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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

DEPARTMENT NO. 1 HON. JACK KOMAR, JUDGE

COORDINATION PROCEEDING)	
SPECIAL TITLE (RULE 1550B))	
ANTELOPE VALLEY GROUNDWATER CASES))	JUDICIAL COUNCIL
_____)	COORDINATION
)	NO. JCCP4408
PALMDALE WATER DISTRICT AND)	SANTA CLARA CASE NO.
QUARTZ HILL WATER DISTRICT,)	1-05-CV-049053
)	
CROSS-COMPLAINANTS,)	
)	
VS.)	
)	
LOS ANGELES COUNTY WATERWORKS,)	
DISTRICT NO. 40, ET AL,)	
)	
CROSS-DEFENDANTS.)	
_____)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

TUESDAY, OCTOBER 7, 2008

(SEE APPEARANCE PAGES)

ELSIE G. DIWA, RPR, CSR #11416
OFFICIAL REPORTER

1 SO A SYSTEM THAT WAS IN WHAT WAS CALLED DYNAMIC
2 EQUILIBRIUM, IT'S NOT COMPLETELY STEADY, BUT AN AVERAGE
3 SORT OF STEADY STATE. THE AMOUNT OF WATER COMING IN IS
4 GOING TO BE EQUAL TO THE AMOUNT OF WATER GOING OUT. AND
5 YOU HAVE ESSENTIALLY NO CHANGE IN STORAGE.

6 Q CAN YOU TURN TO WHAT IS IN YOURS AS
7 EXHIBIT 9, WHICH WILL NOW BE E-7. IF YOU'D -- I'LL
8 DESCRIBE THIS DOCUMENT. ACROSS THE TOP IT SAYS,
9 "PREDEVELOPMENT MASS BALANCE," WHICH SHOULD BE THE NEXT
10 SLIDE. DO YOU HAVE THAT IN FRONT OF YOU?

11 A YES, I DO.

12 THE COURT: THAT'S E-7.

13 MR. DUBOIS: THANK YOU, YOUR HONOR.

14 Q CAN YOU DESCRIBE HOW -- WOULD YOU DESCRIBE
15 THIS, PLEASE. CAN YOU IDENTIFY THIS?

16 A OKAY. SO THIS WAS A FIGURE THAT I PREPARED
17 TO CONCEPTUALLY SHOW HOW THIS PREDEVELOPMENT MASS
18 BALANCE WORKED IN THE ANTELOPE VALLEY. SO WE HAVE
19 MOUNTAIN FRONT RECHARGE IN THIS AREA, SURFACE WATER
20 EXITING THE MOUNTAINS AND SEEPING DOWN THROUGH THOSE
21 ALLUVIAL FAN SURFACES, AND THEN INFILTRATION OR SEEPAGE
22 FROM THE BEDROCK INTO THE GROUNDWATER SYSTEM. SO THOSE
23 WOULD BE THE MAIN INPUTS INTO THE SYSTEM.

24 THE OUTPUTS WOULD BE SEEPAGE TO SPRINGS,
25 EVAPOTRANSPIRATION BY PLANTS IN LOW LAYING AREAS AND ANY
26 EVAPORATION OFF THE PLAYA SURFACES. AND THEN THERE'S A
27 SMALL AMOUNT -- HENCE, THE SMALL ARROW -- OF SUBSURFACE
28 OUTFLOW OUT OF THE NORTHERN PART OF THE BASIN OF THE

1 FREMONT VALLEY.

2 Q AND IN THE CONTEXT OF THE ANTELOPE VALLEY,
3 THE MOUNTAIN FRONT RECHARGE WOULD HAVE BEEN COMING FROM
4 THE WEST AND SOUTH AND MOVING TOWARDS THE --

5 A MOVING NORTHWARD AND EASTWARD. PRINCIPALLY
6 IN PARTS OF THE BASIN IT WOULD HAVE BEEN NORTHWESTWARD
7 ALSO.

8 Q AND ACROSS THE WILLOW SPRINGS FAULT, WHICH
9 DIRECTION WOULD THE FLOW BE?

10 A IT WOULD BE PRIMARILY TOWARDS THE SOUTH, I
11 THINK.

12 Q AND BECAUSE OF THE NEED TO CONSERVE MASS,
13 ALL OF THE WATER THAT COMES IN ON THE UPSLOPE HAS TO
14 FLOW THROUGH THE SYSTEM; IS THAT TRUE?

15 A RIGHT. SO THE MOVEMENT IS FROM THE REGIONS
16 OF RECHARGE AROUND THE MARGINS OF THE VALLEY DOWN
17 TOWARDS THAT CENTRAL DEPRESSION NEAR THE PLAYA AREAS,
18 WHERE THE PRINCIPAL DISCHARGE IS.

19 Q AND I TURN YOU TO EXHIBIT 10, WHICH WOULD BE
20 E-8. CAN YOU IDENTIFY THIS DOCUMENT, PLEASE. IT'S A
21 DOCUMENT ENTITLED "1915 GROUNDWATER ELEVATION CONTOURS,"
22 AND THAT WILL BE MARKED AS E-8?

23 THE COURT: IT IS MARKED.

24 MR. DUBOIS: THANK YOU, YOUR HONOR.

25 THE WITNESS: THESE ARE GROUNDWATER ELEVATION
26 CONTOURS ONLY FOR THE PRINCIPAL AQUIFER PORTION. THESE
27 ARE -- ACTUALLY, I TOOK THEM OFF A USGS WEBSITE, BECAUSE
28 I THOUGHT THEY WERE MORE LEGIBLE, BUT THEY ARE TAKEN

1 DIRECTLY FROM DURBIN'S 1978 REPORT.

2 BY MR. DUBOIS:

3 Q THESE FIGURES ARE FROM THE USGS WEBSITE?

4 A YES.

5 Q AND DOES THIS ILLUSTRATE THE GROUNDWATER
6 CONTOURS THAT YOU WERE DESCRIBING?

7 A RIGHT. SO THOSE BLUE LINES ON THERE ARE THE
8 CONTOURS OF EQUAL GROUNDWATER ELEVATION, AND THEN
9 THERE'S SMALL ARROWS THAT ARE INDICATING THE DIRECTION
10 OF FLOW.

11 Q CAN YOU USE YOUR POINTER AND SHOW --
12 DESCRIBE WHAT YOU'RE TALKING ABOUT.

13 A OKAY. SO THE CONTOURS ARE DRAWN HERE, AND
14 THE ARROWS ARE DRAWN AT RIGHT ANGLES TO THOSE CONTOURS.
15 SO YOU HAVE FLOW COMING DOWN THROUGH THIS AREA FROM THE
16 TEHACHAPI'S ALONG THIS SIDE, AND THEN IT MOVES THIS
17 DIRECTION THROUGH THE NEENACH AREA OFF OF THE
18 SAN GABRIELS OFF IN THIS DIRECTION, AND DOWN HERE
19 PARTICULARLY YOU CAN SEE PROBABLY THE INFLUENCE OF THE
20 TWO MAJOR CREEKS IN THIS AREA, FLOWING UP NORTH TOWARDS
21 THIS MAIN DISCHARGE AREA AROUND ROSAMOND LAKE.

22 Q AND WOULD YOU TURN TO TAB 11 WHICH WILL BE
23 MARKED EXHIBIT 11, AND I ASK THAT THIS BE MARKED AS E-9.

24 THE COURT: E-9.

25 MR. DUBOIS: THANK YOU.

26 Q CAN YOU IDENTIFY THIS DOCUMENT FOR ME,
27 PLEASE.

28 A THIS IS, ACTUALLY, DIRECTLY FROM ONE OF THE

1 PLATES IN MR. DURBIN'S 1978 REPORT. AND THESE ARE
2 CLOSE-UPS OF THE ONLY AREA WHERE HE'S DRAWN THE CONTOURS
3 ON THE DEEP AQUIFER. SO THIS IS THAT AREA OF ROGERS DRY
4 LAKE UP INTO THE NORTH MUROC AREA. AND, AGAIN, THERE
5 ARE CONTOURS OF EQUAL GROUNDWATER ELEVATION, AND THE
6 ARROWS INDICATE THAT FLOW IN THIS REGION IS GOING NORTH,
7 AND THEN THIS IS THE GENERAL EXIT PATHWAY INTO THE
8 FREMONT VALLEY.

9 Q SO THIS IS IN THE DEEP CONFINED AQUIFER?

10 A WELL, WHEN IT'S PRESENT BENEATH THE REGIONAL
11 AQUIFER, IT'S CONFINED. ONCE THAT ALLUVIAL DEPOSITS
12 YOU'VE MOVED FURTHER NORTH, THEY BECOME UNCONFINED. SO
13 THE REGIONAL AQUITARD PINCHES OUT, AND IT BECOMES AN
14 UNCONFINED AQUIFER TO THE NORTH.

15 Q AND THE FLOW IS FROM THE ANTELOPE VALLEY
16 INTO THE --

17 A INTO THIS NORTH MUROC. IT'S THE ANTELOPE
18 VALLEY FROM THE LANCASTER SUBBASIN UP INTO THE NORTH
19 MUROC SUBBASIN AND UP INTO THE FREMONT VALLEY.

20 Q HAS THE GENERAL DIRECTION OF FLOW OR PLACES
21 OF DISCHARGE CHANGED WITH GROUNDWATER DEVELOPMENT?

22 A YES. THEY'VE CHANGED QUITE SIGNIFICANTLY,
23 PARTICULARLY THE -- WELL, THE REGION'S PRIMARILY STILL
24 WITHIN THE LANCASTER AREA, SO IN PREDEVELOPMENT TIMES,
25 ALMOST ALL OF THE NATURAL DISCHARGE WAS WITHIN THE
26 LANCASTER AREA. AFTER DEVELOPMENT IT'S STILL IN THE
27 LANCASTER AREA, BUT THE LOCALE OF DISCHARGE HAVE
28 SHIFTED.

1 Q GOING BACK TO EXHIBIT E-8, IF YOU WILL.

2 MR. WILLIAM KUHS: COUNSEL, I DIDN'T HEAR.

3 MR. DUBOIS: E-8.

4 THE WITNESS: CAN YOU TELL ME WHICH TAB. I'M NOT
5 WRITING THESE DOWN.

6 MR. DUBOIS: 10.

7 Q DO YOU RECALL MR. DURBIN'S TESTIMONY TODAY
8 AND YESTERDAY REGARDING THE BEDROCK RIDGE THAT HE
9 DESCRIBED AS BEING GENERALLY LOCATED IN THE AREA OF, I
10 BELIEVE, ANTELOPE BUTTE TO LITTLE BUTTE?

11 A YES, I DO.

12 Q ARE YOU FAMILIAR WITH THAT BEDROCK RIDGE?

13 A YES, I AM.

14 Q HISTORICALLY, DID THE AREAS EAST AND WEST OF
15 THAT RIDGE SHARE A COMMON SOURCE OF WATER SUPPLY?

16 A WELL, IN THE SENSE THAT ALL THE WATER WEST
17 OF THIS COMING OFF THE TEHACHAPI'S IN THIS PORTION OF
18 THE SAN GABRIEL ULTIMATELY ENDED UP IN THIS LANCASTER
19 BASIN, THEN THEY DID SHARE A SOURCE OF SUPPLY.

20 Q SO THE WATER FLOWING FROM THE WESTERN PART
21 OF THE ANTELOPE BASIN OFF OF THE TEHACHAPI AND
22 SAN GABRIEL MOUNTAINS SUPPLIED WATER TO THE EAST OF THE
23 RIDGE?

24 A EAST OF THE RIDGE.

25 Q LET'S TALK ABOUT THE WATER BALANCES AS IT
26 CURRENTLY EXISTS. IF YOU TURN TO EXHIBIT 12, WHICH WE
27 WILL MARK AS E-10. I REQUEST IT BE MARKED AS E-10.

28 THE CLERK: YES.

1 MR. DUBOIS: AND IT'S ENTITLED "MASS BALANCE AFTER
2 EXTENSIVE GROUNDWATER DEVELOPMENT."

3 Q IS THIS A GENERAL CONCEPTUALIZATION?

4 A YES, IT IS.

5 Q CAN YOU DESCRIBE IT AND IDENTIFY THE
6 DOCUMENT, PLEASE.

7 A SO THIS WAS TWO THAT I DREW TO TRY AND
8 EXPLAIN THE CHANGES THAT WENT ON AFTER DEVELOPMENT
9 OCCURRED. SO INSTEAD OF THE WATER TABLE COMING UP AND
10 BEING VERY CLOSE TO THE GROUND SURFACE, WATER TABLES
11 HAVE BEEN LOWERED BY PUMPING IN THE BASIN THOSE NATURAL
12 DISCHARGES THROUGH EVAPOTRANSPIRATION, SPRING FLOW,
13 EVAPORATION OFF THE PLAYAS HAVE CEASED, AND THAT'S
14 BECAUSE THAT WATER IS BEING REMOVED BY PUMPAGE [SIC.]
15 FOR VARIOUS PURPOSES.

16 THERE'S SOMEWHAT OF A CHANGE TO THE INPUTS
17 TO THE BASIN. BECAUSE OF THE APPLICATION OF THAT PUMPED
18 WATER TO THE GROUND SURFACE, WE DO NOW HAVE SOME RETURN
19 FLOWS THAT ARE GOING TO INPUT, AND WE DO STILL HAVE THAT
20 SMALL SUBSURFACE OUTFLOW INTO THE FREMONT VALLEY.

21 Q BUT BECAUSE OF THE CONSERVATION OF MASS,
22 WATER IN STILL HAS TO EQUAL WATER OUT?

23 A YES. WELL, LET ME MODIFY THAT. UNLESS
24 YOU'RE CHANGING THE AMOUNT OF WATER IN STORAGE. SO TO
25 THE EXTENT THAT YOU'RE RAISING OR LOWERING THE WATER
26 TABLE, THOSE TWO ARE NOT GOING TO BE EQUAL. SO I
27 MISSPOKE.

28 Q THANK YOU. WOULD YOU TURN TO TAB 13,

1 EXHIBIT WHICH WE ASK BE MARKED AS E-11. IT'S A DOCUMENT
2 THAT IS ENTITLED "1961 GROUNDWATER ELEVATION CONTOURS."
3 CAN YOU IDENTIFY THIS DOCUMENT?

4 A THIS IS A MAP TAKEN FROM THE USGS WEBSITE,
5 BUT THE ORIGINAL SOURCE WAS DURBIN'S 1978 REPORT. SO
6 THESE ARE CONTOURS OF EQUAL GROUNDWATER ELEVATION FOR
7 THE PRINCIPAL AQUIFER FOR 1961.

8 Q WHAT DOES THIS WATER, WATER ELEVATION MAP
9 SHOW?

10 A WELL, YOU STILL HAVE WATER FLOWING FROM THE
11 RECHARGE AREAS IN THE TEHACHAPI'S ACROSS THESE VARIOUS
12 FAULTS THROUGH THE NEENACH SUBBASIN OFF OF THE
13 SAN GABRIELS DOWN HERE UP ACROSS AND TO A DEPRESSION IN
14 THE WATER TABLE SURFACE, CREATED BY PUMPING THAT'S SORT
15 OF JUST TO THE EAST OF THE LITTLE BUTTES AREA.

16 THERE'S ANOTHER DEPRESSION HERE SOUTH OF
17 ROSAMOND LAKE SO THE FLOW IS NO LONGER FOCUSED TOWARDS
18 ROSAMOND LAKE BUT, RATHER, DOWN TO THIS DEPRESSION IN
19 THE WATER SURFACE HERE. STILL, WE HAVE WATER OFF THE
20 TEHACHAPI'S FLOWING TO THE NORTH TO THESE TWO
21 DEPRESSIONS.

22 Q OKAY. IF YOU WOULD TURN TO EXHIBIT 14,
23 WHICH I'D ASK BE MARKED AS E-12.

24 THE COURT: ALRIGHT. THAT WILL BE MARKED.
25 BY MR. DUBOIS:

26 Q CAN YOU IDENTIFY THIS DOCUMENT, PLEASE.

27 A THIS IS A PORTION OF CLOSE-UP FROM ONE OF
28 DURBIN'S PLATES FROM HIS 1978 REPORT THAT, AGAIN,

1 FOCUSES ON THAT PORTION OF THE GROUNDWATER ELEVATION
2 CONTOUR MAP THAT IS FOR THE DEEP AQUIFER. AND, AGAIN,
3 WE HAVE CONTOUR LINES HERE. AGAIN, IN THIS MAP, EVEN
4 FOR THE DEEP AQUIFER, WE CAN START TO SEE HOW BOTH THE
5 DIRECTION OF FLOW AND THE WATER SURFACE ARE AFFECTED BY
6 PUMPING. AND THE NORTHERN PART OF THE BASIN FLOW IS
7 STILL UP TO THE NORTH HERE, BUT WE HAVE A CHANGE OF
8 DIRECTION TOWARDS PUMPING HERE, SOME OF THE SOUTH BAY AS
9 WELL AS AT EDWARDS AND EVEN SOME REVERSAL OF FLOW HERE
10 IN THE SOUTH.

11 Q ARE THERE ANY CONCLUSIONS YOU DRAW FROM THIS
12 MAP, OR IS THIS JUST SHOWING CHANGES IN WATER FLOW?

13 A IT'S SHOWING HOW OVER TIME DEVELOPMENT AND
14 PUMPING STRESSES CAN SHIFT THE DIRECTION OF FLOW, CAN
15 SHIFT THE WATER SURFACE, AND AS YOU CHANGE THOSE PUMPING
16 AREAS, YOU'RE GOING TO CHANGE DIRECTIONS OF FLOW.

17 Q UNDER CURRENT CONDITIONS, DOES THE RECHARGE
18 IN THE WESTERN PART OF THE ANTELOPE VALLEY, WEST OF THE
19 BEDROCK RIDGE, STILL FLOW EAST TOWARD THE CENTER OF THE
20 VALLEY AND EAST OF THE BEDROCK RIDGE?

21 A YOU'RE TALKING IN 2008?

22 Q OR THE LATEST DATA YOU HAVE, THE MOST RECENT
23 DATA.

24 A THERE IS A DEPRESSION IN THE WATER SURFACE
25 IN THAT GENERAL AREA. AND THERE IS, I THINK, SOME FLOW
26 ACROSS THAT, BUT IT'S BEEN GREATLY REDUCED FROM WHAT IT
27 WAS IN PREDEVELOPMENT TIMES DUE TO PUMPING TO THE WEST.

28 MR. DUBOIS: MR. KUHS, ARE YOU STANDING FOR

1 SUPERIOR COURT OF THE STATE OF CALIFORNIA
2 FOR THE COUNTY OF LOS ANGELES
3 DEPARTMENT NO. 1 HON. JACK KOMAR, JUDGE
4 COORDINATION PROCEEDING)
SPECIAL TITLE (RULE 1550B))
5 ANTELOPE VALLEY GROUNDWATER CASES) JUDICIAL COUNCIL
6) COORDINATION
NO. JCCP4408
7 PALMDALE WATER DISTRICT AND) SANTA CLARA CASE NO.
QUARTZ HILL WATER DISTRICT,) 1-05-CV-049053
8 CROSS-COMPLAINANTS,)
9 VS.)
10) REPORTER'S CERTIFICATE
11 LOS ANGELES COUNTY WATERWORKS,)
DISTRICT NO. 40, ET AL,)
12 CROSS-DEFENDANTS.)
13

14
15 I, ELSIE G. DIWA, OFFICIAL COURT
16 REPORTER FOR THE SUPERIOR COURT OF THE
17 STATE OF CALIFORNIA, IN AND FOR THE COUNTY
18 OF LOS ANGELES, DO HEREBY CERTIFY THAT THE
19 FOREGOING PAGES 1 THROUGH 187, INCLUSIVE,
20 COMPRISE A FULL, TRUE AND CORRECT TRANSCRIPT
21 OF THE PROCEEDINGS TAKEN IN THE ABOVE-ENTITLED
22 MATTER ON OCTOBER 7, 2008.

23 DATED THIS 8TH DAY OF OCTOBER, 2008.

24
25
26 _____
27 ELSIE G. DIWA, RPR, CSR #11416
OFFICIAL COURT REPORTER
28