		287		i	288
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
07:48	1	A That's correct.	07:49	1	slowly pull all the equipment back onboard the boat and repair
	2	Q And you can't see the boat?		2	it.
	3	A That's correct.		3	Q Couldn't you just cut the cable loose?
	4	Q So now you are trying to grab a streamer?		4	A No. We are a zero discharge company. We don't disturb
07:48	5	A Yeah. Well, one person would be driving and the other two	07:49	5	we don't cut anything. The only time you are ever allowed to
	6	folks will grab they'll literally it has gotten a lot		б	dump something over the side of the boat is if somebody's life
	7	better, we now have mechanical devices. But at the time we		7	is in immediate danger. Otherwise, you take the time to
	8	would get our arms around it and you would want to get it so		8	retrieve it. And if somebody's life is in danger and you cut
	9	you could attach and detach pieces. You don't want to tie it		9	something, the first thing you do after you secure that person
07:48	10	to your boat because if something goes wrong, it will flip your	07:49	10	is you go get whatever you put over the side of the boat.
	11	boat, and you want to stay in your boat.		11	Q How long were you in this role where you were at the back
	12	And so we would work on it and manage it and		12	of the boat responsible for the streamers and the array?
	13	manhandle it. And we would sometimes have a spare section on		13	A I was offshore my first two years, but I did doubles, so I
	14	the boat, and we would try to hook it up and swap it out. It		14	ended up working about ten months each year offshore, and then
07:48	15	was a lot of work.	07:50	15	I moved on to a different role.
	16	Q Are there people that don't want to get this job?		16	Q And what was your next job?
	17	A The small boat you have to volunteer to do. You can't		17	A I was what was called an assistant party chief, assistant
	18	force anyone to do this. But if it is your department and it		18	party manager. So I became the shore-based logistical manager
	19	is your equipment and you don't volunteer and no one else does,		19	for a group of vessels in the Gulf of Mexico. I was brought
07:49	20	then you learn to like it.	07:50	20	off the boats to manage some of the crews in Houston.
	21	Q And what happens if you can't fix the tangle when you are		21	Q In those roles, did you interact with customers?
	22	back there in the boat?		22	A I did.
	23	A If you can't fix the tangle by boat, because boat is always		23	Q In what manner?
	24	the best option because you don't have to pull everything back		24	A Well, every day you talk to the customer in that role,
07:49	25	onboard the ship, you then use these large hydraulic winches to	07:50	25	you are managing all the logistics for the boat, you are
		Mayra Malone, CSR, RMR, CRR mayramalone⊕comcast.net			Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net

		289			290
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
07:50	1	managing the crew, you're managing the equipment. You are	07:51	1	Geco, and they had it. And when we became a joint company, we
	2	basically the representative on the beach for the boat, so you		2	were very, very pleased. The first time I got to see it was in
	3	are their conduit to everything. You do all the ordering.		3	2000.
	4	When the client orders something, you talk to them. The time		4	$\ensuremath{\mathbb{Q}}$ $% \ensuremath{\mathbb{Q}}$ Prior to Western and Geco coming together, which side were
07:50	5	lines, delivery schedule, where the boat is, when it is going	07:52	5	you on? The Western side?
	6	to be there.		б	A I was on the Western side.
	7	$\ensuremath{\mathbb{Q}}$ In that work, did you learn what was valuable to other U.S.		7	Q And did Western have a lateral steering system?
	8	companies?		8	A We did not.
	9	A Certainly.		9	Q Was that something you wanted for a long time?
07:51	10	Q What was that?	07:52	10	A Oh, certainly.
	11	A Well, they want everything better, they want everything		11	Q Why?
	12	faster and they want everything safer.		12	A Through all the problems I mentioned earlier, to keep these
	13	Q Do they care about value?		13	cables from separating, all we had was we had two other
	14	A They do.		14	options. We had we attempted to put steer our tail
07:51	15	Q And how do they measure that?	07:52	15	buoys, but none of those ever worked. We ended up either
	16	A Value is normally measured in time. It is also measured in		16	breaking the tail buoy off or floating them.
	17	the quality of what you are doing, which is a function of time		17	The other thing we had was something called
	18	quite often.		18	cross-tagging, which was basically a rope between the cables,
	19	$\ensuremath{\mathbb{Q}}$ Let's talk a bit about the inventions in this case, sir.		19	which turns your seismic array into a bit of a trawler net,
07:51	20	When did you first hear about a system that could steer	07:52	20	so
	21	streamers laterally?		21	${\tt Q}$ $$ When you mentioned a second ago that you had these two
	22	A I mentioned I worked for a company called Western		22	options, the rope and this steerable tail buoy, what was that?
	23	Geophysical, and we did not have this. We wanted it but we		23	${\tt A}$ $$ It was at the back of this cable, you have a float, and the
	24	didn't have it. It didn't exist, to my knowledge.		24	float has a radar detector and a GPS antenna or something so

		291		i	292
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
07:52	1	control to try and drive this tail buoy around.	07:54	1	beforehand, but once we saw what they had, some of us were
	2	Q Okay. Was there anything else between the end of the		2	happy.
	3	streamer and the ship that was attempting to steer it?		3	Q Were you happy?
	4	A Not laterally, no.		4	A I was happy. I am happy.
07:53	5	Q And did this tail buoy work to steer the streamer?	07:54	5	${\tt Q}$ What is it about the merger that you thought was a good
	б	A No. They broke off. The most you could do was to try to		6	thing for the company?
	7	get a tail buoy to work a little bit, but even then I never		7	A Well, they had a much, much better acquisition system than
	8	saw one successfully work in the field.		8	we did, and they had the ability to steer the streamers. They
	9	Q Had Western tried to solve this lateral steering problem		9	had technology that was far and above better than ours.
07:53	10	and failed?	07:54	10	Q What time period was this?
	11	A We had wanted to try, but we had never been successful at		11	A This was 2000.
	12	anything.		12	Q And did you see the Geco steering system after the merger
	13	THE COURT: The lateral steering mechanism you were		13	took place?
	14	using, was that patented?		14	A I did.
07:53	15	THE WITNESS: I don't know. It was on the tail buoy,	07:54	15	Q What did you see?
	16	but it was very different than an inline streaming device.		16	A I was an operations manager at this point, so I was
	17	BY MR. LOCASCIO:		17	still I was part of the field crew, managing field crews.
	18	${\tt Q}$ $\;$ Let me talk for a second about this Western and Geco		18	And so I spent a lot of time on the boat, still going out and
	19	combination or merger. What did Geco Limited do?		19	at the docks. And I got to see one of the vessels where we
07:54	20	A Geco had a different acquisition system than we did, which	07:55	20	tested WesternGeco's two cables and Geco's two cables alongside
	21	was called a Q , and it had lateral steering.		21	each other.
	22	Q And what did Western bring to the table?		22	Q So Western and Geco sort of had a showdown?
	23	A Western brought a lot of people, a lots of boats, a lot of		23	A They put all four cables on the back of the vessel. I
	24	experience, so it was a pretty good merger of people and		24	wasn't part of the test group itself, but it was all logistics
07:54	25	technology. We weren't looking forward to the merger	07:55	25	team down there helping get it down there to the boat.
		Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net			Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net

293 294 LOCASCIO Continued Direct of THOMAS SCOULIOS LOCASCIO Continued Direct of THOMAS SCOULIOS Q How did the demo go? 07:55 1 07:56 1 are. The goal is to replace every single vessel we have with 2 A The Geco equipment won. 2 this stuff because we get a premium for it when we work. It is Q You said it made you happy that you were now going to have demanded by the customers, and it has been very successful. 3 3 4 this technology. Why, from an industry standpoint? 4 ${\tt Q}$ $\,$ You indicated that the customers want the surveys to be faster, better and safer. Can we take those one by one with A Well, it was a competitive advantage. If you can steer the 07:55 5 07:56 5 cable, you can shoot your surveys safer, you can shoot them connection to lateral steering? 6 б faster, you can position them better. It is -- I think it's 7 7 A Sure. one of the most incredible developments in the field I have Q How does lateral steering allow you to conduct a survey 8 8 9 ever seen. 9 faster? Q Prior to Geco's development of this technology, was this a A Right off the bat, having streamer control is -- it's 07:55 10 07:57 10 important for something we called "infill" earlier when we were 11 problem people were trying to solve? 11 referencing it. And this is when you are shooting prime or 12 A Certainly. 12 you're shooting infill, and infill is the bits of unmowed lawn. 13 Q Was this the first time you had seen it solved? 13 A I had never seen it solved. I had never seen anything even I made a board. I can show you if you like. 14 14 approach this that worked. It wasn't just one bird. It was a 07:56 15 07:57 15 The simplest analogy is the lawnmower analogy, system that moved in tandem. You could move all these cables and you are trying to mow a yard, and you're trying to mow the 16 16 around. You could actually control this thing for the first data. This is my boat and this is my yard, and you do your 17 17 18 time. 18 pass moving upwards. You now have one pass where you have essentially cleaned that data. 19 0 O-Marine, which is the name the Geco system had, has that 19 Q How long does it take for the ship to make that pass 07:56 20 been successful? 07:57 20 21 A It's been very successful. 21 typically? Q Why, do you think? 22 A It can be -- the length of a line is dependent -- in the 22 23 Well, we started out with one Q-Marine crew and we are 23 Gulf of Mexico, the average lines that we have been shooting А still rolling out. We're eventually converting the entire 24 24 have been ten to 12 hours.

Find authenticated court documents without watermarks at docketalarm.com.

		295			296
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
07:57	1	A Just to go one pass up.	07:59	1	match this vessel alongside again. You start out with the best
	2	Q And what happens then?		2	of intentions on your line, but as the currents come, you might
	3	A We then want to turn around. It is something called a		3	leave a pass of infill. And as you go up, you then have an
	4	"line change." So we then take the boat. Now, if you just		4	element of basically unmowed yard.
07:58	5	pivot, you have to remember you have cables which might be the	07:59	5	As the survey continues, you are trying really
	б	length of the survey, so the boat has to go all the way up		б	hard. We were trying really hard. We spent a lot of time
	7	here.		7	watching those cables and moving the boat around. You end up
	8	Now, in order to turn around, you can do one of		8	with chunks of unknown grass. That's the infill that you have
	9	two things. If you want to take the line directly beside you,		9	to come back.
07:58	10	you have to do a big, giant turn, like you have a trailer on	07:59	10	Q How is it that you would come back to get it?
	11	your car. That adds a couple hours to your turn. It is not		11	A You do it one of two ways. You either clean it up as you
	12	efficient.		12	go, which is very rare, because every job has a budget and you
	13	So you do something called a "racetrack." You		13	have so much money you can spend, or you come back at the end
	14	come up, and then you come down in another location over here.		14	of the job and you pick up these passes.
07:58	15	As you go down, you do your second pass, and so now you have	07:59	15	Q To clean up one of those strips of grass or pieces of
	16	two clean lines in your yard and you have a bunch of grass		16	infill, how much additional time does that take?
	17	still to mow. Sorry for the analogy, but it was the one first		17	A If the pass is not located directly in line with another
	18	used to me when I went offshore, and it makes sense.		18	pass, so you have to do a whole line for it, it is like
	19	You then come back around, and you want to line		19	shooting an entire line over again. So you might spent 18,
07:58	20	up. This has now been ten to 12 hours. It could be longer, it	08:00	20	20 hours to go back and get that one piece of grass.
	21	could be shorter. I'm not arguing that. And then you have		21	Q Are there ever obstructions in the field?
	22	added three to six hours for each of these line changes, so it		22	A Okay. So this is another yard example. If you have trees
	23	might be a day or two later when you are coming back on the		23	in your yard, if you have toys in the yard when you are mowing,
	24	second line. The weather could have changed, the currents		24	it's the same as if you have oil platforms or ships. The oil
07:59	25	could have changed. And you come on, and you are trying to	08:00	25	platforms you can plan on. The ships, if they are responding,
		Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net			Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net

		297		1	298
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
08:00	1	you can try to plan on. But you have to remember, if you have	08:01	1	vessel coming across, a ship or otherwise, you can react in a
	2	this vessel that's towing 6 miles of cable, if they see a ship		2	safer, more controlled manner than just driving in a big loop
	3	and even if they answer, if they don't get out of the way fast		3	and coming back and doing it again.
	4	enough, the only thing you can do is turn very, very slowly.		4	Q Thank you, sir.
08:00	5	It's a slow-motion nightmare when things don't go very right.	08:02	5	A Sorry. I'm not an artist.
	б	So if you have this tree in the middle, you have		б	Q Can you explain to the jury what repeatability is in
	7	to come in and get the tree and you have to go around it. If		7	surveys?
	8	you come in like this and try and go around the tree, you will		8	A I have some examples of a 4D survey. But repeatability is,
	9	get it on one side. If you then come back the other direction,		9	once a company found its reservoir, they want to try and
08:01	10	you leave a large hole around that tree, so that creates even	08:02	10	produce it efficiently. Oil fields are not like a triangle
	11	more infill.		11	with a spigot on the top. The best shape I have ever seen is
	12	Q How does the lateral steering system allow you to improve		12	more like a potato, a very misshapen potato.
	13	on this?		13	They want to produce this. So with
	14	A So lateral steering, if you are actively controlling where		14	repeatability, they want to go back and take multiple pictures
08:01	15	your lawnmower is going, it gives you the chance so that if you	08:02	15	of this reservoir through the life of production.
	16	are moving here and you see the current starts to push your		16	Q You mentioned you might have a slide that might help
	17	cable over, when you are getting this line the first time, you		17	explain this to the jury.
	18	can swing them over and attempt to catch that.		18	A Yes. This one is built learning. If you go to Slide 7 and
	19	In addition, when you're going around		19	you show the reservoir.
08:01	20	obstructions, you can get closer, which is important because	08:02	20	MR. LoCASCIO: Let's get that on the screen.
	21	the oil rig is normally the most important part of the survey.		21	THE WITNESS: So this is your reservoir. They have
	22	The oil is underneath that thing, so you want to get as close		22	decided to start producing it. In this function of production,
	23	as possible. But you want to do it safely, you don't want to		23	they are going to do many things to this reservoir. They're
	24	hit it.		24	going to put a hole in the top.
		n1			n

		299			300
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
08:03	1	to do many different things to get the oil and gas out. They	08:04	1	survey, you know where your cables are, so you know where your
	2	may inject air into the reservoir. They may inject water into		2	camera is. If you can steer your cables and you are not
	3	the reservoir, and the reservoir wall is going to change.		3	dependent on the currents, you can accurately put that camera
	4	So if you go to the next image, this is Slide A.		4	back in the right place. You can put those cables almost in
08:03	5	So in '09, you have the first image. You do what's called a	08:04	5	the exact same heading, weather-dependent, or as close as
	б	baseline survey. So you get your very first picture. And this		б	possible to. So you start to remove you start to remove
	7	is a snapshot of what the reservoir looks like. You come back		7	elements that are not part of your original your 4D image.
	8	later in '12, you shoot another picture, and you want to		8	You start to remove the noise.
	9	compare the difference in those. So after you have the two		9	In addition, a 4D production means that's
08:03	10	surveys, you start to see how the oil and gas is moving around	08:05	10	somebody found oil and gas there, so they've gone and put a rig
	11	the reservoir.		11	right on top of where you are trying to be looking. So they
	12	Now, mentioning a camera, this very much equates		12	put a tree on top of your in the middle of your yard. So by
	13	to setting up a camera in front of an object and trying to spot		13	adding a service stream, it allows you to effectively get
	14	the difference in one specific item. If you take that picture		14	around those obstructions. So it makes your 4D surveys much
08:03	15	over and over, you can see what has changed when you look at	08:05	15	more efficient.
	16	these pictures side by side. If you start moving the camera		16	Q Didn't people do 3D and 4D surveys before this technology
	17	around, you lose you start it gets much more difficult to		17	existed?
	18	find out what is actually changing in that reservoir. The		18	A We did. But they have gotten much, much better since we
	19	reason this is important is to efficiently extract that,		19	have been able to steer streamers laterally.
08:04	20	because you want to get as much oil and gas out of that as you	08:05	20	Q Has that difference been valuable to customers?
	21	can onshore, into your production facility.		21	A It has been very valuable to customers.
	22	Q And how does lateral steering of the system that does it		22	THE COURT: Who would read the end product? Would it
	23	allow you to get a better 4D image?		23	be somebody with WesternGeco or would it be a client,
	24	A So lateral steering helps in actually multiple ways in a 4D		24	geologist?
08:04	25	survey. First and foremost, when you shoot that baseline	08:05	25	THE WITNESS: Geologist in the oil company well, we
		Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net			Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net

		301			302
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
08:05	1	would all try to take an image of it, but the oil companies	08:07	1	outside cable is going to break off and it's going to start to
	2	would consider their final interpretation as their property, so		2	fall backwards. If your cables are all drifting to the right
	3	that is going to be the property of the oil company.		3	and your right side cable breaks, it is going to catch it and
	4	THE COURT: So is it a little bit like a radiologist		4	then you could have a domino effect. I have been on a job
08:06	5	taking an image and showing it to a surgeon?	08:07	5	where I have seen all ten cables get ripped off one by one.
	6	THE WITNESS: Yes. And three surgeons are going to		6	100 kilometers of cable ended up getting ripped off the back of
	7	have different opinions on where to cut but		7	the boat, which is a nightmare.
	8	THE COURT: Yeah.		8	If you can steer your streamers and you start to
	9	BY MR. LOCASCIO:		9	have an incident on the outside cable, you quickly get the
08:06	10	${\tt Q}$ $$ Going back to the benefits of Q-Marine, how does Q-Marine $$	08:07	10	other nine and get out of the way, and you have one break off
	11	make surveys safer?		11	and you send one back and hopefully you can pick it up.
	12	A Well, by being able to control these streamers, you can		12	Because it hasn't touched any of the others, it is much easier
	13	reduce number one, you can reduce your likelihood of hitting		13	to fix and repair, and you can get it going hopefully in less
	14	something. You don't ever want to do that. You can reduce the		14	than a day. That is the goal anyway.
08:06	15	instances of tangles, and the fewer tangles you have, the less	08:07	15	${\tt Q}$ $$ You mentioned earlier shooting around a rig and shooting $$
	16	people you are putting in the back of the vessels.		16	around other obstructions. Can you give the jury a
	17	$\ensuremath{\mathbb{Q}}$ Do streamers still get tangled, or is this the 100 percent		17	particularly complicated example of doing that?
	18	solution?		18	A I can. I have got some examples for this. The most
	19	A The streamers still get tangled, that's true. But let's		19	complicated example of steerable streamer I have ever seen was
08:06	20	say, for example, you had ten cables out and you hit a tree	08:08	20	actually in the Gulf of Mexico. This was a very, very bad
	21	Q I assume that's a floating tree?		21	incident. I think everybody is familiar with BP when they had
	22	A A floating tree. We had a telephone pole come in one of		22	the Macondo oil spill. We were not involved before, but we
	23	our lanes Christmas Day, I remember.		23	were asked to help in fixing it.
	24	So this thing starts to go crazy on the right.		24	So this survey was called the Moses survey. It

		303		i	304
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
08:08	1	and they had something like 100 vessels out there trying to fix	08:09	1	those faults and travel up the fault lines, and then you will
	2	this oil spill. This is while the oil spill was actually		2	have three or four oil spills which you could not contain.
	3	happening, not before.		3	So they said: We need to, number one, wait
	4	They gave us this map and they said: This red		4	another 60 days for the relief well to be drilled and, number
08:08	5	line we would like you to shoot and two more red lines that	08:09	5	two, we come in here and try and fix it sooner.
	б	were in different azimuths as well.		б	So the U.S. government and BP came and they said:
	7	How this came to be is, Secretary Chu, who is the		7	Please do this for us.
	8	secretary of energy for the United States, with BP, evaluated		8	Now, this was a tragedy. It is not a survey that
	9	our technology. They called us directly on the phone, and they		9	we would have ever jumped at doing; however, there is no way we
08:08	10	said: Can you guys go in there and can you thread the needle?	08:10	10	could say no to doing something like this if we had the
	11	Can you put your cable three times a day over the top of the		11	technology.
	12	wellhead?		12	So we took a vessel with a couple-mile cable, and
	13	Now, this was after the spill. You guys are		13	we put it in between the goal was to shoot three times a day
	14	saying: Well, why would you guys go in after the spill? We		14	in between these boats. Every night a helicopter came and took
08:09	15	know where the reservoir is.	08:10	15	that data. Every night it came onshore for 30 days, and they
	16	The reason why is, when they were drilling the		16	processed it and they made 30 time slots. And once they were
	17	two relief wells I don't know if everybody remembers this,		17	confident that the casing was intact, they allowed the top hot
	18	but they were drilling two holes in the ground, and it was		18	procedure to go forward, which allowed the capping of the well
	19	going to take a long time. In order to speed that up, they		19	sooner.
08:09	20	wanted to try something called a top hat, which was basically	08:10	20	So while this was a horrible incident, I was
	21	to put a cork in a hose pipe.		21	extremely and not what I wanted to be called to do, I was
	22	The fear was that BP had cracked the casing.		22	extremely proud we were able to help. I was extremely proud of
	23	Now, this is bad because if you have a hose pipe with a bunch		23	the crew, and I was extremely proud that we had the equipment
	24	of cracks in it and you put a cork in it, it's going to start		24	and the cable. And the lateral steering was the only way we
08:09	25	to leak. If there are faults, that oil is going to come out of	08:10	25	could have ever done this survey safely.
		Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net			Mayra Malone, CSR, RMR, CRR mayramalone@comcast.net

		305			306
		LOCASCIO Continued Direct of THOMAS SCOULIOS			LOCASCIO Continued Direct of THOMAS SCOULIOS
08:10	1	I have one or two other pictures which	08:12	1	Q Why not have more streamers and do 4D?
	2	demonstrate exactly how close the boats were. But for		2	A They simply wouldn't fit in between the vessels. This is
	3	perspective, those two vessels are 400 meters apart. So you		3	just an example of showing how important this how you can
	4	have two ships, which were the DD1 and DD2, 400 meters apart.		4	control a system.
08:11	5	They were both drilling the relief wells, and they were not	08:12	5	Q Let's talk for a second about more typical jobs than that
	б	allowed to move. Our boat was coming through, I believe, with		б	one. For customers, the benefits from Q-Marine are something
	7	a 3-kilometer cable, which is 30 football fields long. We are		7	they are willing to pay for?
	8	trying to drive this thing through there every day in three		8	A They are.
	9	different directions. We didn't go every day. We attempted		9	Q How do you know that?
08:11	10	to.	08:12	10	A They regularly well, number one, we have become the
	11	And I think we have one more picture of what the		11	largest marine seismic company not by choice but by having the
	12	captain actually saw. This was the captain's view out of his		12	best equipment, the best service quality. We are regularly
	13	window. We put multiple captains on there because we had we		13	paid a premium for what we do.
	14	had multiple captains on the bridge working around the clock.		14	Q Go ahead.
08:11	15	But this is an example of how much what you	08:13	15	A And we are it has been so successful that we have a plan
	16	can do if you actually have control, if you can laterally steer		16	since day one to convert every single vessel we have to $\ensuremath{\mathbb{Q}}$ and
	17	that cable.		17	steerable streamer, which is going on.
	18	${\tt Q}$ $$ Is this typically the distance that you would get from an		18	Q Were you in the room yesterday for opening statements?
	19	obstruction?		19	A I was.
08:11	20	A We would never go within normally our safety rule says	08:13	20	${\tt Q}$ $$ There was a statement by Mr. Torgerson that WesternGeco $$
	21	prudence, within 500 meters. To be less than 200 meters is not		21	still had boats at some point that had conventional streamers
	22	something we would do.		22	that had not been converted over to steerable streamers.
	23	Q Now, is this a 2D, 3D or a 4D survey?		23	Is that the case?
	24	A This is a 2D, 4D survey. So we did a bunch of 2D surveys		24	A That is true.

DOCKET A L A R M



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.