ILLINOIS POLLUTION CONTROL BOARD

L. KELLER OIL PROPERTIES,
INC./FARINA:

Petitioner,

PCB 07-147

v.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY,

Respondent.

Proceedings held on Wednesday, August 22nd, 2007, at the Illinois Pollution Control Board Hearing Room, 1021 North Grand Avenue East, North Entrance, Springfield, Illinois, before Carol Webb, Chief Hearing Officer.

Reported by: Beverly S. Hopkins, CSR, RPR
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EXHIBITS

INTERROGATION INDEX

HEARING OFFICER WEBB: Good morning. My name is Carol Webb. I'm a hearing officer with the Pollution Control Board. This is PCB 07-147 L. Keller Oil/Farina v. Illinois Environmental Protection Agency. It is August 22nd, 2007. We are beginning at 10 a.m..

I'll note for the record that there are no members of the public present. Members of the public are allowed to provide public comment if they so chose.

At issue in this case is the Agency's rejection of petitioner's plan and budget for an underground storage tank site at 1003 West Washington in Farina, Fayette County. The decision deadline is November 15th, 2007.

You should know it is the Pollution Control Board and not me that will make the final decision in this case. My purpose is to conduct the hearing in a neutral and orderly manner so we have a clear record of the proceedings. I will also assess the credibility of any witnesses on the record at the end of the hearing.

This hearing was noticed pursuant to the Act and the Board's rules and will be

conducted pursuant to Sections 101.600 through 101.632 of the Board's procedural rules.

At this time I will ask the parties to make their appearances on the record.

MS. HESSE: Carolyn Hesse. I represent Keller Oil at the Farina site. I'm with the law firm of Barnes & Thornburg.

MR. FROEMEL: John D. Froemel. I also represent Keller Oil at the Farina site and I'm with Barnes & Thornburg.

HEARING OFFICER WEBB: Thank you.

MS. JARVIS: I'm Melanie Jarvis. I'm a Special Assistant Attorney General and I represent the Illinois Environmental Protection Agency.

HEARING OFFICER WEBB: Thank you. Are there any preliminary matters to discuss on the record?

MS. HESSE: Yes, there is. Before beginning this morning, Ms. Jarvis and I discussed having a joint motion to supplement the record that was filed with the Pollution Control Board, and we brought copies of the documents.

The documents that we want to

supplement the record with are the 45-day report for LUST Incident No. 05-1539. The 45-day report -- oh, there's a number of documents here. I'm sorry.

MS. JARVIS: We can just stipulate to all the documents. We don't need to go through them. Since they're all within the Agency's main record, we -- they've either submitted or we've sent the documents out.

MR. FROEMEL: Do we want to have them marked by the court reporter as Exhibit 1 or 2?

MS. HESSE: Group Exhibit 1, whatever the Board's preference is.

HEARING OFFICER WEBB: We can go ahead and mark it as Exhibit 1, unless anybody else has an Exhibit 1. Do you have petitioner's anything labeled?

MS. HESSE: Nothing labeled yet.

HEARING OFFICER WEBB: Okay. We'll just go ahead and mark it as Exhibit 1 then.

MS. HESSE: Okay.

HEARING OFFICER WEBB: And it will be admitted into the record.

MS. HESSE: And we brought multiple

copies.

HEARING OFFICER WEBB: Okay.

(The reporter marked Exhibit No. 1 for purposes of identification.)

HEARING OFFICER WEBB: Are there any other preliminary matters to discuss on the record?

MS. HESSE: Yes. Yes, there are.

HEARING OFFICER WEBB: Okay.

MS. HESSE: One of the issues that was raised in the Agency's denial letter, from which this appeal is being taken, in respect to a certification signed by the owner/operator or licensed professional engineer. Since finding that out, we've had a discussion with the Agency and gotten an indication from the Agency that we could file that at any time with them up to this point and they would accept it so that -- that by providing a copy of the certification at this point that issue would now become moot and would be resolved with the Board.

MS. JARVIS: That's right.

MS. HESSE: So we have copies of the certifications here and we can mark that as

Exhibit 2.

MS. JARVIS: That would be fine.

MS. HESSE: And we've provided the original to the Agency.

HEARING OFFICER WEBB: Okay.

(The reporter marked Exhibit No. 2 for purposes of identification.)

HEARING OFFICER WEBB: Exhibit 2 is admitted into the record. Are there anymore preliminary matters to discuss on the record?

MS. HESSE: Yes, there's one more preliminary matter. And that is upon further review of the samples that were collected and analyzed, we're stipulating that analysis of the soil samples collected from Monitoring Well 5 was not necessary. So that is no longer an issue before the Board.

MS. JARVIS: That is correct.

HEARING OFFICER WEBB: Okay. Thank you very much. And there were no further issues, preliminary matters?

MS. HESSE: No further issues.

HEARING OFFICER WEBB: Ms. Hesse, would you to make an opening statement?

MS. HESSE: Just a very brief opening statement. Keller Oil at the Farina 711 retained the consulting firm of CWM to investigate whether there was contamination related to some underground storage tanks that were pulled at the site. Some contamination was found.

They did further investigation. They collected samples during early action and there will be testimony on that, how the samples were collected during early action and where they were collected from.

The samples collected during early action indicated that not all of the TACO Tier 1 remediation objectives had been met at the site. Accordingly, a Stage 1 Site Investigation was conducted. During the Stage 1 Site Investigation, a number of monitoring wells were installed, a number of soil borings were installed, those samples were collected and analyzed, monitoring well water samples were collected and analyzed.

The report was submitted to the Illinois EPA of the Stage 1 Investigation as well as a proposed plan to do a Stage 2 Investigation

to build on the information that had been developed. That information was submitted to the Environmental Protection Agency. The Illinois EPA issued a letter in October basically denying the information that was -- rejecting the information that was submitted and denying the proposed work plan. Supplemental information was provided to the Agency and the Illinois EPA in the letter of May of this year rejected that information, denied the proposed plan, and that is the basis for this appeal.

HEARING OFFICER WEBB: Thank you. Ms. Jarvis, would you like to make any opening statements?

MS. JARVIS: Just a real very brief one. We believe that after all the evidence is in that the record is going to show that the Agency's decision will be upheld.

HEARING OFFICER WEBB: Thank you. The petitioner may call its first witness.

MS. HESSE: Yes, our first witness is Ron St. John.

HEARING OFFICER WEBB: Mr. St. John, if you'd like to have a seat up here by the court

reporter, the court reporter will swear you in.
(The witness was sworn in by the court reporter.)
DIRECT EXAMINATION
BY MS. HESSE:
Q. Okay. Mr. St. John, could you please describe your educational and employment background for us?
A. I have a Bachelor's Degree in Geology from the Southern Illinois University. I've done graduate work in hydrogeology at Wright State University in Dayton.
I'm -- I'm a certified professional hydrogeologist by the American Institute of Hydrology which requires essentially either a graduate degree in hydrogeology or the equivalent, seven years of experience working under a professional hydrogeologist, references, the publication of significant research and testing.
I'm also a certified professional geologist by the American Institute of Professional Geologists which requires five or seven years of experience, a bachelor's degree in geology. I am also a certified geologist in the

State of Illinois.

My employment history dates back to 1979 through 1980. I was a hydraulic engineer for Baker Industries in Wood River, Oklahoma, working in the oil field. After that I came to work for Dr. Ralph Pishkin (phonetic) at the Illinois EPA in the groundwater section where I performed groundwater studies involving closed and covered landfills and uncontrolled hazardous waste sources in the State of Illinois.

I worked for Dr. Pishkin for two years, 1980 and '81. During that time I -- we did studies on the Pembroke/Cross Brothers Site, Dead Creek, Champaign Landfill, Mt. Vernon Landfill, Yeoman Creek Landfill. Four of those were -- became Superfund sites.

From there I went to work for Ecology & Environment Incorporated in Chicago where I was a hydrogeologist, and ultimately before I left there in 1985, was the Geotechnical manager.

From 1985 to 1995 I was a hydrogeologist and midwest regional manager for Mittelhauser Incorporation. Mittelhauser Incorporation was then bought by Clayton Group

Services where I was still a hydrogeologist managing projects and worked as the midwest regional manager. In approximately 2001 my responsibilities as the regional manager for Clayton Group Services changed. I became the national director of remediation services for the company.

And then in 2005 a French company by the name of Bureau Veritas bought Clayton Group Services where I worked as -- I still -- I worked as the director of remediation services nationally for Bureau Veritas and left Bureau Veritas in March of this year to start my own firm.

Q. Mr. St. John, I'm going to show you a document and ask you if this is your resume.

A. It looks like the resume I provided you the other day, yes.

MS. HESSE: Okay. Could we enter this as Exhibit 3?

MS. JARVIS: I have no objection.

HEARING OFFICER WEBB: Mr. St. John's resume will be entered into the record as Exhibit 3.

(The reporter marked Exhibit No. 3 for purposes of identification.)

MS. HESSE: Thank you. Okay.

Q. (By Ms. Hesse) Mr. St. John, in your experience have you installed monitoring wells or overseen the installation of monitoring wells?

A. Yes.

Q. Can you estimate how many?

A. I estimate from approximately March of 1980 to present that I have been either directly in person, or have directed in the field staff taking direction from me, probably greater than 10,000 -- the installation of greater than 10,000 monitoring wells.

Q. So it's adequate to say you've had some experience with installing monitoring wells?

A. Yes.

Q. Since we're going to be discussing a number of hydrology terms, Mr. St. John, I thought it might be useful if we started out with you helping us to understand what some of those terms mean. And I'm going to hand you another document and ask you if you can identify that?

A. Yes, this is -- these are copies of

various definitions within the Glossary of Hydrology that's published by the American Geological Institute.

MS. HESSE: Okay. And we'd like to admit this as an exhibit. It's a recognized --

MS. JARVIS: I would have to object. I haven't even seen it.

MS. HESSE: We will give you a copy.

MS. JARVIS: I really kind of need to see it before I can --

MS. HESSE: I understand. I'll provide you a copy.

MS. JARVIS: That's okay. Since it looks like a dictionary, I would have no objection.

HEARING OFFICER WEBB: Okay. I will admit Exhibit 4 into the record, the Glossary of Hydrology. If I could have a copy to look at while we go through this, that would be helpful.

(The reporter marked Exhibit No. 4 for purposes of identification.)

MS. HESSE: Yes.

HEARING OFFICER WEBB: Thank you.

Q. (By Ms. Hesse) Mr. St. John, could

you help us then with the understanding, and you may refer to the Glossary as well since it's an exhibit, definitions of some of the geological and hydrogeological terms that we are likely to encounter as we discuss the work that was done at the site. The first term, if you could help us, is the term aquifer.

A. I think a good simple explanation of the term aquifer is that it's a geologic formation or unit that will yield useful quantities of water as a resource.

The Illinois EPA has definitions on classes of aquifers, you know, one of the definitions of a Class 1 aquifer is that it will yield at least -- there's three definitions of which they have to -- you have to be able to -- any one of which qualifies it as a Class 1 aquifer. They are the yield of 150 gallons in any one day, permeability of one times 10 to the minus four centimeters per second or greater; and the third one I can't remember right now.

But it's -- essentially it's a geologic unit that will yield useful quantities of water as a resource.

Q. Okay. What does the term aquitard mean?

A. The term aquitard, if you look at the second page, which would be page 10 of this -- of the Glossary, just says see aquiclude. And aquiclude is back on page 9.

Aquitard essentially is a geologic unit that's reduced in its capability of transmitting water and is typically a barrier for the direct hydraulic connection for groundwater above or below an aquifer to getting into the aquifer.

Q. Are aquifer and acquiclude basically synonymous terms?

A. Approximately, yes.

Q. What does the term hydrostatic pressure refer to?

A. Hydrostatic pressure is on page 105. It's essentially the pressure that a column of water exhibits. So if you had a column of water that -- it can be calculated in terms of PSI by the weight of water, which is 8.34 pounds per gallon times the column in feet times a conversion factor of .052, to convert the amount

of pressure at the bottom of that water column. Each -- each linear vertical foot of water has a pressure at the bottom that's additive of .43 PSI.

Q. Okay. By PSI, does that mean pounds per square inch?

A. Yes.

Q. How does the term hydraulic head fit in with the concept of hydraulic pressure?

A. Well, hydraulic head is composed of both elevation head and hydrostatic -- the hydrostatic head. So at any one point in an aquifer, the water at that level has its elevation head plus the --

Q. Would it help to draw a diagram of this?

A. Sure. Okay. How about if I draw it on here and then show everybody?

HEARING OFFICER WEBB: That's a good idea.

A. So -- so essentially in a water table aquifer where this would be the water table indicated by the little upside down triangle, any point within -- below the water table, the

hydrostatic head at that point is composed both of the elevation of that point in space as well as the weight of the water column or the hydrostatic head to ultimately make the -- the combined total to -- equal to the hydrostatic head -- or the hydraulic head, excuse me.

Q. (By Ms. Hesse) Okay. You use the term water table, what does the term water table mean?

A. The term water table is -- is a term used to describe the point at where saturated groundwater is at equilibrium with the atmospheric pressure.

Q. Explain to us the concepts of confining layer and a confined aquifer and can those somehow be equated to or somehow distinct from a water table aquifer?

A. Yes. So a good example of a water table aquifer would be in an instance where if we were just to look at this page that I just drew to demonstrate the concept of a hydraulic head, if the entirety of this page were -- if it consisted of sand and gravel, course grain lithologies that have freely moving groundwater

between the -- within the porosity of that formation. So that actually when you drill down into the sand, you actually get to a point where you identify that the -- the particles within the aquifer are saturated. Interstitial space, the porosity is saturated, and the water just simply resides at a consistent level within that formation. Alternatively --

Q. Just to clarify a point there, in the example you just gave above the water table would also be a sand-and-gravel-type lithology?

A. Yes. Alternatively, and as the case at Farina, you have the surface grade down to about approximately 12 feet in depth.

Q. And you indicated surface grade with the letters SG?

A. Yes. That's this -- so from surface grade to approximately 12 feet in depth, the materials are generally cohesive, meaning they're -- they stick together. They don't fall apart when you sample them. And that cohesiveness is a good indication that there's permeability in the sediments there.

And essentially that that silty clay,

which is predominantly what the zones were from surface grade to 12 feet, is really incapable of yielding water to any degree freely to a bore hole or a well.

Alternatively, when they got to 12 to about 13 and-a-half feet, they -- CWM encountered a sand unit, an unconsolidated loose sand that was saturated, wet. You could visually observe saturation in the porosity of the grains in the sampling, and in that particular instance when -- in these particular instances in general when you install a well into a confined -- a course grain lithology that's saturated and it's under -- it has a certain hydraulic head on the sand, the water level in the well will actually rise up to a level above the top of the course grain lithology. So this is the confining layer, and this is the lower confining layer. It actually encountered another silty clay below the sand unit.

So that the only unit that would have likely been -- could be determined an aquifer would have been this sand, and this would have been the confining layer -- the upper confining

layer and the silty clay below the aquifer would have been the lower confining layer.

Q. Okay. I'm going to show you a couple pages from the record since you mentioned the Farina site. And if you could identify what pages those are in the record as well as describe what these pages are and --

A. All right. This is a copy of the boring log, CWM's boring log, from Appendix E of the Stage 2 Site Investigation Plan, page 90 of the record, Monitoring Well 1. And it indicates that the lithologies from surface grade to 12 feet, pretty much as I described here as either being silts, silty clays or clay silts, glacial till down to a depth of 12 feet and at 12 feet a gray very, fine wet sand was identified from 12 to 13 and-a-half feet. That's Monitoring Well 1.

Very similar lithologies and occurrence in Monitoring Well 2 on page 91 of the record. Very similar lithologies and occurrence in Monitoring Well 3, page 92 of the record. Very similar lithologies and occurrence in Monitoring Well 4, page 93 of the record. Very similar occurrence and lithologies in Monitoring

Well 5, page 94 of the record. And then Monitoring Well 6 was apparently installed in the backfill, I believe, it was of the diesel excavation. So it's dissimilar because it shows that -- like you would expect in backfill of a tank. It has sand.

Q. Okay.

A. That was page 95 of the record.

Q. On the boring logs at the bottom it indicates that moisture was encountered at a depth around somewhere around 10, 11 feet below grade. Is there an explanation for that? Could that have something to do with capillary fringe?

A. Yes. It's my review of the logs it would be typical that the clay silt that was identified in Monitoring Wells 1, 2, 3, and 4 starting at 10 and-a-half feet and going from 12 feet that was identified as essentially clay silt moist, a couple of the -- or actually all of the log -- all four -- or actually all five of the logs that some fine grade sand was also identified.

But that that zone from 10 and-a-half to 12 feet that exhibited this moisture is likely

to be the capillary fringe on top of this confined sand.

Q. What -- what is a capillary fringe? And we may need to take you back to your drawing again so you can illustrate it for us.

A. Capillary fringe is a really fairly simple concept. It's essentially present both in unconfined and confined aquifers.

Q. Would you mind labeling the first one as an unconfined aquifer.

A. So the capillary fringe since the water table -- the definition of the water table is the point in which saturated water is actually in equilibrium with the atmosphere, the capillary fringe is actually water that is actually by -- by tension, by surface tension with the particles above -- above the water table, it actually wicks up the water above the capillary action above the zone of saturation or the water table to actually cause moisture to occur within the sediments immediately above the water table. That -- And in that area there's actually less pressure than the atmospheric pressure in those pore spaces. Portions of the capillary fringe will exhibit

complete saturation, depending on the nature of the lithologies.

The best example would be the extremes so you can think of the capillary fringe -- a very -- a very large capillary fringe would occur in a silt, sort of lithology where you might have 5 or 7 feet of capillary fringe. But then on the other hand, if you had actual -- say a cobble aquifer where you actually have clast the size of your first, very high permeability, the capillary fringe would almost be zero. The water table would just occur within the ground wall itself.

Q. And on this drawing are you indicating the capillary fringe by a little squiggle?

A. Yes.

Q. Above the water table?

A. The little squiggle above the water table.

Q. And to also make that drawing clear for anyone who needs to look at it later, where you've indicated to us verbally the water table, would you write that on the document as well? Okay. Could we refer to your next drawing again please --

A. Okay.

Q. -- the confined aquifer drawing?

MS. JARVIS: At this point are we talking still about Farina?

MS. HESSE: Yes, we are.

MS. JARVIS: I'm going to object to his testimony because I didn't hear a foundation or a basis for his discussion of Farina. I didn't hear that he reviewed any documents or that he worked on the site or anything like that and I'd like to hear a foundation for his testimony.

MS. HESSE: Okay. I can give a foundation.

Q. (By Ms. Hesse) Mr. St. John, have you reviewed -- I know we've been talking about general things and help us to all understand hydrogeology better. Have you reviewed any documents related to the Farina site?

A. Yes.

Q. Could you describe to us what the documents were that you reviewed?

A. Well, I reviewed the 20-day report, the early action work. This Stage 2 Site

Investigation Plan. I think there were several -- there was an addendum, I think, to it.

Q. Did you review the results of the Stage 1 Site Investigation?

A. Yes. I reviewed the correspondence from the IEPA. I reviewed the IEPA's reviewer notes.

Q. Did you review IEPA's letters dated October 5, 2006, that was the letter from Illinois EPA that rejected the plan and the associated budget that was received by IEPA on August 7, 2006?

A. Yes, I did.

Q. Did you also review a copy of the letter dated May 17, 2007, that was a letter that rejected the plan and budget after supplemental information had been provided?

A. Yes, I did.

Q. Do you recall reviewing anything else?

A. I probably did, but I just don't remember the specific names.

Q. So based on that review, were you able to evaluate the work that was done at the site by CWM?

A. Yes.

Q. And based on that information do you feel that you have an understanding of the hydrogeology that was going on at the site?

A. Yes.

Q. Based on your review of the information, is it your belief that CWM did the work properly at the site?

A. By properly I'm assuming you mean that they installed the monitoring wells properly?

Q. Yes.

A. Based on my experience with reviewing work and the guidelines put forth by the IEPA underground storage tank section and the requirements, I believe that CWM installed the wells properly at the Farina site, yes.

Q. Okay. Let's continue with your description and the basis for your determination that the work was done properly. Could we go back to your second drawing again?

A. Sure.

Q. The one that -- I'm --

A. I'm going to use the chair as an easel.

Q. Okay. Is this drawing in your mind similar to the conditions that were found at the Farina site?

A. Yes. With the exception that I've generalized the lithologies above the sand. It's -- it's generally accurate to the Farina site.

Q. Okay. Where you've indicated on the drawing where the sand is, is that where groundwater would be encountered --

A. Yes.

Q. -- or was encountered at the site?

A. Yes. Groundwater saturates the sand from 12 -- excuse me, from 12 to 13 and-a-half feet in depth and there's an apparent confining pressure.

Q. How do you conclude that, that there's a confining pressure?

A. Well, later on it was determined that once they screened their wells in -- across the sand unit, that the static water level in the well came up to 2 or 3 feet below the ground surface.

Q. Okay. What does the term static water level mean?

A. It's simply the water level in a well that is -- exhibits the hydrostatic pressure of a geologic formation without influence of any withdrawal or other pumping on that formation.

Q. Can the static water level in a confined aquifer be used to determine where the water is actually found in groundwater, where the aquifer actually is?

A. The static water level for a confined aquifer will, by definition, be above the top of the aquifer itself, otherwise it wouldn't be a confined aquifer. That's -- By definition a confined aquifer is an aquifer that exhibits a static water level above the upper surface of the aquifer.

Q. Is the saturated zone or the saturated area the same thing where the aquifer is located? You had used the term saturated before.

A. Yes, this -- this lithology, this course grain unconsolidated lithology, this sand, fine grain sand that was identified, was the saturated zone.

Q. Okay. Could you label that in your drawing as well too?

A. Yes.

Q. Okay. What is potentiometric-surface?

A. The potentiometric-surface is the total hydraulic head exhibited by an -- an aquifer in equilibrium with the atmosphere.

Q. In -- Is one way of measuring the potentiometric-surface to determine what the static water level is in the well?

A. Yes.

Q. What is importance of determining that?

A. Well, the importance of determining that is to determine which way groundwater flows, for the most part. There are many other important factors really to it, but for the most part I think probably related to this site it's to determine which way the groundwater flows.

Q. Okay. And then the drawing that you've made that's sort of a generalized drawing of the conditions at the Farina site; is that correct?

A. Yes. It could be more detailed if you'd like it. I mean, the lithologies are fairly similar for Monitoring Wells 1 through 5.

The lithologies are very similar from well to well.

Q. When you're doing boring in the field, based on your experience in constructing and monitoring wells, is it always possible, especially in a silty clay like this, to determine when the water table has been reached or if you might be in a confined aquifer?

A. No, there's really no way to determine, particularly in glacial till environments, there's no way to really know what the ultimate level -- hydrostatic level will be for a well completed in a saturated zone or aquifer.

Q. And when you refer to the term hydraulic level, you were referring to the length in the well pipe where the water would rise above? Perhaps you could draw that for us. And then the hydraulic level is what now?

A. There's no way to determine a -- what the hydraulic head is on the saturated zone or aquifer you're drilling in at the time of drilling. You simply have to wait until the well is completed and determine later on after the

static water level has reached equilibrium with the atmosphere.

In certain instances where you might have -- and again, I'll go to the extremes. If you had a cobble zone that exhibited very high permeabilities, that water level might go into equilibrium while you're out in the field drilling. But in other instance where the permeabilities aren't as great, it takes a period of time, often days.

Q. When installing a monitoring well, when is the screen placed in the well? Is that on the same day the well is drilled?

A. Yes.

Q. So when a screen is placed in a monitoring well, you can't always tell what the static water level is going to be; is that correct?

A. That's correct.

Q. When you reviewed the documents that are in the record and were given to you to review, did you identify where the wells were screened when the well -- monitoring wells were installed?

A. I'm unsure -- did I understand --

Q. Did you review -- And you have a copy up there. In the record it's pages 102 through 107.

A. I did review the Well Completion Logs, yes.

Q. Yes. I apologize. I used the wrong terminology. And based on your Well Completion Logs, were the wells screened in accordance with Illinois EPA regulations and policies?

A. I believe they were. It's been my experience that IEPA typically wants to see a tin football screen. And in this particular case, the folks from CWM installed the base on the monitoring well approximately 6 inches to 1 foot below the bottom of the saturated zone and screened the remainder of the -- the remainder of the screen rose up above the saturated zone.

Q. So where the well was screened, the well was screened so that the screen intersected the saturated zone so that the saturated zone was covered by the well screens; is that correct?

A. Absolutely.

Q. And water would enter the monitoring

well through the saturated zone; is that correct?

A. Yes. The saturated zone between 12 and 13 and-a-half feet in depth.

Q. Okay. After a monitoring well is installed, are monitoring wells typically developed?

A. Yes.

Q. And what's the general procedure for developing a monitoring well?

A. Well, there's various procedures. Some use -- some folks or drillers use air surging, some people use what's known as a surge block which essentially is a big plunger.

The general requirement is that you get physical surging action in the well screen -- in the area of the well screen to loosen, if you will, the fine grain particles that have been kind of smeared around the aquifer materials while drilling.

The process of turning a hollow stem auger through silty clay cohesive materials, like you see in the upper 12 feet in these boring logs and on this diagram that I've drawn, you bring that down along with you as you drill through the

unconsolidated course grain lithologies and then some of that gets smeared on there.

So you want -- the premise of the well development is to make a good hydraulic connection between the well screen and the annular filter pack and the aquifer formation.

Q. I believe you mentioned that you reviewed the Illinois EPA reviewer notes at this site?

A. Yes.

Q. Do you recall a comment in the reviewer notes, and the other documents you've read from Illinois EPA, to the extent that drilling for the monitoring wells should have stopped when groundwater was encountered and drilling beyond that point was in excess of the standards? Do you recall that comment?

A. I recall a comment similar to that, yes.

Q. What would happen if you stopped drilling your monitoring well when you first encountered groundwater?

A. Well, you wouldn't have a good hydraulic connection to the well, and you

wouldn't have good water entry into the well --

Q. So --

A. -- groundwater entry into the well.

Q. So would you be able to collect a representative sample of the groundwater?

A. In many instances you wouldn't. Because in many instances you wouldn't even have any groundwater to collect because you -- if you stopped when you -- at precisely the level which you encountered the groundwater and the geologic formation, the aquifer wasn't confined, the water level wouldn't rise up and you wouldn't have any water in the well.

Q. Do you recall reviewing any comments from the Agency to the effect that the well should have been screened up where the static water level was in the well?

A. Yes.

Q. And what is your impression of those comments?

A. Well, my recollection is that the static water level is something like 2 to 3 feet in depth. And that would be suggestive that the screen should have been -- the top of the screen

should have been at least that shallow in depth, and which would also suggest that the bottom of the screen would have been 12 to 13 feet in depth. And that would have -- well, that would have caused a -- probably the biggest problem due to the shallow nature of the upper surface of the screen and its ability to have surface contaminants enter into the upper portion of the screen.

Q. Are monitoring wells supposed to be grouted below the frost line?

A. Yes.

Q. At the -- this site, which is largely basically in central Illinois, if a monitoring well screen went up to as shallow as where the hydrostatic water -- or the static water level was in the well, would you expect the well to be able to be grouted below the frost line?

A. Well, no. So the problem there is that generally frost heave, freezing soils, are going to cause anything that's not grouted or a concrete surface seal installed, to at least that frost heave depth, it's going cause that to heave during freezing conditions.

And I'm not sure exactly what the code is in Farina but knowing the code in northern Illinois and in areas in central Indiana --

MS. JARVIS: I would object to relevance. If he doesn't known the code in Farina, we're not going to have testimony as to the codes in other area of Illinois.

Q. (By Ms. Hesse) Mr. St. John, are you familiar with codes in similar latitudes in Indiana?

A. Yes.

Q. And what is the code at those locations?

A. In Indianapolis, for instance, it's 40 inches.

Q. And that's where the frost line is typically expected, when doing construction?

A. Right. To prevent heaving. And 40 -- you know, 40 inches is 3'4", so you typically want to install your concrete surface seal and/or cement grout monolith from grouting the annular space at least to that depth --

Q. Okay.

A. -- to prevent -- to prevent frost

heaving.

Q. You use the term annular space and we've been talking about grouting a monitoring well. Are there reasons other than frost heaving where you would grout annular space? And if you could also explain to us what annular space is.

A. An annular space is the space between the bore hole that the drilling equipment makes, in this case a hollow stem auger. Typically hollow stem augers will make anywhere between 9 and a quarter and 12 and-a-half inch bore holes, depending on the size diameter auger flights you're using. And inside of that you're installing typically an outside diameter well of two and three eighths inches maybe in a PVC well. So you have an annular space around that two and three eighths inch outside diameter PVC well, and in the bore hole that's -- that space is referred to as the annular space. And it needs to be filled around the screen with a sand filter pack to allow groundwater to come into the well screen and then occur within the well.

Above that it needs to have -- above the sand pack it needs to have a bentonite seal

installed and then be grouted to the surface grade where either most -- most typical applications are where a concrete surface plug is installed, surface pad.

Q. Is the reason to install the concrete plug or the bentonite above the well screen to prevent surface contamination from flowing into the monitoring well?

A. Yes.

Q. And in a gasoline service station situation like this, is there typically a blacktop or concrete surface?

A. Yes. Most service stations, as most people know, have asphalt surfaces.

Q. Is there typically a sand or gravel underlayment to the asphalt or concrete?

A. And --

MS. JARVIS: I'm going to object again because we're now talking typical, if we're talking about the Farina site, or are we talking in generalities?

HEARING OFFICER WEBB: Are we moving on to the Farina site?

MS. HESSE: We're moving on to the

Farina site.

HEARING OFFICER WEBB: Okay. Go ahead. I'll allow it.

A. Like you would expect to see in any proper -- properly engineered asphalt situation there -- and at the -- the boring logs for the Farina site there is at least one to, oh, I guess the Monitoring Wells 3 and 4 indicate there's at least 2 feet of compacted gravel and subbase below the asphalt which is typically put down to compact and provide a stable base for the asphalt.

HEARING OFFICER WEBB: Which pages were you just looking at?

A. This would be pages 92 of the record -- well pages 90 through --

HEARING OFFICER WEBB: Appendix E though?

A. Yes.

HEARING OFFICER WEBB: Okay. Thank you.

A. 90 through 92 of the record.

Q. (By Ms. Hesse) If a spill were to occur on the concrete -- a spill of gasoline or

petroleum were to occur on the concrete or asphalt and there were cracks in the concrete or asphalt coat, could the spill then get into the gravel subbase that you just mentioned?

A. Yes.

Q. What would happen if a well were screened so the top of the well screen was close to the surface then?

A. Well, it's creating a vertical pathway to cause contamination in the well from surface spills or piping leaks in and around the underground storage tank system.

Q. So it would be your conclusion that it would be improper for a number of reasons to have a well screen at the Farina site that went to within 2 to 3 feet from the surface; is that correct?

A. Yes.

Q. Going back now to how the wells were installed at the Farina site, you testified earlier that the well screen crossed the saturated zone. Before collecting a water sample, is there a procedure that is typically followed in accordance with accepted professional

geological practices to collect a sample to purge a well?

A. Purging is a routine and well-accepted procedure for acquiring a sample -- a representative groundwater formational sample.

Q. And what actually is purging?

A. Well, purging can be a variety of things. It can be removing well and annular volumes, well volumes. What it really is is removing enough water out of the well to bring in fresh groundwater from the actual sand, or in this instance, formational groundwater.

Q. So in other words, before you collect a sample from a well, you remove the water that was already in the well?

A. The stagnant water. You're basically removing the stagnant water.

Q. Is there a problem with analyzing stagnant water?

A. Well, yes. It's not representative of the formational groundwater.

Q. If you're dealing at a site where there's volatile chemicals like benzene or gasoline, could it also affect the accuracy of

the sample?

A. Yes.

Q. Is it more accurate to collect a sample then by purging the well and then sampling the water that would flow into the well after the well is purged?

A. Rather than sample the stagnant water?

Q. Yes.

A. Yes.

Q. Okay. Mr. St. John, you mentioned that as part of your preparation today you reviewed two letters sent by Illinois EPA, one dated October 5, 2006, and the other dated May 17, 2007. Do you have copies of those in front of you? I believe they start on pages 157 and 256 representatively in the record.

A. Well, this just goes to 140 something.

Q. Oh.

MR. FROEMEL: We didn't give you those pages.

MS. HESSE: Sorry.

HEARING OFFICER WEBB: I have 157. Do I have 256? Is that in a new pile. Is that Exhibit 1?

MS. HESSE: You should have 256. It's at the very end.

HEARING OFFICER WEBB: Oh, I got it.

MS. JARVIS: The original record goes through 263.

HEARING OFFICER WEBB: I got it.

A. Is there a question out there?

Q. (By Ms. Hesse) Well, I was giving you a chance to review them.

A. I have reviewed these, yes.

Q. Okay. If you could refer to Item Number 3 on page 257 of the record. And that's the letter of May 17, 2007.

A. Okay.

Q. Does it appear to you that the initial portion of Item 3, where there's some subparagraphs one through seven that continues on to the next page, are taken from the regulations?

A. Yes.

Q. And then following that is a paragraph that appears to contain Agency comments, is that your impression?

A. Yes.

Q. Okay. Could you read the first

comment of the Agency?

A. Number one?

Q. The first comment that begins the Agency wishes.

A. Oh. The Agency wishes to clarify that the monitoring wells must be installed in a manner to allow sampling only at the desired interval of the groundwater.

Q. Is the term desired interval defined anywhere in geological practices or the Agency's regulations to your knowledge?

A. Not that I'm aware of.

Q. What is your interpretation of that sentence?

A. My interpretation of that sentence would be that the monitoring well should have been installed with a portion of it screened at least though the interval from 12 to 13 and-a-half feet in depth.

Q. Between -- That's because that's the depth where you saw the sand seam that would bear water?

A. That is the saturated zone in the groundwater, yes. It's the saturated course

grain lithology.

Q. Based upon your review of the boring logs that have been prepared, the Well Completion Reports and the other information that you've reviewed at this site, were the monitoring wells installed in a manner to allow sampling only at the desired interval of the groundwater?

A. Well, the 10 foot well screen allows sampling for -- for areas other than that foot and-a-half that's saturated from 12 to 13 and-a-half feet. But it's my opinion that the water yielded to the monitoring wells that CWM installed is from the course grain lithology, the fine grain sand, at 12 to 13 and-a-half feet in depth.

Q. Could you read the next sentence, please?

A. For sampling of indicator contaminants pursuant to 35 IAC Section 734 the screen must intersect the water level in the well for accurate determination of contaminant levels in the groundwater because gasoline contaminants float on the surface of the water.

Q. What is your interpretation of that

sentence?

A. The term indicator contaminants refers to the constituents benzene, ethylbenzene, toluene and xylene, and that screen must intersect the water level in the well.

Q. Could that sentence be contradictory to statements contained in your understanding of the sentence before that?

A. The contradiction really comes in the form that it's -- it would be very difficult to know in the field how to screen the well so that the water level -- it would intersect the water level, number one --

Q. By the water level you mean the level that the water rose in the well?

A. The static water level. Ultimately that the water rises to in the well, yes. And then secondly, if you were just going on that basis, that is, you were just to make sure that screen level -- the screened interval of the well were to intersect the static water level in the well, often times in the case of confined aquifers, you wouldn't have any water. You couldn't have water in the well because the

static water level would be too far above the saturated zone yielding water to the well and creating the static water level.

So in my opinion if there's not a good foundation for the hydrogeologic reference in the -- in the sentence.

Q. Okay. What about the portion of the sentence related to because gasoline contaminants float on the surface of the water, is that always true?

A. Well, here it's saying gasoline contaminants so -- and in the same sentence it says indicator contaminants. And I know from the general discussions, in the comments prior to this, that the indicator contaminants are that -- are benzene, ethylbenzene, toluene and xylene. And there's a suggestion here that gasoline contaminants float on the surface of the water suggesting that benzene, ethylbenzene, toluene and xylene enter as soluble constituents, meaning, once they partition into groundwater to the extent that there's -- their solubility allows them, that they migrate with some sort of buoyant factor in groundwater rather than just

migrate with the advective flow of groundwater. And that notion simply is not true.

Gasoline as a separate phase contaminant floats on the water table. So if there was a separate phase, gasoline that occurred at the site, which there appears to be no indication of, if gasoline was to occur on top of a water table condition, not in a confined aquifer but on top of a water table condition, you'd want to have the well screened across that water table so you could get the LNAPL, the Light Non-Aqueous Phase Liquid, to occur within the well screen.

But the benzene, ethylbenzene, toluene and xylene are going to partition into the groundwater to the limits of their aqueous solubility. They have -- Benzene has an aqueous solubility of approximately 1750 parts per million. The other three constituents have aqueous solubilities between approximately 200 and 900 parts per million. Those concentrations are orders of magnitude greater than the 620 regs, or the groundwater clean-up standards, so they cause, you know, big problems and once they

go into solution and migrate with the normal course of groundwater flow or the advective groundwater flow, but they do not float. There is no buoyant -- there's no buoyancy associated with them once they are in solution in groundwater.

Just as, for instance, a good example is chloride. Most people realize that, you know, you can go out and swim in the great salt lake and you're buoyant and you float because, you know, brine water is much heavier than fresh water. But that doesn't mean that chlorides in and of themselves free at -- part per million constituents in groundwater have any sort of dense -- denser than groundwater effect as they are transported in groundwater. They're -- they flow along with groundwater in the normal -- in its normal course or its advective flow.

Q. Okay. In preparation for the hearing today, did you look at any particular documents that contained illustrations that could help -- help us understand this concept a little better?

A. Yes. I was aware of this particular American Petroleum Institute document that I

think could clarify this.

MS. HESSE: Yes. We'd like to introduce this as our next exhibit. I think we're up to five.

MS. JARVIS: I would like to reserve objection until I hear the testimony on this exhibit. It's awful --

HEARING OFFICER WEBB: Okay. We'll hear testimony first and then we'll admit it at --

MS. JARVIS: Yeah, it's awful big and technical to just look at it.

HEARING OFFICER WEBB: Okay.

(The reporter marked Exhibit No. 5 for purposes of identification.)

Q. (By Ms. Hesse) Okay. On this document and the cover page of the document are there any illustrations here that could help illustrate the concept you were just discussing?

A. Well, I think they all are helpful but probably the most intuitive would be the upper left figure on the cover. And it simply shows -- what that illustration is trying to depict is a -- is a barrel that is leaking with petroleum

compounds in soluble phase, not as an LNAPL, meaning as not a free-phase gasoline or petroleum sitting on the water table but as a soluble contingent.

And once those soluble constituents like the indicator contaminant benzene, ethylbenzene, toluene and xylene, once they migrate into groundwater, they actually move the advective flow of groundwater. And groundwater under water table conditions, which is what this upper left illustration shows, has a tendency -- as it moves towards its discharge boundary has a tendency to migrate at greater depths into the aquifer because -- and it's -- it should be intuitive because you have more recharge coming into the aquifer from precipitation, infiltration and migration down into the water table and that water has to go someplace.

So purely by mass balance and conservation of mass you have to have a diving plume moving as it goes further down gradient.

Q. So does contamination, including the indicator contaminants here, generally tend to migrate downwards, is that an adequate summary?

A. They -- it will -- I think a more accurate way to say it is that the -- that the soluble constituents will migrate with the advective flow or the natural gradient flow of the groundwater system.

Q. And at this -- at the Farina site the groundwater flow that was found there was found in this 11, 12 foot, 13 foot level below grade; is that correct?

A. That's correct. I think one of the more important statements, just to shed light on this whole discussion, occurs on page 5 of this API document entitled Downward Solute Plume Migration: Assessment, Significance, and Implications for Characterization and Monitoring of "Diving Plumes". Page 5 is the -- the introduction occurs. And on the -- in the last sentence of the third paragraph it states, Although LNAPLs, which we've previously defined, may float and DNAPLs, which is Dense Non-Aqueous Phase Liquids, may sink when in pure phase, the constituents that dissolve from these free-phase mixtures into groundwater are neutrally buoyant.

Q. And neutrally buoyant means what?

A. Means that they have -- they don't occur as floaters. They don't occur as sinkers. They just move with the advective flow of groundwater.

Q. Referring back now to page 258 which is the Agency's letter, it states the monitoring well screens were set at a depth that allows total submersion of the screen in the well. Do you understand what -- what is your understanding of that sentence?

A. My understanding of that sentence is that the static water level in the well rose above the top of the screen.

Q. Is that a problem?

A. My opinion from reviewing the boring logs, static water levels is that there -- and given the geologic conditions, i.e., that we are talking about a confined aquifer. So if there was any sort of an LNAPL occurrence, if there was, there's no indication from any of the data at the site there's any free-phase LNAPL occurrence. But if there was an LNAPL occurrence at the site, it would not have been in the confined zone. It would have been up in

fractures within the till and would not have been available to have occurred in the well, that would have been -- any well that would been properly installed in this confined aquifer. And if -- if LNAPL would have gotten down -- separate phase gasoline would have gotten down into this confined saturated zone, it would have gotten into this well.

Q. It would have gotten into the wells?

A. Into the wells.

Q. That were actually installed?

A. That were installed by CWM.

Q. Okay. So if I could just recap, it's your impression that if there had been Light Aqueous -- LNAPLs present that the way the wells were screened, the wells would have been able to sample for LNAPLs?

A. If -- if LNAPL was occurring in that confined aquifer, these wells would have had as good a chance as any other wells screened anywhere at the site to demonstrate that.

Q. If water in a well rises above the height of the screen, can representative samples still be collected?

A. Yes.

Q. And how is that done?

A. Again, the water in these wells -- it's my opinion that the water in these monitoring wells at the Farina site was yielded from that confined zone between 12 to 13 and-a-half feet in depth. And as long as they were sampled appropriately, they are going to yield wells -- yield samples and be representative of the formational water in that course grain confined aquifer occurring at 12 to 13 and-a-half feet in depth.

Q. And would those samples provide acceptable data to determine the concentrations of contaminants in the groundwater?

A. Yes, they would be able to determine the concentrations of the indicator contaminants benzene, ethylbenzene, toluene and xylene.

Q. Mr. St. John, after reviewing all the documents that were provided to you, is it your opinion that CWM installed monitoring wells at the Farina site in accordance with Illinois EPA regulations?

A. Yes.

Q. We had been discussing earlier how BTEX might migrate in with the groundwater. Is the same hold true to MTBE and polynuclear aromatic hydrocarbon?

A. They are going to partition into solution and migrate with the advective flow of groundwater. You know, they're going to partition into solution to their aqueous solubility, yes.

Q. So if they're present in the groundwater, you should be able to detect them in the groundwater sample; is that correct?

A. Yes. Right. I left out MTBE before. Sorry.

Q. In your professional opinion was the work that CW3M performed at the Farina site consistent with accepted professional engineer and/or professional geology -- geological procedures?

A. Yes.

Q. Is it your opinion as a licensed professional geologist that the groundwater monitoring wells were constructed in a manner to enable the collection of representative

groundwater samples?

A. Yes.

Q. Is it your opinion as a licensed professional engineer that the groundwater monitoring wells were screened to allow sampling at the desired interval of groundwater?

A. Well, I'm not a licensed professional engineer so that's a difficult --

Q. I'm sorry. Geologist. I misspoke.

A. So --

Q. Okay.

A. So could you give me that one again?

Q. Yes. In your opinion as a licensed professional geologist were the groundwater monitoring wells screened to allow sampling at the desired groundwater intervals?

A. I interpret the desired groundwater interval to be the uppermost saturated zone. And they were, in fact, screened at the uppermost saturated zone.

Q. Are the documents you reviewed, including the boring logs and the monitoring well completion reports, the types of documents that a licensed professional geologist would review to

determine if monitoring wells and the work related to them was consistent with professional geology standards?

A. Yes.

MS. HESSE: No further questions.

HEARING OFFICER WEBB: Thank you. Ms. Jarvis?

MS. JARVIS: Can we take like a five-minute break just to go to the restroom?

HEARING OFFICE WEBB: Yes.

MS. JARVIS: Would that be okay?

HEARING OFFICER WEBB: Yes.

(A short break was taken.)

HEARING OFFICER WEBB: Okay. We are back on the record with the cross-examination of Mr. St. John.

CROSS-EXAMINATION

BY MS. JARVIS:

Q. Mr. St. John, who were you retained by?

A. I was retained by Ms. Hesse.

Q. Ms. Hesse. What is your fee?

A. $180 an hour.

Q. Do you get paid extra for expenses?

A. Yes.

Q. Did you get paid separately for the prep or is that the $180 an hour for preparation?

A. It's all the same rate.

Q. Did you get paid separately for travel?

A. I haven't been paid anything to date.

Q. Okay. So you have not been paid so far?

A. That's correct.

Q. How much did you make last year from testifying?

A. I didn't make anything last year from testifying.

Q. So you didn't testify last year?

A. I can't remember if I testified or not last year, but I didn't make anything above my ordinary salary at Bureau Veritas for expert testimony anyhow.

Q. How many times have you testified for consultant or landowners?

A. When you say landowners?

Q. Owners of a site?

A. Owners of a site. I would say that I

have probably represented owners on nearly everything I can think of right now, so probably six or seven times.

Q. Okay. So you've never represented a government Agency? You've never testified for a government Agency, I should rephrase that?

A. Not that I can recall.

Q. Is this the first time that you've testified in a hearing for CWM?

A. Yes.

Q. Have you testified before the Pollution Control Board before?

A. No.

Q. State court?

A. Yes.

Q. How many times?

A. Two that I can you think of.

Q. Federal court?

A. Yes.

Q. How many times?

A. Including depositions?

Q. Yes.

A. Probably two or three.

Q. Have you testified regarding the

specific issue in this case before?

A. No.

Q. Have any of your -- Let me rephrase that. Have any of your opinions ever been found to be unreliable by any court or tribunal?

A. I testified in the Lockformer case versus the Ellsworth Industrial Park and -- in federal court. And Judge Leinenweber determined that my testimony couldn't be admissible related to wastewater treatment plant discharges because I wasn't a wastewater treatment plant engineer.

Q. Let's see. Well, specifically -- And I'd like the Board to take judicial notice of the case. On page 4 of the opinion the court greed that your testimony was unreliable. And then it goes on to say that you failed to discuss the import of, or even mention, material facts in the report amounts to cherry-picking the facts that you considered to render your opinion. And so since you fail to satisfy the selective -- or the scientific method in the Daubert case, which is a kin to the Fry case in Illinois; isn't that correct?

MS. HESSE: I'm going to object to the

line of questioning. There has been no evidence produced here that Mr. St. John disregarded any relevant data. We had him review all relevant data and form his opinions.

Secondly, I'm going to object to this line of questioning because it relates to a different set of contaminants. It also goes to -- the line of questioning goes to whether he is certified to operate a wastewater treatment plant. His testimony here was not whether we were operating wastewater treatment plants. His testimony went to whether what was done here met accepted geological, hydrogeological principals. And there's been ample testimony that he is well qualified in that area. So I object to this line of questioning.

MS. JARVIS: This line of questioning goes to the bias and reliability of the witness which is allowed. He's been found unreliable in another court case by a federal court, and it was shown that not his testimony or expertise were in question but the information that he used or chose to not use in making his decision. And we will explore further his reliability in this case

as we continue on with questioning.

A. Well, could I point out that Judge Leinenweber found that I was a qualified hydrogeologist and also says, even in this record that you point out here, that Mestek responded that my opinion was based on me being a hydrogeologist. It says that in the middle of the second paragraph --

Q. (By Ms. Jarvis) And that --

A. And that he found --

Q. Sir, sir, first of all, you don't have a question pending in front of you.

A. Okay.

Q. And secondly this -- this -- my line of questioning goes to your reliability or unreliability in a specific case.

HEARING OFFICER WEBB: I'll allow the line of questioning and the Board can take judicial notice of this case, if they care to.

Q. (By Ms. Jarvis) What do you understand is the nature of this dispute?

A. Well, the -- I understand that there's a dispute related to whether some of the work that CWM did was above and beyond the work

required by the underground storage tank program, and that there's a dispute related to that in terms of reimbursement. And some of that speaks towards the way the monitoring wells were installed. I really only discussed the aspects of the groundwater occurrence in the monitoring wells.

Q. Now you stated that you reviewed the record files in this case; is that correct?

A. Yes.

Q. Okay. And my question to you are: Did you prepare any of these documents that are contained in this record?

A. No, I didn't prepare --

Q. Did you submit any of these documents to the Agency?

A. No, I didn't.

Q. None of your opinions are located in this Agency record, is it?

A. No.

Q. Okay. You've already went through what you relied upon. Maybe I missed this but am I clear that you did not visit the Farina site?

A. I have not visited the Farina site.

Q. So you were not present when these wells were installed; is that correct?

A. That is correct. I was not present.

Q. And you did not conduct any experiments of any kind or test any materials in forming your opinion today?

A. No.

Q. Did you ask anyone to review your findings?

A. No.

Q. How many well screens have you actually installed yourself?

A. A thousand.

Q. Can you point to any other expert in the field that agrees with your opinion in relation to the placement of the well screens?

A. Regarding the Farina site?

Q. Regarding placement of the well screens you testified as to where you would place the well screens in a site similar to Farina. Do you -- can you point to any other expert in the field that would agree with your opinion?

A. I believe that nearly anyone that, for instance, would be a professional hydrogeologist

with the American Institute of Hydrology would agree with my opinion.

Q. But you can't point to a specific document or a named expert that would specifically have published on this?

A. What specific thing are you referring to?

Q. The placement of the well screen?

A. You mean placing a well screen adjacent to a saturated geologic unit and getting water to occur in it?

Q. Yes.

A. That's probably in every text on hydrogeology published.

Q. Let's discuss the regulations. You didn't participate in the Board's hearing adopting the regulations, did you?

A. No, I did not.

Q. So you didn't comment, you didn't base any opinions on the adoption of that regulation that's in question, defining desired interval or using the term desired interval?

A. So your specific question is I didn't participate in any --

Q. In any hearing, Board hearing regarding the adoption of the regulation, specifically 734.430?

A. Regarding?

Q. Wells, monitoring wells.

A. The desired interval?

Q. Uh-huh.

A. No, I didn't.

Q. To your knowledge has any court or board defined what a desired interval is?

A. No.

Q. What do you think the relative factors are in potentially defining desired interval?

A. My opinion from experience in the underground storage tank program, as well as performing hydrogeologic studies throughout the midwest for 27 years, is that the uppermost saturated zone should be screened.

Q. At the 12 to 13 foot depth that you testified to, would that be the most likely area to find the contaminants?

A. Yes.

Q. What is the hydraulic conductivity of the site?

A. They did a slug test in one of the reports, I believe. My recollection is it was on the order of 10 to minus three centimeters per second, which would be consistent with a fine grain sand?

Q. Okay. I'm going to ask you to go to page 13 of the Agency record and look at Section 3.4. Can you read the section that is in italics right after the first paragraph, please?

A. Hydraulic conductivity?

Q. Yes.

A. 9.6 times 10 to minus seven.

Q. So that would be the hydraulic conductivity of the site; correct?

A. It would be. It doesn't identify any units that I can see.

Q. I think lower in that same page at the end it says 3.0. Okay. If you could go to page 230. Okay, never mind. And it's a sheet entitled Bouwer & Rice Method for Calculating Hydraulic Conductivity.

A. Okay.

Q. And that indicates that the hydraulic conductivity, could you read that section?

A. Is looks as though the result is similar to the page 13 and indicates a hydraulic conductivity of 9.61 times 10 to the minus seven centimeters per second.

Q. What is the average hydraulic conductivity of porus grain sand as found in the aquifer of 12 to 13 and-a-half feet?

A. I would expect it to be -- the fine grain sand that they had in their boring log I was expecting to be approximately one times 10 to the minus three centimeters per second, somewhere in that general range.

Q. Just a second. Can groundwater infiltrate the well in the silty clay strata?

A. I'm not clear as to what you mean.

Q. In the silty clay that you indicated on your chart, can groundwater infiltrate that level?

A. Can groundwater infiltrate the silty clay?

Q. Uh-huh.

A. Well, groundwater infiltrates silty clay all the time.

Q. Okay. And what would the hydraulic

conductivity of silty clay be?

A. It would be low. It would be -- it can range anywhere at the upper end maybe 10 to the minus six to the lower end 10 to the minus nine centimeters per second.

Q. And if you purged a site with this type of hydraulic conductivity, how long would it take for it to recharge or have water come back into the well?

A. So the question is?

Q. If you purged, took water out --

A. Purged what?

Q. -- purged the well, you stated that --

A. Yeah, we --

Q. -- it's common to take water out of the well before testing.

A. Are we talking about the wells that CWM --

Q. Yes, we are.

A. Okay.

Q. If using this hydraulic conductivity that is in the record, if they purged this well, like you were stating in your testimony, okay, and how long would it take for that water to come

back and recharge?

A. It -- they will -- very likely wouldn't recharge.

Q. It wouldn't recharge. So water would not come back into the well?

A. Well, it would be very -- I mean, it would -- not in the same day. It would be slowly. It wouldn't recharge in a matter of, you know, minutes or hours. It will take a long period of time.

Q. So if we had this type of well installed and they purged this and bailed this water, it would take a long time then for the water to come back up into this screen?

A. If -- Okay. I'm sorry.

Q. It indicated in the record --

A. Right now I'm confused. Are you talking about the CWM installed wells at the Farina site?

Q. Yes, at the Farina site.

A. Okay.

Q. I'm talking about at the Farina site, not hypothetically.

A. And not hypothetically, not using this

hydraulic conductivity that you're suggesting?

Q. I'm using the hydroconductivity -- hydrologic conductivity that they presented to the Agency in the record.

A. Okay. So I just want to make sure -- that's what --

Q. It's their -- CWM's hydro --

A. This is approximately a 10 to the minus six hydraulic conductivity.

Q. Okay. And that if the well was bailed or purged, it would take a very long time for that water to come back up?

A. It would be slow, yes.

Q. And is that common knowledge for geologists to know?

A. Well, it wouldn't -- I'm not sure how common knowledge it is, but it would -- it would, based on my experience, it would -- it would take considerable amount of time for the well to recover to allow sampling to occur. But that's all based on whether this hydraulic conductivity was done correctly too.

Q. Okay. Well, we're going to assume that if they submitted it to the Agency and they

signed their PE, that it was done correctly.

MS. JARVIS: That's all.

HEARING OFFICER WEBB: Ms. Hesse?

MS. HESSE: I have some additional questions.

REDIRECT EXAMINATION

BY MS. HESSE:

Q. Let's start, Mr. St. John, with my retention of you to assist us in this matter. Our agreement to retain you under that agreement we agreed to pay you for your time; is that correct?

A. Yes.

Q. And we agreed for you to review these documents and to give me your opinion; correct?

A. Yes.

Q. Your reimbursement for this is not based on what testimony you present; in other words, whether you get paid or not is independent of exactly what you say and exactly what your opinion is; is that correct?

A. That's correct.

Q. With regard to your testimony in the Lockformer case, and I'm referring to page 3 of

the Court's opinion, Judge Leinenweber did find that you were qualified to present expert testimony on hydrogeologic issues; isn't that correct?

A. That's correct.

Q. So you have been found by a federal court to be an expert on hydrogeology; correct?

A. That's correct.

Q. And that's what we've asked you to testify to today here; is that correct?

A. That's correct. May I point something else out about this?

Q. Yes.

A. What essentially happened was that Mestek's expert regarding the wastewater treatment plant processes was disqualified and -- and they asked me a whole slew of questions about wastewater treatment, they being Ellsworth.

Q. Was Ellsworth the other -- the non-party represented?

A. That's correct.

Q. The opposing party?

A. About the wastewater treatment plant processes. And Judge Leinenweber concluded that

my testimony was -- couldn't be reliable based on the wastewater treatment plant discussions because I'm not a wastewater treatment plant engineer. And I said that, you know, multiple times during the during the depositions so --

Q. So your purpose at -- at this deposition or hearing or whatever was not to be an expert on wastewater treatment technology?

A. That is absolutely 100% correct.

Q. In your prior statements regarding the installation of the wells and your opinion of the wells that you presented to us, was that based on information contained in the record, in the record that's been -- that the Agency filed before the Board?

A. Yes.

Q. Does the Glossary of Hydrogeology contain any information on how a well should be screened?

A. I'm sorry. Could you give me that one again?

Q. Does the Glossary of Hydrogeology, that we have copies of us before us, contain information on or give support to your testimony

on where a well screen should be placed in a monitoring well?

A. Well, the Glossary really doesn't. It simply defines terms. And I guess it's fair to say that hydrogeological text do a much better job.

Q. Okay. In your review of where the well screens were placed and in your prior testimony you mentioned that 10 foot well screens were used so that a portion of the well screen was across the saturated layer and then a portion of the well screen was above that in the confined layer; correct?

A. Yes.

Q. So could it be possible, and I realize we have not done tests here so this is only a theoretical possibility, could it be possible when the hydraulic tests were done the hydraulic conductivity that was determined ended up being a mixture of the conductivities of the narrow sand layer as well as the greater expanses of the silty clay?

A. It is possible that the data that -- from the slug tests that indicates that the

approximately 10 to the minus six centimeters per second hydraulic conductivity is an average of the 10 foot section, yes.

Q. So that the --

A. I haven't reviewed that though. It -- Just to make that clear, I have not independently reviewed the slug test data.

Q. Okay. Earlier when Ms. Jarvis was asking you questions about recharging in a well that was screened in silty clay and I believe you said the silty clay had a hydraulic conductivity of roughly 10 to the minus six and 10 to the minus seven centimeters per second, was it your understanding when she was asking you those questions and you were answering those questions that you were working under the assumption of a well that was just screened in silty clay when you said that it would take a long time for the well to have water go back in it?

A. Yes. The way I originally heard her hypothetical was that she was assuming that we had this low permeability 9.61 times 10 to the minus seven centimeters per second hydraulic conductivity.

Q. And that that would be what was in the soil drained the full length of the well screen; is that correct?

A. That's correct.

Q. Referring now to how the wells were actually screened at the Farina site, when a well is purged and water flows back into the well for sampling, where is the water going to be coming from?

A. It's my opinion that the water being yielded to that well is coming from the 12 to 13 and-a-half foot interval.

Q. And that's the saturated zone?

A. Yes.

Q. And that very little, if any, of the water going into the well would be coming from the confining layer above that where the silty clay is located?

A. That's correct.

MS. HESSE: At this time if we could mark Mr. St. John's drawings as exhibits.

HEARING OFFICER WEBB: We can.

(The reporter marked Exhibit No. 6 for purposes of identification.)

MS. HESSE: And I would move that the documents that have been marked as exhibits so far, I believe it's Exhibits 1 through 6, be admitted into the record.

HEARING OFFICER WEBB: I think one through four have already been admitted, five and six we need to discuss. Ms. Jarvis, do you have any comment?

MS. JARVIS: Yeah, I'm going to object to, I believe, it's number five, the Downward Solute Plume Migration because I do not remember any testimony that this site had a diving plume. So I'm going to object based on relevance to this document being admitted.

MS. HESSE: We believe the document should be admitted. The hearing isn't over yet. It goes to some of the issues we're going to discuss later. It helps provide background information for the Board and understanding how plumes can migrate and how plumes can move in various situations. So we think it's appropriate to have this admitted.

HEARING OFFICER WEBB: Would you consider withdrawing your objection if it was

moved at the end?

MS. JARVIS: I'll considering my objection at the end. Yes, I will hold my objection to the end on this one.

HEARING OFFICER WEBB: Okay. All right. Let's hold off on five. What are your comments on six?

MS. JARVIS: Six is the drawing?

HEARING OFFICER WEBB: The drawing.

MS. JARVIS: I will also object to six. While they were useful here in the hearing, we have actual diagrams of the site in the record and I believe those are more reliable than the exhibit that he drew by hand.

MS. HESSE: We think the exhibit should be admitted into the record because they were referred to during his testimony. It would make it easier for the Board to follow along when they read the testimony. We understand that they're used for illustration purposes and may not be the exact site conditions, but it helps to provide an overall understanding of background information to allow the Board to determine that the well -- that the work done at the Farina site

was done properly in accordance with accepted geological principals.

HEARING OFFICER WEBB: Do you know offhand which pages in the record the diagram would appear on?

MS. JARVIS: Yes. The diagrams are on 102. They start on 102 and they go through 107.

MS. HESSE: Again, there's no documents in the record to illustrate the differences between an unconfined layer, where a water table is located and to understand what a confined layer is.

HEARING OFFICER WEBB: I'm going to admit number six. It's not being offered for any truth of any actual representation of the site, but I think to help with interpreting the testimony. I would say in the future, though, I do think diagrams are extremely helpful but if they could be prepared in advance maybe on 8 and-a-half by 11 paper with more specificity, that would be even more helpful. But I will take Exhibit 6 as they are. And I will admit those into the record. And we're holding off on Exhibit 5 until the end of petitioner's case.

Let's go off the record for a moment.

(A discussion was held off the record.)

HEARING OFFICER WEBB: If there's no further questions for Mr. St. John, you may step down. Thank you.

THE WITNESS: Thank you.

HEARING OFFICER WEBB: And petitioner, you may call your next witness.

MR. FROEMEL: Petitioner will call Carol Rowe.

(The witness was sworn in by the court reporter.)

DIRECT EXAMINATION

BY MS. HESSE:

Q. Ms. Rowe, can you describe your educational background, please?

A. I received a Bachelor of Science Degree from Southern Illinois University in Geology and a Master's Degree in Environmental Studies from, what was then, Sangamon State University, now UIS.

And while I was doing my master's degree, I started internship at the Illinois EPA. And that was the year of the writing of the

Groundwater Protection Act. And I stayed on for a couple of years. And then I moved on to Old Ben Coal Company where I was responsible for groundwater surface water reporting. And then came back to the State of Illinois, was at the Department of Ag and Department of Energy and then started with CW3M Company.

Q. When did you start with CWM?

A. 1991.

Q. Let me hand you a document. Can you identify that document for me?

A. Yes, it's my resume.

MR. FROEMEL: And can we have that document attached? Could we have that document marked as Exhibit No. 7?

(The reporter marked Exhibit No. 7 for purposes of identification.)

MR. FROEMEL: I would move to have Exhibit 7 admitted into the record.

MS. JARVIS: No objection.

HEARING OFFICER WEBB: Exhibit 7 is admitted into the record.

Q. (By Mr. Froemel) Since you joined CWM in 1991, how often have you been involved in

field work?

A. Well, until probably the last eight months to a year I've spent most of my time, at least half of my time, in the field. In the beginning days of the company I spent all of my time in the field. I drilled every well. I was at every tank pull, every excavation, every facet.

Today my job is a little more administrative and with the passage of 734 recreating forms and formats and accounting systems, I've been tied to the chair a little more than I like to be so --

Q. Are you a licensed professional geologist?

A. Yes.

Q. How long have you been a licensed professional geologist?

A. Since the inception of the program which, I believe, is probably 1995, 1996.

Q. How many groundwater monitoring wells have you installed?

A. Hundreds, perhaps pushing a thousand.

Q. Are you licensed to remove and install

underground tanks, storage tanks?

A. Yes, I am.

Q. Are you familiar with the Farina site that we've been discussing today?

A. Yes.

Q. What's your role at that site?

A. In a general sense I serve as kind of a project oversight manager of it. We assign projects to different staff in our office. And specifically at the Farina site I was there during the first Stage 1 drilling event.

Q. Who hired CWM to perform work at the Farina site?

A. Keller Oil Company.

Q. And in installing the groundwater monitoring well at the Farina site, did you follow CWM's standard procedures?

A. Yes, I did.

Q. Can you describe the process for installing the groundwater monitoring wells at the Farina site?

A. Typically we'll -- we drill 5 foot sections and we'll try to define the zone of aeration, the capillary zone and the zone of

saturation and define the depth of groundwater. And what we call the depth of groundwater, we will center our well screen so that there's 5 foot below and 5 foot above.

We do that for a couple of reasons, one, seasonal fluctuations in groundwater. If it's at, you know, 10 feet in the spring, it may be at 12 feet in the fall or it may rise in the spring. So we try to intersect it at the center of the well screen. And that's been our practice with all of our LUST sites.

Q. So the Farina site, how far did you drill down?

A. We drilled 15 feet in all of the monitoring wells, I believe.

Q. How did you determine that you had reached groundwater at the site?

A. Well, in this case we had -- if I can find the boring logs.

Q. I think you'll find it on page 90 of the record.

A. About -- Between the five wells, actually one of them, the one in the backfill sand was -- was slightly higher since it was

backfill sand, but the rest we found moisture around 10 feet. And then we began to, you know, what we later defined as capillary but at the time thought we were into the water table where it appeared that the pore spaces were filled with water. By the time we hit the 12 foot seam, we were certain that we had hit the groundwater. It was completely saturated and --

Q. So in relation to, excuse me, the 10 to 11 feet where you first encountered moisture and then the 12 feet where you were clearly within the saturation zone, where did you set the screens in the monitoring wells at Farina?

A. The bottom of the screen or the bottom of the cap was set as 14 and-a-half feet and, you know, up 10 feet so --

Q. So where would the center of the screen have been located?

A. At about 10.

Q. Why was the screen set at that location?

A. Well, the 10 feet is where we saw the moisture and 10 to 11 was where we initially thought we had -- had hit the water table. And

then the sand seam was obviously the -- the primary aquifer, but the material above it was saturated as well and, you know, until -- until we installed the well we weren't sure which, you know, which was the producing unit. That -- that layer above that, if you looked at -- let's see on page 93 we start seeing the moisture in the silt and it was -- it was not acting as a confining layer so we possibly could have been into the water table at the, you know, somewhere between 11 and 12, 10 to 11 feet.

Q. When you refer to the term water table, are you referring to where you are encountering groundwater?

A. Groundwater, yes.

Q. Okay. Now on the date that the wells were installed, could you tell whether -- were these monitoring wells, it was a confined aquifer situation?

A. No.

Q. With respect to these wells, how were they developed?

A. We basically, as soon as the well was drilled, put a bailer into the well. And as soon

as we got water, we started to purge the well. I -- I don't recall how long it took that day to produce, but I know that we developed the wells that day.

Q. What's the process of developing a well? How do you do that?

A. Basically you lower a bailer into the well and -- and in a developing situation you try to develop it until it's dry. And you're trying to remove the sediment that's created while installing the well from, you know, from clogging the screen.

And also as Mr. St. James referenced, there becomes a smear zone from where the auger turns and you're trying to loosen that to get water to come out of formation and into the well pack and well screen.

Q. Now when the well is -- when the samples were collected from the monitoring wells, would CWM purge them?

A. Yes.

Q. Can you describe that process?

A. Yes. We would purge them down to the depth encountered during groundwater -- or during

-- during drilling and then --

Q. Okay. What depth -- at this site what depth would that have been?

A. Probably 11 -- 11, 12 feet. We would -- our staff, or if it's not me or one of the other folks here in the room, staff are directed to look at the bore logs and find where the groundwater was encountered during drilling. And if they can't get exactly that depth, if it recharges too fast, as it would in a sandy condition, we would do a minimum of extracting three well volumes to try to get a fresh sample from the water boring unit.

Q. So what was the purpose again of purging the well?

A. To get a fresh sample from the water boring unit.

Q. After the water was purged from the well at this site, at what point, and maybe we could refer to Exhibit 6, that's the diagram behind you --

A. Uh-huh.

Q. -- at what point on the second page of that exhibit would the well have been drawing

water from? You'll have to, I think, flip to the second page.

A. What was your question again?

Q. Yeah. After purging the well, at what point in that diagram, the second page of Exhibit 6, would the water from the well be drawn from for sampling?

A. We would try to get within the zone right here.

Q. So you're pointing to what's been marked as the saturated zone?

A. Yeah.

Q. Okay. Thanks.

A. This is heavier than it looks.

Q. With respect to the wells at the Farina site, when did CWM determine the static water level in those wells?

A. That is measured on our second trip to the site after the wells have been installed. We measure using a water level indicator, the top of the water -- the water within the well and record that prior to purging.

Q. Okay. What is the importance of determining the static water level? What do you

use that measurement for?

A. The only purpose that we utilize it for is relative to all the other wells at the site to determine which way groundwater is moving across the site or which direction groundwater is flowing.

Q. Okay. Have you reviewed the record in this case?

A. In bits and pieces, as it's been prepared but --

Q. Fair enough. Have you reviewed the -- excuse me, the reviewer notes from the project manager at this site?

A. I briefly did.

Q. There's a specific comment in the reviewer notes that suggests the well -- the drilling for the well should have been stopped at this first encounter of groundwater. Do you recall having seen that statement or something similar to that statement?

A. Yeah.

Q. What would have been the result for the wells at Farina if they were installed where you first believe you would have encountered

groundwater?

A. If we would set the well at 10 to 11 feet, we believe there would be no production of water in that well. We may have gathered some condensation or unless there was a seasonal fluctuation that drove the water table up several feet that that well would have been dry.

Q. And with respect to the water table, again you're referring to --

A. Groundwater.

Q. -- where you first encountered groundwater?

A. Right.

Q. In your opinion as a licensed professional geologist, did CWM comply with the Section 734 regulations in installing the monitoring wells at the Farina site?

A. Yes.

Q. Were the wells constructed in a manner that would enable the collection of representative groundwater samples?

A. Yes.

Q. Were the wells screened to allow sampling at the desired interval?

A. Yes.

Q. And what would you describe the desired interval as at the Farina site?

A. Definitely the sand seam would be a desired interval. And again the foot or foot and-a-half above that we are not sure if that was a producible unit or not. It appeared saturated during drilling. So it may have produced as well. So both -- both of those units would have been within the screened interval.

Q. With respect to the screens used at the Farina site, how long were the well screens?

A. 10 feet.

Q. And how did CWM select the 10 foot well screens?

A. It's been our practice, and apparent Agency policy, to try to use 10 foot well screens. And that's the way we've done it for the last 15 or so years.

Q. Were the wells constructed at the Farina site in accordance with generally accepted standards and practices of a -- of geological -- of the geological profession?

A. Yes.

Q. Are you familiar with or have you been involved during your employment with CWM at other LUST sites where the static water level rose in the well above the well screen?

A. Yes, that's happened on occasion, yes.

Q. And do you recall any sites where the conditions were similar to the conditions at Farina?

A. A couple of older ones: Hall Service, a Keller site in Edgewood, Rushco Shell. We just had a new one Zanra (phonetic) in Herrick, Illinois.

Q. Did the Agency approve the construction --

MS. JARVIS: I'm going to object to this question. A, it asks for hearsay. We don't have the documents that the Agency produced. We don't have the Agency project manager to rebut whatever happened at these other sites. And the question of relevance of information from other sites is also in question.

MR. FROEMEL: We do have the documents. I was going to lay a foundation for those before I asked to introduce them.

MS. JARVIS: But once again I haven't seen the documents, and I also haven't been able to talk to my project manager that have those sites or to be able to rebut whatever else happened at every other site that the Agency ever takes care of.

MR. FROEMEL: Two of the sites that were discussed, the project manager was Ms. Hawbaker. So we're trying to show that in similar situations, again, this goes to the reasonableness of the Agency's denial in this case.

HEARING OFFICER WEBB: Okay. I'm going to allow the question.

MR. FROEMEL: Okay. Thank you.

A. You want to repeat the question?

MR. FROEMEL: Yeah, I will. I'm just trying to figure out what it was. Can you read back the last question?

(The Reporter read from the record as follows: And do you recall any sites where the conditions were similar to the conditions at Farina?)

Q. (By Mr. Froemel) Did the Agency

approve the construction of the monitoring wells at the Hall Service, Rushco Shell and Zanra sites?

A. Yes.

Q. Who is the project manager at the Hall Service site?

A. Ms. Hawbaker.

Q. And the Rushco Shell site?

A. Ms. Hawbaker.

MR. FROEMEL: Can we mark that?

(The reporter marked Exhibit No. 8 for purposes of identification.)

Q. (By Mr. Froemel) If you could flip through --

HEARING OFFICER WEBB: Do you have a copy I could have?

MR. FROEMEL: Oh, sorry. We do.

Q. (By Mr. Froemel) If you could flip through what's been marked as Exhibit 8?

A. Uh-huh.

Q. And can you identify those documents for me?

A. The first one is the Agency's approval of the Site Investigation Plan. The second is

CWM's Site Investigation Plan. The third is the Agency's approval of the Amended Site Investigation Completion Report, and the fourth is the Site Investigation Completion Report.

Q. And the documents that you've identified that were the Site Investigation Reports submitted by CWM, were those submitted in the -- were those prepared in the ordinary course of CWM's business?

A. Yes.

Q. And were you involved in the preparation of those documents?

A. I would have reviewed and had input. Typically drilling plans are brought to me or one of the senior engineers and staff geologists may work on then -- developing them, but we usually approve the drilling plan before it gets -- the project or the report gets started.

Q. On the second page of the first document what you identified as the Agency approval letter, can you identify -- reading the last line, Ms. Hawbaker's name is identified there, does that show that she then is the project manager for that site?

A. Yes, that's our interpretation.

MS. JARVIS: Which site is this? It wasn't discussed before. You mentioned like a Rushco.

A. It was referred as the Rushco Shell, but it's a Keller Oil site.

MS. JARVIS: Okay. Sorry. We were confused about what site we were talking about.

MR. FROEMEL: I'll clarify that on the record as well. And show you -- we'll mark that as Exhibit 9.

(The reporter marked Exhibit No. 9 for purposes of identification.)

Q. (By Mr. Froemel) And if you could review that and tell me what documents are contained within what's been marked as Exhibit 9.

A. Let's see. This one, the first is a letter from the Agency approving the Corrective Action Plan which would have included -- based on the time that the work was done, site investigation information. The second letter is a letter from CWM which is our Site Assessment Report and Corrective Action Plan.

Is there two letters on the top?

We're missing a letter on this one. What I don't see in here, that would be in this record, is the ultimate approval of that plan. The Site Investigation Completion Report and Corrective Action Plan.

Q. If you could just look at the first page, first letter.

A. Huh?

Q. If you could just look at the first letter that's on the top of that stack. Would that be the approval letter that you're referring to?

A. No. This one was the rejection and then there was a subsequent approval.

Q. Is it your understanding that that site was approved?

A. Yes.

Q. And the one document that may be missing from this packet with respect to the site is that final approval letter?

A. Yes.

Q. Okay. And if you could identify for me again the project manager for this site?

A. Ms. Hawbaker. If necessary, we could

get a copy of that letter brought over here or just -- it's in the Agency's file, whatever you prefer.

Q. Yeah, well I'll address that in a minute.

A. Okay.

Q. With respect to the site that we're referring to which is identified in Exhibit 9 as the Edgewood/Keller Oil site --

A. Uh-huh.

Q. -- were the wells that were constructed at that site comparable to the wells installed at the Farina site?

A. Yes.

Q. And also comparable with respect to where the well screens were placed?

A. Yes.

Q. Would you say the same with respect to the Hall's Service site?

A. Yes.

Q. And with respect to the documents with respect to the Edgewood/Keller Oil site, for the documents that are identified as being prepared as CWM, were those prepared in the ordinary

course of CWM's business?

A. Yes.

MR. FROEMEL: Okay. With the caveat that I'd like to supplement maybe at the lunch break get a copy of Farina approval letter attached here, I would like to move to admit Exhibits 8 and 9.

MS. JARVIS: I'm going to object and I would like cross-examine on these two exhibits before we discuss entering them in.

HEARING OFFICER WEBB: Okay. Let's do that. Let's finish with the witness before we discussed admitting Exhibits 8 and 9.

MR. FROEMEL: I have nothing further for the witness.

HEARING OFFICER WEBB: Okay. Ms. Jarvis?

CROSS-EXAMINATION

BY MS. JARVIS:

Q. Okay. Let's start with the exhibits, okay. First I want you to turn to page 90 of the record in Farina. Now, Ms. Rowe, that indicates that we, at least for Monitoring Well 1, we had gravel top soil, then brown silt loam, brown clay

silt, gray silty clay till with some poorly sorted sand, a very small pebble stiff, then we have brown clay silt moist, some fine grain sand and then gray very fine wet sand, and then it goes down to brown till silty clay large and chert, C-H-E-R-T, brown silt hard dry and fine gray sand dry.

Then we go to Hall's Automotive. And the boring logs there are in appendix C. The pages are not marked. Let's see if we can find the -- here we go. The Monitoring Well 1 is about six pages in on that exhibit. And in that case we have asphalt and then gravel and then sandy loam and then brown sand fine grain, moist --

A. I'm sorry. I'm not sure we're on the same page.

Q. Monitoring Well 1, the drilling log?

MS. HESSE: Which document are referring to?

MS. JARVIS: I am referring to the document for Hall's Automotive.

MR. FROEMEL: Exhibit 8.

Q. (By Ms. Jarvis) Exhibit 9. And it is

Appendix C boring logs and Well Completion Reports about page six or seven in where we have the boring log for Monitoring Well 1.

A. Okay.

Q. Okay. Now on that page it shows from about 2 feet to 7 feet, if I'm reading it correctly, brown sand fine grain; is that correct?

A. Uh-huh.

Q. That's not what we found at Farina is it? Between 2 feet to 7 feet there wasn't brown sand fine grain at Farina?

A. So you're asking is the geology the same?

Q. Is it the same, yeah, that's what I'm asking you.

A. Oh. Huh-uh.

Q. Are the geologies between the two sites the same?

A. No.

Q. Okay. Let's then go to the Monitoring Well 1 LUST Well Completion Report. Which, once again, these pages aren't numbered and it's further into that same exhibit. It's the first

Well Completion Report. Now at that site it says depth of water 93.58 feet static; is that correct?

A. Yes.

Q. And your top of your screen is at 97.5 feet which is above the static water level; correct?

A. Correct.

Q. So that's also not comparable to Farina; correct?

A. Correct. Not at that one.

MS. JARVIS: I'm going to object to this, to the entry of this case. The site is not comparable to Farina in geology or the placement of the wells.

HEARING OFFICER WEBB: Ms. Jarvis, would you like to finish your cross --

MS. JARVIS: Sure. We can go ahead. That's it for Hall.

HEARING OFFICER WEBB: Okay.

MS. JARVIS: I'm going to go on to the next exhibit.

HEARING OFFICER WEBB: Okay. We'll just discuss them at the end.

MS. JARVIS: Okay. That's fine.

HEARING OFFICER WEBB: After the testimony.

MS. JARVIS: Because I have a lot more besides these because I thought we would just get the exhibits out of the way.

A. Can I ask a question?

HEARING OFFICER WEBB: Yes.

A. If there's other wells in here that shows the same type of --

HEARING OFFICER WEBB: That would be for your attorney -- that would be for your attorney to take care of.

A. Okay.

Q. (By Ms. Jarvis) Okay. So now we're onto the Edgewood/Keller Oil site. And we are at Appendix C, the first -- oh, okay. So let's see. We have a whole budget of boring logs. Okay. I guess it's page four or five in. It's OMW5. Now is this geology the same as at Farina? This page would indicate otherwise; isn't that correct?

A. It's sightly different but we had brown clay till with increasing sand but not exactly the same, no.

Q. Okay. Now this indicates Monitoring Well 5 and then it indicates that's north of Monitoring Well 6. Were there more monitoring wells in this case?

A. There were probably 30. I don't know.

Q. So this isn't even a complete record, it doesn't include all the monitoring wells or all the boring logs; correct?

A. Correct.

MS. JARVIS: That's all for those.

HEARING OFFICER WEBB: Okay. So are you finished discussing -- are we -- are you finished with the cross-examination regarding the 8 and 9?

MS. JARVIS: Regarding just the exhibits.

HEARING OFFICER WEBB: Okay. I'll make a ruling. Do you have anything further to say on Exhibits 8 and 9?

MR. FROEMEL: I have some additional questions for the witness with respect to Exhibit 8. Do you want me to lay additional foundation?

HEARING OFFICER WEBB: Do you mind if we go ahead --

MS. JARVIS: I don't mind if we go ahead with the exhibits, then I'll get to my regular cross.

HEARING OFFICER WEBB: Okay.

REDIRECT EXAMINATION

BY MR. FROEMEL:

Q. On Exhibit 8 Ms. Jarvis had pointed out the first page of the drilling bore hole logs.

A. Uh-huh.

Q. And that was the page that described the black silt loam and then the fine brown sand?

A. Uh-huh.

Q. Could you turn to the second page of the drilling bore hole log in Exhibit 8?

A. Uh-huh.

Q. And if you could review the soil and rock description on that second page.

A. Is that --

Q. It starts with top soil dark brown silty loam?

A. Brown silty clay with fine grain sand, tan weathered -- tan weathered sandstone, fine grain sand, few fragments.

Q. And would you say that that -- that geology is similar to the geology of the Farina site?

A. We did have similar geologic units at the Farina site. Not in identical depths or --

MS. JARVIS: I was going to ask if the witness could point to where in the record the identical or similar units were.

A. We have a -- we have a brown silty clay, silty loam, silt with fine grain sand becoming prominent.

MS. JARVIS: Which monitoring well bore log are you referring to in the Farina record?

A. Okay, I'm on page 93. The coarseness of the sand is slightly different on page 96. We have gray silt with fine grain sand.

MS. JARVIS: But that's a soil boring, correct, not a monitoring well?

A. I can't --

HEARING OFFICER WEBB: You can take off that binder clip if that would help.

A. Boring --

HEARING OFFICER WEBB: I don't want to

spend too much time on this. Is there anything that we can just summarize without --

MR. FROEMEL: If I could just ask a couple follow-up questions and see were it takes us.

HEARING OFFICER WEBB: Okay.

Q. (By Mr. Froemel) With respect to the Farina and the two sites we've been talking about, the Hall's Service Center and the Edgewood/Keller Edgewood site, it's your testimony that the wells at those sites were installed in the same fashion?

A. Yes.

Q. And those well installations were approved by the project -- same project manager, Ms. Hawbaker?

A. Yes.

Q. If you could just look real quick at the Well Completion Report for Monitoring Well 8 in the Hall's Automotive site.

A. For which well?

Q. Monitoring Well 8.

A. Eight.

Q. And can you tell me was the -- the top

of the screen submerged beneath the static water level at that well?

A. No, it's above the screened interval.

Q. Okay. So this static water level is -- that is above the top of the screen; is that correct?

A. Correct.

Q. Okay. And then if I could just have you a look for an example with respect to the Edgewood/Keller Oil site for I think Monitoring Well No. 5, the Well Completion Report.

A. Okay.

Q. And could you tell me is the static water level above the top of the screen for Monitoring Well 5 at that site?

A. Yes, it's above the screen.

Q. At both those sites, both the Edgewood/Keller Oil site and the Hall's Automotive site, the placement of the wells with the screen below this static water level was accepted by the Agency; is that correct?

A. Yes.

MR. FROEMEL: Okay. I have nothing further on that.

HEARING OFFICER WEBB: Do you have anything?

MS. JARVIS: I just have a couple follow-up questions.

CROSS-EXAMINATION

BY MS. JARVIS:

Q. Monitoring Well is one of 17 monitoring wells at the Hall's site; is that correct.

A. I'm really not sure what the total number was.

Q. It looks like it went to Monitoring Well 17 when I looked through here.

A. Okay.

Q. The last page before the next blue sheet --

A. Uh-huh.

Q. -- Appendix C it says Monitoring Well 17?

A. Right.

Q. So that was just one of 17 monitoring wells?

A. Right.

Q. And Monitoring Well 5 in the Edgewood

case is one of how many wells did you say there were at that site?

A. Numerous.

Q. Numerous. Okay.

HEARING OFFICER WEBB: Okay. If we're finished with testimony on Exhibit 8 and 9, I'm going to take these as offers of proof. On the one hand it is information that the Agency had; however, whether it's, you know, there's obviously some, you know, it's not clearcut -- there's some factual differences of opinion here. I will let the Board make the determination whether it's relevant and whether they want to consider this information. But I think for now I'm just going to accept it as an offer of proof for the Board.

MS. JARVIS: Okay.

HEARING OFFICER WEBB: So if you'd like to continue your cross-examination on other issues.

MS. JARVIS: Sure.

Q. (By Ms. Jarvis) Okay. What was the year that CWM was formed?

A. We began work in 1991 and incorporated

in 1992.

Q. And you've been at CW3M the entire time the company has been in business; correct?

A. Yes.

Q. What's the nature of your contract with L. Keller Oil in the nature of your fees?

MS. HESSE: Objection, irrelevant.

MS. JARVIS: It goes to the bias of this witness as to how she gets paid from L. Keller Oil. Is it from the fund or is it from L. Keller Oil? Because if it's from the fund, her testimony could be biased in this case in order to get reimbursement from the fund. If it's from L. Keller Oil, then she may be a little bit more neutral in telling us about the site.

HEARING OFFICER WEBB: So was your question where her salary comes from?

MS. JARVIS: The question is -- Exactly. Does she get paid when she gets reimbursed from the fund or does she get paid from L. Keller Oil.

HEARING OFFICER WEBB: I'll allow it. You can answer.

A. It's a site eligible for

reimbursement, so it ultimately gets paid for by the UST Fund.

Q. (By Ms. Jarvis) How many times has your company appealed an Agency decision?

A. Quite a few.

Q. 300? 500?

A. I don't, Melanie.

Q. I'm assuming we're talking hundreds since the inception in 1991; right?

A. I don't know hundreds.

Q. Okay. So since the inception since 1991?

A. I don't know.

Q. Since you get paid out of the fund, if the Board holds in favor of the Agency and denies these wells and the wells are not reimbursed, you won't get paid for that work; is that correct?

A. That's correct.

MS. HESSE: I'm going to object. One of the issues is not -- that's on appeal here is not whether the wells get reimbursed or not.

MS. JARVIS: It still all goes to bias of the witness as to whether or not this is denied. It's a reimbursable action and what

follows from doing the work is a reimbursement.

HEARING OFFICER WEBB: Well, I don't know. She works for the company that's bringing the complaint so I would imagine that's her situation. But, I mean, I guess I'll allow a couple more questions on it. I'm not sure how relevant it is.

MS. JARVIS: Okay. This is actually how far I'm going on that question.

HEARING OFFICER WEBB: Okay.

Q. (By Ms. Jarvis) And you actually installed this well; correct?

A. Correct.

MR. FROEMEL: Melanie, which well are you referring to?

MS. JARVIS: These wells. I should have said these wells. I meant in plural. Sorry, the wells at the Farina site.

Q. (By Ms. Jarvis) Were you also onsite to do the soil borings?

MR. FROEMEL: Objection. Goes beyond the scope of the direct testimony.

MS. JARVIS: Well, it's the nature of the appeal, the soil borings. If she wasn't

onsite and didn't do the soil borings --

HEARING OFFICER WEBB: I'm going to allow it.

A. I was onsite for the majority of the soil borings that have been completed there.

Q. (By Ms. Jarvis) But your testimony today is just as to the wells, you're not going to testify as to the installation --

A. No.

Q. -- or the correct placement of the soil boring?

A. No. We have another witness for that.

Q. That's fine. I won't go any farther than that on that one. Okay. Let's go to page 90 of the Agency record. Do you see the section all the way down at the bottom where it says Groundwater Depth After Drilling? I'd like you to look at pages 90 through 94. That section wasn't filled in by you; is that correct?

A. No, it wasn't.

Q. Did you determine the groundwater depth after drilling?

A. No, we did not.

Q. And if we could go to pages 102 and

look for Monitoring Wells 1 through 5. On page 102 if you could read the depth to water.

A. 10 to 11 well drilling, 97.75 feet static.

Q. Okay. And the top of the screen?

A. 95.5 feet.

Q. So the top of the screen in this well is below water; correct?

A. Yes.

Q. It's below the static water level?

A. Yes.

Q. Okay. And if you could look through, we'll just try to shortcut this a little bit, that's true for the following wells to Monitoring Well 5?

A. Correct.

Q. Now you testified that when you hit moisture around 10 feet you thought you had hit the groundwater level; correct? You thought you had hit groundwater?

A. Yeah, 10 feet we hit moisture and then it became virtually saturated and we thought we hit groundwater.

Q. And that's the information you

presented to the Agency; correct?

A. Correct.

Q. And you never presented any information in opposition to that to the Agency; correct?

A. Correct.

Q. So you never told the Agency, hey, we were wrong. This isn't where we hit. Groundwater is actually down here, as Mr. St. John testified in the 12 foot area; is that correct? That was never submitted to the Agency; correct?

A. Well, we're -- we're still not sure that that unit didn't produce some water. It was either capillary or it was -- it was groundwater.

Q. But you do understand the Agency relies on the information you submit to it --

A. Correct.

Q. -- in order to make its decision? And for the Agency to understand what you submitted was that groundwater was at 10 feet; correct?

A. Uh-huh. Because it was saturated --

Q. Right.

A. -- you know.

Q. That's the information you submitted to us?

A. Yeah. There's not a magic blue line that says that, okay, you've gone from the capillary fringe to groundwater. And when it's saturated we're saying we're in groundwater --

Q. Okay.

A. -- or at the top of the groundwater table.

Q. When you set the well screen, did you intend the well to be submerged?

A. No.

Q. Okay.

A. No.

MS. JARVIS: I have no further questions.

HEARING OFFICER WEBB: Thank you. Any redirect?

MR. FROEMEL: I have a few.

REDIRECT EXAMINATION

BY MR. FROEMEL:

Q. With respect to the logs that begin at page 90 that we have just discussed, does the screen extend both above and below the

groundwater depth while drilling that 10 to 11 foot range?

A. Yes.

Q. And where's the center of the screen placed?

A. The center of the screen would be -- the bottom would be about 14 and-a-half and the top would be 4 and-a-half, so the center of the screen is, what, 9 and-a-half.

Q. And moisture was found --

A. Or 10 -- did I say that wrong?

Q. I think. Between 10 and 11; is that right?

A. Between 10 and 11, yeah.

Q. And if you look at these logs, moisture was found initially in around the 10 to 11 range; is that right?

A. Uh-huh.

Q. And that at the 12 foot range your log identifies that it was quote wet; is that correct?

A. Uh-huh.

Q. Would you have set the screens differently at the -- for these wells if you had

known they would be submerged beneath the static water level?

A. No, I don't think I would have. And if I did, I would have probably only by six inches.

MR. FROEMEL: Okay. I don't have anything further.

MS. JARVIS: I don't have any follow-up.

HEARING OFFICER WEBB: Okay. Thank you, Ms. Rowe, you may step down. Let's go off the record for a moment.

(A discussion was held off the record.)

(A short break was taken.)

HEARING OFFICER WEBB: Petitioner may call their next witness.

MS. HESSE: Yes, our next witness is Jeff Wienhoff.

HEARING OFFICER WEBB: Would the court reporter please swear in the witness.

(The witness was sworn in by the court reporter.)

DIRECT EXAMINATION

BY MS. HESSE:

Q. Okay. Mr. Wienhoff, could you describe for us your educational background?

A. I have a Bachelor's of Science in Engineering, in Chemical Engineering, with Departmental Honors from Tulane University in New Orleans, Louisiana. I attended one year of graduate school for chemical engineering at Washington University in St. Louis. Since after leaving Washington University, since June of 2000, I have been employed at CWM Company as an environmental engineer and project manager.

Q. Are you a registered professional engineer?

A. Yes. I've been a registered professional engineer since the summer of 2005.

Q. And how -- what does it take to become a registered professional engineer?

A. You have to have a degree from an accredited university as well as pass two tests and have a minimum of four years of experience, I believe.

Q. Okay. I'm going to show you a document and ask if you could identify what that is?

A. That's my resume.

MS. HESSE: Okay. We'd like to enter this as Exhibit 10.

(The reporter marked Exhibit No. 10 for purposes of identification.)

MS. JARVIS: No objection.

HEARING OFFICER WEBB: Okay. Exhibit 10 is admitted.

Q. (By Ms. Hesse) Mr. Wienhoff, did you participate in the rulemaking proceedings under Section 734, regulations with respect to underground storage tank remediation?

A. For the Section 734 rulemaking proceedings, yes, I was at, I believe, every hearing and filed comment for our company.

Q. Did you also provide testimony?

A. Yes.

Q. What was your involvement at the Keller Oil Farina 711 site?

A. I have been at both of the UST removals. I was onsite for the majority of the Stage 1 drilling investigation. And in the office I have reviewed plans and reports prior to their submittal to Illinois EPA as well as review

Illinois EPA's correspondence in response to them.

Q. In preparation for your testimony today, did you prepare an illustration?

A. I had someone at our office prepare an illustration.

Q. And this was prepared at your direction?

A. Yes.

Q. Could you describe what the document is?

A. It's a map of the Farina site. It's basically combining all the soil samples that have been taken throughout early action and Stage 1 Site Investigation as well as the contaminant values found at each location. It's different pieces of what's in the record combined into one document for easier viewing, I guess.

MS. HESSE: Okay. I'd like to move that this be entered at Exhibit 12.

(The reporter marked Exhibit No. 11 for purposes of identification.)

HEARING OFFICER WEBB: 11.

MS. HESSE: Sorry.

MS. JARVIS: I'd lake to be able to here the testimony first and be able to cross on this document first before we admit it into evidence.

HEARING OFFICER WEBB: Okay. Let's do that.

Q. (By Ms. Hesse) Okay. Mr. Wienhoff, did you determine where the soil borings would be taken and where the soil borings would be located at the Farina site?

A. Yes, I did. In conjunction with other members of our office.

Q. And are the locations of those soil borings reflected on this map that we've discussed as Exhibit 12?

A. Yes, they are.

Q. And to your knowledge are the locations of the soil borings an accurate depiction of where the soil borings were collected?

A. Yes, they're accurate in accordance with the measurements we took at the site the day we installed them.

Q. Does this diagram also show the

locations of the various monitoring wells?

A. Yes, it does.

Q. And do the locations of the monitoring wells shown on this diagram reflect where the monitoring wells were located on this site?

A. Yes, they are.

Q. There's other dots here marked, for example, N-2, N-1, W-1, S-2, what do those dots represent?

A. Those are the samples that were taken during early action sampling.

Q. And those would have been the sidewall excavation samples?

A. The sidewall excavation samples as well as the piping run samples that were taken.

Q. Okay. Just generally the dots that are located in the center of the diagram levels, P-1, P-2, P-3, are those piping run samples?

A. Yes, they are.

Q. If you look to the left of the diagram there is a number of dots that are labeled D-5, D-4, D-3, are those representative of where the sidewall excavation samples were collected for the diesel tank excavation?

A. Yes, they are.

Q. Then there's also some samples labeled D-10, D-11, D-12, D-13, and D-1, what do those samples represent?

A. Those are the piping run samples taken for the diesel excavation and diesel piping.

Q. Did you determine where the soil borings should be located?

A. Yes.

Q. And how did you make that determination?

A. By reviewing the Illinois -- or the 734 rules in determining what needed to be done to define the dirty samples from the early action sampling.

Q. Was that work done in compliance with the regulations?

A. Yes, it was.

Q. How many soil borings were installed around the gasoline tank excavation?

A. Two soil borings were installed around the gasoline tanks excavation.

Q. And which soil borings are those?

A. Soil Boring 3 and Soil Boring 4.

Q. How many borings do the regulations allow to be installed around a tank excavation where contamination was found?

A. Up to four borings are allowed to be installed, according to that section of the regulations.

Q. So you installed less than the maximum that would have been allowed; is that correct?

A. That's correct.

Q. How many soil borings were installed along the gasoline piping line?

A. Two soil borings were installed to define the piping run release.

Q. And which soil borings are those?

A. SB-1 and SB-2.

Q. Did you find contamination in Soil Borings SB-1 and SB-2?

A. Yes, we did.

Q. Under the regulations, how many soil borings may be installed the gas -- along a gasoline piping run?

A. For Stage 1 Investigation is two samples.

Q. How many soil borings were installed

for the diesel tank excavation?

A. Two soil borings were installed.

Q. And that was initially?

A. Initially SB-5 and SB-6.

Q. Was that -- Subsequently did you determine that SB-6 was not needed and did you then install two additional soil borings around the diesel excavation?

A. SB-6 was not needed due to a clerical error in our 45-day report that was -- that we took to the field with us. We did not install any additional borings around the diesel tank excavation, but we installed SB-7 and SB-8 around the diesel piping run excavation, since that is where the correct dirty sample was located.

Q. When you realized that there had been a clerical error where the report got the data mixed up for two of the borings, did you advise the Agency of that and get that cleared up?

A. For SB-6, yes, we did.

Q. Okay. So that's not part of the appeal here at all?

A. No, it's not.

Q. Could you explain the location of

SB-5?

A. SB-5 is installed originally to define D-7, which was the clerical error sample, but now it is to the northwest of, I guess, D-10 sample.

Q. So can that sample be used to help define the area near D-10?

A. Yes, it can.

Q. And was contamination found in D-10?

A. Yes.

Q. Was contamination found in Soil Boring 5?

A. Yes, it was.

Q. Okay. Soil Boring 4, why is that soil boring necessary to understand the extent of soil contamination at the Farina site?

A. Soil Boring 4 is to define the contamination from the E-1 sample to the north. We didn't have anything directly north of sample E-1 to define it.

Q. And sample SB-3, how is that defined?

A. When we were there, Soil Boring SB-3 was intended to determine the extents from sample E-1 to the east.

Q. Can Soil Boring N-1 and Soil Boring

SB-3 define conditions that would have been found at SB-4?

A. No, they cannot.

Q. And why not?

A. Because they are not between the two locations. They are further to the east and further to the west.

Q. They being?

A. N-1 is further to the west, and SB-3 is to the east.

Q. And the contamination that was being defined, was the contamination in Excavation Sample E-1?

A. Yes.

Q. Benzene contamination was found in SB-5; is that correct?

A. Yes.

Q. Do you consider the benzene contamination that was found in Sample SB-5 to be an anomaly?

A. No, I do not.

Q. And why not?

A. It is likely that it is caused by an overfill from the diesel tanks.

Q. Are overfills covered by the regulations at Section 734?

A. Yes, they are.

Q. Are cleanups of overfills eligible for reimbursement under Section 734?

A. Yes, they are.

Q. One of the issues that the Agency raised in this denial letter, and that we're appealing, is whether the soil samples collected from monitoring wells should have been analyzed. So I'm going to be asking you some questions about that.

A. Okay.

Q. First of all, before we get to that, could you explain why the monitoring wells were located where they were located?

A. The regulations for Stage 1 Site Investigation require that a monitoring well is located at each property boundary or 200 feet from the excavation, whichever is less, as well as one monitoring well in a location that is most likely to be contaminated.

Q. Okay. Monitoring Well 1 is located where?

A. On the southern property boundary.

Q. Monitoring Well 2 is located where?

A. 200 feet from the excavation in the eastern direction.

Q. Monitoring Well 3 is located where?

A. It was located in the middle of the property to be the most likely -- most -- most likely contaminated point from the gasoline tank release.

Q. And where was Monitoring Well 4 located?

A. As close to the northern property line as we could get with the utilities in the way.

Q. And Monitoring Well 5 is located where?

A. On the western property boundary.

Q. Why do you consider analysis of soil samples that were collected when Monitoring Well 1 was installed to be an appropriate sample?

A. At the time that Monitoring Well 1 was sampled, there were -- the regulations required that if there is any evidence of contamination in the monitoring wells that soil samples must be collected. Or if there is no evidence of

contamination in the monitoring wells, borings, that they must be sampled as long as there isn't soil sampling to date which indicates that contamination has not reached that direction.

Monitoring Well 1 was sampled because D-10 is contaminated and there was -- there is no soil sampling between D-10 and D -- and MW-1 which indicates that BTEX or PNAs has not reached that location.

Additionally, MW-1 was sampled for MTBE as there was no soil sampling to date, and there continues to be none, in between the release at P-4 and MW-1 for MTBEs.

Q. Okay. You mentioned earlier, when you were just speaking, that there was no data between D-10 and MW-1. When was Soil Boring 8 collected?

A. Soil Boring 8 was collected at a later date.

Q. So that data would not have been available when MW-1 was --

A. No, it would not have been. And even if it would have been done on the same date, it would not have been available because you don't

have the results in the field. You have to wait for the qualified laboratory to return results.

Q. When you collect samples in the field and send them to the laboratory, how long does it typically take to get the lab results?

A. Approximately two weeks, plus or minus, depending on how busy they are.

Q. Is there a reason why the samples could not have been held and then submitted after receiving the initial laboratory results?

A. Because samples have to be analyzed by the laboratory. The holding time for the samples to be analyzed is 14 days -- or for the samples to be delivered to the laboratory is 14 days. I'm not exactly sure on their protocol once they have them.

Q. Okay. Is one of the reasons why samples need be analyzed shortly after they're -- they're collected, such as samples for BTEX and some of the other things we're looking at, is because they're -- some of the chemicals in there are volatile chemicals and could evaporate?

A. Yes, that's why. They have to be analyzed within a certain time in order to

maintain the integrity of the sample.

Q. So there's a laboratory holding time that needs to be met; is that correct?

A. Yes, that's correct.

Q. So as a practical matter, it would not be possible or prudent or good engineering practices to collect all the samples and then submit them to the laboratory piecemeal; is that correct?

A. That's correct.

Q. Could you explain the reasoning for collecting and analyzing the samples from Monitoring Well -- the soil samples from Monitoring Well 2?

A. The soil samples from Monitoring Well 2 were collected because there was nothing to define soil contamination between the P-4 location and the MW-2 location for BTEX and MTBE.

Additionally, for PNAs, there's nothing between the D-10 location and the MW-2 location which can be utilized to define the entire unsaturated zone of soil.

Q. Okay. Could you quickly define for us what BTEX is, what that acronym stands for?

A. BTEX is benzene, ethylbenzene, toluene, and total xylenes.

Q. And PNA?

A. Is polynuclear aromatic hydrocarbons.

Q. And MBTE -- MTBE?

A. MTBE, Methyl tert-butyl ether, I think is exactly what it is.

Q. Is that a gasoline additive?

A. Yes.

Q. Has that been known to cause groundwater contamination problems?

A. Yes. It's probably the biggest contaminant problem of any of the components.

Q. Please explain the reasoning for collecting and analyzing the soil sample from the installation of Monitoring Well 4?

A. The soil samples at Monitoring Well 4 were sampled for BTEX and MTBE due to the releases at P-4 and E-1 as there were no soil samples between those locations and MW-4. They were sampled for PNAs because there were no soil samples between D-10 and MW-4 that defined PNA contamination in that direction.

Q. Okay. Would you mind repeating the

answer to the question of why soil samples for Monitoring Well 2 were analyzed?

A. Because there -- they were analyzed for BTEX and MTBE because there was nothing in between P-4 and that location. They were analyzed for PNAs because there was nothing that can define the entire unsaturated zone between D-10 and that location.

Q. Okay. You mentioned PNAs in the context of the samples collected near the diesel tanks, is there a reason for that?

A. Because -- Well, the indicator contaminants for the diesel release was just PNAs. So that the pit for the diesel tank was sampled for BTEX and PNAs while the other pit was sampled for BTEX and MTBE during the early action sampling.

Q. And that's because BTEX and MTBE are indicators of gasoline?

A. Yes.

Q. And BTEX and PNAs are indicators for diesel?

A. Yes, they are.

Q. Can piping run samples, such as were

collected during early action and we understand Mr. Smith's going testify about those, can they be used to show extent of contamination at a site?

A. No. They can be used to determine releases from piping, but they cannot be used to determine extensive contamination from other points where a release may have occurred.

Q. Okay. Could -- I know you just said this in an abstract, could you draw us an illustration.

A. Sure. Describing why clean soil samples -- clean piping run samples cannot be used to define the entire unsaturated zone because, for example, this is D-10 from the Farina site. As the contamination migrates from that location, it's going to migrate downward and latterly. The other piping run samples can be used to determine whether there's releases for piping at the shallower depths but they cannot be used to determine whether or not the contamination which was released at the D-10 area spread beneath those other piping run samples.

Therefore, those cannot be used to

determine the entire horizontal/vertical stint of contamination as related to a soil boring in this direction from there, from the D-10 location.

Q. And then on the drawing you made where you've written the word surface, is that the ground surface?

A. Yeah, that's the ground surface.

Q. And then where you've got one labeled as D-10, that's your depiction of D-10?

A. Yeah, the contaminated piping run sample from the Farina site.

Q. And then next to that is two circles with the word clean below them?

A. Right. For the existing sample those would be, I guess there's four of them, D-11, 12, 13, and D-1 at the Farina site.

Q. And then you have sort of an elliptical semicircle drawn under that and it says unsaturated zone, what does that represent?

A. Yeah, that's the unsaturated zone that -- that was meant to incorporate the whole area. That's the unsaturated zone where you have to search for soil contamination above the water table. The actual elliptical area is the

potential contaminant plume that is not known until you do the drilling investigation. You want me to label that?

Q. Okay. So then the reason you would do a soil boring is to try to intercept the potential contaminant plume?

A. That is emanating from the D-10 location.

MS. HESSE: And we would like to enter this an as an exhibit also.

MS. JARVIS: You know, with this one I'm just a little confused. You don't mind me just asking a couple of questions just to clarify the drawing?

HEARING OFFICER WEBB: Do you mind if she --

MS. HESSE: No, go ahead.

Q. (By Ms. Jarvis) Okay. Where you have D-10, did that come from the surface because it looks like the boring is under the ground?

A. This is the surface.

Q. And then would you --

A. And then this would be the bottom of the piping trench.

Q. Oh, okay. So then at the bottom of the piping trench is where you --

A. Collected the D-10.

Q. And then how far down did you drill down?

A. The drilling sample like, for example, in this case would be MW-2 is 10 feet total.

Q. Well, how much for the piping run though?

A. You don't drill for the piping run. The piping was excavated during early action when we were onsite.

Q. And then you just take the sample?

A. Take the sample right at the bottom of the piping trench.

MS. JARVIS: Okay. I don't have any objection to this. I just wanted to be clear I understood it before I --

HEARING OFFICER WEBB: Okay.

MS. HESSE: And may I suggest labeling the line that goes --

A. Bottom of the piping of trench.

MS. HESSE: The bottom of the piping trench.

HEARING OFFICER WEBB: I guess we could go ahead and mark this as Exhibit 12.

MS. HESSE: 13.

MR. FROEMEL: I have the next is 12.

(The reporter marked Exhibit No. 12 for purposes of identification.)

Q. (By Ms. Hesse) When the Stage 2 Site Investigation plan was submitted to the Agency, did it propose additional soil borings?

A. Yes, it did.

Q. Did it propose soil borings to be located west of the diesel tank excavation?

A. Yes. It proposed the soil boring to the west of SB-5 in order to define the contamination found at that location and to the west to southwest of D-10 or to define soil contamination south of SB-5 and west of D-10.

Q. Were additional soil borings proposed at that site?

A. There were multiple additional soil borings proposed at that site. There's also soil borings proposed, I believe, at issue here between the SB-1, SB-2, and MW-3 locations and the MW-2 location.

Q. And why are those borings proposed?

A. While we already have evidence the contamination spreads to the MW-2 location, we believe that additional information would be invaluable as far as design corrective action, and lowering corrective action costs is to know exactly what the contaminant levels are between those two locations.

Q. Would it also help to know the chemical nature of the contaminants in designing some sort of remediation if one is necessary?

A. Yes, it would.

Q. Might the information also be helpful in deciding what remediation might be necessary if the level of contamination that was found in Monitoring Well 2 could be -- the term we sometime use is risked away in terms of doing a Tier 2 assessment in Monitoring Well 2 for the stuff that was found at Monitoring Well 2 to meet Tier 2 objectives?

A. Yes, the -- likely once you design corrective action, the Tier 2 remediation objectives would eliminate the need for any remediation to the MW-2 location. So that

additional information would be helpful in defining the plume for the corrective action phase of the work.

Q. During the Stage 1 Investigation and early action activities, is the data under the regulations required to be compared to the Tier 1 remediation?

A. Yes, for the site investigation purposes of the regulations you have to define the plume to Tier 1 numbers. And then once that is completed, then you can do the Tier 2 analysis in order to reduce the area of the plume that needs to be cleaned up.

Q. During early action activities, if data from any of the sample exceeds the most stringent Tier 1 remediation objectives, is additional sampling required?

A. Yes. If any samples from the early action sampling exceed Tier 1 remediation objective, then a Stage 1 Site Investigation is require to be performed.

Q. If the Stage 1 Site Investigation finds contamination that exceeds the Tier 1 remediation objectives, is a Stage 2 Site

Investigation required?

A. A Stage 2 Site Investigation is required if further onsite investigation is necessary to help define the plume.

Q. Is there a Stage 3 Site Investigation?

A. Yes. Stage 3 Site Investigation is that if any of the contamination reaches the property boundaries it is in order to define the contamination as it extends onto neighboring properties.

Q. Was your sampling protocol and your location of soil borings and your location of monitoring wells in accordance with the regulatory requirements?

A. Yes, they were.

Q. Were they in accordance with accepted professional engineering practices and procedures?

A. Yes, they were.

MS. HESSE: No further questions.

HEARING OFFICER WEBB: Okay. Ms. Jarvis?

CROSS-EXAMINATION

BY MS. JARVIS:

Q. Okay. Let's go through your map first.

A. Okay.

Q. Can you point to the maps in the record that you used to compile this map from?

A. I can, if I have the whole record here. Let me figure out where everything is.

MR. FROEMEL: I think it's all there.

A. The -- the soil boring -- soil boring and monitoring well soil location data can be found on pages 215 and 216 of the record. One is for the 0 to 5 foot depth and the other is for the 5 to 10 foot depth. The early action samples are going to be located in what was added to the record as Exhibit 1.

Q. (By Ms. Jarvis) Okay.

A. They're going to be Drawing Number 0004 in Appendix B for the 2005-1539 incident.

Q. Okay.

A. And is 2006 in here? Do you have -- we have a copy of 2006 early intervention?

MR. FROEMEL: It's part of Exhibit 1.

HEARING OFFICER WEBB: Part of Exhibit 1 did you say?

MR. FROEMEL: Yes.

A. The sample location map in Appendix B of the -- for the 2006-0153, Drawing Number 4 in Appendix B is also there and then the values for this map are found in the analytical results which are in Appendix E of both of those 45-day report addendums. They were not on that specifically.

Q. (By Ms. Jarvis) Okay. Let's look at Soil Boring 4.

A. Okay.

Q. Okay. And specifically I want to look at the maps in the record -- in Appendix B of the record starting on 213. Soil Boring 4 on page 213 is sort of towards the very edge of that near N-1?

A. Yes.

Q. Okay. But then on the next picture on 214 it's kind of in the middle of that wall.

A. Okay.

Q. And now N-1 and N-2 were both clean and this looks like it's right in between those two. So it looks like -- Would you agree with me that looks like inconsistent data?

A. Yes, that was a clerical error from the first report that was supposed to be resolved in the second report. And obviously the person fixing the maps only fixed some of the maps and not all of the maps.

Q. Okay. Let's go on. Why don't we stick with Soil Boring 4 since we're on it. And where Soil Boring 4 is on this map is the correct location?

A. Yes.

Q. Okay.

HEARING OFFICER WEBB: Exhibit 11.

MS. JARVIS: Exhibit 11. Thank you.

Q. (By Ms. Jarvis) I just have to find Soil Boring 4 in my notes. Okay. So N-2 and N-1 on Exhibit 11 are both clean samples?

A. Yes, they are.

Q. SB-3 is clean?

A. Yes.

Q. And then was SB-3 and SB-4 both bored at the same time?

A. Within 10 minutes of each other, I believe.

Q. Okay. So we had E-1 which is the

dirty sample?

A. Yes.

Q. To scale, and I'm not very good at doing scale, how far away is SB-3 from E-1?

A. I can't say exactly what it scales to on this map. The measured distance when we were onsite doing the boring was 20 feet.

Q. And then how far is SB-4, which looks directly north?

A. It would have been an additional 10 feet off the northern edge of the excavation which probably should have been 10 feet, so it should be 20 feet also.

Q. Okay. Let's move on to SB-5, okay?

A. Yes.

Q. SB-5 was drilled due to an error?

A. Yes, that was the original intent.

Q. Because D-8 was clean, D-7 was clean, D-6 was clean. Now all those were clean and would you normally drill a soil boring opposite a clean wall?

A. No. That -- It originally was drilled because of clerical error.

Q. Okay. So you came back in and D-10 is

the actual location of the contamination; correct?

A. Yes.

Q. And you came back in and you drilled SB-7 and SB-8?

A. Yes.

Q. Which were both clean and not subject to this appeal?

A. Correct.

Q. But now SB-8, had it been done without the clerical error, would have been drilled before MW-1?

A. Yes.

Q. Or at the same time?

A. Yes, it would have been drilled at the same time.

Q. Would you have taken soil samples from MW-1?

A. Yes, we would have.

Q. Even if SB-8 was drilled at the same time?

A. Yes.

Q. And was shown clean?

A. I have no proof when I'm in the field

if that boring is clean. It can -- I -- For example, I drilled a site two weeks ago that I could have sworn was clean when I left the site. And when I got the results back yesterday, the benzene levels were in the thousands as far as PPBs. So while I would have suspected it was clean, I wouldn't have had enough evidence to not sample MW-1. I don't consider a location clean until I receive analytical results from the laboratory.

Q. Okay. Now is it your testimony that the contamination from the SB-5 is separate from the contamination in the diesel excavation?

A. It is my testimony that since we found the contamination at the SB-5 location, that is most likely from an overfill at the diesel tank excavation.

Q. So that would be separate from the actual contamination in the excavation?

A. I don't understand what you mean.

Q. Well, we have -- I'll run you through it. We have the excavation, D-8 is clean?

A. Uh-huh.

Q. Okay. So we took the wall samples and

we have D-9 clean, D-8 clean, D-7 clean, D-6 clean, then we have SB-1 and it's got contamination?

A. Yes, uh-huh.

Q. So to me, appearing on the map, it appears that in that tank pit those walls were clean?

A. Yes.

Q. So is SB-5 from a separate release from the diesel tank?

A. No. What I would say is the sample location at D-8 is clean. Now the person onsite collecting those samples did the best job they could in order to get the most contaminated wall sample from that area after removing the early action backfill. Barring any obvious differences in contamination, that sample would have been collected from approximately 8 feet deep.

Q. Now did this tank release, or was it just a piping run that had the release?

A. The fire marshal onsite determined that the piping release and overfills at the tank were cause of the release.

Q. Okay, okay. Let's go to the

monitoring well samples. I'm just sorry for the delay. I'm just checking to make sure -- I hit you all with the same questions --

A. That's fine.

Q. -- on it so I'm not jumping all over the place for you. Okay. Monitoring Well 1 was examined for PNAs, BTEX, and MTBE; correct?

A. Yes.

Q. And it was clean?

A. Yes, it was.

Q. And the only dirty sample anywhere in the direction is D-10?

A. I would say that there was nothing between P-4 and MW-1 as well. There was no samples in between -- for MTBE. There was heating oil samples in between which would have defined the BTEX and the PNAs but that -- those were not tested for MTBEs because that is not an indicator contaminant for heating oil samples, for heating oil releases.

Q. Monitoring Well 2 --

A. Yes.

Q. -- that had a hit --

A. Yes.

Q. -- correct?

A. Yes, it did.

Q. And it had a hit in BTEX?

A. In benzene specifically.

Q. Benzene. And you also tested for PNAs?

A. Yes, we did.

Q. And why did you test for PNAs?

A. Because there were no samples between the D-10 release location and the MW-2 location that spanned the entire unsaturated zone.

Q. So you're just counting D-11, D-12, D-13, and D-1?

A. Absolutely, because that's --

Q. Which were all to the same level as D-10?

A. Yes, they were. Because the contamination as released from D-10 would migrate down towards the water table as it spread latterly.

Q. But now would you still have tested MW-2 had you seen that SB-7 and SB-8 were clean?

A. Yes, because SB-7 is to the north, SB-8 is to the south, and MW-2 is to the east.

So they're in different directions. And additionally --

Q. Did you pick those directions on SB-7 and SB-8 because you already had MW-2?

A. No. We typically do it perpendicular to the piping runs, is typically how we determine, because we're allowed two borings for a piping run release. And we typically do it perpendicular to the piping run. Just as policy -- company policy perpendicular to the piping run release is most contaminated.

Q. Okay. Let's go to MW-4. We only -- you only -- MW-4 is clean?

A. Yes.

Q. But you only tested that for PNA?

A. No, we tested it for BTEX and MTBE as well. That's just not at issue in this appeal.

Q. Oh, gotcha.

A. And we followed the same logic as we did for MW-2 in testing that for PNAs. That there is nothing in between the sample at D-10 and MW-4. And then in the northeast direction which is sampled -- which it -- which -- where the entire unsaturated zone was examined and

sampled.

Q. When did you sample MW-4, MW-2, and MW-1 for PNAs? Was it on the same date that you drilled SB-6 and SB-5?

A. Yes, it was.

Q. So you sampled those thinking that actually it wasn't D-10 that was dirty?

A. That's correct. At the time it was for D-7.

Q. Actually if you thought D-7 was dirty, you actually had D-4 and D-3 clean?

A. That's correct.

Q. So you still tested MW-4 but you did have samples at that time to your knowledge that were clean?

A. Yes, which is why we agreed that MW-5 is no longer at issue. That was an error on our part. However, we believe they're still relevant and should be taken because of the release at D-10.

Q. Okay. Let's go to those regulations.

A. Do we have a copy of those up here?

HEARING OFFICER WEBB: I don't think so. Is there a copy of the regulation anywhere

in any of these exhibits?

MS. JARVIS: I don't know.

MS. HESSE: Did you bring a copy for the witness to use?

MS. JARVIS: I did not bring a copy for the witness to use.

MS. HAWBAKER: Here, I have a copy.

A. Thank you.

Q. (By Ms. Jarvis) You testified that you were at the hearings for 734?

A. Yes.

Q. That was your testimony?

A. Yes, I did.

Q. Did you present testimony on 734.315?

A. It's been -- I think we presented testimony on 713 -- 734.315 as it was originally written. It was subsequently modified. And I don't think we presented testimony regarding its final version. It was significantly rewritten during the hearings. It was much more prescriptive in nature originally than it is today.

Q. So let's look at 734.315(a)(1)(a)?

A. Yes.

Q. That section changed from when you gave testimony?

A. I believe it did.

Q. So it says up to four borings must be drilled and on each independent UST field where one or more UST excavation samples collected pursuant to 734.210(h), excluding backfill samples, exceeds the most stringent Tier 1 remediation objectives.

A. Yes.

Q. How do you interpret that?

A. That as long as one sample of the -- along the excavation wall is contaminated you're allowed to conduct up to four borings in order to define the release at that point.

Q. Do you interpret that to mean you go in the direction of the contamination?

A. I mean that's -- that's what -- that's what I would say is the correct way to do it, sure. I don't really see that in there, but, yeah, that is the correct way to do it.

Q. Were you present for the testimony at the hearing of Fernando O. Bernstein (phonetic)?

A. I'm sure I was if it happened.

Q. I have a copy if you'd like to see it.

A. I don't recall it.

Q. We believe the testimony -- his testimony at the hearing was that you follow the contamination?

A. Okay.

Q. And you did not do soil borings into non-contaminated area, if you've already defined the extent of the contamination there. Would you agree --

A. I would agree that's reasonable, yes. I don't think we've done that.

Q. Okay. If you could look at 734.315(2)(c).

A. Yes.

Q. Okay. Could you read where it starts four borings that do not exhibit, it's about halfway down?

A. For borings that do not exhibit any signs of soil contamination, samples from the following intervals must be analyzed for the applicable indicator contaminants, provided that the samples must be not analyzed if other soil sampling conducted to date indicates that soil

contamination does not extend to the location of the monitoring well installation boring. Would you like me to read the --

Q. No, that's all you need to do. You saw the words must not be analyzed?

A. Yes, I did.

Q. Okay, okay. I just have a couple more questions.

A. Okay.

Q. MW-2, okay?

A. Yes.

Q. You have proposed soil borings between -- which are not indicated on Exhibit 11; correct?

A. Yes, the proposed soil borings are not on that map.

Q. But you have proposed soil borings between SB-2?

A. Uh-huh.

Q. And Monitoring Well 2?

A. Yes, we have.

Q. Now SB-2 is contaminated for benzene?

A. Correct.

Q. And Monitoring Well 2 is contaminated

for benzene?

A. Yes.

Q. And in a site investigation, according to the 734.315, you're supposed to only do borings necessary to define the extent of the contamination?

A. Well, 315 is just Stage 1.

Q. Right. But that's kind of where we're at right now.

A. Well, the proposed borings are Stage 2.

Q. Stage 2.

A. That's a different section of the rules.

Q. Let me just grab that real quick. I just probably looked at the wrong section.

A. Okay.

Q. Okay. So let's go to 734.320.

A. Okay.

Q. In the first paragraph of 734.320 it says, Stage 2 Site Investigation must be designed to complete the identification of the extent of soil and groundwater contamination at that site --

A. Uh-huh.

Q. -- or at the site, that as a result of the release it exceeds the most stringent Tier 1 remediation objectives.

A. Correct.

Q. And we already know the extent that SB-2 is contaminated?

A. Correct.

Q. And that MW-2 is contaminated?

A. Okay. Here's the logic that we -- that we utilized in order to do this, and we've had it differ by product manager, where some -- only one -- the bare minimum to determine the edge of the contamination, where the contamination actually ends; and then what they'll do is have us go back under the first stage of corrective action and do more samples to define exactly how bad it is and in what areas.

We found that that's an inefficient way of doing it because it's cheaper if you do it all at once and it saves time if you do it all at once. It gets the job done cheaper and more efficiently.

Q. But basically that's a problem with

the regulation?

A. Okay.

Q. I mean, the regulation is written, you had an opportunity to comment on the regulation and the regulation is written in a certain way?

A. Okay. I'm --

Q. I know you're explaining --

A. Okay.

Q. -- the practical aspect of it, but the regulation states what regulation states.

A. Okay. We filed this rule following discussions with the manager of the LUST section who said all the drilling should be done during site investigation and not -- because we had inconsistent from multiple project managers. And that's the reason we proposed it in this matter.

While it says, let me read the thing, to complete the identification of the extent and soil groundwater contamination at that site that exceeds the most -- to define the extent in my mind it isn't that it exceeds the most but exactly where it is and what it is. That's how we were interpreting it. Exactly where the contamination is and what it is.

And originally we did not propose it that way and then we were getting project managers that wanted us to, so that's why we did it like that.

MS. HESSE: Can I ask a clarifying question?

HEARING OFFICER WEBB: Yes.

MS. HESSE: You say why you did the work -- how you did the work applying --

A. Why we proposed those three borings between the -- that she's talking about between the SB-2 and SB-1, and MW-3 and MW-2 location.

MS. JARVIS: No further questions.

HEARING OFFICER WEBB: Redirect?

Ms. HESSE: YES.

REDIRECT EXAMINATION

BY MS. HESSE:

Q. Earlier you were discussing, when Ms. Jarvis was questioning you, the relationship between where the sample at D-8 was collected and where the contamination was found in SB-5?

A. Uh-huh.

Q. Approximately how many feet below ground surface was the sample at D-8 collected?

A. Approximately 8 feet.

Q. And approximately how many feet below the ground surface was the contamination found in Soil Boring 5?

A. 2 and-a-half feet.

Q. So that if there was an overfill in the area of Soil Boring 5, did the deeper sample from Soil Boring 5 indicate that that contamination had gone down --

A. No.

Q. -- to the same level that sample D-8 was collected?

A. No, it did indicate contamination at that level.

Q. You also had some questions regarding the timing of when the monitoring wells were installed and the soil borings were installed. Is there a reason why you installed all of those on the same day?

A. Just more efficient and more cost-effective than doing multiple trips at that distance.

Q. Earlier you had mentioned another site where you had recently gotten some data back and

found benzene contamination. When you're in the field collecting samples, is it always possible to determine if the samples are going to be contaminated or not?

A. I would say 90% of the time you can get a pretty good read, but there's that 10% of the time you get surprised.

Q. And when you get surprised, is it because you find contamination and you did not expect to find it?

A. It can be both ways. It can be you get -- find contamination when you thought it was clean. And it can be you thought it was contaminated and it's come back clean. I've had it happen both ways.

Q. Again, when you had the samples analyzed that were collected from the monitoring wells, was the data from the soil borings available?

A. The laboratory data was not available, no.

Q. So in referring to regulations at 734.315(a) to (c), is it your belief that you complied with the regulatory requirement with

respect to samples being analyzed if other soil sampling conducted to date indicates soil contamination?

A. We comply with that because we did not have -- we did not believe there was other soil sampling to date which indicated that contamination had not spread to that location.

Q. And there was not other soil sampling data that was available at the time, was there?

A. No, there was not.

MS. HESSE: I'd like to move to admit Exhibit No. 11, which is the drawing that Mr. Wienhoff prepared.

MS. JARVIS: And I'm not going to object since he established it came from the record.

HEARING OFFICER WEBB: Okay. Exhibit 11 is admitted. And you have no more questions for this witness?

MS. JARVIS: I have no more questions.

HEARING OFFICER WEBB: Okay. Thank you very much.

MS. HESSE: Just a quick point of clarification. A handwritten drawing was

admitted and --

HEARING OFFICER WEBB: It was admitted.

MS. HESSE: Thank you.

(A short break was taken.)

(The witness was sworn in by the court reporter.)

HEARING OFFICER WEBB: And would you state your name?

THE WITNESS: My name is Vince Smith.

HEARING OFFICER WEBB: Vince Smith.

DIRECT EXAMINATION

BY MR. FROEMEL:

Q. Mr. Smith, I'm handing you a copy of a document. And could you identify that document for me?

A. It's my resume.

MR. FROEMEL: If you could please mark that as Exhibit 13.

(The reporter marked Exhibit No. 13 for purposes of identification.)

MR. FROEMEL: I would move to have Exhibit 13 admitted into the record.

MS. JARVIS: No objection.

HEARING OFFICER WEBB: Okay. Exhibit

13 is admitted into the record.

Q. (By Mr. Froemel) Mr. Smith, are you a licensed professional engineer?

A. Yes, I am.

Q. How long have you been a licensed professional engineer?

A. Since approximately 1990.

Q. Can you describe your educational background?

A. I have a Bachelor of Arts Degree in Mathematics from Culver-Stockton College. I also have a Bachelor of Science Degree in Civil Engineering from the University of Missouri-Rolla.

Q. How long have you worked for CWM?

A. Just over seven years now.

Q. How often are you out in the field?

A. Approximately 40% of the time.

Q. How many sites have you conducted soil investigation on?

A. In the neighborhood of 100.

Q. Do you have prior work experience that's relative to issues related to soil analysis and investigation?

A. When I worked for a firm called ALPHA Testing based into Dallas, they were a geotechnical as well as a materials testing and construction inspection firm, and we did a lot of geotechnical type investigations. During my final year with them, they were beginning to get into the environmental arena and we were beginning to do some soil and groundwater investigation work.

Q. Okay. Are you familiar with the Farina site?

A. Yes, I am.

Q. What's you -- what has been your role or responsibility at the Farina site?

A. I was there during the removal and the early action activities associated with the gasoline tanks. I also was there doing the second round of soil borings which were just the two borings to replace the borings that were earlier determined to be improper.

Other than that, from the office standpoint it's been one of a management oversight and then the professional certification of the reports that have gone in on that.

Q. Are you licensed to remove and install underground storage thanks?

A. Yes, I am.

Q. You've referenced the excavation samples at the gasoline tanks, can you explain how those samples were collected?

A. I took those samples myself as well as the piping samples for the gasoline tank excavation. The piping samples were taken following the removal of the piping. So they were taken basically at a depth of about 2 and-a-half to 3 feet below ground surface at the bottom of what was the pipe trench.

The excavation wall samples were taken -- the requirement is that you obtain at least one sample per 20 linear feet of wall. In this case the walls -- the wall dimensions of the tank excavation were between 20 and 40 feet; therefore, I obtained two samples from each wall. Typically you would obtain floor samples from beneath -- beneath the tanks, either one or two samples depending upon the size of the tank. In this case I was unable to obtain those because we had groundwater entering the excavation.

Q. So where then did you collect those samples from?

A. The wall samples were collected, in this case, at a depth of approximately 8 feet which was -- was about 2 feet below the bottom of what we had removed from the excavation and basically at a line at which the water was collecting in the hole.

Q. Is it possible to determine during an excavation with certainty the most contaminated location on excavation wall?

A. With absolute certainty, no. Experience does help select the possible locations, but absolute certainty it doesn't. I don't think that's possible.

Q. What's the relationship between the size of the sample and the size of the excavation wall?

A. Like I said, you're required to take a sample at least every 20 feet. So a typical tank excavation is between 10, 12 feet deep so you're looking at an area of 20 by 12, 20 by 10 and out of which you're going to obtain a sample that's possibly a 3 inch cube to represent that entire

area.

Q. You had said the sample area was 20 by 10, do you mean -- is that in terms of 20 feet by 10 feet?

A. 20 feet by 10 feet, yes.

Q. And when the tanks were excavated, did water flow into the excavation?

A. Yes. There was -- there was some purged water both from the piping runs as well as beneath the pavement, that tended to stop. We did remove water from the excavation and then it basically returned by coming up from the bottom of the excavation. We could see it seeping back through the floor.

Q. How high did it rise up in the excavation?

A. There was about 2 feet of water within the excavation, the top of which was approximately 8 feet below the ground surface.

Q. Okay. What's the difference between collection of early action sample and soil boring samples during a Stage 1 Site Investigation?

A. In this case specifically the piping samples were only taken from the bottom of the

piping trench which is at a very shallow depth. Whereas a boring taken during the Stage 1 would have been -- you would investigate from ground surface all the way to the area the groundwater has encountered.

Q. Do piping run samples indicate contamination or can they indicate contamination at greater depths?

A. Only if you obtain a piping run sample through drilling would you know anything beyond the bottom of the piping trench.

Q. Now you mentioned that you were responsible for the licensed professional engineering certification at the Farina site. If you could turn to page 21 of the record. I don't know if the record is still up there or not.

HEARING OFFICER WEBB: Here, he can use this one.

A. Okay.

Q. (By Mr. Froemel) Can you tell me is that your signature on the bottom of page 21 of the record?

A. Yes, it is.

Q. And -- and I don't know if it's still

up there in front of you, is Exhibit 2 available for the witness? And if you could look at Exhibit 2 and if you could identify for me is that your signature on the second to last page of Exhibit 2 under licensed professional engineer?

A. Yes, it is.

Q. With respect to the licensed professional engineering certification, how did you comply with that role? Basically what did you look at in making your certification?

A. As Carol Rowe and Jeff Wienhoff have talked about earlier, we sat done before this was ever drilled in the first place and laid out a plan for the drilling. I was involved all the way from the early action at the site. And then each subsequent report and response I reviewed as it came across. And so basically the work was done under my direction and, therefore, I felt comfortable approving it.

Q. In your opinion was the work done at the Farina site in a manner that's consistent with procedures -- accepted procedures of a professional engineer?

A. Yes, I do.

Q. To the best of your knowledge was the Stage 2 plan completed in accordance with Section 734 of the Administrative Code?

A. Yes, it was.

Q. To the best of your knowledge was the Stage 2 plan completed in accordance with generally accepted standards and practices of the engineering profession?

A. Yes, it was.

Q. And to the best of your knowledge is the information in the Stage 2 plan accurate and complete?

A. Yes.

Q. With respect to the 45-day reports that were entered as Exhibit 1 --

A. Uh-huh.

Q. -- were they completed in accordance with Section 734 of the Administrative Code?

A. Yes, they were.

Q. And also completed in accordance with generally accepted standards and practices of the engineering profession?

A. Yes, they were.

Q. Would that be true with respect to the

addendum to the 45-day reports as well?

A. Yes.

Q. Okay. Same question with respect to the Stage 1 investigation. Were those completed in accordance with generally accepted standards and practices of the engineering profession?

A. Following the additional submittal of additional information, yes.

Q. And to the best of your knowledge was the Stage 1 plan completed in accordance with Section 734 of the Administrative Code?

A. Yes.

MR. FROEMEL: Nothing further.

HEARING OFFICER WEBB: Thank you. Ms. Jarvis?

CROSS-EXAMINATION

BY MS. JARVIS:

Q. I have one very short question for you just for clarification. You said you were there during the removal of the gasoline tanks?

A. Yes.

Q. Were you also there during the removal of the diesel tanks?

A. I was not.

Q. Okay. I just wanted to make sure I understood.

A. That's correct.

MS. JARVIS: Thank you.

HEARING OFFICER WEBB: And you have nothing further?

MR. FROEMEL: Nothing further.

HEARING OFFICER WEBB: At this time I would like to ask again about Exhibit 5. The EPA was holding their objection until the final witness of petitioner.

MS. JARVIS: And it wasn't used again so I would once again object to this.

HEARING OFFICER WEBB: What is it being -- what are you moving to admit it to show?

MS. HESSE: We're moving to admit it essentially as reference material to assist the Board in understanding that contamination, including petroleum contamination, when it's released onto the ground can migrate down below. So it can migrate down and then migrate with the flow of the groundwater.

There's been some issues raised in the Agency's denial letters with respect to whether

the piping run samples can adequately characterize contamination at a site. We have presented testimony, and I think this supports the testimony that was presented that you can have a release at a site, the contamination can migrate downward and then it can migrate latterly so that the contamination would be below where the piping run samples would have been collected. And this document supports our position.

This document was prepared by a professional organization and it goes to support that our position is in accordance with generally accepted engineering and geological principals.

MS. JARVIS: My main objection is, A, we did not have any testimony that there was a diving plume at the site. In fact, I think the diesel tank was -- there was testimony that it was in good condition, didn't leak. Further, this has to go with groundwater and it deals with groundwater and not piping run samples or soil samples. So I'm just going object to it as far as the relevance.

I haven't had a chance to check this organization or look at it so I'm just going to

have to keep my objection.

HEARING OFFICER WEBB: Well, I'm going to then take this as an offer proof. I'm not sure that the Board necessarily needs this. We have technical staff as well. I will show the Board, but I agree that it -- it's not necessarily relevant to a lot of the testimony we've had. So I will take Exhibit 5 as an offer of proof.

Ms. Hesse, is there -- do you have anything further to offer for your case?

MS. HESSE: Not at this time. But we would like to reserve the opportunity to call witnesses as rebuttal witnesses after we hear the Agency's case. And may I also request can we take a five-minute break before the next witness?

HEARING OFFICER WEBB: Okay. We can take a five-minute break.

(A short break was taken.)

HEARING OFFICER WEBB: I believe we are picking up with the EPA's case.

MS. JARVIS: And we have no testimony.

HEARING OFFICER WEBB: Oh, you're not putting on witnesses?

MS. JARVIS: So we're going to just rest, that's right. We're going to stand on the record.

HEARING OFFICER WEBB: And you don't have anything further you would like to add? Okay, well --

MS. HESSE: Just a second.

HEARING OFFICER WEBB: Okay.

MS. HESS: Never mind.

MR. FROEMEL: We have nothing more.

HEARING OFFICER WEBB: Then let's go off the record again just to clarify our briefing schedule.

(A discussion was held off the record.)

HEARING OFFICER WEBB: Okay. We have just had an off-the-record discussion regarding post-hearing briefs. The parties have agreed to a briefing schedule as follows: The transcript of these proceedings will be available from the court reporter by August 27th and will be posted on the Board's Website. The public comment deadline is September 14th. Any public comment must be filed in accordance with Section 101.628

of the Board's procedural rule. Petitioner's brief is due by September 18th. Respondent's brief is due by October 9th. Any reply must be accompanied by a motion for leave to reply directed to the Board. The mailbox rule will not apply, although parties may file electronically.

Ms. Hesse, or petitioners like to make any closing argument.

MS. HESSE: Just a very brief summary of the case. We believe that petitioner has demonstrated through testimony, through exhibits at the hearing, through the documents that were in the record that the work that it did at the Farina site was in accordance with applicable Board regulations, that the work was in accordance with accepted engineering practices and professional hydrogeological practices and procedures, and that the Illinois Environmental Protection Agency should not have rejected the work that was done, should not have rejected the proposed plan that was submitted and that the Board should find in favor of petitioner.

HEARING OFFICER WEBB: Thank you. Ms. Jarvis, would you like to make any closing

statements?

MS. JARVIS: Very brief. We believe that after the Board reviews the record that was available to the Agency when we made our decision, it will uphold the decision of the Agency in the denials that it made.

HEARING OFFICER WEBB: Thank you. I will again note that there are no members of the public present to present any public comment. So I will proceed to make the statement as to the credibility of witnesses testifying during this hearing.

Based on my legal judgment and experience I find all of the witnesses testifying to be credible. At this time I will conclude the proceedings. We stand adjourned and I thank you all for your participation.

(The hearing was adjourned.)

STATE OF ILLINOIS
COUNTY OF FAYETTE

C E R T I F I C A T E

I, BEVERLY S. HOPKINS, a Notary Public in and for the County of Fayette, State of Illinois, DO HEREBY CERTIFY that the foregoing 188 pages comprise a true, complete and correct transcript of the proceedings held on August 22nd, 2007, at the Illinois Pollution Control Board Hearing Room, 1021 North Grand Avenue East, North Entrance, Springfield, Illinois, before Carol Webb, Chief Hearing Officer, in the case of L. Keller Oil Properties, Inc./Farina vs. IEPA, in proceedings held before Hearing Officer Carol Webb, and recorded in machine shorthand by me.

IN WITNESS WHEREOF I have hereunto set my hand and affixed by Notarial Seal this 24th day of August, 2007.

_____
Beverly S. Hopkins, CSR, RPR
CSR License No. 084-004316