PLUMES AND WHERE YOU DETERMINE THE NON-DETECT AND YOU RAN THROUGH A COUPLE OTHER CHEMICALS THAT YOU LOOKED AT IN THIS SAME PLUME.

SO LET'S, IF YOU WOULD, PUT THE NEXT EXHIBIT UP WITH OUR OTHER CHEMICALS THAT YOU LOOKED AT. I THINK THE SECOND ONE WAS MTBE AND DIPE.

THE CLERK: THIS IS 1502; IS THAT CORRECT?

THE WITNESS: THIS IS 1501.

Q BY MS. BRIGHT: AND, AGAIN, DID YOU REACH ANY DETERMINATION AS TO WHERE TO DRAW THE EDGE OF THE PLUME BASED ON THE MTBE AND DIPE?

A. YES. IF YOU LOOK AT THE CONCENTRATIONS THAT WE HAVE IN THE MIDDLE OF THE PLUME, THEN LOOK AT WHAT YOU HAVE ON THE OUTSIDE, YOU KNOW, YOU COULD DRAW THE -- A NON-DETECT LINE HERE, A THOUSAND LINE HERE, AND THIS IS THE DIPE PLUME AND FOR THE MTBE PLUME, YOU HAVE LOTS OF DATA FOR THAT, YOU CAN SEE IT'S BASICALLY SURROUNDED BY NON-DETECTS, SO WE DRAW THAT PLUME IN THIS AREA RIGHT HERE (INDICATING).

THERE IS NO MTBE PLUME ASSOCIATED WITH THE B2 PLUME AND THERE IS A SMALL DIPE AND A LARGER MTBE PLUME ASSOCIATED WITH THE B1 PLUME.

Q. ALL RIGHT.

NOW, LET'S LOOK AT THAT THIRD PLUME MAP THAT YOU HAD, AND I THINK THAT WAS 1502. 1501,

SORRY.

AND NOW WHAT CHEMICALS ARE YOU USING HERE TO DESCRIBE THE PLUMES?

A. THIS IS THE EDB AND EDC, THOSE WERE THE LEAD SCAVENGER CHEMICALS. AND THE GREEN IS OUR EDC IN THE PINK HERE IS THE EDD.

AND YOU CAN SEE FOR THE B1 PLUME THERE IS NO EDB OR EDC WHICH GIVES YOU KIND OF A HINT OF WHERE IT ORIGINATED FROM, THE TIMEFRAME IT ORIGINATED FROM.

AND THEN HERE WE HAVE BOTH OF THOSE WHICH TELLS US THAT WE ARE DEALING WITH A LEADED GASOLINE.

AND IF YOU LOOK AT THE SAMPLES THAT WERE TAKEN ON THE BORDER YOU WOULD HAVE VERY GOOD, ALL THESE PLACES, YOU HAVE NON-DETECTS OR ZERO FOR BOTH OF THE TWO COMPONENTS.

SO ZERO, ZERO, ZERO, ZERO, ZERO, AND WE ARE NOT SHOWING UP HERE, BUT IF WE DID LOOK ALONG THE ARCO WE WOULD SEE ZEROS, ZERO, ZERO, ZERO, ZERO, ZERO.

SO THE POINT I THINK IS THAT ALL THESE PLUMES ARE BASICALLY THE SAME SHAPE. THEY ALL HAVE THE HOT SPOT BASICALLY IN THE SAME AREA.

THEY ARE ALL ORIENTED ALONG THE AXIS OF THE UTILITY WAY PIPELINE CORRIDOR.

THEY ARE ALL COMING FROM THE SAME SOURCE, THAT'S WHAT THAT TELLS US.

IN FACT, THIS ONE IS MAPPED PRETTY MUCH COMPLETELY TO NON-DETECT, REINFORCES THE INTERPRETATION THAT WE HAVE FROM THE OTHERS.

BUT YOU REALLY NEED TO LOOK, AS I WAS SAYING YESTERDAY, IS WHAT'S HAPPENING ALONG WILMINGTON SO THAT YOU DO HAVE PRETTY MUCH ZEROS ALL THE WAY AROUND THOSE TWO TO ISOLATE THESE PLUMES.

Q. ALL RIGHT. AND WE WILL GET TO THAT IN A MOMENT. BUT BEFORE WE DO THAT, I'D LIKE TO HAVE A LOOK AT THESE PLUMES AS THOUGH WE SLICED THAT LOAF OF BREAD IN HALF AND LOOK AT THEM SIDEWAYS IN THE WATER.

DO YOU HAVE SOMETHING THAT WOULD DO THAT?

A. YES.

Q. ALL RIGHT. PERHAPS WE COULD PUT TWO EXHIBITS IN FRONT OF THE WITNESS. THEY HAVE BEEN MARKED AS 1503 AND 1508 FOR IDENTIFICATION.

DR. DAGDIGIAN, DO YOU RECOGNIZE THESE EXHIBITS?

A. YES, I DO.

Q. WERE THOSE PREPARED UNDER YOUR SUPERVISION?

A. YES, THEY WERE.

Q. DID ANYBODY HELP YOU?

A. YES. MY ASSOCIATE, NANCY BERESKY HELPED ME PUT THESE TOGETHER.

A. YES, WE WERE.

Q. HOW COULD YOU DETERMINE THAT?

A. WELL, THERE WERE ANALYSES THAT WERE DONE IN 1990 AND 1991 AND THE -- THE ANALYSIS BASICALLY SHOWED THE BENZENE CONCENTRATIONS AT THE 500 SERIES WELLS.

Q. NOW, I BELIEVE YOU TOLD US THAT THE B2 PLUME IS OLD LEADED GASOLINE; IS THAT RIGHT?

A. RIGHT, THAT IS CORRECT.

Q. HOW DO YOU KNOW IT'S OLD LEADED GASOLINE?

A. WELL, WE HAVE LOOKED AT THE ANALYSIS FOR, AGAIN, I SAID EARLIER THAT THE TPH IN BENZENE REALLY DON'T TELL YOU A LOT ABOUT THE AGE BECAUSE EVERYTHING HAS GOT THAT IN THERE. SO YOU HAVE TO LOOK BEYOND.

ONCE YOU KNOW THAT YOU HAVE A LEADED GASOLINE, WHICH WE HAVE HERE, BECAUSE WE HAVE LEAD INSIDE THE FREE PRODUCT. WE HAVE EDB AND EDC, WHICH ARE THE LEAD SCAVENGERS, WE DON'T HAVE MTBE WHICH IS ANOTHER CLUE AND THEN WE KNOW FROM THE MIXED, FROM THE LEAD PACKAGE THAT THAT LEAD PACKAGE WAS ONLY ADDED TO GASOLINE BETWEEN 1960 AND 1982.

SO I KNOW I HAVE A LEADED GASOLINE AND I CAN PRETTY MUCH FIX THE DATE THAT THIS GASOLINE WAS MANUFACTURED BY THE KIND OF LEAD THAT WAS USED TO ADD THE LEAD PACKAGE TO THE GASOLINE.

SO THAT, COUPLED WITH THE FACT THAT WE HAVE MEASUREMENTS IN 1990 THAT WILL SHOW THE PLUME IS THERE, TELL ME THAT THIS GASOLINE WAS PRODUCED BETWEEN 1960 AND '82 AND WAS RELEASED WITHIN THAT TIME PERIOD.

Q. DR. DAGDIGIAN, I'D LIKE TO SHOW YOU AN EXHIBIT THAT'S BEEN INTRODUCED, EXHIBIT 5 -- EXHIBIT 556, WE HAVE A LARGE BOARD THAT'S GOING TO BE COMING OUT SHORTLY.

AND I'D LIKE YOU TO, IF YOU WOULD, BRIEFLY EXPLAIN FOR US FROM THIS EXHIBIT WHAT THE LEAD AND LEAD ADDITIVE PACKAGES TELL YOU ABOUT THE CHRONOLOGY OF THE GASOLINE?

A. OKAY. WELL, BASICALLY BY LOOKING AT THIS TIME LINE, THIS TIME LINE SHOWS DIFFERENT ADDITIVES BEING ADDED TO GASOLINE AND A TIME PERIOD AT WHICH THOSE ADDITIVES WERE ADDED TO GASOLINE.

SO LET'S TAKE A SIMPLE EXAMPLE.

IF WE LOOK AT THE EDB AND EDC, ETHYLENE DIBROMIDE, ETHYLENE DICHLORIDE, WE SEE THAT FROM 1960 TO ABOUT 1988 THAT THIS MATERIAL WAS ADDED TO GASOLINE.

SO WHEN YOU HAVE A GASOLINE WITH THIS MATERIAL IN IT, WE GO TO THIS CHART AND GO, GEE, THIS GASOLINE WAS MANUFACTURED WITHIN THIS PERIOD.

AND YOU CAN NARROW IT DOWN FURTHER AND FURTHER TO THE PERIOD IT WAS PRODUCED BY

LOOKING AT OTHER COMPOUNDS THAT ARE ON THIS CHART.

SO FOR OUR B2 PLUME, THE BIG ONE ALONG UTILITY WAY CORRIDOR, WE KNOW THAT THERE'S EDB AND EDC IN THAT PLUME, SO WE KNOW THAT THAT IS A LEADED GASOLINE AND IT WAS PRODUCED IN THE LEADED GASOLINE ERA WHICH EXTENDED PRIOR TO 1960, ACTUALLY, TO ABOUT 1988.

SO THAT'S OUR FIRST CLUE.

WE KNOW THAT THE LEAD PACKAGE, THIS IS A LEADED GASOLINE, THERE'S LEAD INSIDE THE FREE PRODUCT, WE HAD THAT ANALYZED AND THEN WE HAD THE LABORATORY DETERMINE WHAT KIND OF LEAD PACKAGE WAS ADDED.

AND THEY DETERMINED THAT IT WAS A MIXED ALKYL LEAD.

NOW, THE OTHER THING THAT YOU WILL TYPICALLY SEE IS WHAT'S CALLED TETRAETHYLLEAD. AND TETRAETHYLLEAD WAS USED AFTER THE MIXED ALKYL LEAD PERIOD, FROM 1980 ON.

AND IT WAS USED BEFORE.

SO WE HAVE A WINDOW BETWEEN 1960 AND 1980 THAT MIXED ALKYL LEAD WERE ADDED TO GASOLINE.

SO WHEN YOU FIND MIXED ALKYL LEAD IN GASOLINE, COUPLED WITH FINDING THE LEAD PACKAGE, YOU HAVE NOW TAKEN THE TIME PERIOD, 1960 TO 1988, AND SHRUNK IT DOWN TO 1960 TO 1980 THAT THIS GASOLINE WAS PRODUCED IN.

AND THAT'S EXACTLY THE CASE FOR THIS MATERIAL HERE.

BY LOOKING AT WHAT'S INSIDE THE FREE PRODUCT, AND THE FACT THAT WE HAVE KNOW MTBE, THAT'S ANOTHER THING. MTBE WAS ADDED TO GASOLINE PRETTY MUCH 1990 ON.

SO I DON'T HAVE THIS.

I HAVE GOT THIS. AND I HAVE GOT THIS.

SO THE ONLY THING THAT ACCOUNTS FOR THAT, THOSE OBSERVATIONS IS HAVING GASOLINE PRODUCED FROM 1960 TO 1980.

IT'S REALLY PRETTY SIMPLE.

NOW, LOOK AT THE B2 PLUME, IT'S A LITTLE BIT DIFFERENT.

AND --

Q. B2?

A. EXCUSE ME, THE B1 PLUME.

I AM LOOKING AT IT, SAYING THE WRONG THING.

THE B1 PLUME, WHICH IS THE LITTLE BENZENE PLUME OVER IN THIS AREA. OKAY.

NOW, THIS B1 PLUME DOES HAVE MTBE IN IT. IT ALSO HAS DIPE IN IT. AND WHEN WE GO BACK AND WE LOOK AT THE CHARACTERIZATION DATA FOR THIS, WE NOTICE THERE IS NO EDB OR EDC. THE LAST PIECE OF INFORMATION THAT WE HAVE IS THAT WHEN WE LOOK AT THE FREE PRODUCT, AND THERE HAPPENED TO BE

Q. HOW DID YOU DO THAT?

A. WELL, AGAIN, WE KNOW THAT THE RELEASE POINT IS RIGHT IN THIS AREA RIGHT HERE (INDICATING) BECAUSE THAT'S WHERE THE HIGHEST CONCENTRATIONS OF BENZENE ARE.

WE KNOW THAT MTBE AND DIISOPROPYL ETHER ARE LIKE INDY CARS WHEN IT COMES TO MOVING WITH GROUNDWATER, BUT THAT THAT CHEMICAL, THOSE KINDS OF CHEMICALS MOVE VERY QUICKLY, FASTER THAN BENZENE, SO WE COULD SEE THE BENZENE HERE, THE MTBE AND THE DIPE, THEY ARE STARTING TO SEPARATE OUT A LITTLE BIT OVER TIME, SO IT INDICATES TO US THAT THIS PLUME IS EXPANDING IN THIS DIRECTION FROM NORTH TO SOUTH.

Q. WERE YOU ABLE TO DETERMINE THE B1 PLUME WAS THERE BY 1990?

A. YES.

Q. NOW, WE HAVE TALKED ABOUT THE PLUMES THAT ARE ON THE SOUTH HALF OF THE WATSON CENTER.

HOW ABOUT THE NORTH HALF, HAVE YOU PREPARED ANY PLUME MAPS FOR THE PLUME THAT WE HAVE DESIGNATED AS PLUME A?

A. YES, I HAVE.

Q. ALL RIGHT. LET'S BRING THOSE UP TO THE WITNESS.

FIRST OF ALL, DR. DAGDIGIAN, WHY DON'T YOU PUT THAT UP FOR US AND TELL US IF YOU

RECOGNIZE THIS?

A. I DO.

Q. THIS IS EXHIBIT 1515.

YOU DO RECOGNIZE THIS? THIS WAS PREPARED UNDER YOUR DIRECTION?

A. YES, IT WAS.

Q. WOULD YOU TELL US WHAT'S DEPICTED ON PLUME A, EXHIBIT 1515?

A. OKAY. WELL, IF YOU REMEMBER THE ORIGINAL FIGURES THAT I PUT TOGETHER FOR THE WATSON CENTER, WE ARE NOW AT THE VERY TOP PORTION OF THE WATSON CENTER, SO IT BASICALLY COMES DOWN LIKE THIS AND OVER.

SO THIS IS THE NORTHERN BOUNDARY OF THE WATSON CENTER, HERE, AGAIN, IS THE TWO PIPELINE CORRIDORS THAT WE HAVE BEEN TALKING ABOUT, UTILITY WAY, THE DWP, AND THIS IS THE, WHAT WE ARE CALLING THE A-PLUME. AND THIS IS THE BENZENE PLUME MAP FOR THE A-PLUME.

SO JUST LIKE WE SAW BEFORE, WE HAVE DIFFERENT LEVEL CONTOURS, SO WE HAVE DRAWN OUR N.D. LINE IN HERE, AGAIN, WE DON'T HAVE ANY DATA OUT IN THIS DIRECTION, SO WE HAVE GOT QUESTION MARKS IN TERMS OF WHERE EXACTLY IT GOES TO NON-DETECT.

BUT HERE WE HAVE NON-DETECT, NOT DETECT, NON-DETECT, NON-DETECT, NON-DETECT, NON-DETECT.

SO WE HAVE PRETTY GOOD DEFINITION,

ON THIS SIDE IS A LITTLE BIT OF OPENNESS RIGHT HERE. BUT WE KNOW IT DOESN'T EXTEND VERY MUCH FURTHER THAN THIS BECAUSE WE HAVE A 99 HERE, A 29 HERE, SO WE ARE STARTING TO PETER OUT AND MOVE OUT IN THIS DIRECTION.

THE LAST -- THE HOT SPOT IS RIGHT IN THIS AREA (INDICATING).

Q. FIRST OF ALL, I STAND CORRECTED, THAT'S BEEN MARK AS EXHIBIT 1512.

AND ALSO, COULD YOU SHOW US WHERE THE EDGE OF THE WATSON CENTER IS. NOW, WHERE ARE WE?

A. WE ARE AT THE VERY NORTHERN SECTION, SO THIS IS THE TOP PORTION OF IT, AND IT COMES DOWN RIGHT THERE, THERE, AND LIKE THIS. SO IT'S ALL THIS AREA RIGHT IN HERE (INDICATING).

Q. AND WHILE WE ARE AT IT, WOULD YOU GET YOUR LITTLE FOOTBALL FIELD OUT FOR US SO WE CAN GET A SENSE OF HOW LARGE THIS PLUME IS?

A. THIS ONE IS ACTUALLY A LITTLE BIT SMALLER THAN WHAT WE LOOKED AT BEFORE.

AGAIN, ONE INCH EQUALS 50 FEET, THE FOOTBALL FIELD IS DRAWN 21 INCH EQUALS 50 FEET. SO THIS IS THE LITTLE BROTHER, ABOUT ONE, TWO, A LITTLE OVER TWO FOOTBALL FIELDS.

AND AGAIN, DEPENDING ON WHERE YOU LOOK AT IT, IF YOU LOOK AT IT UP HERE (INDICATING), IT'S A LITTLE OVER ONE FOOTBALL FEET WIDE. IF YOU

LOOK AT IT DOWN IN THE HOT SPOT, IT'S ONE, TWO, THREE; THREE FOOTBALL FIELDS WIDE.

Q. NOW, WHAT ABOUT LOOKING AT THIS PLUME IN TERMS OF OTHER CHEMICALS PRESENT. DID YOU DO THAT AS WELL?

A. YES, I DID.

Q. LET ME BRING THE WITNESS ANOTHER EXHIBIT WHICH HAS BEEN MARK AS 1513 FOR IDENTIFICATION.

IS THIS AN EXHIBIT THAT YOU HAVE CAUSED TO BE PREPARED, DR. DAGDIGIAN?

A. YES, IT IS.

Q. WHAT DOES THIS EXHIBIT SHOW US?

A. WELL, THIS IS PLUME A, AGAIN, BUT NOW INSTEAD OF LOOKING AT BENZENE, LIKE WE WERE BEFORE, WE'RE LOOKING AT DIPE. THIS IS A PLOT OF BOTH DIPE AND MTBE, THERE IS NO MTBE ON THIS AREA.

SO ALL THESE NON-DETECTS THAT YOU ARE SEEING IN THE FIRST NUMBER ARE NON-DETECT FOR MTBE AND THE SECOND NUMBER YOU SEE IN EACH SAMPLE IS THE DIPE CONCENTRATION.

SO HERE WE HAVE 560, 340, HOT SPOT, 4,100, DOWN BELOW, 390, AND NOTHING SAMPLED RIGHT THERE, NON-DETECT, NON-DETECT, NON-DETECT, NON-DETECT, NON-DETECT.

SO AGAIN, DEFINITION ALONG HERE AND A 45 AND 150, SO PROBABLY EXTENDS OUT HERE A WAYS BEFORE IT PETERS OUT, 24 UP THERE.

Q. WHY DON'T YOU FOCUS FOR A MINUTES, IF YOU WOULD, ON THE WEST SIDE OF THE DIPE PLUME WHERE YOU HAVE SHOWN THE LIGHT SHADED AREA. I SEE THERE'S A COUPLE QUESTION MARKS THERE.

CAN YOU TELL US HOW YOU DECIDED TO LOCATE THAT CONCENTRATION OF DIPE IN THE PLUME ON YOUR DRAWING?

A. SURE.

WE HAVE HERE AT C29, THE DIPE CONCENTRATION IS THE SECOND NUMBER, WE HAVE A NON-DETECT.

AND RIGHT HERE AT C24, WE HAVE A DIPE CONCENTRATION OF 560.

SO SOMEWHERE IN BETWEEN THERE, WE ARE GOING TO HAVE THIS LINE RIGHT HERE (INDICATING), WHICH IS 300 LINE, WILL BE IN BETWEEN ZERO AND 560, PROBABLY CLOSER TO 560.

SO I HAVE GOT A LITTLE CLOSER, 567.

AND THEN THE NON-DETECT SIDE, YOU KNOW, I COULD HAVE DRAWN IT MAYBE A LITTLE CLOSER TO THE NON-DETECT HERE AND EXPANDED THE SIZE OF THE PLUME. BUT HERE'S WHERE THE JUDGMENT OF DRAWING PLUMES KIND OF COMES IN. AS YOU START TO LOOK AT THE OTHER AREAS ON THIS SIDE, YOU KNOW, THAT DOESN'T LOOK LIKE A WHOLE LOT OF DISTANCE BETWEEN THE 300 LINE AND NON-DETECT, SO I EXTENDED IT UP ABOUT THE SAME DISTANCE.

WHICH IS KIND OF A CONSERVATIVE

THING TO DO IN THIS PARTICULAR PLUME.

Q. NOW, WHAT ABOUT SLICING THIS PLUME DOWN THE MIDDLE LIKE A LOAF OF BREAD AND SEEING WHAT THAT PLUME LOOKS LIKE ON THE GROUNDWATER, DID YOU PREPARE SECTIONS FOR THAT?

A. YES, I DID.

Q. LET'S BRING THOSE UP. LET THE RECORD REFLECT THAT I AM BRINGING THE WITNESS EXHIBITS 1514 AND 1515.

ALL RIGHT, TO START WITH, DO YOU RECOGNIZE THAT CROSS-SECTION B-B NORTH/SOUTH PLUME A AREA?

A. YES, I DO.

Q. WHO PREPARED THAT?

A. MYSELF AND NANCY BERESKY.

Q. WHY DON'T YOU SHOW US, IF YOU WOULD, ON THE PLUME A GASOLINE MAP WHERE THAT SECTION IS TAKEN?

A. OKAY, SURE.

Q. IF YOU CAN HOLD IT UP. IT'S HARD FOR EVERYBODY IN THE BACK TO SEE IT UNLESS IT IS BEING HELD UP.

A. OKAY. SO THIS FIRST PLUME SECTION IS THE B, B-PLUME SECTION AND YOU WILL NOTICE IT GOES THROUGH A PORTION OF THE PLUME, THEN THE PLUME STOPS FOR A SECTION, AND THEN IT GOES THROUGH THE PLUME AGAIN AND DOWN.

SO IT IS BASICALLY RUNNING RIGHT

ANY DATA WHEN YOU JUST DO A CPT.

Q. IS THAT THE PUSH TECHNIQUE?

A. THAT'S THE PUSH TECHNIQUE.

Q. SO WE DON'T HAVE ANY SOIL DATA ON THE, LET'S SEE, WHAT WOULD THAT BE, THE NORTH HALF OF THERE, BUT I SEE COLORS ON THE SOUTH HALF.

COULD YOU JUST BRIEFLY TELL US WHAT ALL THOSE COLORS MEAN?

A. SURE.

WE TRIED TO, WE HAVE A COLOR CODE HERE AND THE MORE PERMEABLE COLORS ARE THE SANDS, SANDS WITH SILT. SO THOSE ARE THE CHEMICALS -- THOSE ARE, EXCUSE ME, THE LAYERS OF SOIL THAT YOU WOULD EXPECT CHEMICALS TO MOVE THROUGH A LOT EASIER.

AND AS IT GETS DARKER, IT'S LESS PERMEABLE SOIL. SO YOU WOULD EXPECT WATER OR CHEMICALS TO GET HUNG UP IN THOSE LAYERS AND TO MOVE DOWNWARD AS EFFICIENTLY OR AS QUICKLY.

SO YOU COULD SEE JUST BY A GLANCE HERE THAT UP NEAR THE TOP WE GOT THESE IMPERMEABLE SOIL OR LESS PERMEABLE SOILS AND AS WE START TO MOVE DOWNWARDS THE COLORS ARE GETTING LIGHTER, INDICATING WE ARE GOING TO A MORE PERMEABLE AREA.

Q. NOW, FOR THE A-PLUME, HAVE YOU BEEN ABLE TO FIGURE OUT HOW OLD THAT PLUME IS?

A. YES, I HAVE.

Q. HOW DID YOU DO THAT?

A. WELL, I COMPARED IT TO -- THERE IS NO FREE PRODUCT INSIDE THE HOT SPOT AREA. BUT I WAS ABLE TO KNOW FROM THE FACT THAT THERE'S EDB, I CAN GET THE CHART OUT AGAIN -- OKAY, WE KNOW THAT THERE'S EDB AND EDC. WE KNOW THAT THE PLUME LOOKS LIKE THE B2 PLUME, THERE'S DIPE, THERE'S BENZENE.

SO WHAT WE HAVE IS A PLUME, SINCE WE HAVE THE EDB AND EDC, I THINK, ACTUALLY, WE ONLY HAVE EDC. IT DOESN'T MAKE ANY DIFFERENCE. BUT WE KNOW THAT AT MINIMUM, THIS IS A 1960'S TO THE 1985 PLUME.

Q. HAVE YOU BEEN ABLE TO ASCERTAIN WHETHER THE A-PLUME IS CHANGING OVER TIME?

A. YES.

Q. HOW DO YOU KNOW THAT?

A. WELL, WE HAVE SOME ANALYSIS AT WS-B27 AND, EXCUSE ME. YEAH, WE DO HAVE SORT OF A CONTROL POINT RIGHT HERE WITH OUR CPT AND WS-B27, THIS WAS DONE IN THE MIDDLE '90'S AND THIS WAS DONE EARLIER THIS YEAR. AND THEY ARE QUITE DIFFERENT.

SO THAT INDICATES TO ME THAT THIS THING IS CHANGING, CHEMICALS MAY BE COMING DOWN STILL AND THAT IT'S PROBABLY LENGTHENING OUT WITH THE DIRECTION OF GROUNDWATER FLOW.

Q. NOW, HAVE YOU BEEN ABLE TO DETERMINE THE CAUSE OF THE THREE GASOLINE PLUMES WHICH YOU HAVE IDENTIFIED ON THE WATSON CENTER?

A. YES, I HAVE.

TRIED TO SHOW YOU IS THAT IF WE LOOK AT THE BENZENE CONCENTRATIONS ONLY, WE HAVE GOT TO BREAK THE SECOND LAW OF THERMODYNAMICS, WE HAVE TO GO FROM LESS CONCENTRATED TO MORE CONCENTRATED.

WHEN WE START LOOKING AT THE OTHER DATA LIKE THE MTBE AND DIPE DATA AND THE EDB AND EDC DATA, AND THE TEL DATA, IT'S CLEAR THAT THESE PLUMES ARE DIFFERENT MATERIALS.

AND THAT THERE'S A BUFFER ZONE BETWEEN THE MATERIAL ON THE ARCO REFINERY AND ON THE WATSON CENTER.

AND MY CONCLUSION IS, THAT THIS PLUME DID NOT ORIGINATE FROM MATERIAL THAT MIGRATE OVER ON THE GROUNDWATER TO THE WATSON CENTER.

Q. NOW, WHAT IS THE BASIC CONTAMINATION THAT WE HAVE IN B2, WHAT IS IT?

A. THE BASIC CONTAMINATION IS A LEADED GASOLINE.

NOW, THERE ARE SMALL AMOUNTS OF OTHER THINGS IN THERE. POSSIBLY SOME DIESEL, POSSIBLY SOME JET FUEL, BUT IN TERMS OF THE RELATIVE PROPORTIONS, WE ARE LOOKING AT, AND WE KNOW THIS FROM OUR FINGERPRINTING, THAT'S THE LAST PIECE OF DATA, THE FINGERPRINTING OF THE FREE PRODUCT HERE TELLS US THAT THIS IS MAINLY, MAINLY A GASOLINE PLUME.

IT ALSO TELLS US THAT THE MATERIAL OVER HERE IS MAINLY JET FUEL AND DIESEL AND MIDDLE

DISTILLATE WITH SOME GASOLINE CONTAMINATING THAT.

SO WE DO HAVE OR COMMINGLED WITH IT, SO WE KNOW THERE IS SOME GASOLINE IN THIS AREA AND POSSIBLY SOME DOWN HERE BECAUSE WE SEE SOME OF THE GASOLINE BYPRODUCTS, BUT WE MAINLY, THIS MATERIAL IS WHAT WE WOULD CALL MIDDLE DISTILLATE, A MUCH BIGGER, HIGHER MOLECULAR WEIGHT MOLECULE THAN THE GASOLINE THAT WE SEE OVER HERE.

Q. WELL NOW, STILL ON THE SUBJECT OF THE ENEMY COMING BY SEA, IS IT CONCEIVABLE THAT THERE COULD HAVE BEEN A GASOLINE RELEASE ON THE ARCO REFINERY THAT WAS MIGRATING ON THE GROUNDWATER AND THAT AS THE GROUNDWATER ROSE, IT SLICED OR PREVENTED FURTHER MIGRATION BY RAISING THE WATER THROUGH THE PERMEABLE BARRIER, THEREBY LEAVING THIS PLUME OF GASOLINE TO MIGRATE OVER AND LINE ITSELF UNDER THE UTILITY WAY PIPELINE CORRIDOR?

A. IT DOESN'T MAKE ANY DIFFERENCE IF YOU HAVE A BARRIER OR NO BARRIER, IT'S GOT TO MOVE FROM HERE TO THERE. ALL THAT A BARRIER REALLY DESCRIBES OR HELPS EXPLAIN IS THE FACT THAT THEY ARE CUT OFF. SO WHAT YOU ARE REFERRING TO IS CALLED A STRATIGRAPHIC TRAP, GOING BACK TO THIS DRAWING, IS CONCEIVABLY IF WE HAD PRODUCTS MIGRATING OVER HERE TO UNDERNEATH THE UTILITY WAY PIPELINE CORRIDOR.

SO FROM ARCO TO THE WATSON CENTER, AND WE HAD SOME SORT OF IMPERMEABLE SOIL ZONE, IF

AND I DON'T SEE ANY OF THEM.

SO MY CONCLUSION IS, THAT THIS MECHANISM IS NOT THERE.

Q. OKAY. SO IT'S NOT ARCO.

WHAT ABOUT WATSON'S TENANTS, COULDN'T IT BE WATSON'S TENANTS CAUSING THE VERY PROBLEM THAT WATSON IS COMPLAINING ABOUT?

A. NO, IT ISN'T.

Q. WHY NOT?

A. THERE'S NO SOURCE. TO CREATE THE SIZE OF GROUNDWATER PLUME THAT WE ARE LOOKING AT, YOU NEED TO HAVE A TREMENDOUS AMOUNT OF MASS. A TREMENDOUS AMOUNT OF FUEL. IT'S GOT TO COME FROM SOMEWHERE. THIS IS WAY BIGGER THAN A TRADITIONAL GASOLINE STATION PROBLEM. YOU MIGHT BE ABLE TO FIND A GASOLINE STATION PLUME THAT IS A PORTION OF THIS SIZE BUT YOU WILL NOT FIND ONE THIS BIG.

SO THE AMOUNT OF MATERIAL THAT CAUSED IT HAD TO BE TREMENDOUS. AND WHEN WE DID OUR BACKGROUND RESEARCH ON THE WATSON CENTER, MY ASSOCIATE NANCY BERESKY, MADE A DILIGENT STUDY OF THE TENANTS, NOT ONLY THE CURRENT TENANTS, BUT THE HISTORICAL TENANTS AND LOOKED AT ALL TENANTS WITH UNDERGROUND TANKS. AND DID THOSE UNDERGROUND TANKS CONTAIN GASOLINE OF THIS VINTAGE, OR OTHER MATERIALS WHICH COULD HAVE CAUSED THIS KIND OF CONTAMINATION? AND HER CONCLUSION WAS NO. THERE ARE NO TANKS THERE. THERE ARE NO SOURCES. SO

WITHOUT A SOURCE, YOU CAN'T HAVE A TENANT CAUSING THIS PROBLEM.

THE ONLY TWO POTENTIAL SOURCES ARE ARCO AND THE SHELL REFINERY, INTER-REFINERY PIPELINES. THOSE ARE THE ONLY TWO.

Q. ALL RIGHT. YOU HAVE TOLD US WHY IT ISN'T ARCO. WHY, IN YOUR CONCLUSION, IS IT SHELL?

A. THE PROCESS THAT WE WENT THROUGH WAS A PROCESS OF ELIMINATION.

THE FIRST QUESTION WE ASKED WAS, COULD IT BE A TENANT. NO.

COULD IT BE SHELL OR ARCO -- NO.

WHAT'S LEFT, THE SHELL PIPELINES.

WE LOOK AT THE CONFIGURATION OF THE PLUMES, THEY MATCH THE AXIS OF THE PLUMES, MATCH THE AXIS OF THE PIPELINE CORRIDOR.

SO WE SEE A SHAPE THAT MAKES SENSE.

WE DO OUR DOWNHOLE FLUX STUDIES. OUR DOWNHOLE FLUX STUDIES SENSE CONTAMINATION COMING FROM THE SURFACE ALL THE WAY THROUGH THE SOIL COLUMN DOWN INTO THE GROUNDWATER WHERE THE PLUME IS.

WE SEE IN OUR FREE PRODUCT THAT OVER THE LAST COUPLE OF YEARS, THE FREE PRODUCT HAS GONE UP.

CONTAMINATION IS STILL COMING THROUGH THE SOIL COLUMN AND LEAKING INTO THE GROUNDWATER.

WE LOOK AT THE PIPELINES.

THE PIPELINES -- THE PIPELINE EXPERT TELLS ME THAT PIPELINES CARRYING GASOLINE OF THE VINTAGE THAT YOU NEED TO GENERATE THERE KIND OF PLUME, THE AGE GASOLINE YOU NEED, THAT THERE WERE GASOLINE PIPELINES DURING THAT TIME PERIOD.

IF WE LOOK AT THE PIPELINE COMPETENCY TEST, MANY OF THEM FAIL.

WE SEE SEVEN PIPELINES THAT WERE IN FROM 1965 TO 1972 AND TAKEN OUT OF SERVICE.

LASTLY, WE SEE A CHEMICAL CALLED DIPE. DIISOPROPYL ETHER. AND WE KNOW DIISOPROPYL ETHER IS FOUND AT THE TWO SHELL REFINERIES UP HERE, NORTH OF THE SITE, AND SOUTH OF THE SITE.

AND AT MORMON ISLAND WHERE NO PROCESSES WENT, JUST GASOLINE AND CRUDE OIL, THERE WAS NO PROCESSING HERE. GASOLINE WAS STORED HERE, AND A PORTION OF THIS REFINERY, AND WE SEE DIPE THERE.

DIPE WAS MANUFACTURED HERE, BUT ON THE OTHER SIDE OF THE REFINERY WHERE GASOLINE WAS STORED, WE ALSO SEE DIPE.

AND TO COMPLETE THE STORY, AT WS-B2, WHICH IS RIGHT HERE, AT THE BOTTOM OF UTILITY WAY CORRIDOR, WE SEE DIPE.

AND NOT ONLY DO WE SEE DIPE BUT THE CHEMICAL FINGERPRINTING EXPERT THAT WAS HIRED BY SHELL'S ATTORNEYS SAYS THAT THIS DIPE AND THIS

GASOLINE LOOKS LIKE THE SAME GASOLINE THAT CAME FROM A LEAK OF UTILITY WAY PIPELINE UP NEAR THE REFINERY ON PERRY STREET.

WHEN I ADD ALL THIS UP, THE ONLY CONCLUSION THAT I CAN COME TO IS THAT THE RELEASES CAME FROM THE PIPELINES ON THE UTILITY WAY CORRIDOR AND DWP PIPE LINE CORRIDOR AND IT CAME FROM SHELL PIPELINES.

Q. DR. DAGDIGIAN, I'D LIKE TO HAND YOU AN EXHIBIT THAT'S BEEN MARKED AS EXHIBIT 951 AND ASK YOU IF THAT IS THE ANALYSIS TO WHICH YOU JUST REFERRED?

A. YES, IT IS.

MS. BRIGHT: YOUR HONOR, WITH THE COURT'S PERMISSION, WE WOULD LIKE THE RESERVE THE REMAINDER OF DR. DAGDIGIAN'S TESTIMONY FOR PRESENTATION LATER IN OUR CASE. AND IF THAT'S ACCEPTABLE, HE'S AVAILABLE FOR CROSS-EXAMINATION.

THE COURT: ALL RIGHT.

MR. LESLIE: MY ONLY OBJECTION TO THAT, YOUR HONOR, IS THAT IF HE'S NOW DONE GIVING ALL THESE CONCLUSIONS HE HAS JUST GIVEN, HE, OF COURSE, SHOULDN'T GO BACK AND RE-TESTIFY TO THESE LATER. IF IT IS ON A COMPLETELY DIFFERENT SUBJECT MATTER, I THINK THAT'S ACCEPTABLE, OTHERWISE WE NEED TO PUT EVERYTHING ON NOW.

THE COURT: I THINK WE DISCUSSED THIS EARLIER AND IT IS GOING TO BE NEW SUBJECT MATTER.

IN THE SOIL GAS AS YOU ARE WORKING YOUR WAY DOWN THROUGH THE COLUMN?

A. CORRECT.

Q. THAT, IN FACT, IS --

MR. LESLIE: WELL, I WAS GOING TO REFER TO SOMETHING THAT'S NOT ON THE RECORD YET, SO I WILL WAIT UNTIL TOMORROW, YOUR HONOR.

THE COURT: IS THIS A GOOD TIME TO BREAK?

MR. LESLIE: YES, I THINK SO. I WILL GIVE UP THE 20 SECONDS.

THE COURT: ALL RIGHT, LADIES AND GENTLEMEN, DON'T DISCUSS THE CASE WITH ANYONE, DON'T FORM OR EXPRESS ANY OPINIONS ON THE CASE UNTIL IT IS FINALLY SUBMITTED TO YOU, WE WILL SEE YOU BACK TOMORROW MORNING, 9 O'CLOCK. HAVE A GOOD EVENING.

(THE PROCEEDINGS IN THE ABOVE-ENTITLED MATTER WERE ADJOURNED AND CONTINUED TO WEDNESDAY, JUNE 6, 2001, AT 9:00 A.M.)

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COURT OF APPEAL OF THE STATE OF CALIFORNIA

SECOND APPELLATE DISTRICT

WATSON LAND COMPANY, PLAINTIFF-RESPONDENT, VS. ATLANTIC RICHFIELD COMPANY, ETC., ET AL., DEFENDANTS-APPELLANTS,	SUPERIOR COURT CASE NO. BC 150161

APPEAL FROM THE SUPERIOR COURT OF LOS ANGELES COUNTY

HONORABLE WENDELL MORTIMER, JR., JUDGE PRESIDING

REPORTER'S TRANSCRIPT ON APPEAL

JUNE 6, 2001

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VOLUME 13 OF 37 VOLUMES
PAGES 1671 THROUGH 1866, INCLUSIVE

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OFFICIAL REPORTERS

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

DEPARTMENT 308 HON. WENDELL MORTIMER, JR., JUDGE

WATSON LAND COMPANY, A CALIFORNIA CORPORATION,

PLAINTIFF,

VS.

ATLANTIC RICHFIELD COMPANY, ETC., ET AL,

DEFENDANTS.

SUPERIOR COURT
CASE NO. BC 150161

REPORTER'S DAILY TRANSCRIPT OF PROCEEDINGS

WEDNESDAY, JUNE 6TH, 2001

VOLUME 12
PAGES 1671 THROUGH 1791, INCLUSIVE

APPEARANCES:
(SEE APPEARANCE PAGE)

LISA C. RIDLEY, CSR NO. 5886
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EXHIBITS

MR. LESLIE: OKAY, YOUR HONOR, I YIELD THE WITNESS.

THE COURT: ALL RIGHT. ANY REDIRECT?

MR. LESLIE: CAN I JUST GET MY STUFF ORGANIZED HERE FOR A SECOND.

SHE CAN GO AHEAD AND START TO ASK.

MS. BRIGHT: SO MUCH MATERIAL AND SO LITTLE TIME, YOUR HONOR.

REDIRECT EXAMINATION

BY MS. BRIGHT:

Q. BY THE WAY, DR. DAGDIGIAN, WHILE I AM DIGGING, LET'S VISIT A LITTLE BIT ABOUT SOMETHING.

COUNSEL JUST TOLD YOU THAT ARCO PURCHASED A TETRAMIX 25-50 OR 75 THAT HAD MIXED ALKYL LEAD IN IT, DID YOU HEAR THAT?

A. YES, I DID.

Q. NOW, THOSE MIXED ALKYLS, DO THOSE THINGS HAVE FEET, IF I LET ONE DOWN LOOSE ON THE CARPET HERE, WOULD IT JUST RUNAWAY?

A. I DON'T THINK SO.

Q. WELL, IF I HAD A GASOLINE THAT HAD MIXED ALKYL LEAD IN IT AND I POURED IT ON TO THE GROUND AND I JUST LET IT GO, WOULD IT POP UP OVER BY YOU AS HAVING ONLY TETRAETHYLLEAD IN IT?

A. NO.

Q. WHY IS THAT?

A. WELL, THAT WOULD DISOBEY THE SECOND LAW OF THERMODYNAMICS, AND THE -- BASICALLY THE COMPOUNDS ARE GOING TO GO AND GET DILUTED AS THEY MOVE OUT SO ALL THE COMPOUNDS ARE GOING TO MOVE TOWARDS WHERE, FROM THE POINT WHEN YOU LET THEM GO AND MOVE OUTWARD IN THAT DIRECTION.

SO THEY ARE NOT GOING TO SEGREGATE. THE GROUND IS NOT GOING TO CHANGE ONE INTO ANOTHER OR ALL OF THEM INTO TETRAETHYLLEAD, IT'S JUST NOT GOING TO HAPPEN.

Q. NOW, WHAT KIND OF LEAD PACKAGE DO WE HAVE IN OUR B2 PLUME?

A. WE HAVE MIXED ALKYL LEAD. AND THEY WERE FORMED, THEY WERE USED IN THE MANUFACTURE OF GASOLINE BETWEEN 1960 AND 1980.

Q. NOW, THE MIXED ALKYLS IS TETRAETHYLLEAD, ONE OF THOSE?

A. YES, IT IS.

Q. WELL, WHAT ARE THE OTHER ALKYLS, AS LONG AS WE ARE NAMING THE FAMILY TREE, LET ME HEAR THE SISTERS AND BROTHERS THAT GO ALONG WITH TETRAETHYLLEAD WHEN YOU HAVE THE FIVE LEAD ALKYL PACKAGE?

A. OKAY. YOU WOULD HAVE METHYLTRIETHYL LEAD, YOU WOULD HAVE DIMETHYLDIETHYL LEAD, YOU WOULD HAVE METHYL -- EXCUSE ME, TRIMETHYLETHYL LEAD AND YOU WOULD HAVE, ALSO HAVE TETRAMETHYL LEAD. SO YOU WOULD HAVE BASICALLY,

WHAT IS THAT, FIVE.

Q. I WAS WAITING FOR FREDL ETHEL LEAD.

SO THERE'S FIVE DISTINCT COMPOUNDS THAT ARE TOGETHER IN THAT PACKAGE, IS THAT RIGHT?

A. YES, IT IS.

Q. OKAY.

NOW, YESTERDAY ONE OF THE DOCUMENTS THAT COUNSEL BROUGHT TO OUR ATTENTION, THAT I AM PARTICULARLY GRATEFUL FOR, IS EXHIBIT 190.

AND I AM ASKING BRIAN TO GO GET THAT FOR US SO THAT I CAN PUT A COPY OF IT IN FRONT OF YOU.

BUT WHILE WE'RE WAITING FOR THE COPY FOR YOU TO SEE, I WANT TO PUT THIS UP. AND I WANT TO TALK TO YOU A LITTLE BIT, TOO, ABOUT THE SIGNIFICANCE OF DATES AND TIMES IN THE EVENTS THAT WE HAVE BEEN TALKING ABOUT.

THIS IS A GLOBAL GEOCHEMISTRY REPORT AND I BELIEVE, HAVE YOU SEEN THIS ONE BEFORE, DR. DAGDIGIAN?

A. YES, I HAVE.

Q. AND LET'S JUST, LET'S JUST ZOOM IN AND PICK UP THE DATE OF THIS REPORT. IN FACT, LET'S REALLY ZOOM IN ON THE DATE OF THIS REPORT.

LET THE RECORD REFLECT THAT WE ARE PLACING A COPY OF THE COMPLETE GLOBAL GEOCHEMISTRY REPORT THAT'S BEEN MARKED AS EXHIBIT 190 IN FRONT OF THE WITNESS.

THAT DATE, DR. DAGDIGIAN, THIS REPORT, WAS THIS REPORT PREPARED BEFORE THE BARRIER SYSTEM WENT IN ON THE ARCO REFINERY?

A. YES, IT WAS. THE BARRIER SYSTEM WAS BASICALLY INSTALLED DURING 1995 AND 1996, WENT INTO OPERATION IN EARLY 1996. SO THIS WAS ABOUT 10, 13 YEARS, EXCUSE ME, '96, I CAN'T ADD AND SUBTRACT HERE, ABOUT SEVEN YEARS PRIOR TO IT.

Q. PRIOR TO THE BARRIER SYSTEM.

AND BY THE WAY, YESTERDAY WE HEARD ABOUT SOME EXTRACTION OF THE PETROLEUM HYDROCARBONS THAT WERE GOING ON AT THE ARCO REFINERY IN THE LATE 1970'S AND EARLY '80'S, DO YOU KNOW WHERE THOSE ACTIVITIES WERE GOING ON?

A. YES. THEY WERE GOING ON ON THE POOL 1 AREA, WHICH IS BASICALLY ALL THE WAY ON THE EAST SIDE OF THE ARCO REFINERY, ABOUT AS FAR AWAY AS YOU COULD GET FROM WILMINGTON.

Q. SO, NOW WE ARE IN AUGUST OF 1989, I DON'T HAVE ANY PETROLEUM EXTRACTION WELLS ANYWHERE AFFECTING GROUNDWATER FLOW COMING ACROSS WILMINGTON TOWARDS THE WATSON CENTER; IS THAT RIGHT?

MR. LESLIE: I THINK SHE IS LEADING HER WITNESS.

MS. BRIGHT: YOU CAN LEAD AN EXPERT. I WILL ASK PERMISSION TO DO SO.

THE COURT: I WILL OVERRULE THAT OBJECTION. THANK YOU.

MS. BRIGHT: COULD YOU ANSWER THE QUESTION?

THE WITNESS: COULD YOU REPEAT IT?

Q BY MS. BRIGHT: YES. WE ARE IN 1989 AND YOU HAVE TOLD US WHERE THE EXTRACTION WELLS ARE. SO AUGUST OF 1989, ARE ANY OF THE EXTRACTION WELLS ON THE ARCO REFINERY AFFECTING THE FLOW OF GROUNDWATER ACROSS THE RESERVOIR OF 502 AREA IN WATSON CENTER?

A. NOT IN THE LEAST.

Q. NOW, I'D LIKE YOU TO TAKE A LOOK, IF YOU WOULD, LET'S START OUT AT WHAT'S PAGE 4 OF THIS DOCUMENT. I NOTICE THERE'S, I NOTICE THERE'S A TABLE HERE THAT'S GOT THE LAB REPORTS.

ARE YOU WITH ME?

A. YES, I AM.

Q. OKAY.

SO I AM LOOKING AT THIS TABLE AND I SEE THAT THERE'S TWO SAMPLES ON THIS TABLE, IN WHICH LEAD WAS DETECTED. DO YOU SEE THAT?

A. YES, I DO.

Q. WHICH SAMPLES ARE THEY, DR. DAGDIGIAN?

A. THEY ARE THE SAMPLES FOR SUBPOOL 2A AND 2C, WHICH ARE BASICALLY THE POOLS THAT ARE RIGHT ALONG WILMINGTON.

Q. NOW, LET ME HAVE YOU TAKE A LOOK AT PAGE 48. CAN YOU TELL US WHAT KIND OF LEAD WAS

DISCOVERED IN THE SAMPLES TAKEN FROM THE POOLS UNDER THE ARCO REFINERY IN 1985 -- '89, SORRY?

A. WELL, THE ONLY LEAD COMPOUND THAT THEY FOUND WAS TETRAETHYLLEAD.

Q. ALL RIGHT. NOW, WHAT DOES THAT MEAN, DR. DAGDIGIAN?

A. IT MEANS THAT THE GASOLINE THAT WAS RELEASED UNDERNEATH THE ARCO REFINERY IS DIFFERENT THAN THE GASOLINE THAT WAS RELEASED UNDERNEATH THE WATSON CENTER. AND WE KNOW THAT BECAUSE THE WATSON CENTER GASOLINE HAD MIXED ALKYL LEAD AND THE FACT THAT WE DON'T FIND TETRAETHYLLEAD ON THE ARCO REFINERY INDICATES THEY ARE DIFFERENT VINTAGE GASOLINES, HENCE, DIFFERENT GASOLINES.

Q. NOW, DR. DAGDIGIAN, DID YOU TAKE INTO CONSIDERATION THE FACT THAT THE LEAD COMPOSITION IS DIFFERENT IN PLUME B2 THAN IT IS IN THE ARCO POOL 2 IN DRAWING YOUR PLUME MAPS?

A. YES, I DID.

Q. WHY DID YOU DO THAT?

A. WELL, WHEN YOU DRAW PLUME MAPS, YOU WANT TO TRY AND USE ALL THE INFORMATION THAT'S AVAILABLE TO YOU. SO YOU WILL USE GROUNDWATER FLOW DIRECTION, YOU WILL USE OTHER CHEMICAL DATA, LIKE THE TYPE THAT WE TALKED ABOUT HERE, THE MIXED ALKYL LEAD, THE EDB, EDC, MTB, DIPE, AND BENZENE, AND TO TRY AND PUT TOGETHER A PICTURE WHICH EXPLAINS ALL OF THE DATA.

AND THAT'S WHAT I TRIED TO DO.

Q. NOW, AS PART OF WHAT YOU DID IN YOUR EVALUATION, DID YOU DETERMINE WHETHER OR NOT ARCO HAS, IN FACT, CONTAMINATED THE WATSON CENTER?

A. YES.

Q. WHAT DID YOU DETERMINE?

A. I HAVE DETERMINED THAT THERE ARE A PORTION OF THE FREE PRODUCT PLUME FROM ARCO HAS GONE ONTO THE WATSON CENTER AND A PORTION OF THE DISSOLVED PLUME HAS GONE ONTO THE WATSON CENTER?

Q. AND IN DRAWING THE PLUME MAPS, THAT WE ASKED YOU TO PREPARE, IDENTIFYING THE PLUMES THAT ARE ATTRIBUTABLE TO SHELL, DID YOU INCLUDE ANY OF THE ARCO CONTAMINATION IN THE PLUME MAPS THAT ARE BEING ATTRIBUTED TO SHELL?

A. NO, I DO NOT.

Q. LET'S REVISIT OUR LARGE PLUME MAPS FOR A SECOND.

DID YOU GET THE EDP, EDC MAP OUT FOR ME, PLEASE.

IS THERE AN EXHIBIT NUMBER ON THERE SOMEWHERE?

A. 1502.

Q. 1502, PUT THAT UP FOR A SECOND.

BEFORE WE TALK ABOUT THE EFFECTS OF THAT EXHIBIT AND LINE THE PLUMES AS YOU HAVE, DR. DAGDIGIAN, LET'S STOP FOR A SECOND AND VISIT ON THE SUBJECT OF LEAD.

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

DEPARTMENT NO. 307 HON. WENDELL MORTIMER, JR., JUDGE

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