

>> OKAY OF, TIME TO GET STARTED 09:30:20:18
AGAIN. 09:30:22:18
AT THIS POINT IN TIME I WOULD 09:30:23:01
LIKE TO ASK DR. SCOTT AUERBACH 09:30:25:12
TO MAKE PRESENTATION ON THE 09:30:27:09
UPDATE OF NTP RESPONSE THE TO 09:30:28:12
THE WEST VIRGINIA CHEMICAL STILL 09:30:30:03
SPILL. 09:30:34:18
09:30:35:01
>> SUPPOSE WE CAN GET STARTED. 09:30:49:01
SO I'M GOING TO GIVE A REPORT ON 09:30:50:12
THE NTP RESPONSE TO THE CHEMICAL 09:30:52:00
SPILL. 09:30:56:18
HERE IS AN OUTLINE FIRST I'M 09:30:57:01
GOING TO GIVE YOU A SHORT 09:31:00:00
BACKGROUND ON THE -- THEN I'LL 09:31:01:00
TALK ABOUT THE STUDY GOALS WE 09:31:03:15
HAVE SET FORTH AT INITIATION OF 09:31:06:27
THESE STUDIES. 09:31:08:28
TALK ABOUT THE RESULTS, AND THEN 09:31:09:19
GO BACK AND READDRESS GOALS TO 09:31:12:21
ANSWER THE QUESTION ASSOCIATED 09:31:18:09
WITH THE GOALS. 09:31:18:25
SO ON JANUARY 9TH 2014 IN THE 09:31:21:10
MORNING, RESIDENTS OF 09:31:25:09
CHARLESTON, WEST VIRGINIA BEGAN 09:31:26:25
TO NOTICE A SWEET SMELL ALONG 09:31:28:27
THE LINES OF LICORICE, REPORTED 09:31:30:27
TO THE WEST VIRGINIA DEPARTMENT 09:31:34:25
OF ENVIRONMENTAL PROTECTION. 09:31:36:00

ALSO IN THE MORNING O JANUARY 9 09:31:37:06
FREE MINISTRY REPORT AD LIQUID 09:31:43:10
CRUDE NCHM USED TO WASH COAL 09:31:45:04
WITH SPELL FROM LEAKING TANK OF 09:31:48:10
THE WEST VIRGINIA RIVER, ONE AND 09:31:49:24
A HALF MILES OFF STREAM OF THE 09:31:54:28
FACILITY ABOUT 300,000 PEOPLE 09:31:56:27
ACROSS NINE COUNTIES IN WEST 09:31:58:21
VIRGINIA ON THE SLIDE HERE 09:32:01:22
COMPONENTS OF CRUDE FCHM WAS THE 09:32:04:24

MAJOR COMPONENT HIGHLIGHTED. 09:32:08:00 46

NOT INITIAL HI REPORTED ON THE 09:32:10:12

9TH BUTT STRIP PBH WAS ALSO 09:32:12:01

ABOUT 7% OF THE MIXTURE AND 09:32:15:12

CONTAINS (INAUDIBLE) CDC 09:32:16:21

RESPONDED AND ISSUED ONE PBM 09:32:28:06

SCREENING LEVEL FOR -- BASED ON 09:32:32:13

LD 50 STUDY ON MS DATA WHICH IS 09:32:34:03

HARD TO DO. 09:32:37:06

OTHERS PROVIDE CHEMICAL MAKER OF 09:32:40:00

CRUDE MCHS. 09:32:42:27

PEAK LEVELS IN THE TREATED WATER 09:32:44:24

MCHM WERE 3.5 CTM BUT WENT 1 CPM 09:32:46:12

WHICH DRINKING WATER ADVISORY 09:32:53:01

LEVEL. 09:32:55:07

IT'S UNKNOWN WHAT CONCENTRATION 09:32:55:15

IN THE TAP WATER WAS, PEAK LEVEL 09:32:59:15

FINISH IN THE RAKE OF 3.5 AND WE 09:33:01:04

ALSO DON'T KNOW THE MIXTURE WAS 09:33:03:12

JANUARY 16th A WEEK LATER A 09:33:11:10

RE-EVALUATION OF RELEASE 09:33:13:06

COLLECTION OF STUDIES A ARE THE 09:33:18:06

OFEN -- LOT OF UNCERTAINTY, THE 09:33:22:06

MAKE OF CRUDE MCHF. 09:33:25:18

PEAK LEVELS IN THE TREATED 09:33:27:18

WATER, THIS IS MCHM WERE 09:33:28:18

APPROXIMATELY 3.5 PPM BUT WENT 09:33:30:24

BELOW 1 PPM WHICH WAS WATER 09:33:33:04

ADVISORY LEVEL. 09:33:37:07

DRINKING WATER ADVISORY LEVEL. 09:33:38:01

UNKNOWN WHAT THE CONCENTRATION 09:33:40:12

IN TAP WATER WAS ON PEAK LEVELS 09:33:41:21
OF FINISHED WATER WITHIN THE 09:33:43:07
RANGE OF 3.5 AND WE DON'T KNOW 09:33:45:15
WHAT THE MIXTURE WAS AT THE 09:33:47:18
TIME. 09:33:49:00
ON JANUARY 16th ABOUT A WEEK 09:33:49:06
LATER, THERE WAS RE-EVALUATION 09:33:54:09
OF DRINKING WATER ADVISORY 09:33:56:00
LEVEL, THIS IS BECAUSE EASTMAN 09:33:57:25
RELEASED COLLECTION OF STUDIES 09:33:59:24
ONE WHICH WAS A 28 DAY STUDY IN 09:34:01:21
RATS. 09:34:05:00
WHICH HAD A (INAUDIBLE) 09:34:07:00
APPROXIMATELY 100 MGs PER KG 09:34:09:21
PER DAY, SMALL KIDNEY AND BLOOD 09:34:13:18
CELL EFFECTS, THAT WAS ABOUT 100 09:34:15:16
MGs PER KG PER DAY USED AS 09:34:17:22
POINT OF DEPARTURE AND NUMBER OF 09:34:20:22
SAFETY FACTORS APPLIED. 09:34:22:15

LIMITED DATABASE, THAT'S ONE OF 09:34:24:12 47

THE REASONS WE'RE HERE TODAY. 09:34:25:24

THAT'S A EXTRAPOLATION FACTOR OF 09:34:27:03

TEN AND SENSITIVE INDIVIDUALS, 09:34:29:15

ON FACTOR OF TEN. 09:34:31:09

MISGAVE A DOSE NOT ANTICIPATED 09:34:32:24

TO CAUSE ADVERSE EFFECTS OF .1 09:34:35:06

MG PER KG PER DAY, DO A 09:34:38:07

DERIVATION DO PENDING WHO TO 09:34:41:04

PROTECT, CKC DECIDE AD TEN 09:34:43:12

KILOGRAM CHILD, THERE'S 09:34:46:18

ASSUMPTION OF CERTAIN AMOUNT OF 09:34:48:09

DRINKING WATER TO CONSUME, THIS 09:34:49:27

GAVE 1 P PM LEVEL TO REACH -- 09:34:51:10

NTP HELPED REVIEW THESE 09:34:54:21

CALCULATIONS. 09:34:56:27

ALSO IN JANUARY, WHEN THESE 09:34:57:27

THINGS HAPPENED THOUGH NCP MAY 09:35:02:28

NOT BE VOCAL WE'RE PAYING 09:35:05:06

ATTENTION AND WE DID SOME 09:35:06:27

INITIAL SA RNA ANALYSIS. 09:35:08:06

JUST TO SEE IF THERE WAS 09:35:10:24

ANYTHING OF REALLY SUBSTANTIAL 09:35:13:06

CONCERN A AT THE OUTSET. 09:35:15:09

AND WE DID NOT FIND ANYTHING 09:35:17:10

AFTER EVALUATING SAR MODELS SO 09:35:23:01

WE THOUGHT IT WAS LIMITED TOX O 09:35:27:09

COLLAGECAL CONCERN AT THE TIME 09:35:28:27

BUT BECAUSE OF LACK OF DATA 09:35:29:27

THERE'S UNCERTAINTY. 09:35:31:09

-- UNCERTAINTY. 09:35:32:09

THIS UNCERTAINTY PERSISTED FOR 09:35:34:06
SOME TIME AND THERE WERE COUPLE 09:35:39:13
OF ISSUES. 09:35:42:07
TWO BIG ONES WERE LIFE STAGE 09:35:43:04
ASSOCIATED UNCERTAIN THEITIES 09:35:47:25
BECAUSE OF NO IN UTERO EXPOSURE 09:35:50:00
OR TOXICITY DATA IN RODENTS FOR 09:35:52:21
NCHM AND THE QUESTION WHETHER OR 09:35:54:24
NOT A POINT OF DEPARTURE WAS 09:35:56:15
ACCURATE OR WAS APPROPRIATE. 09:36:02:07
SO AROUND THAT TIME, CDC 09:36:04:22
REQUESTED THAT THE NTP UNDERTAKE 09:36:08:19
RESEARCH ADDRESSING THESE 09:36:10:28
LINGERING UNCERTAIN THEITIES AND 09:36:12:03
ALSO AT THAT TIME THIS WAS 09:36:14:03
SOMEWHAT A BY-PRODUCT OF A 09:36:15:28
MEETING BETWEEN DR. BUCKER AND 09:36:17:13
DR. FRIEDEN. 09:36:19:19
ONE THING THAT WAS A FOCUS OF 09:36:22:03

THE NOMINATION WAS TO BASICALLY	09:36:24:04	48
CREATE DATA IN A YEAR.	09:36:26:00	
THAT WILL HELP PUBLIC HEALTH	09:36:27:24	
DECISION MAKERS.	09:36:30:21	
SO MOVING ON NOW TO GOALS OF THE	09:36:31:18	
NTP STUDY.	09:36:36:19	
THE FIRST THING THAT WE WANTED	09:36:38:27	
TO ADDRESS WAS TO REDUCE	09:36:40:00	
UNCERTAINTY AROUND POINT OF	09:36:42:09	
DEPARTURE AND SAFETY FACTORS	09:36:44:00	
USED TO DEVELOP SAFETY WATER	09:36:45:27	
ADVISORY LEVEL.	09:36:48:03	
TWO CHEMICALS DRINKING WATER	09:36:49:03	
ADVISORY LEVELS, I MENTIONED	09:36:50:27	
ONE, WERE DEVELOPED AND THEY	09:36:52:13	
USED POINTS OF DEPARTURE MCHM	09:36:53:24	
100 MG PER KG PER DAY CANNEDNY	09:36:57:27	
AND BLOOD EFFECTS AND PPH,	09:37:01:00	
ACTUALLY RATHER WELL STUDIED AND	09:37:03:07	
THE POINT OF DEPARTURE FOR THAT	09:37:05:00	
DEVELOPMENT OF THAT DRINKING WAS	09:37:08:12	
40 MG PER KG PER DAY FROM	09:37:10:03	
MATERNAL TOXICITY STUDY.	09:37:12:06	
FROM THOSE DRINKING WATER	09:37:14:10	
ADVISORY LEVELS WERE DEVELOPED	09:37:16:21	
SO NCHM WAS ONE PMM 0.1 MG PER	09:37:18:13	
KG FOR A TEN MILLIGRAM CHILD AND	09:37:24:07	
0.4 MG PER KG PER DAY FOR A	09:37:28:15	
PREGNANT WOMAN.	09:37:32:12	
THIS WAS THE BACKGROUND REDUCING	09:37:33:16	
UNCERTAINTY, WE WANT TO	09:37:37:12	

DETERMINE IF THERE ARE LIFE 09:37:38:24
STAGE SPECIFIC HAZARDS. 09:37:40:15
AND THAT WAS IN RELATION TO 09:37:42:00
PARTICULARLY IN RELATION TO IN 09:37:43:21
UTERO DEVELOPMENT AND THEN 09:37:45:16
SCREEN COMPONENTS THE MAKE SURE 09:37:48:04
TO DETERMINE SIGNIFICANT 09:37:49:12
DEVIATIONS IN POTENCY OR TOX 09:37:50:04
COLLAGIC PROPS. 09:37:52:06
-- TOXICOLOGIC PROPERTIES. 09:37:53:06
FROM THOSE GOALS EMERGED THESE 09:37:56:16
IS THE STUDIES HERE, WHAT YOU 09:38:00:06
HAVE ARE CHEMICALS FROM THE 09:38:03:15
SPILL ON THE LEFT MCHM AT TOP 09:38:06:00
AND WE ALSO INCLUDED A TECHNICAL 09:38:09:19
PRODUCT OR ACTUAL CRUDE MIXTURE 09:38:13:09
IN OUR SETS. 09:38:14:24
GOING ACROSS THE TOP HERE A 09:38:16:21
NUMBER OF STUDIES THOSE IN GREEN 09:38:18:12

ARE GUIDELINE STUDIES SO 09:38:21:21 49
DEVELOPMENTAL TOXICITY, DERMAL 09:38:24:18
IRRITATION AND HYPERSENSITIVITY, 09:38:26:09
MOST AROUND THE TABLE RECOGNIZE 09:38:29:10
THIS IN IS AN LLA ASSAY AND 09:38:30:07
BACTERIA MUTAGENICITY. 09:38:34:04
WE HAD GUIDELINE STUDIES WORKING 09:38:37:24
TRUE EITHER -- THROUGH AS 09:38:39:18
SCREENING STUDIES IN VIVO 09:38:41:18
SCREENING STUDIES AT NTP OR IN 09:38:43:09
VITRO SCREENING THROUGH THE TOX 09:38:46:04
21 EFFORT. 09:38:48:21
YOU CAN SEE HERE, AS YOU GO FROM 09:38:49:18
LEFT TO RIGHT WHICH IS MOST 09:38:51:28
RESOURCE INTENSIVE TO LEAST YOU 09:38:53:06
GET MORE CHEMICALS EVALUATED IN 09:38:56:27
DIFFERENT STUDIES. 09:38:59:12
NOWLY WORK YOU THROUGH THE 09:39:00:09
RESULTS TO DATE. 09:39:06:27
I SHOULD EMPHASIS -- EMPHASIZE 09:39:07:22
SOME STUDIES ARE NOT COMPLETE AT 09:39:10:21
THIS POINT. 09:39:12:06
I WILL TRY TO MAKE CLEAR WHICH 09:39:12:16
ARE STILL WAITING FOR SOME DATA 09:39:13:27
ON. 09:39:15:09
SO WE'RE GOING TO WORK FROM THE 09:39:15:22
LEAST RESOURCE INTENSIVE TO THE 09:39:21:01
MOST, START WITH STRUCTURE 09:39:22:27
ACTIVITY RELATIONSHIPS, I 09:39:24:12
BELIEVE YOU HER ABOUT THESE 09:39:25:27
STUDY LAST TIME. 09:39:27:06

SO WHAT THESE ARE, WE DID 09:39:29:04
EVALUATED -- USE SIX SOFTWARE 09:39:30:12
PLATFORMS CONTAINING 200 MOLDS 09:39:35:21
COVERING TOX LOGICAL END POINTS 09:39:37:16
MANY WHICH YOU'LL SEE HERE 09:39:42:18
TODAY. 09:39:43:28
TO USE BASICALLY THE CHEMICAL 09:39:44:04
STRUCTURE TO PREDICT TOXICITY OF 09:39:46:18
AGENTS. 09:39:48:12
AND WHAT THIS IS, IS JUST -- 09:39:49:07
IT'S A SET OF SOFTWARE TOOLS 09:39:50:27
THAT ALLOW YOU TO RAPIDRY 09:39:53:00
IDENTIFY POTENTIAL -- RAPIDLY 09:39:54:03
IDENTIFY TOXICOLOGICAL HAZARDS. 09:39:56:19
SO THE LARGE BAR ACROSS THE 09:40:01:06
BOTTOM YOU SAW THE TANKS ABOVE. 09:40:03:09
THE POSITIVE PREDICTIONS 09:40:05:16
MONITORING HIGH CONFIDENCE WERE 09:40:07:04
FOR DEVELOPMENTAL O TOXICITY AND 09:40:08:19

IRRITANCY AND WE ADDRESSED THOSE 09:40:10:21 50

IRRITANCY. 09:40:13:04

AND THE PPH CLASS WE LOOKED IN 09:40:14:12

DEPTH AT THESE DIFFERENT MODELS 09:40:19:07

AND WHAT THE BASES OF THESE CALS 09:40:20:19

WERE AND REALLY DIDN'T FIND 09:40:24:13

ANYTHING THAT WERE WE CONSIDERED 09:40:25:25

MODERATE TO HIGH CONFIDENCE. 09:40:29:15

SO WE DID NOT ANYTHING FOR THE 09:40:30:21

PBH CLASS. 09:40:33:24

NEXT WE MOVE TO EVALUATE HIGH 09:40:35:15

THROUGH PUT SCREENING DATA FROM 09:40:40:03

TOX 21. 09:40:41:21

27 CELL BASED SCREENING STUDIES 09:40:42:10

THAT EVALUATE CHEMICAL EFFECT ON 09:40:48:00

TOXICOLOGICAL -- EXAMPLES 09:40:51:21

INCLUDE STRESS SIGNALING PATH 09:40:53:18

WAYS LIKE HEAT SHOCK AND 09:40:55:09

ANTIOXIDANT RESPONSE AND ALSO 09:40:57:28

HORMONE RELATED ASSAYS ESTROGEN 09:40:59:09

RECEPTOR. 09:41:03:24

ANDROGEN RECEPTOR. 09:41:04:09

09:41:05:19

>> CAN I AM I SPEAKING LOUD 09:41:11:15

ENOUGH? 09:41:14:19

FINDINGS WERE NO SPILLED 09:41:15:06

CHEMICALS INCLUDING MCH WERE 09:41:16:27

ACTIVE UP TO 92 MICROMOLAR, 09:41:18:24

OUR TEST MAKES 10 TO 20 PBM IN ANY 09:41:21:09

ASSAYS TO DATE, THESE INCLUDE 09:41:25:21

COUPLED CYTOTOXICITY ASSAY FOR 09:41:27:24

THE SPECIFIC PATHWAYS WE AT. 09:41:29:24
ONE THINGS WE WILL NOTE IS 09:41:34:01
PROBABLY THE ONLY GROUP IN THE 09:41:35:25
WORLD TO DO CHEMISTRY ON 8,300 09:41:38:10
COMPOUNDS ON THROUGH PUT 09:41:41:10
SCREENING AND WE'RE STILL 09:41:42:18
WORKING ON THAT. 09:41:43:18
SO THE NEGATIVES UNLIKELY, 09:41:44:03
HIGHLY UNLIKELY, THE NEGATIVES 09:41:47:21
MAY TURN INTO NO CALL BECAUSE 09:41:49:18
IT'S POSSIBLE THAT MAYBE 09:41:52:03
CHEMICAL WITH WAS NOT IN THE 09:41:53:10
WELL. 09:41:54:13
AGAIN, HIGHLY UNLIKELY. 09:41:54:21
SO THESE ARE CHEMICALS HERE AT 09:41:56:03
THE BOTTOM INACTIVE ACROSS ALL 09:42:01:07
27 ASSAYS. 09:42:03:09
THE NEXT SET OF STUDY WERE 09:42:04:06
NEMATODE TOXICITY STUDIES AN 09:42:08:03

THESE LOOK AT GROWTH FEEDING AND	09:42:10:24	51
REPRODUCTION IN NEMATODE	09:42:13:09	
FOLLOWING CHEMICAL EXPOSURE.	09:42:14:24	
THIS IS A DIAGRAM OF LIFE PSYCH	09:42:16:10	
OF THE NEMATODE SHOWING YOU	09:42:17:13	
WHERE THESE DIFFERENT END POINTS	09:42:19:09	
ARE EVALUATED.	09:42:20:09	
ALL THESE CHEMICALS WERE	09:42:21:03	
EVALUATED AND ALL WERE INACTIVE.	09:42:26:24	
THIS IS UP TO 200 MICROMOLAR,	09:42:30:03	
20, 40 PPM.	09:42:33:06	
MCHM WAS EVALUATED, THE PPH, DIP	09:42:34:15	
PENSACOLAH AND CRUDE MIXTURE	09:42:41:27	
INACTIVE.	09:42:43:07	
NEXT SET OF STUDIES WERE	09:42:44:00	
ZEBRAFISH DEVELOPMENTAL TOXICITY	09:42:48:13	
STUDIES.	09:42:51:03	
WHAT THESE ARE, WE LOOK AT	09:42:51:28	
DEVELOPMENT AND BEHAVIOR AND	09:42:54:21	
ZEBRAFISH EMBRYOS FOLLOWING	09:42:56:13	
CHEMICAL EXPOSURE.	09:42:59:06	
TAKE A FERTILIZED EMBRYO, TREAT	09:43:00:09	
WITH CHEMICAL 24 HOURS LATER	09:43:03:27	
EVALUATE A NUMBER OF SHORTER	09:43:06:06	
TERM END POINTS INCLUDING	09:43:08:12	
SPONTANEOUS RUE MINUTE OR	09:43:09:22	
RUDIMENTARY BEHAVIOR ASSESSMENT	09:43:11:27	
IN ADDITION TO GROSS END POINTS	09:43:14:00	
FOR STRUCTURAL ABNORMALITIES.	09:43:15:21	
THEN FIVE DAYS AFTER CHEMICAL	09:43:18:13	
TREATMENT LOOK AT MUCH BROADER	09:43:21:06	

SET OF PHENOTYPES IN ADDITION TO 09:43:22:15
TOUCH RESPONSE WHICH IS 09:43:26:03
BEHAVIOR, CONSIDER BEHAVIOR -- 09:43:27:03
THESE ARE MALFORMATION END 09:43:30:04
POINTS. 09:43:31:21
PLOTTINGS WERE THAT ONE CHEMICAL 09:43:32:01
DIMETHYL DECARBOXYLATE OR KNOWN 09:43:38:16
DMCHDC WHICH IS LESS THAN 1% OF 09:43:43:07
SPILLED MATERIAL, WAS TOXIC TO 09:43:46:00
DEVELOPING FISH AT DOSE OF 6.3 09:43:48:13
MICROMOLAR. 09:43:51:13
THIS TRANSLATES INTO 09:43:52:12
APPROXIMATELY 13 PPM. 09:43:53:27
THIS IS RELEASED IN UPDATE 09:43:55:25
RECENTLY. 09:43:57:21
THE SPECIFIC EFFECTS FOUND WERE 09:43:58:07
CURVED OR BENT ACCESS IN THE 09:43:59:25
FISH, PERICARDIAL EDEMA, AND 09:44:01:15
MORTALITY AT THE HIGH DOSE. 09:44:03:24

THE OTHER CHEMICALS INCLUDES 09:44:05:24 52

MCHM CRUDE MCHM AND PPH. 09:44:11:00

NOTICE THE LIST IS SHORT. 09:44:14:22

WE ARE STILL TESTING CHEMICALS, 09:44:17:13

WITH WE'LL HAVE THE DATA SOON. 09:44:20:06

INACTIVE IN WHICH MICRO THESE 09:44:22:06

HAVE BEEN TESTED AND ACTIVE AND 09:44:25:09

THIS IS THE ONE THAT WAS ACTIVE. 09:44:26:18

NEXT WE PERFORM BACTERIAL 09:44:27:24

MUTAGENESIS STUDIES. 09:44:33:27

THESE ARE -- DON'T NEED TO 09:44:36:12

EXPLAIN TO THIS CROWD. 09:44:38:18

THE FINDINGS FOR THOSE NOT 09:44:42:09

FAMILIAR I SHOULD TAKE A MOMENT. 09:44:45:12

WHAT THIS DOES IS EVALUATE IT IS 09:44:47:10

CHEMICAL TO CHANGE DNA. 09:44:49:21

AND IF CHEMICAL HAS ABILITY TO 09:44:50:21

CHANGE DNA HAS INCREASE POTENT 09:44:53:22

TO BELIEVE CAUSE CANCER. 09:44:55:27

SO THAT'S WHY WE EVALUATE -- USE 09:44:56:18

-- IT'S A STANDARD DIED LINE 09:45:00:09

ASSAY USED FOR YEARS THAT IS 09:45:02:00

EXTENSIVELY VALIDATED. 09:45:04:18

NONE OF THE CHEMICALS FROM THE 09:45:06:21

SPELL TESTED TO DATE WE'RE STILL 09:45:10:24

WAITING ON A COUPLE, THIS 09:45:12:21

INCLUDES MCHM AND PAST MUTAGENIC 09:45:14:03

IN THREE STRAINS OF BACTERIA. 09:45:18:07

TESTS CONDUCTED WITH OR WITHOUT 09:45:21:06

METABOLIC ACTIVATION SO SIX 09:45:22:24

DIFFERENT TESTS. 09:45:24:15

ALL IN ACTIVE FOR GENERATING DNA 09:45:25:09
MUTATIONS. 09:45:29:03
THIS NEXT SET OF STUDIES I WILL 09:45:29:24
TAKE A LITTLE MORE TIME ON. 09:45:34:25
TO EXPLAIN HOW WE WORKED THROUGH 09:45:36:04
THE ANALYSIS AND WHAT THEY ARE. 09:45:40:06
THESE IS IN VIVO LEVEL SCREENING 09:45:42:06
STUDY TRYING TO DEVELOP 09:45:47:21
HOPEFULLY NEAR FUTURE IF 09:45:49:04
SOMETHING LIKE THIS HAPPENS 09:45:50:15
AGAIN, HOPE IT DOESN'T, OF 09:45:51:27
COURSE, WE CAN TURN THE 09:45:53:03
INFORMATION AROUND AROUND AND 09:45:58:04
SAY MONTH, MONTH AND A HALF 09:45:59:24
ASSUMING ENOUGH CHEMICAL, THIS 09:46:01:27
IS IN VIVO DATA WHICH WILL GIVE 09:46:03:06
YOU HOPEFULLY IN VIVO VERY 09:46:05:06
SENSITIVE IN VIVO POINT OF 09:46:07:00
DEPARTURE TO WORK OFF OF. 09:46:10:06

WE USE RATS 8 TO 10 WEEKS OLD, 09:46:11:15 53

FIVE PEAK DOSES AND EUTHANIZE 09:46:15:00

THEM 24 HOURS LAST DOSE. 09:46:17:06

IN THIS CASE WE HAVE SIX DOSES 09:46:18:18

AND A VEHICLE CONTROL WIDE DOSE 09:46:22:15

RANGE DOWN TO .1 MG PER KG PER 09:46:25:07

DAY USED TO DEVELOP LEVEL FOR 09:46:28:22

MCHF. 09:46:31:15

THE ONES WE FOCUS ON ARE THE 09:46:33:09

GENE EXPRESSION BUT ALSO 09:46:35:04

INCORPORATED A NUMBER OF 09:46:36:04

OTHER ENPOINTS THAT ARE MORE 09:46:37:06

TRADITIONAL IN NATURE INCLUDING 09:46:39:15

HEMATOLOGY, CHEMISTRY, CLINICAL 09:46:41:12

OBSERVATION ORGAN WEIGHT AND WE 09:46:43:09

ALSO PUT INTO, NUCLEI STUDIES 09:46:45:12

ARE DONE INDEPENDENT ON THE GENE 09:46:49:28

TOX CONTRACT BUT WE INCORPORATED 09:46:52:06

TO THESE STUDY AND VALUED AT THE 09:46:54:06

T TOX LABORATORIES. 09:46:55:24

FUNDAMENTALLY, WHAT THIS IS, SO 09:46:57:18

IMAGINE YOU CAN LOOK EVERY GENE 09:47:02:12

IN THE GENOME AND SEE WHAT 09:47:07:24

MOVES, SCREENING FOR BIOLOGICAL 09:47:08:21

ACTIVITY, USE A WIDE NET THAT'S 09:47:10:13

SENSITIVE. 09:47:11:24

LOOKING FOR ANY CHANGE THAT MAY 09:47:12:12

OCCUR. 09:47:15:06

NOT SAYING THIS IS RELATED 09:47:15:24

TOXICITY AT THIS POINT JUST 09:47:17:28

SAYING THIS IS A BIOLOGICAL 09:47:19:03

EFFECT. 09:47:20:15
WHICH MAY TRANSLATE INTO 09:47:20:27
TOXICITY. 09:47:23:13
SO THIS THAT'S WHAT THESE ARE, 09:47:24:10
MEANT FOR -- TURN OVER EVERY 09:47:25:27
STONE YOU POSSIBLY CAN. 09:47:27:24
SO TO MAKE A STATEMENT, 09:47:28:21
SCREENING LEVEL STUDY BENCHMARK 09:47:33:25
DOSE THAT PRODUCES INTEGRATED 09:47:37:27
BIOLOGIC RESPONSE, NOT TOXICITY 09:47:39:10
MEASURED BY RESPONSE OF GENES AN 09:47:41:21
MOLECULAR BIOLOGICAL PROCESSES. 09:47:43:06
JUST FOR REVIEW PURPOSES, A 09:47:44:22
BENCHMARK DOSE, THIS IS A MORE 09:47:52:09
LOADED TERM, MORE SPECIFIC TERM, 09:47:54:27
THAT'S USED IN THE RISK 09:47:58:07
ASSESSMENT ARENA. 09:47:59:12
THIS IS A DOSE OF TEST ARTICLE, 09:48:00:18
OR CHEMICAL IN THIS CASE, THAT 09:48:01:21

CORRESPONDS TO A SPECIFIC LEVEL	09:48:04:00	54
OF RESPONSE ABOVE OR BELOW, SO	09:48:06:12	
RESPONSE GOES DOWN OUR, THAT	09:48:08:00	
OBSERVES -- THAT OBSERVED IN A	09:48:09:22	
CONTROL OR BACKGROUND	09:48:12:06	
POPULATION.	09:48:13:00	
SO BASICALLY, VARIANTS IN	09:48:13:10	
CONTROL AND TRYING TO FIND OUT	09:48:16:06	
WHEN THE TREATED ANIMALS ESCAPED	09:48:17:10	
THAT AREA.	09:48:19:06	
WHAT THE DOSE IS.	09:48:19:24	
BY FITTING A CURVE THAT'S WHAT	09:48:20:15	
THE CURVE IS HERE.	09:48:24:10	
SO USUALLY OCCURS BETWEEN	09:48:25:03	
TRADITIONAL CONSIDERED NO L AN	09:48:28:03	
LOW L.	09:48:32:04	
ANOTHER TERM WE NEED TO DEFINE	09:48:33:03	
HERE, MOLECULAR BIOLOGICAL	09:48:34:22	
PROCESSES.	09:48:36:24	
THOSE WHO HAVE DONE GENOMICS	09:48:38:18	
BEFORE, YOU WILL NOT RECOGNIZE	09:48:40:25	
THIS TERM BECAUSE WE COLLAPSED	09:48:43:07	
TERMS TO MAKE IT SIMPLE.	09:48:44:09	
WHAT IT IS IS A OF GENES THAT	09:48:45:15	
FUNCTIONING TO TO CONTROL A	09:48:49:03	
STUDY -- CELLULAR PROCESS, THICK	09:48:50:03	
LIKES P-53 SIGNALING PATHWAY,	09:48:52:03	
LIPID METABOLISM, NOT SAYING	09:48:54:28	
THESE ARE ASSOCIATED WITH MC	09:48:56:03	
HEALTHCAREHM BUT THESE ARE	09:48:58:03	
EXAMPLE, ANNOTATED BY MOLECULAR	09:49:00:03	

BIOLOGISTS FOR THE LAST 30 YEARS 09:49:02:00
NOW. 09:49:04:21
THE DIFFERENCE TYPE OF MOLECULAR 09:49:05:04
BIOLOGICAL PROCESSES ARE KEG 09:49:06:12
PATHWAYS AND GENE ONTOLOGY 09:49:07:27
BIOLOGICAL PROCESSES. 09:49:09:18
THIS IS JUST AND MANAGE THAT I 09:49:10:27
PULLED FROM KEG DATABASE OF P-53 09:49:12:09
PATHWAY, YOU DON'T NEED TO KNOW 09:49:17:15
WHAT THAT IS. 09:49:19:06
JUST AN IMAGE A COLLECTION OF 09:49:22:06
GENES, THAT WORK TOGETHER TO 09:49:23:24
PRODUCE AN EFFECT. 09:49:25:18
AND THE CELL. 09:49:26:18
THIS IS WHERE WE'LL GET GREATEST 09:49:28:00
DEGREE OF SCRUTINY. 09:49:33:01
THAT'S A GOOD THING, WE NEED TO 09:49:33:27
GET THIS RIGHT. 09:49:36:16
SO SOMEHOW DO WE DO ANALYSIS 09:49:38:28

THIS SON THE GENE EXPRESSION 09:49:41:00 55

LEVEL, NOT RELATED TO CLINICAL 09:49:42:03

CHEMISTRY, HEMATOLOGY ORGAN 09:49:43:24

WEIGH OR ANYTHING. 09:49:45:09

HOW DO WE GET BENCHMARK TO DOSE 09:49:46:03

FROM THE MOLECULAR ANALYSIS. 09:49:51:00

THISES THE PROCESS WE FORMULATED 09:49:52:03

BASED UPON WHAT WE HAVE SEEN 09:49:53:06

WITH THE DATA WE DID LIVER AND 09:49:54:19

KIDNEY BUT FOR OUR PURPOSE LIVER 09:49:58:18

DNA FOUR TO FIVE ANIMALS PER 09:50:01:15

GROUP. 09:50:03:15

SO LIVER, EXTRACT THE RNA, AND 09:50:03:28

WE HAVE RUN MICROARRAYS SO 09:50:07:03

FUTURE WILL DO NEXT GENERATION 09:50:09:06

SEQUENCING. 09:50:10:18

THAT GIVES EXPRESSION LEVELS 09:50:11:09

ABOUT 20,000 GENES. 09:50:13:18

PER ANIMAL. 09:50:15:00

FROM THERE WE USE SOFTWARE 09:50:17:24

PACKAGE THAT WAS DEVELOPED AT 09:50:19:19

THE INSTITUTE BY RUSTY THOMAS 09:50:22:03

CALLED BMD EXPRESS, 09:50:23:27

WE LOAD THE DATA SO YOU HAVE 09:50:25:19

THIS IMAGINE THIS SPREADSHEET OF 09:50:26:22

DATA, ALL THE GENES ON THE SIDE 09:50:29:21

AND THEN YOU HAVE DIFFERENT 09:50:31:04

COLUMNS REPRESENTING DIFFERENT 09:50:32:13

ANNULS AND DOSE LEVELS A TOP OF 09:50:34:10

COLUMNS SO 0 DOSE HAS FOUR, ONE 09:50:36:25

MG PER KG HAS FOUR SO LOAD IN 09:50:40:01

THE SOFTWARE. 09:50:42:15
AND ONE THING THAT WE HAVE BEEN 09:50:43:04
STRUGGLING WITH PARTLY BECAUSE 09:50:45:00
THE SIGNAL FROM THESE CHEMICALS 09:50:46:21
IS WEAK, WAS HOW FAR YOU TAKE 09:50:47:27
THE MODELING. 09:50:51:12
SO ONE THING WE DECIDED TO DO, 09:50:52:07
THIS IS UNIQUE, NOT WHAT RUSTY 09:50:54:03
HAS ADVOCATED FOR, BUT WE DID A 09:50:56:18
ONE WAY BY DOSE. 09:50:59:06
AND IF WE DIDN'T SEE ANYTHING, 09:51:01:00
EVEN ONE GENE CHANGE WE ASSUME 09:51:07:25
NO SIGNAL IN THE DATA SO WE STOP 09:51:09:24
AND DID DISCIPLINE TRY TO DEVELOP 09:51:11:12
MOLECULAR -- DIDN'T TRY TO 09:51:12:25
DEVELOP MOLECULAR -- BUT IF 09:51:15:18
THERE WAS SIGNAL IN THE DATA, WE 09:51:17:15
MOVE ON EXPRESS AND ALL THE 09:51:19:12
GENES, ALL 20,000, NOT ONES 09:51:21:09

SIGNIFICANT BUT ALL 20,000 WERE 09:51:24:01 56

THEN FIT TO DOSE RESPONSE MODEL. 09:51:26:00

THERE WERE FIVE MODELS THAT WE 09:51:29:24

RUN. 09:51:30:27

FROM THERE WE SELECT BASICALLY 09:51:31:09

THE BEST FIT MODEL AND DERIVE A 09:51:35:28

BENCHMARK DOSE FOR EACH TEAM 09:51:38:27

THAT'S HAS ASSOCIATED FIT P 09:51:43:25

VALUE FOR THAT CURVE SO IMAGINE 09:51:46:10

20,000 GENES WITH BENCHMARK DOSE 09:51:49:01

VALUE ABOUT FIT P VALUE FOR 09:51:51:00

PROBE BENCHMARK CAME FROM. 09:51:52:27

AGAIN, SHOULD PAUSE HERE BECAUSE 09:51:54:10

I'M SEEING SOME HEAD SCRATCHING. 09:51:58:07

ONE THING THAT -- SO RUSTY HAD 09:52:00:03

GONE BACK AND FORTH DEALING WITH 09:52:04:06

BPA HOW TO DO THIS. 09:52:05:15

HOW TO MODEL THE DATA. 09:52:07:01

AND INITIALLY IT WAS A 09:52:08:01

PRE-FILTER WITH ONLY MODEL THOSE 09:52:09:22

GENES WITH WITH SIGNIFICANT 09:52:12:04

CHANGE IN GENE EXPRESSION. 09:52:13:09

WHEN TALKING WITH THE FOLK THE 09:52:14:12

EPA FELT THAT THAT WAS TOO 09:52:16:18

CONSERVATIVE AND WHAT WAS 09:52:19:22

RECOMMENDED WAS YOU RUN ALL 09:52:21:13

20,000. 09:52:24:28

AND THEN GROUP THEM BY MOLECULAR 09:52:25:21

BIOLOGICAL PROCESS AND IDENTIFY 09:52:28:27

BENCHMARK FROM THERE SO ALL 09:52:31:01

20,000 MODEL THOUGH NOT ALL 09:52:32:18

SIGNIFICANT, ALL 20,000 WERE 09:52:35:00
MODELED. 09:52:36:13
WE HAVE A LIST OF 20,000 GENES 09:52:36:27
FIT P VALUE AN BENCHMARK DOSE. 09:52:44:07
IN ORDER TO BE A LEGAL MORE 09:52:46:00
STRINGENT THAN WHAT'S 09:52:47:12
TRADITIONALLY USED WE USE A FIT 09:52:48:25
P VALUE OF GREATER THAN .5, 09:52:51:24
ANYTHING GREATER THAN STOPPED 09:52:54:15
THAT THE STEP HERE. 09:52:55:21
FROM THERE WE HAVE REDUCE LIST 09:52:56:27
THINGS REASONABLY CONFIDENT THAT 09:53:02:28
HAD A NICE FIT CURVE BENCHMARK 09:53:04:24
DOSE VALUE. 09:53:07:15
THOSE GENES WERE SORTED TO WHAT 09:53:08:03
WE HAVE BEEN CALLING MOLECULAR 09:53:09:09
BIOLOGICAL PROCESSES. 09:53:10:19
AND IN ORDER TO MAKE SURE WE 09:53:11:24
HAVE A ROBUST SET OF MOLECULAR 09:53:13:07

BIOLOGICAL PROCESS WAS FILTERED 09:53:15:15 57

TO MAKE SURE EACH ONE PROCESSES 09:53:17:12

HAD AT LEAST 15 GENES IN THEM SO 09:53:21:16

WE'RE NOT DEALING WITH MOLECULAR 09:53:24:10

BIOLOGICAL PROCESS WITH THREE 09:53:26:12

GENES ANNOTATED WITH THREE GENES 09:53:28:13

SO AT LEAST 15. 09:53:30:07

SHORTER END AND THEN WE ASK 09:53:31:15

WHICH ONES OF THOSE MOLECULAR -- 09:53:34:27

AT LEAST 20% POPULATED BY THE 09:53:37:12

APPROPRIATELY FIT GENES. 09:53:39:00

SO THESE ARE NOW HAVE AT LEAST 09:53:40:09

20% GENES IN THE PATHWAY, 09:53:43:27

ACTUALLY HAVE A GOOD FIT P VALUE 09:53:45:12

AND BENCHMARK DOSE VALUE. 09:53:47:21

THEN YOU REPORT THE MEDIAN 09:53:49:12

MOLECULAR BIOLOGICAL PROCESS AND 09:53:54:09

THAT'S THE MEDIAN GENE, SHOW YOU 09:53:55:24

THIS HERE. 09:53:59:00

THIS IS A MOLECULAR BIOLOGICAL 09:53:59:21

PROCESS. THERE'S 15 GENES IN 09:54:07:04

THIS PATHWAY. 09:54:08:15

THE WAY IT WORKS, THERE'S FIVE 09:54:09:18

GENES THAT PASS THE FILTER AND 09:54:10:27

TEN THAT DID NOT. 09:54:12:15

SO THIS IS A -- SOMETHING THAT'S 09:54:13:10

POPULATED BY OUR BEST FIT GENES 09:54:15:07

OR APPROPRIATELY FIT GENES AND 09:54:18:24

WHAT YOU DO TO DETERMINE THE 09:54:20:07

BENCHMARK DOSE FOR MOLECULAR 09:54:22:24

BIOLOGICAL PROCESS IS SELECT 09:54:24:27

MEDIAN GENE FROM THOSE GENES IN 09:54:26:10
THAT GROUP. 09:54:28:03
THIS IS A STANDARD PUBLISHED 09:54:28:12
NUMEROUS TIMES BEFORE. 09:54:33:21
THAT BECOMES A MOLECULAR 09:54:34:21
BIOLOGICAL PROCESS BENCHMARK 09:54:39:00
DOSE. 09:54:41:00
WOULD YOU LIKE KNOW GO THROUGH 09:54:41:06
THAT AGAIN? 09:54:43:28
SORRY. 09:54:44:18
A LOT IS BORNE OUT OF HEURISTICS 09:54:47:01
WORKED THROUGH BY RUSTY AND 09:54:53:15
OTHERS USING THIS SOFTWARE. 09:54:54:27
SO LET'S GET TO THE FINDINGS. 09:54:56:21
SO -- SO LET'S GET TO THE 09:54:59:00
FINDINGS. 09:55:01:03
WE DID THREE HERE WITH TWO 09:55:01:18
CHEMICALS AND A MIXTURE MCHM, 09:55:03:16
CRUDE MCHM AND PPH. 09:55:06:09

SO THE DOSE RANGE FOR MCHM 09:55:08:27 58

STUDIES WITH WAS 0.1 TO 500 MG 09:55:11:03

PER KG PER DAY AND WE USE SIX 09:55:14:07

DOSE LEVELS. 09:55:16:12

OVERALL BY TOXICOGENOMICS 09:55:17:03

STANDARDS THESE WERE WEAK 09:55:20:03

EFFECTS ON GENE EXPRESSION LIVER 09:55:21:13

AND THERE WAS NO EFFECT IN 09:55:22:24

KIDNEY. 09:55:25:25

132 MOLECULAR BIOLOGIC PROCESSES 09:55:26:06

CONSIDERED ACTIVE AND HAD 09:55:30:19

REPORTED DMV VALUES SO KEG 09:55:31:24

PATHWAYS ARE BIOLOGICAL PROCESS. 09:55:33:21

THE MINIMUM BIOLOGICAL EFFECT 09:55:35:15

BENCHMARK DOSE WAS 100 MG PER KG 09:55:37:12

PER DAY. 09:55:41:03

REMEMBER BACK THE POINT OF 09:55:42:09

DEPARTURE FOR MCHM WAS 100 MG 09:55:44:00

PER KG PER DAY. 09:55:48:00

WHAT WE FIND IS LARGELY 09:55:49:21

CONSISTENT WHAT WAS IDENTIFIED 09:55:50:18

IN THE 28 DAY STUDY. 09:55:53:00

OTHER FINDINGS INCLUDED INCREASE 09:55:55:00

TRIGLYCERIDES HIGH DOSE, AND 09:55:57:22

THIS WAS NO INCREASE IN MICRO-- 09:56:00:12

IN THE RICH POPULATION SO NOT 09:56:02:27

AND IN VIVO GENE TOX, REDUCE 09:56:05:00

OURS CONCERN FOR CARCINOGENIC 09:56:07:06

PROPERTIES. 09:56:09:21

DON'T TRY TO READ THIS. 09:56:10:06

WHAT THESE ARE, WE'RE TRYING TO 09:56:14:06

SHOW DIFFERENT MOLECULAR 09:56:17:28
BIOLOGICAL PROCESSES AND THEIR 09:56:20:00
BENCHMARK DOSE VALUES. 09:56:21:21
SO WHAT THIS IS, THIS IS COUNTS 09:56:23:09
HERE ON THE -- AN THIS IS THE 09:56:25:16
MEDIAN BMB FOR THAT MOLECULAR 09:56:27:03
BIOLOGICAL PROCESS. 09:56:29:10
THESE GUYS HAVE BEEN WORKING 09:56:30:18
WITH THIS, TRYING TO HELP 09:56:31:15
VISUALIZE THIS APPROPRIATELY TO 09:56:32:24
GIVE A SENSE OF MASS OF THE 09:56:34:15
DATA. 09:56:36:00
AND WHAT YOU CAN SEE HERE IS 09:56:36:10
THAT THIS LINE HERE THAT GOES UP 09:56:37:07
THROUGH THE DATA. 09:56:39:03
AND SO THE LOWEST ONE WAS ABOUT 09:56:39:21
107 MG PER KG PER DAY AN GOES 09:56:43:07
OVER FAR AND STARTS REALLY 09:56:45:15
RAMPING UP, A LOT START SHOWING 09:56:47:00

UP AS ACTIVE. 09:56:49:03 59

SO WHAT YOU LOOK AT AGAIN, IS 09:56:50:10

LOWEST BENCHMARK DOSE FOR MCHM 09:56:54:16

WAS 100 MG PER KG PER DAY. 09:56:57:18

CRUDE MCHM, SIMILAR DOSE RANGE 09:57:01:27

TO MCHM HAT WEAK EFFECT ON GENE 09:57:05:18

EXPRESSION AND LIVER, VERY 09:57:08:27

SIMILAR. 09:57:10:21

VERY SIMILAR. 09:57:11:13

132 MOLECULAR CONSIDERED ACTIVE 09:57:12:04

OR REPORTED BMV VALUE THERE'S A 09:57:16:07

MINIMUM BIOLOGICAL BENCHMARK 09:57:18:18

DOSE OF 60 MG PER KG PER DAY. 09:57:20:16

THE OTHER FINDINGS SIMILAR TO 09:57:23:18

MCHM, INCREASED TRIGLYCERIDES IN 09:57:24:22

TOP TWO DOSE AND NO INCREASE IN 09:57:27:25

MICRONUCLEUS SO CRUDE WAS 09:57:30:09

LOOKING SIMILAR THE TO PURE. 09:57:31:12

FINALLY PBH DOSE RANGES 09:57:33:03

DIFFERENCE. 09:57:41:00

1 TO 2,000, WEAK EFFECT ON GENE 09:57:41:15

EXPRESSION LIVER AND KIDNEY. 09:57:43:12

144 AND 104 MBPs CONSIDERED 09:57:45:03

ACTIVE AND REPORTED BMB VALUE 09:57:48:21

REPORTED IN KIDNEY RESPECTIVELY. 09:57:51:27

THE MINIMUM BIOLOGICAL EFFECT 09:57:53:21

BENCHMARK DOSE WAS 1 MG PER KG 09:57:56:04

PER DAY. 09:57:59:03

THE OTHER FINDINGS, THIS IS 09:57:59:15

ACTUALLY NOT TOO FAR OFF FROM 09:58:01:21

SOME OF THE NOELS IN THE 09:58:03:21

DATABASE LOWEST WAS ABOUT 18 MG 09:58:06:03
PER KG PER DAY. 09:58:09:19
THE OTHER FINDINGS INCLUDE THE 09:58:11:00
2000 MG PER KG DOSE WAS OVERTLY 09:58:14:27
TOXIC. 09:58:18:16
SO THOSE ANIMALS WERE NOT 09:58:18:27
INCLUDED IN THIS ANALYSIS. 09:58:20:12
INCREASE ALT LEVELS 500 AND 09:58:22:03
1,000 AND NO INCREASE IN 09:58:24:06
MICRONUCLEI SO AGAIN, NOT GENE 09:58:25:21
TOXIC AND ACTUALLY THERE WAS 09:58:28:03
SOME INDICATIONS HIGH DOSES THAT 09:58:29:28
PPH MIGHT BE GENE TOXIC FROM 09:58:32:03
PREVIOUS STUDIES BUT FROM WHAT 09:58:35:03
WE SEE HERE WE DO NOT SEE IT. 09:58:36:27
NOW ON TO THE LNA ORDER MALL 09:58:38:21
IRRITANCY HYPERSENSITIVITY 09:58:44:24
STUDY. 09:58:46:09
WHAT WE DO HERE IS LOOK AT 09:58:46:28

PROLIFERATION OF LYMPH NODE 09:58:49:00 60
CELLS, IMMUNE ORGANS IF YOU 09:58:50:18
WOULD. 09:58:52:09
AND LOCALIZE SKIN SWELLING FOUND 09:58:52:28
REPEATED APPLICATION OF MOUSE 09:58:56:03
SKIN TO DETERMINE CHEMICAL CAUSE 09:58:58:03
OF IRRITATION OR ALLERGIC 09:58:59:27
REACTION HYPERSENSITIVITY. 09:59:00:27
FINDING WERE WITH MCHM, I WON'T 09:59:02:18
GO INTO DETAIL BECAUSE THIS IS A 09:59:06:27
GUIDELINE STUDY THE, PRETTY SURE 09:59:08:06
YOU'RE FAMILIAR WITH THIS. 09:59:10:06
CAUSES MILD IRRITATION AT 20% OR 09:59:11:12
200,000 PPM. 09:59:15:15
AND IT DID NOT CAUSE DERMAL 09:59:16:27
SENSITIZATION. 09:59:18:24
MCHM, PURE CHEMICAL, IT'S A 09:59:19:21
MIXTURE OF TWO ISOMERS. AND DID 09:59:23:12
NOT CAUSE SENSITIZATION UP TO 09:59:25:15
500,000 PPM. 09:59:27:21
CRUDE MCHM CAUSE MILD IRRITATION 09:59:29:06
AT 750,000 PPM AND CAUSE DERMAL 09:59:31:15
SENSITIZATION ABOUT 40% SO THIS 09:59:35:18
WAS A SENSITIZER ABOUT WE HAVE 09:59:37:13
NOT FIGURED YET WHAT THE 09:59:39:10
COMPONENT IS IN THE CRUDE 09:59:41:12
MIXTURE THAT MAYBE DRIVING THE 09:59:42:22
SENSITIZATION BECAUSE WE DIDN'T 09:59:43:27
SEE IT IN PURE. 09:59:47:03
FINALLY, WE RAN A PRE-NATAL 09:59:47:27
DEVELOPMENT TOXICITY STUDY MCHS, 09:59:56:03

THIS IS WHERE WE LOOK AT 09:59:59:01
MATERNAL PRE-DEVELOPMENT 09:59:59:28
PARAMETERS FOLLOWING CHEMICAL 10:00:02:06
EXPOSURE DURING GESTATION WHICH 10:00:04:12
IS A TWO WEEK PERIOD FOR RATS. 10:00:06:00
WE RUN STUDIES IN TWO PHASES. 10:00:08:09
UNLESS WE HAVE INFORMATION WE 10:00:12:06
CAN PICK THE DOSE, WE RUN A DOSE 10:00:16:10
RANGE FINDING STUDY TO IDENTIFY 10:00:19:00
A DOSE, THE MAXIMUM DOSE IS NOT 10:00:20:09
PRODUCE MATERNAL TOXICITY. 10:00:22:19
SO TELL YOU ABOUT THAT FIRST. 10:00:24:09
THAT'S THE DOSE RANGE FINDING 10:00:25:21
STUDY HERE. 10:00:26:24
DOSE USED WERE 150 TO 900 MG PER 10:00:27:18
KG PER DAY, GESTATION DAY OF TO 10:00:32:10
1. 10:00:34:09
WE SAW 60 AND 900 MG PER KG PER 10:00:34:21
DAY, INCREASE IN FETAL LOSS, 10:00:40:28

CREASE IN -- STARTING AT 150 MG 10:00:46:18
PER KG PER DAY. 10:00:50:00
SO BASED ON THE FINDINGS, WE 10:00:51:15
DETERMINED 400 MG PER KG WOULD 10:00:55:12
BE THE APPROPRIATE TOP DOSE 10:00:58:00
INCLUDING THE MAIN STUDY, 10:00:59:24
DEVELOPMENTAL TOXICITY STUDY. 10:01:01:21
SO DOSES WENT FROM 50 TO 400, 10:01:03:15
FOUR DOSES AND CONTROL, SIMILAR 10:01:07:22
IDENTICAL DAYS DOSING, WE PICK 10:01:09:04
THE DOSES WELL, NO MATERNAL 10:01:11:21
TOXICITY OBSERVED. 10:01:12:27
I WILL POINT OUT, MATERNAL 10:01:14:09
TOXICITY IS TRADITIONALLY 10:01:16:19
DETERMINED BY CLINICAL SIGNS AND 10:01:19:06
GROSS -- BODY WEIGHT. 10:01:21:18
THOSE PARAMETERS WERE UNCHANGED. 10:01:23:04
WE WENT FARTHER AND THERE SEEMED 10:01:25:06
MINOR CHANGES IN CLINICAL -- I 10:01:34:09
DON'T BELIEVE IT CONSIDERED 10:01:36:27
MATERNAL TOXICITY. 10:01:37:27
SO AT THIS POINT NO MATERNAL 10:01:39:03
TOXICITY OBSERVED BASED UPON 10:01:43:19
CURRENT GUIDELINES. 10:01:45:24
NO EFFECTS ON FETAL SURVIVAL. 10:01:46:24
WEIGHT DECREASE 200 MG PER KG, 10:01:50:09
PER DAY AND WE ALSO SAW 10:01:55:27
INCREASED MALFORMATIONS AT 400 10:01:57:06
MG PER KG PER DAY INCLUDE 10:01:59:03
INCREASE INCIDENCE OF -- 10:02:01:19

CERVICAL WHICH IS I'M IN THE A 10:02:03:03
MOLECULAR BIOLOGIST RELATIVELY 10:02:07:00
RARE. 10:02:08:27
WE HAVE EXPERTS. 10:02:09:01
VERY GOOD ONES ABOUT DECREASE 10:02:13:00
FUSION OF CARTILAGE TO STERNUM. 10:02:14:15
AND THE FINDINGS INDICATE MCHM 10:02:16:13
PRODUCED TOXICITY IN ABSENCE OF 10:02:22:00
MATERNAL TOXICITY AND BY 10:02:23:16
STANDARD DEFINITION CONSIDERED A 10:02:25:06
DEVELOPMENTAL TOXICANT. 10:02:27:09
WE SAW NO EFFECT LEVEL ABOUT 50 10:02:28:28
TO 100 MG PER KG PER DAY. 10:02:31:18
WE HAVE RUN BENCHMARK ANALYSIS 10:02:34:06
JUST ON FETAL WEIGHT AND WITH 1 10:02:36:15
WE CAN MOVE THE L AROUND IN THE 10:02:41:15
30s. 10:02:43:12
SO NOT TOO FAR FROM THE 100 MG 10:02:43:21
PER KG PER DAY DOSE. 10:02:46:24

TO DATE. 10:02:59:00

YELLOW ONES ARE INCLUDED IN MY 10:03:00:12

ORIGINAL PRESENTATION, BUT I 10:03:02:01

THINK FOR PURPOSES OF CLARITY I 10:03:03:12

MOVE THEM SO WHAT THESE WERE 10:03:05:00

BEFORE EXTRA COMPOUNDS NOT IN 10:03:06:12

THE SPILL, WHY WE DIDN'T HAVE 10:03:09:16

THEM THE FIRST SLIDE, STRUCTURAL 10:03:11:09

ANALOGS. 10:03:12:19

ADDED TO INCREASE THE BULK OF 10:03:13:09

DATA ACROSS CHEMICAL CLASS. 10:03:16:16

YOU HAVE THE REST OF THE 10:03:18:15

CHEMICALS, WE DID GET -- ACTUAL 10:03:21:12

DIPPH FROM DOW CHEMICAL AND RAN 10:03:24:24

A COUPLE OF ASSESSMENTS. 10:03:29:06

BUT THESE ARE ALL THE ONES YOU 10:03:30:21

RECOGNIZE FROM PREVIOUS SLIDE. 10:03:33:09

AND THESE ARE STUDIES HERE, X 10:03:35:00

INDICATES THEY WERE DONE AND 10:03:37:15

CHEMICALS WERE EVALUATED AND 10:03:38:24

ACTIVE, THEY WERE POSITIVE, O 10:03:42:19

MEANS GETTING THE DATA SOON. 10:03:44:27

AND THEN THESE ASTERISKS 10:03:46:03

INDICATE THE TWO HERE HAD TO BE 10:03:49:24

SYNTHESIZED. 10:03:52:03

WE RAN THE ZEBRA FISH THE 10:03:52:27

NEMATODE STUDIES EARLY SO WE 10:03:54:24

HAVE SINCE LOST THE CAPABILITY 10:03:57:16

TO RUN THESE STUDIES SO THAT'S 10:03:58:21

WHY THEY'RE NOT GOING TO BE 10:04:00:10

REASON.	10:04:01:10
-- RUN.	10:04:01:24
SO WHAT YOU SEE HERE IS ANIMAL	10:04:03:06
STUDIES, APPEAR ACTIVE FOR	10:04:06:15
CHEMICALS IN MATRIX WE EVALUATED	10:04:09:06
AND SARs, WHICH YOU'LL NOTE	10:04:12:01
HERE AS WE'RE WAITING	10:04:15:09
PHOTOCHEMICALS, BACTERIAL	10:04:16:18
MUTAGENICITY AND NUMBER OF	10:04:18:13
ZEBRAFISH AND THERE'S ONE ACTIVE	10:04:20:15
IN ZEBRAFISH.	10:04:22:15
STILL WAITING HOPEFULLY, THE	10:04:23:19
GOAL WAS THE END OF JUNE.	10:04:25:21
AND DATA SO I BELIEVE WE WILL	10:04:27:01
GET.	10:04:30:16
RELASHING FINDINGS HERE, SA RNA	10:04:31:07
INDICATED THE MCHM CLASS OF	10:04:36:12
CHEMICALS ARE IRSTATING TO THE	10:04:38:12
SKIN AND SENSORY ORGANS IN	10:04:39:21

DEVELOPING ANIMALS AND WE	10:04:41:15	63
VALIDATEED THAT WITH ONE	10:04:42:27	
CHEMICAL CRASS.	10:04:44:01	
DEVELOPING AND DEVELOPMENT AND	10:04:45:01	
IRRITATION.	10:04:47:06	
NONE TESTED IN NEMATODE WERE	10:04:47:18	
ACTIVE.	10:04:52:27	
AND THAT WAS UP TO IN THE CASE	10:04:54:01	
OF HCS, 10 TO 20 PPM AND 20 TO	10:04:56:06	
40 PPM IN NEMATODE.	10:05:01:22	
NONE OF THE CHEMICALS EXCEPT A	10:05:03:12	
MINOR COMPONENT TEST IN	10:05:07:12	
ZEBRAFISH WERE ACTIVE SO ALL	10:05:09:04	
ACTIVELY SECTION OF DMC.	10:05:11:00	
NONE ANIMAL FROM THE SPILL TEST	10:05:13:01	
IN MUTAGENESIS TO DATE, WERE	10:05:16:09	
POSITIVE.	10:05:20:06	
MCHM AND CRUDE MCHM PRODUCE	10:05:20:28	
CHANGES IN BIOLOGICAL ACTIVITY	10:05:26:18	
OF 50 PM PER KG PER DAY,	10:05:28:04	
EQUIVALENT OF 500 TO A THOUSAND	10:05:31:15	
PBM IN DRINKING WATER.	10:05:33:24	
PPH PRODUCE CHANGES IN	10:05:35:21	
BIOLOGICAL ACTIVITY, SLIGHTLY	10:05:37:21	
LOWER DOSE ABOUT 30 PPM AND WE	10:05:40:06	
APPROXIMATE THIS TO BE ABOUT 30	10:05:42:13	
PPM DRINKING WATER.	10:05:44:18	
WE SHOULD NOTE PBH WAS ONLY THE	10:05:48:04	
DETECTED AT TEN MICROGRAMS PER	10:05:51:15	
LITER THOUGH THE ADVISORY, WERE	10:05:53:03	
1.2, MOST WERE NON-DETECTS SO	10:05:55:22	

THE MARGINS HERE WERE LARGE. 10:05:59:01
ASSUMING THE TEN MICROGRAMS PER 10:06:00:28
LITER IS ACT AN CRACK 10:06:02:27
REPRESENTATION OF WHAT THE LEVEL 10:06:04:24
WAS. 10:06:05:21
-- AN ACCURATE REPRESENTATION OF 10:06:06:04
WHAT THE LEVEL WAS. 10:06:08:00
MCHM WAS MILD IRRITANT, IN CRUDE 10:06:08:28
IT WAS IRRITANT AND SENSITIZER. 10:06:13:12
AT DOSES WELL IN EXCESS TO HAVE 10:06:14:28
DRINKING WATER ADVISORY LEVEL IT 10:06:16:15
WAS TOXIC TO DEVELOPING RATS. 10:06:18:19
TOXICITY WAS SERVED AT DOSES NO 10:06:20:06
MATERNAL TOXICITY SO 10:06:24:12
DEVELOPMENTAL TOXICANT BY 10:06:25:24
TRADITIONAL STANDARDS. 10:06:27:04
OBVIOUSLY HAVE TO GO THROUGH A 10:06:29:19
STANDARDIZED REVIEW BASED UPON 10:06:30:18
THE STANDARDS NOW IT WILL BE 10:06:32:15

CONSIDERED ONE.	10:06:34:00	64
THE MOST SENSITIVE EFFECT IN THE	10:06:34:21	
TOXICITY STUDY WE SAW WAS	10:06:37:21	
DECREASED FETAL WEIGHT.	10:06:40:01	
SO LET'S REVIEW THE GOALS HERE.	10:06:41:19	
AND WHAT WE'VE STUDIES THAT	10:06:45:13	
ADDRESS THESE GOALS.	10:06:48:00	
SO REDUCE UNCERTAINTY, AROUND	10:06:49:06	
THE POINT OF DEPARTURE IN THE	10:06:52:15	
SAFETY FACTOR USED TO DEVELOP	10:06:54:06	
DRINKING WATER LEVEL BY CDC.	10:06:55:24	
SO RESULTS FROM THE RAT	10:06:58:00	
DEVELOPMENT TOXICITY STUDIES AN	10:07:01:06	
TOXICOGENOMICS STUDIES WERE	10:07:04:21	
APPROXIMATELY 100 MG PER KG PER	10:07:06:09	
DAY, OBVIOUSLY SOME MOVEMENT	10:07:08:27	
THERE AND NOEL IS CONSISTENT	10:07:10:15	
WITH THE 28 DAY STUDY USED TO	10:07:12:00	
DEVELOP DRINKING WATER SO AGAIN	10:07:13:18	
FINDING VERY CONSISTENT RESULTS	10:07:15:27	
ON A DOSE LEVEL.	10:07:18:15	
P BH PRODUCE CHANGES IN	10:07:19:03	
BIOLOGICAL ACTIVITY IN 1 MG PER	10:07:22:15	
KG PER DAY, 30 PPM FOR PREGNANT	10:07:25:12	
WOMEN, HOWEVER WE DON'T KNOW	10:07:27:27	
WHAT THE TOXICOLOGICAL	10:07:29:07	
INDICATIONS OF THIS IS BECAUSE	10:07:30:21	
IT'S A BIOLOGICAL -- MOLECULAR	10:07:32:03	
BIOLOGICAL PROCESS AT THIS	10:07:34:18	
POINT.	10:07:35:15	
IT'S A BIOLOGICAL EFFECT.	10:07:35:24	

AND I WILL NOTE AGAIN, EXPOSURE 10:07:37:12
LEVELS TO PPH WERE LOW. 10:07:40:12
MUCH LOWER THAN THE DRINKING 10:07:42:15
WATER. 10:07:45:12
THEN WE CONFIRM LACK OF GENE 10:07:45:27
TOXICANT POTENTIAL, WE HAVE 10:07:49:27
STILL -- MCHM IN THE PHENYL 10:07:52:01
ETHERS REDUCING CONCERNS TO LONG 10:07:55:00
TERM EFFECT SUCH AS 10:07:57:09
CARCINOGENICITY. 10:07:58:22
LIFE STAGE SPECIFIC EFFECTS, WE 10:08:09:06
DID THAT. 10:08:11:06
IN RATS FETUS IS MORE SENSITIVE 10:08:11:21
TO -- IN THE ADULT BUT TOXICITY 10:08:15:06
WAS ONLY SERVED IN LEVELS IN -- 10:08:19:00
FINALLY WE WANT TO THE DETERMINE 10:08:23:21
IF THERE ARE DIFFERENCES IN 10:08:25:18
POTENCY OR TOXICOLOGICAL 10:08:26:18
PROPERTIES COMPARED SPECIFICALLY 10:08:28:25

TO MCHM BECAUSE THAT WAS DRIVING 10:08:30:21 65

THE THE CONCERN. 10:08:33:18

MINIMAL DIFFERENCE IN POTENCY OR 10:08:34:13

TOXICITY BETWEEN THE 10:08:38:00

CONSTITUENTS IN MCHM T OBVIOUS 10:08:39:03

EXCEPTION IS DMC HTC. 10:08:41:04

THERE'S ACTUALLY A CD4 21 10:08:45:03

REPRODUCT THETIVE SCREENING 10:08:48:21

STUDY IN ACTIVE DATABASE FOR THE 10:08:49:27

MCHDC. 10:08:51:00

THESE STUDIES EVALUATE THINGS 10:08:53:06

LIKE FETAL WEIGHT AND THINGS 10:08:55:03

ALONG THOSE LINES AND THERE WAS 10:08:56:18

NO EFFECT, NEAR GRAM KILOGRAM 10:08:57:28

PER DAY. 10:09:01:03

IN THE RODENTS. 10:09:01:24

SO THAT ALLAYS SOME CONCERNS, 10:09:05:04

STILL WANT THE TO INSPECT THAT 10:09:08:00

CHEMICAL MORE. 10:09:09:15

THERE ARE MINIMAL DIFFERENCES 10:09:10:06

BASED ON FIVE DAY STUDIES WE CAN 10:09:12:24

THINK MINIMAL DIFFERENCES 10:09:14:19

BETWEEN MCHM AND CRUDE MCHM, NOT 10:09:15:24

NECESSARILY SURPRISING BECAUSE 10:09:18:19

90% OF CRUDE MCHM IS MCHM. 10:09:20:04

FINALLY, NOT FINALLY QUITE YET. 10:09:23:28

JUST A CLOSE STATEMENT THAT WAS 10:09:30:18

REALLY THE MAJOR FOCUS WHAT WE 10:09:32:00

WERE TRYING TO DO HERE. 10:09:34:00

THE DATA BY N THETP TO DATE 10:09:36:27

SUPPORTS DETERMINING HEALTH RISK 10:09:39:18

ASSOCIATED WITH THE SPILL ABOUT 10:09:41:13
SELECTION OF 100 MG PER KG PER 10:09:42:09
DAY AS POINT OF DAY DEPARTURE SO 10:09:44:27
WE THINK THE DATA AT THIS POINT 10:09:47:06
SUPPORTS THAT SELECTION. 10:09:49:15
FINALLY, I DID A VERY SMALL 10:09:54:03
AMOUNT OF THIS WORK, I GET TO 10:09:57:04
STAND HERE AND TALK ABOUT IT. 10:09:59:19
I THINK -- I ASKED EVERYONE IN 10:10:00:24
THE ROOM TO RAISE THEIR HANDS IF 10:10:02:13
THEY TOUCHED THIS STUDY OR I 10:10:04:00
THINK YOU GET 90% IN THE ROOM 10:10:05:18
REALLY IS AN IMPRESSIVE GROUP 10:10:07:27
AND THEY CAME TOGETHER AND 10:10:10:09
REALLY DID GOOD JOB. 10:10:11:18
THE NAMES ARE LISTED HERE I'LL 10:10:17:09
LET YOU ADMIRE THEM WHILE I 10:10:19:15
ANSWER QUESTIONS. 10:10:21:13
10:10:21:19

>> AT THIS POINT I'LL OPEN IT TO	10:10:22:06	66
THE BSC FOR POINTS OF	10:10:23:09	
CLARIFICATION.	10:10:25:19	
GO AHEAD IRIS.	10:10:26:09	
	10:10:29:00	
>> IRIS (INAUDIBLE) RUTGERS.	10:10:31:15	
I HAVE A BUNCH OFFER PHYSICIAN	10:10:34:06	
QUESTIONS TO ASK BECAUSE I'M	10:10:36:00	
THINKING OF MYSELF AS THE LOCAL	10:10:37:16	
ENVIRONMENTAL PHYSICIAN SO IF	10:10:38:24	
YOU COULD INDULGE ME.	10:10:42:22	
FIRST QUESTION ANYBODY	10:10:46:27	
SYMPTOMATIC THE PEOPLE THAT HAD	10:10:47:27	
NAUSEA, SKIN AND EYE IRRITATION	10:10:49:18	
AS FAR AS YOU KNOW IS ANYBODY	10:10:52:10	
SYMPTOMATIC?	10:10:53:18	
	10:10:53:18	
>> I DON'T BELIEVE SO.	10:10:54:18	
NO I DON'T BELIEVE SO.	10:11:01:00	
NO.	10:11:02:25	
	10:11:02:25	
>> SO I FEEL GOOD ABOUT THE LONG	10:11:03:06	
TERM STUDIES AND I WOULD TELL MY	10:11:05:19	
PATIENTS IT SOUNDS LIKE YOU	10:11:07:27	
PROBABLY DON'T HAVE TO WORRY	10:11:10:15	
ABOUT CANCER.	10:11:11:24	
I'M NOT SURE ABOUT THE BIRTH	10:11:13:19	
DEFECTS BUT I WAS WONDERING IF	10:11:15:01	
YOU COULD EXPLAIN WHAT YOU THINK	10:11:17:16	
IS THE MECHANISM FOR INCREASED	10:11:19:15	
TRIGLYCERIDES AND ELEVATED LIVER	10:11:23:09	

FUNCTION TEST. 10:11:25:18
10:11:27:03
>> ALCOHOL. 10:11:29:00
QUITE WELL COULD BE METABOLIZED 10:11:29:21
TO AN ALDEHYDE. 10:11:31:04
WHICH ALDEHYDES ARE GENERALLY 10:11:32:07
REACTIVE. 10:11:34:24
I DON'T HAVE A SENSE -- 10:11:35:07
OBVIOUSLY ONE MAJOR FUNCTION OF 10:11:38:25
THE LIVER WITH RESPECT TO 10:11:39:25
TRIGLYCERIDES ONE OF THE LIVER 10:11:41:09
FUNCTIONS IS REGULATING THE FLUX 10:11:44:06
AND RELEASE OF TRIGLYCERIDES SO 10:11:45:27
TOXICOLOGICAL EFFECT IN THE 10:11:47:18
LIVER IS PROBABLY GOING TO HAVE 10:11:49:09
SOME MODIFICATION OF THOSE 10:11:50:18
CHARACTERISTICS. 10:11:51:28
WITH RESPECT TO THE ALT, IF I 10:11:52:18
HAD TO RENDER A GUESS, AND I 10:11:55:18

IT WOULD BE IN RELATION TO SHEER 10:11:59:04
AMOUNTS OF CHEMICAL ENTERING THE 10:12:02:03
LIVER. 10:12:04:10
AND THIS IS THE PHENYL ETHERS, 10:12:04:25
NOT THE MCHM. 10:12:07:09
THAT MAYBE DRIVING TOXICITY BUT 10:12:08:27
THE LTL HE WILL VAGUES DEPENDING 10:12:15:27
ON CLINICAL PATHOLOGIST YOU TALK 10:12:18:06
TO, THEY WERE NOT CONSIDERED 10:12:20:13
SIGNIFICANT. 10:12:23:12
STATISTICALLY THEY WERE BUT NOT 10:12:24:03
NECESSARILY BIOLOGICAL. 10:12:25:06
10:12:26:03
>> PRESUMABLY REVERSIBLE. 10:12:26:21
10:12:28:16
>> PRESUMABLY. 10:12:29:06
WE DIDN'T DO REVERSIBILITY 10:12:30:00
STUDIES BUT PRESUMABLY. 10:12:31:09
10:12:32:00
>> THAT WOULD BE INTERESTING TO 10:12:32:24
KNOW IF IT WAS REVERSIBLE EFFECT 10:12:34:12
ANYWAY. 10:12:36:00
THE OTHER QUESTION I HAD IT 10:12:38:03
MIGHT BE A SENSITIZER TO ANYBODY 10:12:40:19
LOOK AT ANY OF THE RESPIRATORY 10:12:44:12
STUDIES? 10:12:48:03
AND I WAS THINKING ABOUT THOSE 10:12:49:12
GREAT MODELS THAT YOU SHOWED US 10:12:50:22
FOR ASTHMA BECAUSE HERE I HAVE 10:12:55:12
PATIENTS WHO MAYBE HAVE ASTHMA 10:12:59:00

AND -- THAT MAYBE YOU WOULD 10:13:01:01
DEMONSTRATE THAT THE SPILL 10:13:03:00
EXACERBATED ASTHMA, WHEN ONE OR 10:13:07:15
THE OTHER BECAUSE THAT'S A 10:13:11:12
QUESTION THAT I THINK LOCAL 10:13:13:03
PEOPLE COULD ASKING. 10:13:14:07
I KNOW IT'S NOT WHAT YOU USUALLY 10:13:15:15
DO WITH CANCER AND BIRTH DEFECT 10:13:17:19
STUDIES BUT IT'S WHAT PEOPLE 10:13:19:28
WORRY ABOUT. 10:13:21:15
10:13:22:03
>> SO THERE IS SOME DEGREE OF 10:13:26:00
RELATIONSHIP BETWEEN NORMAL 10:13:27:13
SENSITIZATION AND RESPIRATORY 10:13:30:09
SENSETYIZATION IT IS CERTAINLY 10:13:31:21
POSSIBLE. 10:13:35:12
THE ACTUAL ABILITY THE TO GET -- 10:13:35:18
THE CHEMICAL HAS A VERY LOW ODOR 10:13:37:09
THRESHOLD SO YOU CAN DECK IT AT 10:13:40:15

EXTREME LE LOW LEVELS SO IN 10:13:42:27 68

ORDER TO GET A DOSE INTO THE 10:13:44:18

AIR, THAT WOULD PRODUCE 10:13:46:00

TOXICOLOGICAL EFFECT IS 10:13:49:10

CHALLENGING, WE LOOK AT 10:13:51:21

SEPARATING ATMOSPHERES AND IT IS 10:13:53:00

VERY -- IT'S QUITE DIFFICULT TO 10:13:54:24

GENERATE ATMOSPHERES. 10:13:56:18

SO ONE THING THAT WE RUN INTO IS 10:13:57:28

THIS STUDY THAT IS PLAUSIBLY -- 10:14:00:07

BY TOXICOLOGICAL STANDARDS WE 10:14:03:16

CAN'T RAISE THE DOSE HIGH ENOUGH 10:14:05:21

ENDED UP BEING NEGATIVE SO 10:14:07:04

THAT'S A REASON, IN ADDITION 10:14:08:22

FROM THE STANDPOINT, I KNOW 10:14:10:06

YOU'RE TALKING SPECIFICALLY AT 10:14:11:03

THE LUNG, FROM A SYSTEMIC 10:14:12:09

EXPOSURE LEVEL WE ACHIEVED LARGE 10:14:13:16

SYSTEMIC EXPOSURE LEVELS 10:14:17:21

RELATIVE TO ACHIEVE IN 10:14:19:21

INHALATION SO AT SOME LEVEL WE 10:14:20:27

HIT THE DOSES VERY HIGH, 10:14:23:13

SYSTEMIC LEVEL. 10:14:25:15

10:14:26:12

>> WHENEVER PEOPLE SMELL 10:14:29:03

SOMETHING THERE'S AUTOMATICALLY 10:14:31:03

HEALTH EFFECT EVEN IF THERE 10:14:32:15

ISN'T A HEALTH EFFECT THAT I NOT 10:14:34:03

SURE HOW YOU CAN CONTROL FOR 10:14:36:12

THAT BUT IN SUMMARY IN SUMMARY, 10:14:37:21

IT MIGHT BE ACUTELY IRRITATING 10:14:44:18

OR IT MIGHT JUST BE THAT IT'S A 10:14:47:13
REALLY ANNOYING SMELL THAT 10:14:49:24
BOTHERS PEOPLE WHICH IS PROBABLY 10:14:51:16
WHAT IT IS. 10:14:53:15
BUT CAN'T TELL THAT 100%. 10:14:55:19
10:14:57:15
>> YOU CAN'T THAT'S A DIFFICULT 10:14:57:21
MESSAGE TO COMMUNIQUE. 10:14:59:24
IF YOU SMELL IT, THERE'S A 10:15:00:21
PSYCHOLOGICAL DISTRESS BECAUSE 10:15:03:06
YOU KNOW YOU'RE EXPOSED TO 10:15:05:24
SOMETHING YOU DON'T HAVE CONTROL 10:15:07:00
OVER. 10:15:08:00
SO BUT YOU'RE RIGHT THE 10:15:08:12
PSYCHOLOGICAL DISTRESS MAYBE IN 10:15:12:00
SOME WAYS WORSE THAN WITH 10:15:14:22
CHEMICAL EFFECT. 10:15:16:09
10:15:17:03
>> DR. HATTIS. 10:15:21:24

>> I ALSO HAVE A FEW QUESTIONS. 10:15:24:15

ONE, IS I SIMPLY DON'T 10:15:25:27

UNDERSTAND WHAT YOU MEAN BY THIS 10:15:27:27

P LEVEL FORFEIT GREATER THAN .5, 10:15:29:15

WHEN PEOPLE QUOTE P VALUES 10:15:34:10

THEY'RE TALKING REJECTING A NULL 10:15:35:18

HYPOTHESIS AT SOME LOW LEVEL, IN 10:15:37:18

CASE OF 20,000 COMPARISON STUDY 10:15:44:00

INVOLVES MASSIVE COMPARISON 10:15:48:10

PROBLEM. 10:15:50:15

TELL ME WHAT YOU WHAT YOU MEAN 10:15:51:03

BY FIT GREATER THAN .5. 10:15:52:15

10:15:53:09

>> OPPOSITE TO YOUR -- YOUR 10:15:55:00

INTUITIVE NATURE WHAT YOU SHOULD 10:15:58:06

BE SELECTING YOU'RE CORRECT. 10:15:59:13

SO BASICALLY THE WAY IT WORKS, 10:16:02:04

IT'S A SQUARE BASE TEST THAT 10:16:04:00

EVALUATES FIT OF CURVE TO DATA. 10:16:06:00

I'M A BIOLOGIST SO SPECIFICS HOW 10:16:12:21

IT IS CALCULATED IS NOT MY FORTE 10:16:14:18

BUT THE WAY IT WORKS IS BETTER 10:16:18:28

THE FIT TO DATA, THE HIRE THE P 10:16:20:21

VALUE. 10:16:25:12

10:16:25:12

>> MORE LIKE A HIGHER THE P 10:16:25:18

VALUE. 10:16:28:03

10:16:28:03

>> MORE LIKE A CO-EFFICIENT 10:16:28:15

CORRELATION CO-EFFICIENT OR 10:16:30:03

SOMETHING? 10:16:31:21
10:16:31:21
>> WHAT YOU MEAN BY P VALUE IN 10:16:34:18
THIS CASE IS THAT THERE'S 10:16:36:03
GREATER THAN 50% CHANCE THAT 10:16:37:18
DEVIATIONS FROM THE DATA BETWEEN 10:16:43:00
MODEL AND DATA OCCUR BY CHANCE 10:16:44:10
MORE THAN HALF THE TIME. 10:16:48:12
SO IS IT POSSIBLE THAT WE CAN 10:16:49:12
DISCUSS THIS OVER THE SOFTWARE? 10:16:56:01
AND I CAN SHOW YOU WHAT WE'RE 10:16:57:18
TALKING ABOUT. 10:17:01:12
WHAT I CAN TELL YOU IS THIS 10:17:02:00
PROTOCOL IS BEEN IMPLEMENTED IN 10:17:03:03
THE SOFTWARE, WHICH IS USED 10:17:05:21
EXTENSIVELY TO DEVELOP BENCHMARK 10:17:07:22
DOSE VALUES FROM DATA. 10:17:12:12
'S AN ACCEPTED STANDARD FOR 10:17:13:22
EVALUATING THE DATA. 10:17:15:10

AGAIN, HOW THE EXACT MATHEMATICS	10:17:16:12	70
OF THE SPECIFIC FITS WORK	10:17:21:03	
STANDARDIZED SET OF SOFTWARE.	10:17:22:28	
I I CANNOT TELL YOU AT THIS	10:17:24:15	
POINT BUT IT'S SOMETHING RUN	10:17:28:03	
OVER AND OVER AND OVER FOR THE	10:17:30:12	
LAST 20 ODD YEARS.	10:17:31:22	
	10:17:33:03	
>> THIS IS LISA PETERSEN, I	10:17:35:15	
ACTUALLY SOUNDS MORE LIKE A	10:17:37:00	
CORRELATION -- WHEN YOU DO A	10:17:39:18	
TREND LINE HOW WELL THE DATA FIT	10:17:43:03	
THE LINE, BASICALLY -- P VALUES	10:17:44:27	
SOMEHOW WE WOULD NORMALLY	10:17:48:15	
EXPRESS IS HOW THE SOFTWARE	10:17:50:03	
>> IT'S FIT VALUE IN EPA MDS.	10:17:53:18	
	10:17:57:07	
>> THE OTHER ISSUE IS, ARE YOU	10:18:00:03	
EMBARRASSED TO BE DELIGHTING BY	10:18:07:09	
TEN REPEAT LID TO GET YOUR	10:18:09:06	
GUIDANCE VALUES?	10:18:10:16	
WOULDN'T YOU RATHER HAVE A	10:18:14:04	
PROBLEM LISTIC TRY FROM DATA	10:18:16:00	
RELATED TO THESE URN CERTAINTY	10:18:18:27	
ISSUE?	10:18:23:00	
	10:18:23:00	
>> WE WOULD LOVE TO AND GROUPS	10:18:23:13	
ARE WORKING TOWARDS THAT.	10:18:25:09	
AT THIS POINT THIS IS FROM THE	10:18:26:06	
STANDPOINT OF RISK ASSESSMENT,	10:18:30:07	
THE DRINKING WATER ADVISORY	10:18:31:22	

LEVEL WAS NOT A RISK ASSESSMENT 10:18:32:27
BUT THE DRINKING WATER ADVISORY 10:18:34:06
DEVELOPMENT THESE ARE ACCEPTED 10:18:36:09
GUIDELINES THAT CDC USED BIASED 10:18:37:09
UPON THE DATA THEY HAD AT HAND 10:18:41:00
AND IT IS AGAIN IMPERFECT 10:18:43:06
PROCESS. 10:18:46:27
AND IT IS THERE IS A SCIENTIFIC 10:18:47:18
BASIS BUT ALSO I BELIEVE SOME 10:18:52:10
LEVEL ROUND NUMBER. 10:18:54:22
BUT THERE IS A ACCEPTED STANDARD 10:18:56:00
USED AND THIS IS SHOWN OVER TIME 10:19:04:06
TO BE REASONABLY PROTECTIVE 10:19:08:00
>> I DISAGREE, I HAVE DONE 10:19:13:12
EXTENSIVE AMOUNTS OF -- I THINK 10:19:15:03
THE WHOLE SYSTEM NEEDS TO BE 10:19:17:24
REPLACED BY A PROBABILISTIC 10:19:18:27
SYSTEM BASED ON REAL DATA. 10:19:22:04
10:19:23:18

>> DR. DORMAN.	10:19:27:01	71
		10:19:27:28
>> SO CURIOUS LIKE THE		10:19:29:00
TOXICOGENOMIC STUDY BY		10:19:31:06
AADVANTAGE AND YOU'RE -- THE		10:19:33:24
DRINKING WATER STANDARD AND I		10:19:36:24
DIDN'T SEE PHARMACOKINETIC		10:19:38:07
ANALYSES TO TRY TO LOOK AT		10:19:39:18
DIFFERENCES BETWEEN GAVAGE		10:19:41:18
VERSUS DRINKING WATER AND DOSE		10:19:44:03
RATE AS FAR AS HOW ITISM PACTS		10:19:45:10
TOXICITY.		10:19:48:24
HOW ARE YOU CONSIDERING THAT IN		10:19:49:13
YOUR CONCLUSIONS?		10:19:51:16
		10:19:52:22
>> AT THIS POINT WE ARE NOT --		10:19:53:06
WE DO NOT HAVE PLANS TO LOOK AT		10:19:54:21
THAT.		10:19:56:06
WE BELIEVE THE METRICS, THE		10:19:57:06
SPACE BETWEEN POINT OF DEPARTURE		10:19:59:00
AND THE EXPOSURE LEVELS WAS SO		10:20:01:07
WIDE, THE VARIATION AS A		10:20:05:21
FUNCTION OF THE DRINKING WATER		10:20:08:01
VERSUS -- IS GOING TO BE		10:20:09:04
LIMITED.		10:20:11:09
I WILL POINT OUT (INAUDIBLE)		10:20:11:22
LIKELY TO GIVE A HIGHER C MAX		10:20:13:28
BECAUSE YOU GIVE BOLUS SO IT		10:20:15:22
OVERDOSE SOME LEVEL RELATIVE TO		10:20:17:24
DRINKING WATER.		10:20:20:06
SO WE ARE ON THE SAME SIDE.		10:20:21:00

10:20:22:09

>> DR. CORCORAN. 10:20:26:03

10:20:26:24

>> THANK YOU, DR. PETERSON. 10:20:28:06

FASCINATING PRESENTATION AND 10:20:32:03

GARGANTUAN AMOUNT OF WORK. 10:20:34:01

YOU'RE TO BE COMMENDED. 10:20:36:06

MY QUESTION IS, THIS IS REALLY 10:20:38:09

NEW GROUND FOR THE NTP, RAPID 10:20:41:24

RESPONSE, NOT THE ONLY TIME 10:20:45:06

THERE'S A TERM FOR RAPID 10:20:47:07

RESPONSE AS I RECALL BUT THIS IS 10:20:49:16

A PARTICULARLY IMPORTANT I THINK 10:20:50:24

FOR THE FUTURE. 10:20:52:00

OF THE PROGRAM AND THIS QUESTION 10:20:52:24

MAY BE BEAR, ANSWERED BY OTHER 10:20:56:22

BUS ARE THERE PLANS TO 10:21:00:01

EXTRAPOLATE THIS EXPERIENCE TO 10:21:01:09

OREGON EXPECTED EMERGENCIES? 10:21:03:28

AND WHAT COMES TO MIND FOR ME IN 10:21:08:24 72

MICHIGAN IS THE INBRIDGE OIL 10:21:10:16

SPILL, LARGEST ON LAND OIL SPILL 10:21:14:03

IN THE HISTORY OF THE COUNTRY. 10:21:17:09

THE DISASTER THAT CONTINUES TO 10:21:19:00

UNFOLD DUE TO HOW THAT'S BEEN 10:21:20:28

HANDLED. 10:21:22:28

AND WOULD THIS GROUP CONSIDER 10:21:23:18

THAT AS PART OF ITS PURVIEW IN 10:21:25:27

THE FUTURE WHEN THERE'S ON LAND 10:21:28:16

OIL SPILLS OR OTHER CHEMICAL 10:21:30:18

RELEASES? 10:21:33:12

10:21:33:24

>> THERE'S ACTUALLY MUCH FURTHER 10:21:38:09

ABOVE ME, SO I WILL LET -- 10:21:40:12

>> I HAD A FEELING LINDA MIGHT 10:21:43:09

WANT TO ADDRESS THIS. 10:21:45:10

THE 10:21:46:06

>> NIEHS HAS BEEN ACTIVELY 10:21:46:27

INVOLVED IN CONDUCTING RESEARCH 10:21:48:12

WHEN THERE IS A DISASTER 10:21:51:15

SITUATION GOING BACK TO 9/11, 10:21:53:24

KATRINA. 10:21:57:07

RITA. 10:21:58:15

THE GULF OIL SPILL, WEST 10:21:59:00

VIRGINIA -- I GOT TO GO BACK 31 10:22:00:12

YEARS AGO. 10:22:04:15

TIMES CALL FOR SOMETHING 10:22:09:25

TOXICOLOGICAL AND MANY TIMES 10:22:11:07

OBSERVATIONAL STUDIES OF PEOPLE, 10:22:13:15

DEPENDS. 10:22:15:13

WE HAVE A CROSS-INSTITUTE EFFORT 10:22:16:07
THAT WE CALL DISASTER RESEARCH 10:22:18:24
RESPONSE, DISASTER DR-2. 10:22:20:27
WE WORK CLOSELY WITH THE 10:22:23:15
NATIONAL LIBRARY OF MEDICINE AND 10:22:25:15
HAVE A -- NLM WEBSITE PUT IN 10:22:27:04
DISASTER RESEARCH SPONSOR YOU 10:22:30:18
CAN PULL UP I THINK A VERY 10:22:31:27
DETAILED LISTING OF DIFFERENT 10:22:34:24
PROTOCOLS. 10:22:37:12
MANY -- SOME OF THESE 10:22:38:19
PRE-APPROVED BY IRBs SO THAT 10:22:40:15
WE CAN GET IN EARLY. 10:22:42:12
IN AN EMERGENCY SITUATION BEGIN 10:22:43:09
TO GET BIOSPECIMENS FOR EXAMPLE. 10:22:46:09
WE ARE ALSO WORKING CLOSELY WITH 10:22:49:21
THE ASSISTANT SECRETARY FOR 10:22:54:04
PREPAREDNESS AND RESPONSE 10:22:55:09
OFFICE. 10:22:56:24

WHO HAVE A EFFORT RELATED TO 10:22:57:15 73

RESPONDING. 10:23:03:12

IN OUR EXTRAMURAL PROGRAM OUR 10:23:03:24

HAZARDOUS WASTE AND EMERGENCY 10:23:06:24

RESPONSE STRAINING PROGRAM, 10:23:09:04

WORKER EDUCATION TRAINING 10:23:11:10

PROGRAM. 10:23:12:09

IS ALSO VERY INVOLVED IN 10:23:13:06

CONDUCTING -- PROVIDING TRAINING 10:23:15:01

IN EMERGENCY SITUATION AND SOME 10:23:19:00

OF THE GROUPS WE IDENTIFIED 10:23:20:15

RECENTLY AS BEING PEOPLE WHO FOR 10:23:22:18

RESEARCHERS NEEDED RELATED TO 10:23:25:21

EMERGENCY RESPONSE WORKERS. 10:23:27:27

AND THEIR MENTAL HEALTH FOR 10:23:28:27

EXAMPLE BECAUSE OF STRESS. 10:23:31:03

SO WHENEVER THERE IS A EMERGENCY 10:23:32:22

THAT COMES UP, OUR CROSS 10:23:37:10

INSTITUTE GROUP GETSING TO AND 10:23:40:27

TALKS ABOUT IS THIS SOMETHING WE 10:23:42:09

HAVE REASON TO GET INVOLVED IN. 10:23:44:06

WE ARE ALSO RESPONSIVE TO 10:23:48:18

OUTSIDE PARTIES. 10:23:50:24

SO IF WE GET REQUEST FROM SISTER 10:23:51:22

AGENESIS OR FROM A STATE 10:23:58:09

GOVERNMENT FOR EXAMPLE, 10:24:00:03

SOMETHING TO RESPOND WE MIGHT DO 10:24:01:27

IT. 10:24:03:10

OUR FEELING IN THE CASE THE WEST 10:24:03:16

VIRGINIA SPILL IS THAT MISSING 10:24:05:06

TOXICOLOGICAL INFORMATION 10:24:10:27

ADEQUATE TOXICOLOGICAL 10:24:13:13
INFORMATION THAT'S HELPFUL TO 10:24:15:27
WORK ON THAT, WE FELT THAT THE 10:24:17:18
-- WHETHER OR NOT WE WOULD SEE 10:24:19:28
ANY KIND OF -- BE ABLE TO 10:24:21:09
CAPTURE ANY KIND OF RESPONSE IN 10:24:24:03
THE POPULATION WAS ALREADY TOO 10:24:26:03
LATE. 10:24:28:22
10:24:29:00
>> JUST A BRIEF FOLLOW-UP. 10:24:31:18
DO I GET THE SENSE THAT IF THIS 10:24:34:03
WEST VIRGINIA OAK RIVER PROGRAM 10:24:36:21
WAS IN PLACE FIVE YEARS AGO 10:24:39:24
THERE'S A REASONABLE POSSIBILITY 10:24:41:27
YOU WOULD HAVE BOOTS ON THE 10:24:43:21
GROUND AT THE KALAMAZOO RIVER 10:24:44:24
AFTER THE OIL SPILL? 10:24:47:00
OR IS OIL SPILL SOMETHING THAT'S 10:24:48:12
OWN CATEGORY? 10:24:50:24

>> OIL SPILL -- I THINK WE'RE 10:24:51:21
LEARNING A GREAT DEAL FROM THE 10:24:53:25
WORK THAT WE ARE DOING RELATED 10:24:55:09
TO THE GULF OIL SPILL. 10:24:57:00
DIFFERENT OIL SPILLS OBVIOUSLY 10:24:59:09
HAVE DIFFERENT COMPOSITIONS AND 10:25:00:12
WHAT'S GOING ON AND DIFFERENT 10:25:02:03
PEOPLE IMPACT BUT THERE'S A 10:25:04:28
GREAT DEAL OF INFORMATION COMING 10:25:06:12
OUT FROM WHAT'S DONE WITH GULF 10:25:07:18
OIL SPILL TOXICOLOGICALLY AND 10:25:09:16
EPIDEMIOLOGICALLY. 10:25:11:27
10:25:13:09
>> THANKS. 10:25:13:15
THANK YOU. 10:25:14:06
10:25:14:13
>> CAN I ADD TO THIS? 10:25:18:16
THE SITUATION YOU DESCRIBE OIL 10:25:21:03
SPILL IS QUITE DIFFERENT 10:25:23:13
SITUATION THAN WHAT WE'RE 10:25:25:27
DEALING WITH HERE AND I THINK AS 10:25:27:06
NTP MOVES TOWARD A PROBLEM 10:25:30:19
SOLVING ORGANIZATION, WE NEED TO 10:25:33:07
TAKE MORE INTO ACCOUNT 10:25:37:10
CHARACTERISTICS OF THE SITUATION 10:25:38:03
WE'RE TRYING TO ADDRESS. 10:25:39:09
WHICH IS SOMETHING THAT NTP 10:25:40:16
HASN'T NECESSARILY DONE IN THE 10:25:42:06
PAST. 10:25:43:12
DO TRADITIONAL STUDIES AN 10:25:45:16

DEVELOP DATABASES THAT WOULD BE 10:25:47:04
SIMILAR DEPEND IRRESPECTIVE OF 10:25:48:15
PARTICULAR CHEMICALS WE'RE 10:25:52:21
TRYING TO PREDICT. 10:25:54:12
AS WE MOVE MORE TOWARDS A RAPID 10:25:55:09
RESPONSE, WE NEED CONFIDENCE IN 10:25:57:10
THE OUTS WE REPORT AS TO WHETHER 10:26:02:25
THEY'RE APPROPRIATE FOR THE 10:26:07:15
PARTICULAR ACCIDENT WE SEE. 10:26:08:12
SO WE WOULD CERTAINLY DESIGN A 10:26:09:21
MUCH DIFFERENT RESEARCH PROGRAM 10:26:11:09
FOR OIL SPILL THAN FOR A 10:26:12:15
SITUATION IN THIS CASE. 10:26:16:00
10:26:16:22
>> EXCELLENT RESPONSE. 10:26:17:06
10:26:18:16
>> DR. DORMAN. 10:26:21:03
>> STEVE DORMAN. 10:26:22:22
ONE QUESTION WITH THE DMCHDC 10:26:23:21

THAT TESTED POSITIVE IN THE	10:26:26:12	75
ZEBRAFISH ASSAY FOR REPRODUCTIVE	10:26:27:21	
DEVELOPMENT -- DEVELOPMENTAL	10:26:32:09	
EFFECT SO HAVE YOU CONSIDERED	10:26:33:27	
THE POSSIBILITY OF NOW RUNNING	10:26:35:18	
THAT THROUGH PRE-NATAL	10:26:37:06	
DEVELOPMENTAL DATABASE TO SEE	10:26:42:04	
HOW PREDICTIVE THAT ZEBRAFISH	10:26:44:01	
TOXICITY STUDY MIGHT BE FOR	10:26:48:12	
MAMMALIAN RESPONSE?	10:26:49:24	
	10:26:50:12	
>> CERTAINLY A POSSIBILITY GO	10:26:50:18	
THROUGH THE NOMINATIONS GROUP AT	10:26:52:10	
THIS POINT BECAUSE BASED UPON	10:26:53:10	
THE PRIORITIZATION STANDARDS	10:26:55:09	
BECAUSE OF THE NATURE OF THE	10:26:56:12	
AMOUNT IN THE SPILL MATERIAL	10:27:01:00	
THERE IS LIMITED CONCERN.	10:27:02:04	
THAT CHEMICAL IS USED IN	10:27:03:27	
PROCESSES.	10:27:05:06	
DR. (INAUDIBLE) HERE INFORMATIVE	10:27:09:12	
O SO THAT'S WHY IT'S IN THE	10:27:11:03	
ACTIVE DATABASE AND HAS -- IT	10:27:12:24	
HAS DEVELOPMENTAL -- OOC-421,	10:27:16:12	
SCREENING LEVEL PREPRODUCTIVE	10:27:19:12	
TOXICITY STUDY AND DID NOT HAVE	10:27:21:21	
EFFECT.	10:27:23:03	
SO FOR THAT REASON IN	10:27:23:15	
COMBINATION WITH THE CHEMICAL WE	10:27:27:15	
DONE SEE IT AS PRIORITY RIGHT	10:27:30:24	
NOW TO RUN PRE-NATAL TOXICITY.	10:27:32:12	

RUNNING GUIDELINE STUDIES THAT 10:27:37:00
ARE EXPENSIVE TO VALIDATE, 10:27:38:21
ZEBRAFISH ASSAY WOULD BE HARD TO 10:27:41:01
JUSTIFY UNLESS WE NEED GOOD 10:27:45:24
REASON TO JUSTIFY THE DATA 10:27:47:15
OTHERWISE. 10:27:49:06
10:27:49:21
>> THAT BEGS THE QUESTION WHAT 10:27:51:22
IS THE VALUE OF ZEBRAFISH IF YOU 10:27:53:06
CAN'T PHENOTYPICALLY PHENOTYPE 10:27:56:01
AGAINST A MAMMALIAN END POINT 10:27:59:06
THAT'S THE DILEMMA WITH ANIMAL 10:28:00:28
MODELS TO WHAT EXTENT PREDICTIVE 10:28:03:13
OF MAMMALIAN RESPONSES LET ALONE 10:28:05:09
WHATEVER THE PREDICTIVENESS OF 10:28:07:03
PROBENT FOR HUMANS. 10:28:08:21
THAT'S THE NEXT BIG QUESTION. 10:28:10:18
YOU HAVE DATA POINT ZEBRAFISH 10:28:15:22
HANGING THERE WITH NOT A LOT OF 10:28:17:25

ANCHORING SO TO SPEAK.	10:28:20:27	76
>> THAT'S ALSO TRUE WITH	10:28:21:27	
(INAUDIBLE) FROM THE QUALITATIVE	10:28:23:16	
INSULATION.	10:28:26:12	
WHILE THERE IS CONCORDANCE	10:28:27:27	
GLOBALLY, THE SPECIFIC FINDINGS	10:28:29:24	
ARE NOT NECESSARILY TRANSLATABLE	10:28:32:18	
TO HUMAN.	10:28:34:12	
IF WE ACCEPT RODENTS.	10:28:34:27	
I THINK THE THING OF IT IS,	10:28:43:18	
THERE NEEDS TO BE SOME	10:28:45:10	
EVALUATION BUT DO WE VALIDATE	10:28:46:18	
THOSE, THE QUESTION IS DO WE	10:28:48:15	
VALIDATE AGAINST HUMANS.	10:28:50:03	
IS THAT THE MOST APPROPRIATE WAY	10:28:51:06	
OF DOING IT?	10:28:54:12	
	10:28:55:01	
>> DAVID, YOU RAISE QUESTIONS WE	10:28:57:21	
DEAL WITH ALL THE TIME.	10:28:59:16	
THIS IS SOMETHING WE'RE GOING TO	10:29:00:16	
HAVE TO TAKE UNDER ADVISEMENT	10:29:04:03	
AND IF THE BOARD FEEL THIS IS IS	10:29:05:24	
A SIGNIFICANT ISSUE THEN THAT'S	10:29:07:04	
A RECOMMENDATION YOU CAN MAKE TO	10:29:11:04	
THE PROGRAM.	10:29:13:06	
	10:29:14:03	
>> I WOULD LIKE TO THEY CAN	10:29:17:15	
DR. DORMAN FOR RAISING THE ISSUE	10:29:18:19	
THAT I WAS GOING TO RAISE.	10:29:23:18	
BUT IN AN ADDITIONAL OR ANOTHER	10:29:26:00	
WAY, I SAW THAT THE CHEMICAL OF	10:29:29:15	

MAIN CONCERN DHMC, IS THAT 10:29:31:25
RIGHT? 10:29:34:10
IS -- WAS POSITIVE IN THE RODENT 10:29:35:15
DEVELOPMENTAL TOX ASSAY BUT NOT 10:29:38:00
POSITIVE IN ZEBRAFISH. 10:29:40:13
10:29:41:10
>> MCHM. 10:29:42:07
10:29:43:06
>> MCHM WAS POSITIVE IN 10:29:43:19
DEVELOPMENTAL TOX. 10:29:45:27
>> RIGHT. 10:29:46:25
SO IS THAT INTERESTING LITTLE 10:29:47:24
PAIR OF DISCORDANCES THERE. 10:29:53:09
10:29:54:21
>> THIS IS ONE -- FINISH YOUR 10:29:55:03
STATEMENT. 10:29:57:12
10:29:57:12
>> GO AHEAD. 10:29:57:25
10:29:58:01

>> THIS IS A REASON -- THIS IS 10:29:58:24 77

THE MAIN REASON I WOULD WANT A 10:29:59:27

TK STUDY. 10:30:02:09

10:30:03:07

>> RIGHT. 10:30:03:22

WE MAX THE DOSES OUTS TO 100 10:30:07:28

MICROMOLAR. 10:30:09:24

IF I GIVE 400 MG PER KG PER DAY 10:30:10:18

TO RHODEN OF BOLUS DOSE OF 10:30:14:22

ALCOHOL CHANCES ARE HIGH BLOOD 10:30:16:21

LEVELS POTENTIALLY HIGHER THAN 10:30:18:15

100 MICROMOLAR. 10:30:20:18

SO THAT'S SOMETHING -- AT LEAST 10:30:21:15

-- MOST OF THESE CLEAR QUICKLY 10:30:25:06

BUT CMAX GOOD CHANCE OF GETTING 10:30:27:18

HIGH LEVELS. 10:30:30:09

10:30:30:25

>> SO TWO OTHER COMMENTS, ONE I 10:30:32:09

LOVED YOUR GREATER THAN THREE 10:30:35:00

DOSE LEVELS, GENERICALLY 10:30:40:24

WONDERFUL, NICE TO RECEIVE 10:30:42:10

MULTIPLE DOSE LEVELS BUT TWO, 10:30:44:04

AND I LIKE THE SPREAD OF ALL THE 10:30:45:24

DIFFERENT PLACES THE SPOTLIGHT 10:30:50:12

LANDS, GENO TOXICITY, DERMAL, 10:30:52:00

IMMUNE TOX, ALL OF THAT IS GOOD. 10:30:55:00

WONDERING IF THERE IS AN INTENT 10:30:58:13

IN THE PROGRAM AS THIS -- SO I 10:31:02:06

THINK -- LET ME TAKE A STEP 10:31:05:15

BACK. 10:31:07:04

DEVELOPING A COGENT RAPID 10:31:07:21

RESPONSE SET OF ARROWS THAT YOU 10:31:10:10
CAN PULL OUT OF YOUR QUIVER WHEN 10:31:13:18
THE NEXT EMERGENCY COMES UP, IS 10:31:15:18
A REALLY WISE THING FOR THE 10:31:18:07
PROGRAM TO DO. 10:31:20:12
THAT'S JUST GREAT. 10:31:21:00
YOU KNEE TO BE ABLE TO SHOW THE 10:31:21:28
FUNDERS AND THE PUBLIC THAT YOU 10:31:26:00
CAN BE THERE WITH USEFUL 10:31:27:15
INFORMATION IN A VERY SHORT 10:31:29:00
PERIOD OF TIME AFTER THERE'S A 10:31:30:21
SPECIFIC EVENT. 10:31:32:06
10:31:32:25
>> EXCUSE ME. 10:31:33:18
WE'RE JUST IN QUESTIONS FOR 10:31:34:18
CLARIFICATION, WE'RE NOT READY 10:31:36:10
FOR COMMENTS. 10:31:39:01
WE HAVE -- SORRY TO CUT YOU OFF. 10:31:39:27
10:31:41:15

>> THANK YOU.	10:31:45:00	78
I WANT YOU -- YOU CAN COME BACK	10:31:45:09	
AND MAKE THE COMMENTS.	10:31:47:00	
MORE IN THE COMMENT PHASE WE	10:31:48:24	
NEED TO GET THROUGH.	10:31:50:12	
ANY OTHER QUESTIONS FOR	10:31:51:12	
CLARIFICATION FROM THE BOARD?	10:31:56:12	
OKAY.	10:31:57:19	
WE HAVE RECEIVED ONE WRITTEN	10:31:58:27	
COMMENT FROM THE PEOPLE	10:32:04:06	
CONCERNED ABOUT CHEMICAL SAFETY.	10:32:05:00	
AND DR. -- YOU HAVE SOME PUBLIC	10:32:07:00	
ORAL COMMENTS FOR THE GROUP.	10:32:14:12	
	10:32:15:16	
>> SHE'S REPRESENTATIVE OF THE	10:32:17:25	
PEOPLE CONCERNED ABOUT CHEMICAL	10:32:19:09	
SAFETY.	10:32:21:06	
	10:32:21:16	
>> FIRST TIME I HAVE BEEN CALLED	10:32:25:12	
DOCTOR.	10:32:26:18	
THANK YOU, I'M NOT A DOCTOR.	10:32:27:09	
MY NAME IS MAYA NYE, I'M	10:32:28:22	
EXECUTIVE DIRECTOR OF PEOPLE	10:32:33:03	
CONCERNED ABOUT CHEMICAL SAFETY	10:32:34:18	
BASED IN CHARLESTON, WEST	10:32:36:27	
VIRGINIA, ONE REASON I WANTED TO	10:32:38:27	
BE PRESENT HERE IS JUST TO PUT A	10:32:41:06	
PHASE TO THE WORK THAT YOU HAVE	10:32:42:21	
BEEN DOING AND SAY THANK YOU TO	10:32:43:18	
THE THE MYRIAD OF PEOPLE IN THE	10:32:44:24	
ROOM WHO HAVE BEEN WORKING ON	10:32:46:22	

THIS. 10:32:47:21
IT MEANS A LOT SO THANK YOU VERY 10:32:50:16
MUCH. 10:32:51:21
ON A PERSONAL LEVEL WOMAN OF 10:32:52:00
CHILD BARING AGE WHO GREW UP IN 10:32:57:15
THE FENCE LINE COMMUNITY NEXT TO 10:32:59:16
A CHEMICAL FACILITY SO VERY 10:33:01:00
INTERESTED IN THE WORK THAT 10:33:03:15
YOU'RE DOING ON CUMULATIVE 10:33:04:07
EXPOSURE AND HOW THAT EXPERIENCE 10:33:05:21
TRANSLATES TO THE WORK THAT 10:33:10:03
YOU'RE DOING. 10:33:11:15
SO I SUBMITTED COMMENTS, I 10:33:16:12
DIDN'T SUBMIT THEM UNTIL LATE 10:33:18:13
YESTERDAY EVENING SO I'M NOT 10:33:20:01
SURE IF YOU HAVE HAD A CHANCE TO 10:33:21:25
REVIEW THEM. 10:33:23:00
BUT PEOPLE CONCERNED ABOUT 10:33:23:27
CHEMICAL SAFETY, WE ARE A 10:33:25:15

VALLEY AND WE HAVE BEEN AROUND 10:33:28:21
FOR ALMOST 30 YEARS SINCE BO 10:33:30:06
PAUL DISASTER AN EAR DEDICATED 10:33:33:18
TO PROTECTION OF HEALTH AND 10:33:35:09
SAFETY OF THOSE WHO RESIDE IN 10:33:36:06
THE VICINITY OF CHEMICAL 10:33:38:15
FACILITIES. 10:33:40:22
WE PROMOTE CHEMICAL SAFETY AND 10:33:42:03
PREVENT WORK TO PREVENT CHEMICAL 10:33:44:06
DISASTERS. 10:33:46:21
SO AGAIN THANK YOU FOR YOUR WORK 10:33:47:12
AROUND, 3 HUB THOUSAND FAMILY 10:33:50:19
MEMBERS -- 300,000 AND CLOSEST 10:33:54:06
NEIGHBORS, AT LEAST A THIRD WHOM 10:33:57:18
HAVE BEEN DOCUMENTED HAVING 10:34:00:00
EXPERIENCE SYMPTOMS OF EXPOSURE. 10:34:01:00
AND ONE THAT'S IDENTIFIED AS 10:34:04:07
RISK BY WEST VIRGINIANS FOR A 10:34:07:07
NUMBER OF YEARS IN THE HANDLING 10:34:09:12
AT WORK COAL PROCESSING 10:34:11:16
FACILITIES AND AS A RESULT OF 10:34:13:03
GROUND WATER CONTAMINATION. 10:34:14:24
I DON'T REALLY -- I DON'T -- I 10:34:15:22
DON'T WANT TO READ MY WHOLE 10:34:18:00
COMMENTS BUT THERE ARE SOME 10:34:19:15
REALLY IMPORTANT POINTS THAT I 10:34:20:12
WOULD LIKE TO HIGHLIGHT WITH 10:34:21:21
THEM. 10:34:22:27
IN PARTICULAR BACK TO A QUESTION 10:34:23:03
ASKED ABOUT ONGOING EFFECTS OF 10:34:28:06

SKIN DERMAL SENSITIVITY AND THAT 10:34:30:21
HAS NOT BEEN AN ISSUE BUT WHAT'S 10:34:33:16
BEEN AN ISSUE THAT I CAN CONFIRM 10:34:35:18
FROM PEOPLE ON THE GROUND IS 10:34:37:00
DEVELOPMENT OF ADULT ON SET 10:34:38:27
ASTHMA. 10:34:40:27
VULNERABLE POPULATIONS WITH 10:34:41:10
PRE-EXISTING RESPIRATORY 10:34:44:06
ILLNESSES THAT HAVE BEEN 10:34:45:27
SIGNIFICANTLY IMPACTED AS A 10:34:47:19
RESULT OF INHALATION OF THIS 10:34:49:07
CHEMICAL. 10:34:53:09
AND CHEMICAL PNEUMONIA. 10:34:53:21
SOMEONE REPORTED THAT AS A 10:34:58:22
RESULT OF EXPOSURE. 10:35:00:04
SO THE TESTS THAT HAVE COME OUT 10:35:01:21
SINCE THEN INTERESTED TO KNOW 10:35:03:09
HOW THE WORK OF THIS BODY IS 10:35:04:09
LOOKING AT THE BROADER BASE OF 10:35:05:21

EVIDENCE THAT'S COME OUT SINCE 10:35:11:03 80

THE SPILL IN PARTICULAR LOOKING 10:35:12:06

AT THE VOLATILITY OF THE 10:35:13:06

CHEMICAL, I HAVE HIGHLIGHTED IT 10:35:15:09

IN A COUPLE OF MY POINTS. 10:35:20:00

BUT LOOKING AT VOLATILITY AND 10:35:22:15

HOW A AT DIFFERENT TEMPERATURES 10:35:24:00

PERHAPS THIS CHEMICAL COULD 10:35:26:04

CAUSE -- COULD BE MORE TOXIC. 10:35:28:12

AND SO SEEM AS LOT OF TESTS DONE 10:35:31:00

BY THE NTP FOCUSED ON DERMAL AND 10:35:36:12

INGESTION, A LOT OF PEOPLE DID 10:35:39:00

AVOID IT, THEY AVOIDED INGESTING 10:35:41:21

THE CHEMICAL, EXCUSE ME 10:35:44:21

INGESTING THE WATER BUT THEY 10:35:47:00

DIDN'T ESCAPE THE INHALATION IN 10:35:48:07

THE SHOWER OR WHEN THEY FLUSHED 10:35:51:12

THEIR PIPES BECAUSE ALL THE 10:35:52:24

HOMES HAD TO FLUSH THE CHEMICAL 10:35:54:22

THROUGH THEIR PIPES. 10:35:56:18

AND THERE WAS A PROTOCOL THAT 10:35:58:00

WAS SET 15 MINUTE HOT WATER 10:35:59:09

FLUSH, MOST PROBABLY FLUSHES 10:36:05:27

LONGER THAN THAT. 10:36:07:15

IT WAS ALSO IDENTIFIED IN THE 10:36:08:15

WATER FILTERS AT WEST VIRGINIA 10:36:09:18

WATER THE CHEMICAL TRAPPED IN 10:36:13:04

FILTERS FOR IT WAS IDENTIFIED I 10:36:15:06

BELIEVE SOMETIME IN MARCH BUT 10:36:16:18

NOT UNTIL JUNE THAT THE FILTER 10:36:19:15

REPLACEMENT WAS COMPLETE SO 10:36:22:13

EXPOSURE LENGTH MIGHT NEED TO BE 10:36:27:03
SOMETHING THAT IS CONSIDERED AS 10:36:29:10
WELL. 10:36:30:09
SO THOSE ARE HIGHLIGHTS IN MY 10:36:30:15
LETTER. 10:36:36:27
BE SURE TO TAKE A LOOK AT THAT. 10:36:37:10
MMCHC, METHYL CYCLE CARBOXYLATE 10:36:39:01
WAS IDENTIFIED BY THE U.S.GS AS 10:36:43:24
BEING DUCTED IN THE TAP WATER 10:36:47:16
SAMPLES. 10:36:48:27
SO THAT WAS ALSO SOMETHING 10:36:49:18
DR. URBAL SAID THERE WAS ONGOING 10:36:55:21
STUDIES ABOUT THAT SO WE'RE 10:36:58:00
INTERESTED TO SEE WHAT COMES OUT 10:36:59:06
AS A RESULT OF THAT. 10:37:00:21
THAT IS THE BULK OF HIGHLIGHTS 10:37:01:12
OF THE LETTER. 10:37:12:00
HOPE YOU READ IT AND WE WOULD 10:37:13:07
LOVE TO HAVE RESPONSES AND MAYBE 10:37:15:10

THIS WILL BE HELPFUL, I THINK 10:37:16:24 81

THERE'S GOING TO BE A 10:37:18:12

PRESENTATION IN WEST VIRGINIA IF 10:37:19:09

I'M NOT MISTAKEN OR THAT HAS 10:37:20:13

BEEN DISCUSSED AT SOME POINT FOR 10:37:22:16

PEOPLE TO INTERACT WITH THIS 10:37:27:06

INFORMATION AND ASK QUESTIONS, 10:37:28:12

IF NOT, I WOULD HIGHLY SUGGEST 10:37:29:15

THAT IS SOMETHING THAT HAPPENS 10:37:32:12

BECAUSE PEOPLE WANT TO KNOW HOW 10:37:33:18

THIS INFORMATION TRANSLATES TO 10:37:34:28

THEIR EXPERIENCE. THAT IS THE 10:37:36:12

BULK OF WHAT I WANT TO SAY. 10:37:44:27

THANK YOU SO MUCH FOR YOUR WORK 10:37:46:03

AND FOR RESPONDING TO THIS 10:37:47:07

INCIDENT. 10:37:48:12

AND WE HOPE YOU CONSIDER 10:37:48:24

CONDUCTING INHALATION STUDIES. 10:37:52:15

ONE MORE -- INHALATION STUDIES 10:37:54:03

THAT. 10:37:56:10

THE'S ONE THING TALKED ABOUT 10:37:56:12

DISASTER RESPONSE AND ONE MAIN 10:37:57:28

ISSUES WAS THE DATA COLLECTION, 10:37:59:09

AIR SAMPLING WAS NOT TAKEN IN 10:38:05:06

RESPONSE TO THE SPILL WHICH FOR 10:38:08:12

US WAS A MAIN PATHWAY THE TO 10:38:10:13

EXPOSURE AND GREATEST CONCERN. 10:38:12:06

SO IN LOOKING AT DISASTER 10:38:14:03

RESPONSE, AND SCIENTIFIC 10:38:15:10

RESPONSE IN THE FUTURE, THIS WAS 10:38:18:21

A CONVERSATION THE NATIONAL 10:38:19:27

SCIENCE FOUNDATION CONFERENCE	10:38:20:24
COUPLE OF WEEKS AGO WE HOPE	10:38:22:22
THERE'S A WAY TO COLLECT THE	10:38:24:00
DATA NECESSARY, WHEN THESE	10:38:25:18
DISASTERS OCCUR BECAUSE THAT'S	10:38:27:15
WHEN IT'S MOVE IMPORTANT TO	10:38:29:06
COLLECT.	10:38:31:09
SO THANK YOU VERY MUCH.	10:38:31:16
	10:38:36:04
>> THANK YOU.	10:38:36:18
ANY QUESTIONS FOR HER?	10:38:37:07
ARE THERE ANY OTHER PUBLIC	10:38:42:28
COMMENTS FROM THE AUDIENCE?	10:38:48:00
ALL RIGHT.	10:38:49:09
WITH THAT, I'LL ASK	10:38:52:24
DR. MARKOWITZ TO PRESENT HIS	10:38:54:09
COMMENTS.	10:38:56:18
	10:38:57:00
>> THANK YOU, STEPHEN MARKOWITZ,	10:38:59:22

I'M NOT PRESENT, NEXT TIME I'LL 10:39:03:00
TRAVEL WITH DAN CATZ AND SUCCEED 10:39:06:03
IN ARRIVING. 10:39:09:15
FIRST I WANT TO SAY I'M SURE I 10:39:10:09
SPEAK FOR OTHER MEMBERS OF THE 10:39:13:15
BOARD TO EXPRESS ADMIRATION FOR 10:39:15:06
THIS WHOLE PROJECT THE ABILITY 10:39:18:09
TO PLAN IT, TO ACHIEVE 10:39:19:27
CONSENSUS, EXECUTE IT, 10:39:23:15
COMMUNICATE ALONG THE WAY, AND 10:39:24:22
COME UP WITH FINAL RESULTS 10:39:28:12
WITHIN A YEAR. 10:39:29:12
IS REALLY SOMETHING. 10:39:30:00
BOB MENTIONED THIS IN THE 10:39:36:04
DECEMBER MEETING, HERE WE ARE 10:39:37:12
SIX MONTHS LATER AND APPEARS 10:39:39:00
APPEARS TO HAVE THE DEADLINE 10:39:44:06
SUCCESSFULLY SO HATS OFF TO YOU 10:39:45:25
FOR THAT. IT'S ALSO PERSONAL 10:39:47:12
COMMENTARY QUITE A CONTRAST, I 10:39:50:01
THINK S THE SOPHISTICATION OF 10:39:51:25
WHAT YOU DO VERSUS HOW CRUDE THE 10:39:53:27
SYSTEM WE HAVE, THAT ALLOWS USE 10:39:57:27
OF CHEMICALS LARGELY UNTEST AND 10:40:01:19
LARGELY UNMONITORED SUCH AS 10:40:03:15
CHEMICALS INVOLVED WITH THIS 10:40:06:09
SPILL. 10:40:07:27
AND WHICH RESULTED IN -- AT SOME 10:40:09:00
LEVEL SOME HUMAN EXPOSURE. 10:40:12:03
SECONDLY, I THINK THE WRITE UP 10:40:13:21

TO THE UPDATES AND ALSO 10:40:18:07
DR. AUERBACH'S PRESENTATION 10:40:19:22
TODAY WERE EXCEPTIONALLY CLEAR. 10:40:21:09
AND PROVIDING UPDATES ALONG THE 10:40:26:09
WAY I'M SURE IS IMPORTANT NOT 10:40:29:03
JUST TO US BUT PEOPLE AFFECTED 10:40:30:12
BY THIS. 10:40:32:03
AND I THINK AGAIN, THE HISTORY 10:40:32:18
OF THE SPILL THAT RISK 10:40:36:21
COMMUNICATION WAS A MAJOR 10:40:37:18
CHALLENGE. 10:40:38:27
AND I THINK NTP DOING WELL AT 10:40:40:06
LEAST IN YOUR OWN OF OVERCOMING 10:40:45:03
THAT, WHICH RELATES TO THE 10:40:50:09
QUESTION I HAVE, WHAT IS -- I 10:40:51:18
KNOW YOU WILL BE DONE IN A MONTH 10:40:53:06
OR SO, WHAT IS THE PLAN FOR 10:40:54:24
FURTHER COMMUNICATION WITH LOCAL 10:40:58:06
COMMUNITY? 10:40:59:10

>> DR. (INAUDIBLE) LOOKS LIKE HE WANTS TO COMMENT SO LET HIM GO FIRST.
>> THIS IS THE FIRST PUBLIC PRESENTATION OF THE INFORMATION FROM THE SCIENTIFIC LEVEL. I HAVE -- WE WILL BE DOING INTERVIEWS WITH THE OCAL NEWS TODAY. AND WE WILL BE WRITING OVERALL REPORT OF THESE STUDIES THAT WILL BE MADE AVAILABLE TO ANYONE WHO WANTS TO TALK ABOUT IT. SO WE DON'T HAVE ANY OFFICIAL PLANS FOR PRESS CONFERENCES OR THE LIKE. BUT WE ARE OPEN TO OBVIOUSLY ANY -- INTERACTIONS THAT WOULD FURTHER OUR -- GETTING THIS INFORMATION OUT TO THE PEOPLE WHO WOULD LIKE TO HEAR IT.
>> ONE THING I WOULD ALSO NOTE, ANY INTERACTION WITH THE PUBLIC IN WEST VIRGINIA WOULD LIKELY BE COORDINATED WITH CDC, WEST VIRGINIA DEPARTMENT OF BIODEVELOPMENT AND WEST VIRGINIA OFFICIALS.

>> (OVERLAPPING SPEAKERS) 10:42:13:21
>> COUPLE OF QUICK QUESTIONS. 10:42:17:09
IN -- WE MET LAST TIME I THINK 10:42:20:00
THERE WAS MENTION OF USING THE 10:42:21:27
PRE-NATAL -- STUDY TO LOOK AT A 10:42:24:03
LITTLE BIT OF INTERNAL 10:42:27:18
DOSIMETRY. 10:42:29:06
THIS RELATES TO ONE ISSUE THAT 10:42:30:21
PUBLIC COMMENTERS RAISED 10:42:33:03
INHALATION. 10:42:34:24
SO WHAT IS -- DR. AUERBACH YOU 10:42:35:10
MAY HAVE COVERED THIS IN YOUR 10:42:39:21
REPORT, DID YOU LEARN ANYTHING 10:42:40:28
ON THAT STUDY ABOUT INTERNAL 10:42:42:01
DOSES THAT MIGHT BE USEFUL IN 10:42:43:24
MODELING WHAT INHALATION MIGHT 10:42:46:06
HAVE MEANT? 10:42:48:09
10:42:48:27
>> WE HAVE NOT AT THIS POINT 10:42:51:09

AVAILABLE TO US. 10:42:55:24

ONE BIG FOCUS WAS EVALUATING 10:42:56:21

THAT POINT OF DEPARTURE 10:43:01:06

ORIGINALLY USED. 10:43:04:22

IF THE MARGIN WAS QUITE LARGE, I 10:43:06:03

DON'T THINK THERE WAS -- MUCH 10:43:08:25

ENTHUSIASM TO GO ABOUT 10:43:12:24

EVALUATING TOXICOKINETICS 10:43:16:09

BECAUSE IT DIDN'T HAVE THAT 10:43:19:24

SIGNIFICANT OF AN EFFECT. 10:43:21:01

I BELIEVE IT'S A VERY GOOD 10:43:22:00

SUGGESTION AN CERTAINLY 10:43:23:09

SOMETHING WE CAN REVISIT. 10:43:24:06

AND TAKE INTO CONSIDERATION 10:43:26:09

GOING FORWARD. 10:43:28:00

10:43:30:24

>> JUST A FINAL QUESTION, GIVEN 10:43:33:27

WHAT YOU FOUND SO FAR, DO YOU 10:43:37:18

HAVE OR WILL YOU DEVELOP 10:43:39:06

RECOMMENDATIONS FOR ADDITIONAL 10:43:40:16

STUDIES? 10:43:41:13

OR -- WE HAVE LEARNED WHAT WE 10:43:43:28

LEARNED AND TIME TO MOVE ON? 10:43:45:27

10:43:47:03

>> AT THIS POINT I THINK WE -- 10:43:49:06

THE BIGGEST CONCERN THAT WE HAD 10:43:51:04

WAS EVALUATING THE POINT -- 10:43:52:21

NUMBER ONE ON OUR GOALS, WE 10:43:56:13

DON'T BELIEVE WE WOULD 10:44:00:18

SIGNIFICANTLY LOWER THAT NUMBER 10:44:02:00

WITH MORE STUDIES AT THIS POINT. 10:44:04:01
SO WE DON'T KNOW WHAT ADDITIONAL 10:44:07:09
VALUE WE WOULD PROVIDE. 10:44:08:21
IF THERE IS JUSTIFICATION AND 10:44:09:28
POTENTIAL FOR DISCUSSION ON 10:44:14:00
THIS, IT IS POSSIBLE THAT WE CAN 10:44:15:18
DO ADDITIONAL STUDIES BUT THEY 10:44:17:06
WOULD HAVE TO BE A CLEAR 10:44:19:06
JUSTIFICATION TO THAT THAT WE 10:44:20:10
THINK IMPACT PUBLIC DECISION 10:44:22:00
MAKING. 10:44:25:21
10:44:26:09
>> THANK YOU. 10:44:28:06
THAT'S ALL I HAVE. 10:44:28:27
10:44:29:03
>> I WOULD LIKE TO MAKE ONE MORE 10:44:29:25
COMMENT. 10:44:31:15
ONE THING THAT IS IMPORTANT 10:44:32:06
TRYING TO DESIGN A SERIES OF 10:44:34:12

STUDIES THAT ADDRESSES A	10:44:36:00	85
PARTICULAR PUBLIC HEALTH ISSUE	10:44:37:18	
IS THAT YOU HAVE AFTER	10:44:39:09	
PARTICULAR TARGET.	10:44:40:27	
THE TARGET WAS THE ONE PPM	10:44:42:07	
DRINKING WATER ADVISORY LEVEL TO	10:44:45:27	
SEE IF IT WAS SUPPORTED BY	10:44:48:00	
INFORMATION WE GENERATE IN	10:44:49:24	
DECREASING THE UNCERTAINTY	10:44:51:15	
AROUND THAT ESTIMATE.	10:44:53:00	
IT WOULD BE GREAT TO HAVE HAD	10:44:54:28	
INHALATION MEASUREMENTS AT THE	10:44:58:18	
TIME OF THIS BILL OR TIME OF	10:45:00:13	
EXPOSURE OR FLUSHING OF THE	10:45:03:22	
PIPES IN THE HOUSES, THAT WOULD	10:45:06:18	
HAVE GIVEN US A TARGET TO FOCUS	10:45:08:06	
ON.	10:45:09:21	
BUT IN THE ABSENCE OF THOSE	10:45:10:01	
MEASUREMENTS IT'S REALLY	10:45:11:27	
DIFFICULT TO TRY TO DECIDE WHAT	10:45:13:09	
KIND OF A STUDY YOU WOULD PUT	10:45:15:16	
TOGETHER TO SEE IF WHATEVER	10:45:16:27	
LEVELS ARE ACHIEVED OR	10:45:20:27	
POTENTIALLY HARMFUL.	10:45:22:21	
SO IT'S THE FOCUS ON THE POINT	10:45:24:06	
OF DEPARTURE I THINK WAS	10:45:28:00	
SOMETHING THAT WAS CRITICAL AND	10:45:29:18	
SOMETHING WE TALKED ABOUT AT THE	10:45:31:09	
VERY BEGINNING DESIGNING THESE	10:45:32:12	
STUDIES.	10:45:33:27	
	10:45:34:16	

>> PAUL HOWARD. 10:45:39:06
TWO QUICK QUESTIONS. 10:45:40:03
ONE, ONE OF THE HALLMARKS OF THE 10:45:43:04
NTP PROGRAM IS KEEPING OTHER 10:45:44:22
FEDERAL AGENCIES INVOLVED AND 10:45:46:15
UPDATED AS THINGS MOVE ALONG. 10:45:48:09
SO THERE'S NO SURPRISES IN FRONT 10:45:49:15
OF THE CAMERAS. 10:45:51:04
WOULD YOU CLARIFY WHAT YOU SAID 10:45:53:00
ABOUT THE CDC, SCOTT? 10:45:54:09
THEY HAVE BEEN INVOLVED OR GOING 10:45:56:10
TO BE INVOLVED IN. 10:45:58:00
>> WE HAVE EVERY SINGLE UPDATE 10:45:58:24
HAS BEEN COMMUNICATED THROUGH 10:46:00:25
OUR STAKEHOLDERRERS BEFORE THEY 10:46:01:22
WERE RELEASED. 10:46:03:18
AND THEY WERE GIVEN THE 10:46:04:15
OPPORTUNITY TO REVIEW THEM. 10:46:05:18
THERE'S BEEN AN OPEN LINE 10:46:06:15

COMMUNICATION WITH CENTER FOR 10:46:12:00 86
 DISEASE CONTROL SPECIFICALLY ON 10:46:13:15
 WHAT WE HAVE BEEN DOING AND WHAT 10:46:15:06
 WE HAVE BEEN FINDING AND WHAT WE 10:46:16:22
 WERE RELEASED TO THE PUBLIC. 10:46:18:13
 10:46:19:27
 >> THAT IS OUTSTANDING. 10:46:20:10
 IN LIGHT OF RAPID RESPONSE YOU 10:46:21:28
 DON'T WANT TO LEAVE THAT 10:46:23:27
 COMMUNICATION OFF THE TABLE 10:46:24:27
 BECAUSE SURPRISES NEVER A GOOD 10:46:26:12
 THING IN THE FEDERAL GOVERNMENT. 10:46:29:00
 THE SECOND THING IS, JUST A 10:46:30:21
 QUESTION ABOUT WHY 10:46:31:28
 TOXICOKINETICS OR 10:46:33:09
 PHARMACOKINETICS, WHY 10:46:34:24
 PHARMACOKINETICS WASN'T DONE 10:46:37:06
 SINCE IT'S THE BENCHMARK TO 10:46:39:25
 UNDERSTAND THE DOSE DIFFERENCE 10:46:41:07
 BETWEEN ANIMALS AND SEXES, ET 10:46:42:04
 CETERA, IS IT BECAUSE JUST THE 10:46:44:24
 TIMING, TO PUT TOGETHER TO 10:46:46:18
 VALIDATE AN LCMS METHOD FOR 10:46:50:09
 LOOKING AT METABOLITES OR WAS IT 10:46:53:28
 A DIFFERENT REASON? 10:46:55:19
 10:46:56:22
 >> SO WE -- A LOT OF WHAT IT IS, 10:46:59:21
 IT'S RESEARCH CAPABILITY AND I 10:47:02:27
 HAVE GUMMED UP THE WORK 10:47:06:19
 SIGNIFICANTLY AND EVERYONE IS 10:47:08:22
 VERY PATIENT WITH ME. 10:47:10:24

AGAIN, IT'S A QUESTION OF IF YOU 10:47:11:21
HAVE VERY LARGE MARGINS OF 10:47:18:15
EXPANSION, WHAT'S THE -- THERE 10:47:20:00
ARE SCIENTIFIC JUSTIFICATION. 10:47:22:21
BUT FROM INFORMING THE PUBLIC 10:47:26:06
HEALTH OFFICIALS TO MAKE 10:47:29:24
DECISIONS IS A QUESTION OF THE 10:47:30:24
VALUE OF THE INFORMATION. 10:47:32:15
ONCE YOU HAVE THE POINT OF 10:47:34:03
DEPARTURE A THOUSAND FOLD 10:47:35:13
HIGHER. 10:47:37:19
ADDITIONAL TOXICOKINETIC 10:47:38:09
INFORMATION YES MAYBE 10:47:40:12
INTERESTING, MAY CHANGE NUMBERS 10:47:41:09
SLIGHTLY BUT WHAT ADDED VALUE, 10:47:43:24
DO YOU GET AT THAT POINT? 10:47:46:09
THAT'S WHERE THE BALANCES COME 10:47:48:18
FROM. 10:47:50:09
CERTAIN PEOPLE MAKE ARGUMENTS 10:47:50:28

ONE WAY OR ANOTHER WAY. 10:47:52:09 87

I AGREE. 10:47:53:18

FINE AN ACCURATE NUMBER REDUCES 10:47:56:25

UNCERTAINTY. 10:47:58:09

YOU HAVE A LOT OF ROOM TO WORK 10:47:59:06

WITH MARGIN EXPOSURE. 10:48:01:12

10:48:02:25

>> THAT'S A VERY WELL THOUGHT 10:48:04:10

OUT WAY OF LOOKING AT THAT 10:48:06:06

BECAUSE YOU THINK IF IT WAS A 10:48:09:00

SERIOUS ISSUE EPA RAISED IT. 10:48:10:15

THEY BEAR THE BRUNT OF THIS. 10:48:13:03

10:48:18:10

>> YES, THE (INAUDIBLE) GROUP AT 10:48:20:28

EPA. 10:48:23:09

CORRECT? 10:48:24:01

WOULD BE THE ONE DEALING WITH 10:48:24:15

IT. 10:48:26:09

10:48:26:21

>> OKAY. 10:48:30:06

ANY OTHER COMMENTS FROM THE 10:48:30:21

BOARD? 10:48:31:22

DR. CHAPIN? 10:48:32:00

10:48:34:00

>> SO GLAD YOU ASKED. 10:48:36:10

SO LET'S SEE. 10:48:38:16

MY -- SO AS I LOOK AT THAT LIST 10:48:39:24

OF END POINTS AND SYSTEMS 10:48:43:18

PRESENTED AND EVALUATED, AND I 10:48:49:12

THINK ABOUT DOSING THE RATS AND 10:48:51:07

SO YOU HAVE THE DOSE RATS TO GET 10:48:55:00

LIVERS, SO YOU FOCUS FOR THE 10:48:59:00
TOXICOGENOMICS ON GENOMIC 10:49:01:21
RESPONSES IN THE LIVER. 10:49:04:21
THAT'S OKAY. 10:49:05:19
THEN THERE WERE OTHER VARIOUS IF 10:49:06:09
YOU WILL TISSUE SURROGATES OR 10:49:10:15
SYSTEM SURROGATES UP THERE, 10:49:12:24
ZEBRAFISH FOR DEVELOPMENT AND 10:49:16:24
FOR ALL CONTENT, ET CETERA. 10:49:19:22
I'M WONDERING DOSING RATS FOR 10:49:21:15
FIVE DAYS WOULD THERE BE VALUE 10:49:25:00
IN EVENTUALLY WORKING TOWARDS 10:49:28:24
HAVING A FIST FULL OF GENOMIC 10:49:32:27
MARKERS IN DIFFERENCE TISSUES, 10:49:37:03
THYMUS, GONAD, WHATEVER, MAYBE 10:49:40:01
BONE MARROW FOR LOOKING MORE IN 10:49:45:09
DEPTH, IF YOU WILL, AT ACTUALLY 10:49:50:12
DOSED MAMMAL RATHER THAN A 10:49:54:03
REMOVED SURROGATE. 10:49:56:22

I HAVE MORE QUESTIONS. 10:49:59:00

I'LL POSE THAT TO JOHN OR NIGEL. 10:50:00:06

10:50:02:06

>> THAT'S A LARGER SYSTEMIC 10:50:02:13

APPROACH KIND OF QUESTION. 10:50:04:25

10:50:06:00

>> WE HAVE BEEN DISCUSSING THAT 10:50:07:09

QUITE A BIT AS A RESULT OF THIS 10:50:08:15

BUT THAT WAS ONE OF THE HOLES IN 10:50:09:24

ONE OF THE ONLY LIVER AND 10:50:12:12

KIDNEY, IT WAS DRIVEN BY KNOWN 10:50:16:03

INFORMATION KNOWN PREDICTIONS SO 10:50:18:21

THAT'S KIND OF WHY WE CHOSE THE 10:50:21:06

LIVER IS SENTINEL AND FIRST PASS 10:50:23:10

MAKES SENSE BUT WHAT WAS -- 10:50:25:07

WOULD BE SOME OF THE OTHER 10:50:26:18

SIGNALS IN? 10:50:29:03

EXACTLY WHAT WE'RE TALKING 10:50:32:12

ABOUT, SO ONE THING THAT SCOTT 10:50:33:21

MENTIONED IS WE'LL HAVE AN 10:50:34:19

DIRECTION RE-EVALUATION OF WHAT 10:50:36:24

WAS GOOD, WHAT WAS BAD, WHAT 10:50:38:01

WORKED, WHAT DIDN'T, LEARN FROM 10:50:40:06

IT, WE LEARNED AS SCOTT POINTED 10:50:41:21

OUT WE LEARNED PROCESS 10:50:43:21

INTERNALLY. 10:50:45:00

BOTH FOR THE CONDUCT, REPORTING 10:50:45:13

THE ANALYSIS, COMMUNICATION, 10:50:47:22

THIS IS A LEARNING PROCESS THIS 10:50:51:06

PAST YEAR. 10:50:52:16

SO WE TAKE ALL THAT UNDER 10:50:53:00
CONSIDERATION AS WE MOVE 10:50:56:24
FORWARD. 10:50:58:12
BUT WE HAVE BEEN THINKING THE 10:50:58:25
SAME KIND OF THING. 10:51:00:06
10:51:00:21
>> I WOULD LAST -- MY LAST TWO 10:51:01:10
COMMENTS IS I WOULD THINK THAT 10:51:04:19
AS YOU THINK ABOUT HOW THAT 10:51:07:27
RAPID RESPONSE PANEL IS 10:51:09:16
COMPOSED, OR WHAT IT IS COMPOSED 10:51:11:00
OF, YOU HAVE AN INTERESTED 10:51:14:12
POPULATION AND FOLKS ON THE 10:51:17:24
GROUND IN WEST VIRGINIA. 10:51:19:18
SO BOTH CDC BUT ALSO A LAY 10:51:21:10
PUBLIC WHO ARE CONSUMING YOUR 10:51:24:09
REPORT, THEY'RE GOING TO READ 10:51:26:07
YOUR REPORT AND THINK I HAVE 10:51:28:03
STILL GOT QUESTIONS ABOUT THIS, 10:51:29:24

THIS, THIS OR THIS. 10:51:31:00 89

AND WHILE THAT SHOULDN'T 10:51:31:27

NECESSARILY DICTATE HAVING THAT 10:51:33:01

AS INPUT OR THOUGHTS ABOUT WHAT 10:51:36:09

THEY THINK IS IMPORTANT, WILL BE 10:51:38:24

USEFUL FOR GOING FORWARD BECAUSE 10:51:41:00

THAT MIGHT BE A SENTINEL FOR 10:51:42:19

WHAT OTHER EXPOSED POPULATIONS 10:51:44:19

ARE GOING TO BE CONCERNED ABOUT. 10:51:46:09

DID YOU RESPOND TO THAT? 10:51:47:25

10:51:53:03

>> A REASON WE FOCUSED ON LIVER 10:51:53:09

AND KIDNEY, SCOTT CAN JUMP IN, 10:51:54:27

WE HAVE THE PUB METRICS DATABASE 10:51:57:07

AND WE HAVE DATABASES ABOUT 10:51:58:19

SIGNALING PATHWAYS. 10:51:59:27

IN THOSE TISSUES. 10:52:01:00

ONE THING WE WERE CONCERNED 10:52:05:22

ABOUT IS GENERATING -- TO 10:52:07:28

INTERPRET OTHER TISSUES LIKE NO 10:52:11:12

CONTEXT TO IT, NO HISTORICAL 10:52:13:25

EXPERIENCE, MIGHT BE A GENE IN 10:52:16:00

THE MIDST AND THAT WOULDN'T BE 10:52:18:09

VERY HELPFUL SO THIS IS ONE WAY 10:52:20:27

WE CAN ANSWER A QUESTION IN THAT 10:52:22:25

TISSUE WITH COMPARATORS TO PUT 10:52:24:09

INTO CONTEXT. 10:52:27:09

WITH CHALLENGES FOR MANY YEARS 10:52:28:03

NOW THAT PROVIDE CONTEXT FOR THE 10:52:29:06

INFORMATION TO GENERATE THAT WAS 10:52:30:27

ANOTHER QUESTION. 10:52:35:03

THAT ANSWER IT IS FIRST SECOND, 10:52:35:21
WHAT DO YOU PROVIDE THIS USEFUL, 10:52:37:15
PROVIDE SOMETHING WITH CONTEXT 10:52:38:27
FOR THE COMPARATOR TO -- SO 10:52:40:06
YOU'RE NOT JUST ALARMING PEOPLE 10:52:43:09
WITH UNKNOWN INFORMATION. 10:52:44:19
THAT IS WISE. 10:52:46:18
I APPROVE AND AGREE WITH THAT, 10:52:50:21
BUT AT THE SAME TIME, TO THE 10:52:52:06
DEGREE THAT IT LEAVES OUT PARTS 10:52:54:12
OF THE BODY OR PARTS OF 10:52:58:18
PHYSIOLOGY THAT ARE NOT TESTED 10:52:59:18
THAT PEOPLE ARE CONCERNED ABOUT, 10:53:01:09
THEN THAT'S A SIGNAL THAT OUR 10:53:02:22
ALL RIGHT, WE HAVE THAT -- NOW 10:53:05:12
WE NEED TO TURN OUR ATTENTION TO 10:53:06:15
THE OTHER STUFF. 10:53:07:27
SO I'M JUST SAYING THAT'S THE -- 10:53:09:00
YOU HAVE AN INTERESTING GROUP 10:53:11:24

THERE THAT MIGHT BE ABLE TO 10:53:12:22 90
 CONTRIBUTE TO SOMETHING AND YOU 10:53:14:07
 SHOULD -- MIGHT BE WORTHYING 10:53:15:12
 ABOUT INVOLVING THEM. 10:53:16:28
 FOR THE COMMUNICATIONS PIECE IT 10:53:17:27
 OCCURS TO ME THAT AS GOOD A 10:53:23:09
 COMMUNICATOR AS DR. AUERBACH IS, 10:53:26:07
 THERE ARE ALMOST CERTAINLY, 10:53:32:01
 THERE'S GOING TO BE QUESTIONS 10:53:32:28
 AND CONCERNS HAD BY THE AUDIENCE 10:53:36:03
 ON THE GROUND THAT -- WHERE 10:53:38:24
 THEIR TRAINING AND BACKGROUND 10:53:43:09
 MAY NOT BE THE SAME AS THOSE OF 10:53:44:09
 US IN THE ROOM. 10:53:46:07
 SO MAKING SURE THAT THE 10:53:48:09
 COMMUNICATION PIECE IS 10:53:50:21
 TRANSLATED APPROPRIATELY WOULD 10:53:52:24
 BE GOOD. 10:53:53:24
 10:53:54:15
 >> SO THAT POINT WE LOADED ON 10:53:58:12
 THE WEB A VERSION OF THE TALKS 10:53:59:21
 THAT GOES THROUGH THE RESULTS AT 10:54:03:18
 A LAY LEVEL IF YOU WILL. 10:54:04:21
 SO HOPEFULLY THAT WILL BE PART 10:54:07:00
 OF COMMUNICATIONS. 10:54:11:12
 10:54:11:27
 >> ANY PLAN ON FLYING A DRAFT OF 10:54:12:06
 THAT PAST OUR SPEAKER EARLIER 10:54:14:10
 TODAY OR SOMEONE ELSE FROM JUST 10:54:18:19
 THIS SORT OF GET SOME INPUT? 10:54:20:09
 DOES THIS MEET YOUR NEEDS, DOES 10:54:25:03

THIS ANSWER YOUR QUESTIONS? 10:54:26:21
10:54:27:21
>> THERE OOH'S NO REASON WE 10:54:28:28
COULDN'T DO THAT. 10:54:30:15
SHOW IT TO SOMEONE OBVIOUSLY 10:54:32:18
SHOW COMMUNICATION PIECES THERE 10:54:34:06
DEVELOP IN CLOSE CONCERT WITH 10:54:35:15
OUR COMMUNICATIONS EXPERTS. 10:54:36:27
TO MAKE SURE THAT IN FACT WE 10:54:38:15
WILL BE GETTING ACROSS THE 10:54:42:12
MESSAGE THAT WE WANT AND NOT 10:54:43:19
SOMETHING ELSE SO THERE'S A LOT 10:54:48:01
OF WORK THAT'S GONE ON TO 10:54:51:00
DEVELOPING THE PRESS RELEASE FOR 10:54:52:03
EXAMPLE, AND DEPARTMENT WOULD 10:54:53:18
APPROVE, WEST VIRGINIA ISSUED. 10:54:56:07
AND WHAT'S GONE ON THE WEB. 10:55:00:12
10:55:01:13
>> I'M SURE THERE'S BEEN A HUGE 10:55:01:27

AMOUNT OF WORK, (INAUDIBLE) WAS	10:55:03:18	91
STANDING HEAR SAYING WE WOULD	10:55:06:00	
LIKE TO BE INVOLVED SO GIVE HER	10:55:07:10	
THIS STACK OF STUFF AND SAY READ	10:55:09:04	
THIS AND TELL WHAT WE HAVE NOT	10:55:10:27	
YET ANSWERED FOR YOU.	10:55:12:00	
	10:55:13:06	
>> ANY OTHER COMMENTS FROM THE	10:55:18:00	
BOARD?	10:55:19:03	
I WANT TO SAY THAT WE WANT TO	10:55:22:06	
KEEP ON SCHEDULE, WE'RE A LITTLE	10:55:24:09	
BIT BEHIND.	10:55:25:19	
	10:55:26:15	
>> I'M NOT YELLING AT ANYBODY	10:55:27:06	
BUT -- --	10:55:28:25	
>> CAN I MAKE A QUICK POINT?	10:55:34:24	
SORRY, GO AHEAD.	10:55:36:00	
	10:55:37:10	
>> GO AHEAD.	10:55:37:18	
	10:55:38:07	
>> I JUST WANT TO SAY --	10:55:38:15	
>> IDENTIFY YOURSELF.	10:55:39:27	
	10:55:40:12	
>> DALE HADDES CLARK UNIVERSITY.	10:55:40:19	
I NEVER EXPECTED TO MAKE A HUMAN	10:55:48:18	
HEALTH RISK ASSESSMENT ON THE	10:55:50:00	
BASIS OF C ELEGANS OR ZEBRAFISH	10:55:51:18	
TOXICITY INFORMATION.	10:55:57:15	
BECAUSE I DON'T HAVE THE	10:55:59:27	
DATABASE OF RELATIONSHIPS	10:56:00:27	
BETWEEN PRODUCTIVITY BETWEEN	10:56:02:09	

THOSE SYSTEMS AND IN VIVO 10:56:06:18
MAMMALIAN TOXICITY, I DO HAVE A 10:56:08:19
DATABASE FOR RODENT TO HUMAN 10:56:11:18
WHERE THEY'RE TESTED FOR 10:56:17:07
COMPARABLE END POINTS. 10:56:18:04
SO IF YOU WANT SUCH DATA TO BE 10:56:20:18
USABLE, THEN YOU NEED TO BUILD 10:56:22:19
THE DATABASE OF TO BE ABLE TO 10:56:25:09
MAKE THOSE QUANTITATIVE DOSE 10:56:29:21
RELATED COMPARISONS. 10:56:35:04
10:56:36:24
>> ONE POINT I WANT TO MAKE, 10:56:39:15
THAT IS PART OF WHAT'S BEING 10:56:42:25
DONE WITH THE CHILDREN'S FUND 10:56:44:21
MONEY. 10:56:45:19
10:56:45:19
>> THANKS, SCOTT, FOR THE PUMP 10:56:46:03
THERE. 10:56:48:04
SO THAT'S EXACTLY ONE THING AS 10:56:48:18

WE WERE GOING THROUGH THIS AND 10:56:51:00 92

WHEN THE NCS CAME OUT IT WAS 10:56:51:19

ASKING THOSE QUESTIONS ABOUT 10:56:54:18

ZEBRAFISH SO INTERNALLY WE LOOK 10:56:56:00

AT DEVELOPING BETWEEN TOX BRANCH 10:56:57:21

OF COMPOUNDS THAT HAVE BEEN WELL 10:57:02:06

STUDIED IN TRADITIONAL 10:57:03:12

DEVELOPMENTAL REPRODUCTIVE 10:57:05:13

STUDIES AND OTHERS NOT JUST 10:57:06:21

DEVELOPMENTAL BUT IMMUNOTOX, A 10:57:09:27

SERIES OF DIFFERENT TEST 10:57:11:18

COMPOUNDS WE CAN VALIDATE, NOT 10:57:12:21

JUST VALIDATE BUT GET COMPARISON 10:57:15:06

STUDIES IN ROBUST SYSTEMS. 10:57:21:24

WHY WE'RE JUMPING ON THAT. 10:57:24:27

10:57:26:03

>> I WANT TO SEE WHAT THE ED 50 10:57:26:09

IS FOR END POINT X FOR THIS 10:57:28:00

SYSTEM. 10:57:31:28

GIVEN THAT, I CAN MAKE MY 10:57:32:12

QUANTITATIVE ASSESSMENTS. 10:57:36:06

DO EVALUATION OF QUANTITATIVE 10:57:38:07

UNCERTAINTY. 10:57:45:07

10:57:45:27

>> ONE POINT. 10:57:48:28

THAT'S FINE. 10:57:59:24

WE HAVE TIME. 10:58:00:24

10:58:01:01

>> QUICKLY. 10:58:01:18

SO THE (INAUDIBLE) YOU HEARD 10:58:02:01

ABOUT EARLIER, DR. BUCHER IS THE 10:58:03:06

NEXT GENERATION GENE EXPRESSION 10:58:08:06
PLATFORM WILL ALLOW US TO 10:58:10:10
EVALUATE A SUBSET OF GENES THAT 10:58:11:15
ARE -- THERE'S A REPRESENTATIVE 10:58:13:15
OF THE WHOLE GENOME. 10:58:15:06
IT'S NEXT GENERATION SEQUENCING 10:58:15:27
BASED TECHNOLOGY THAT BELIEVE 10:58:20:28
WE'RE USING AND YOU SHOULD BE 10:58:22:28
ABLE TO TAKE HUNDREDS OF ANIMALS 10:58:24:12
IN MULTIPLEX THEM FOR GENE 10:58:27:09
EXPRESSION ACROSS DOZENS OF 10:58:29:00
TISSUES. 10:58:31:09
IN THE FUTURE. 10:58:32:00
BIGGEST CONSTRAINT NOW IS COST 10:58:33:10
OF MICROARRAYS IS A -- IS 10:58:36:04
BALANCING THAT WITH THE SIZE OF 10:58:39:06
THE STUDY AND POWER AND USE OF 10:58:40:06
THE STUDY. 10:58:41:25
SO ONCE WE GET THE S 1500 10:58:42:22

TISSUES. 10:58:47:16

EASILY. 10:58:48:00

>> ANY OTHER COMMENTS? 10:58:53:00

SO WE DON'T TAKE A VOTE ON THIS 10:58:54:04

BUT I'M -- TO SUMMARIZE THE 10:58:57:27

OVERALL, I THINK GENERAL FEELING 10:58:59:21

IS THAT YOU SHOULD BE STRONGLY 10:59:02:06

-- YOU AND TEAM SHOULD BE 10:59:03:27

STRONGLY COMMEND FORD THIS RAPID 10:59:05:00

RESPONSE THAT USING THE 10:59:06:24

AVAILABLE SCIENCE AND 10:59:09:00

INFORMATION THAT YOU HAD ABOUT 10:59:11:09

EXPOSURE YOU CAME TO REASONABLE 10:59:12:12

AND SOLIDLY SCIENTIFICALLY 10:59:15:18

RATIONALIZED DECISIONS BUT 10:59:17:27

USEFUL MOVING FORWARD. 10:59:20:27

I THINK YOU WILL LEARN A LOT BY 10:59:22:04

YOUR POST SCHEME ASSESSMENT AND 10:59:23:22

KNOWING HOW TO DESIGN THESE 10:59:27:22

RAPID RESPONSE THINGS GOING 10:59:32:12

FORWARD. 10:59:34:06

SO I THINK IT WAS A REAL GOOD -- 10:59:34:22

A VERY WELL JOB DONE. 10:59:37:00

I GUESS IT'S TIME FOR LUNCH. 10:59:39:15

JOB WELL DONE. 10:59:43:12

SO WE'LL TAKE 45 MINUTE BREAK 10:59:44:15

FOR LUNCH, WE'LL START BACK AT 10:59:47:18

12:45. 10:59:49:21

10:59:50:12