

Table 10. Trace-metal and metalloid concentrations in water samples collected during cycles 1 and 2 of the injection, storage, and recovery

[Sample collection sites: ground-water sites are identified by local well name (see table 1 for well information), and imported surface-water sites
 Water chemistry data were compiled from 15 active production wells from late March 1995 through mid-May 1995, prior to the beginning of the study.
 Department of Agricultural Commissioner and Weights and Measures; USGS, U.S. Geological Survey. $\mu\text{g/L}$, microgram per liter. <, less than value shown;

Sample collection site (local well name)	Sampling date	Day of cycle phase	Collected by/analyzed by	Aluminum dissolved ($\mu\text{g/L}$)	Antimony dissolved ($\mu\text{g/L}$)	Arsenic, dissolved ($\mu\text{g/L}$)	Barium, dissolved ($\mu\text{g/L}$)	Beryllium, dissolved ($\mu\text{g/L}$)	Cadmium, dissolved ($\mu\text{g/L}$)
Cycle 1 pre-injection									
4-9	03-24-95	na	LAC/LAC	< 50	< 6	36	< 100	< 1	< 1
4-17	03-24-95	na	LAC/LAC	< 50	< 6	43	< 100	< 1	< 1
4-26	03-24-95	na	LAC/LAC	< 50	< 6	7	< 100	< 1	< 1
4-33	03-27-95	na	LAC/LAC	< 50	< 6	6	< 100	< 1	< 1
4-42	03-27-95	na	LAC/LAC	< 50	< 6	51	< 100	< 1	< 1
4-5	03-27-95	na	LAC/LAC	< 50	< 6	5	< 100	< 1	< 1
4-12	04-11-95	na	LAC/LAC	< 50	< 6	6	< 100	< 1	< 1
4-25	04-11-95	na	LAC/LAC	< 50	< 6	4	< 100	< 1	< 1
4-30	04-11-95	na	LAC/LAC	< 50	< 6	5	< 100	< 1	< 1
4-32	04-11-95	na	LAC/LAC	< 50	< 6	9	< 100	< 1	< 1
4-34	04-11-95	na	LAC/LAC	< 50	< 6	11	< 100	< 1	< 1
4-37	04-11-95	na	LAC/LAC	< 50	< 6	11	< 100	< 1	< 1
4-38	04-11-95	na	LAC/LAC	< 50	< 6	4	< 100	< 1	< 1
4-43	05-09-95	na	LAC/LAC	< 50	< 6	13	< 100	< 1	< 1
4-44	05-09-95	na	LAC/LAC	< 50	< 6	16	< 100	< 1	< 1
4-13	10-16-95	na	LAC/LAC	60	< 6	16	< 100	< 1	< 1
4-29	10-16-95	na	LAC/LAC	60	< 6	7	< 100	< 1	< 1
Cycle 1 storage									
4-13	05-15-96	10	LAC/LAC	< 50	< 6	26	< 100	< 1	< 1
4-29	05-15-96	10	LAC/LAC	< 50	< 6	7	< 100	< 1	< 1
4-30	05-15-96	10	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-32	05-15-96	10	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-33	05-15-96	10	LAC/LAC	< 50	< 6	4	< 100	< 1	< 1
4-34	05-15-96	10	LAC/LAC	< 50	< 6	4	< 100	< 1	< 1
4-42	05-15-96	10	LAC/LAC	< 50	< 6	47	< 100	< 1	< 1
4-43	05-15-96	10	LAC/LAC	< 50	< 6	14	< 100	< 1	< 1
4-44	05-15-96	10	LAC/LAC	< 50	< 6	18	< 100	< 1	< 1
Cycle 1 recovery									
4-5	07-26-96	67	LAC/LAC	< 50	< 6	< 2	130	< 1	< 1
4-9	07-26-96	67	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-12	07-26-96	67	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-17	07-26-96	67	LAC/LAC	< 50	< 6	93	< 100	< 1	< 1
4-25	07-26-96	67	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-26	07-26-96	67	LAC/LAC	< 50	< 6	65	< 100	< 1	< 1
4-37	07-26-96	67	LAC/LAC	< 50	< 6	9	< 100	< 1	< 1
4-38	07-26-96	67	LAC/LAC	< 50	< 6	< 2	140	< 1	< 1
Cycle 2 pre-injection									
5K8-PZ1	10-31-96	11	USGS/LAC	< 50	< 6	35	< 100	< 1	< 1
5K8-PZ2	10-31-96	11	USGS/LAC	300	< 6	6	< 100	< 1	< 1
5K8-PZ3	10-31-96	11	USGS/LAC	< 50	< 6	3	< 100	< 1	< 1
5K8-PZ4	10-31-96	11	USGS/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-5	10-31-96	11	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1

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(the injection wells) are identified by the local well name and the name of the water-importing agency (AVEK, Antelope Valley–East Kern Water Agency). Water in AVEK wells 4-32 and 4-34 was sampled as the water was injected during cycles 1 and 2. Collected by/ analyzed by: LAC, Los Angeles County na, not applicable]

Chromium, total (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Thallium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Cycle 1 pre-injection										
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
Cycle 1 storage										
< 10	< 50	100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	260
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	160
< 10	< 50	130	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
Cycle 1 recovery										
< 10	< 50	< 100	< 5	30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
Cycle 2 pre-injection										
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50

Table 10. Trace-metal and metalloid concentrations in water samples collected during cycles 1 and 2 of the injection, storage, and recovery

Sample collection site (local well name)	Sampling date	Day of cycle phase	Collected by/ analyzed by	Aluminum dissolved ($\mu\text{g/L}$)	Antimony dissolved ($\mu\text{g/L}$)	Arsenic, dissolved ($\mu\text{g/L}$)	Barium, dissolved ($\mu\text{g/L}$)	Beryllium, dissolved ($\mu\text{g/L}$)	Cadmium, dissolved ($\mu\text{g/L}$)
Cycle 2 pre-injection—Continued									
4-9	10-31-96	11	LAC/LAC	< 50	< 6	51	< 100	< 1	< 1
4-25	10-31-96	11	LAC/LAC	< 50	< 6	2	< 100	< 1	< 1
4-26	10-31-96	11	LAC/LAC	< 50	< 6	31	< 100	< 1	< 1
4-29	10-31-96	11	LAC/LAC	< 50	< 6	13	< 100	< 1	< 1
4-37	10-31-96	11	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-38	10-31-96	11	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-44	10-31-96	11	LAC/LAC	< 50	< 6	17	< 100	< 1	< 1
4-12	11-01-96	12	LAC/LAC	< 50	< 6	2	< 100	< 1	< 1
4-13	11-01-96	12	LAC/LAC	< 50	< 6	13	< 100	< 1	< 1
4-17	11-01-96	12	LAC/LAC	< 50	< 6	34	< 100	< 1	< 1
4-30	11-01-96	12	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-32	11-01-96	12	LAC/LAC	50	< 6	< 2	< 100	< 1	< 1
4-33	11-01-96	12	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-34	11-01-96	12	LAC/LAC	50	< 6	5	< 100	< 1	< 1
4-42	11-01-96	12	LAC/LAC	< 50	< 6	36	< 100	< 1	< 1
4-43	11-01-96	12	LAC/LAC	< 50	< 6	11	< 100	< 1	< 1
DK8-PZ1	11-07-96	18	USGS/LAC	< 50	< 6	60	< 100	< 1	< 1
Cycle 2 injection									
4-32(AVEK)	11-12-96	1	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-34(AVEK)	11-12-96	1	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-32(AVEK)	01-09-97	59	LAC/LAC	70	< 6	< 2	< 100	< 1	< 1
4-34(AVEK)	01-09-97	59	LAC/LAC	60	< 6	< 2	< 100	< 1	< 1
4-5	02-05-97	86	LAC/LAC	< 50	< 6	5	< 100	< 1	< 1
4-9	02-05-97	86	LAC/LAC	< 50	< 6	36	< 100	< 1	< 1
4-12	02-05-97	86	LAC/LAC	< 50	< 6	6	< 100	< 1	< 1
4-13	02-05-97	86	LAC/LAC	< 50	< 6	24	< 100	< 1	< 1
4-17	02-05-97	86	LAC/LAC	< 50	< 6	34	< 100	< 1	< 1
4-25	02-05-97	86	LAC/LAC	< 50	< 6	4	< 100	< 1	< 1
4-26	02-05-97	86	LAC/LAC	< 50	< 6	33	< 100	< 1	< 1
4-29	02-05-97	86	LAC/LAC	60	< 6	7	< 100	< 1	< 1
4-30	02-05-97	86	LAC/LAC	< 50	< 6	2	< 100	< 1	< 1
4-33	02-05-97	86	LAC/LAC	< 50	< 6	3	< 100	< 1	< 1
4-37	02-05-97	86	LAC/LAC	< 50	< 6	11	< 100	< 1	< 1
4-38	02-05-97	86	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-42	02-05-97	86	LAC/LAC	< 50	< 6	42	< 100	< 1	< 1
4-43	02-05-97	86	LAC/LAC	< 50	< 6	14	150	< 1	< 1
4-44	02-06-97	87	LAC/LAC	< 50	< 6	16	150	< 1	< 1
4-32(AVEK)	02-13-97	94	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-34(AVEK)	02-13-97	94	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1

study at Lancaster, Antelope Valley, California, March 1995 through June 1997—Continued

Chromium, total (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Thallium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Cycle 2 pre-injection—Continued										
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
16	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
Cycle 2 injection										
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	430
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	460
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	370
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	360
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
15	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	510
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	530

Table 10. Trace-metal and metalloid concentrations in water samples collected during cycles 1 and 2 of the injection, storage, and recovery

Sample collection site (local well name)	Sampling date	Day of cycle phase	Collected by/ analyzed by	Aluminum dissolved ($\mu\text{g/L}$)	Antimony dissolved ($\mu\text{g/L}$)	Arsenic, dissolved ($\mu\text{g/L}$)	Barium, dissolved ($\mu\text{g/L}$)	Beryllium, dissolved ($\mu\text{g/L}$)	Cadmium, dissolved ($\mu\text{g/L}$)
Cycle 2 storage									
5K8-PZ1	05-06-97	20	USGS/LAC	< 50	< 6	64	< 100	< 1	< 1
5K8-PZ2	05-06-97	20	USGS/LAC	< 50	< 6	8	< 100	< 1	< 1
5K8-PZ3	05-06-97	20	USGS/LAC	< 50	< 6	2	170	< 1	< 1
5K8-PZ4	05-06-97	20	USGS/LAC	< 50	< 6	6	< 100	< 1	< 1
4-5	05-06-97	20	LAC/LAC	< 50	< 6	13	< 100	< 1	< 1
4-9	05-06-97	20	LAC/LAC	< 50	< 6	49	< 100	< 1	< 1
4-12	05-06-97	20	LAC/LAC	< 50	< 6	11	< 100	< 1	< 1
4-25	05-06-97	20	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-26	05-06-97	20	LAC/LAC	< 50	< 6	40	< 100	< 1	< 1
4-37	05-06-97	20	LAC/LAC	< 50	< 6	22	< 100	< 1	< 1
4-38	05-06-97	20	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-29	05-07-97	21	LAC/LAC	< 50	< 6	6	< 100	< 1	< 1
4-30	05-07-97	21	LAC/LAC	< 50	< 6	8	< 100	< 1	< 1
4-34	05-07-97	21	LAC/LAC	50	< 6	< 2	< 100	< 1	< 1
4-43	05-07-97	21	LAC/LAC	< 50	< 6	14	140	< 1	< 1
DK8-PZ1	05-08-97	22	USGS/LAC	< 50	< 6	68	< 100	< 1	< 1
4-17	05-08-97	22	LAC/LAC	< 50	< 6	45	< 100	< 1	< 1
4-44	05-08-97	22	LAC/LAC	< 50	< 6	17	120	< 1	< 1
4-13	05-09-97	23	LAC/LAC	< 50	< 6	29	< 100	< 1	< 1
4-33	05-09-97	23	LAC/LAC	< 50	< 6	< 2	< 100	< 1	< 1
4-42	05-09-97	23	LAC/LAC	< 50	< 6	47	< 100	< 1	< 1
Cycle 2 recovery									
4-32	05-14-97	1	LAC/LAC	100	< 6	5	< 100	< 1	< 1
4-13	06-12-97	30	LAC/LAC	< 50	< 6	16	< 100	< 1	< 1
4-33	06-12-97	30	LAC/LAC	< 50	< 6	8	< 100	< 1	< 1
4-42	06-12-97	30	LAC/LAC	< 50	< 6	32	< 100	< 1	< 1
4-32	06-13-97	31	LAC/LAC	< 50	< 6	7	< 100	< 1	< 1

study at Lancaster, Antelope Valley, California, March 1995 through June 1997—Continued

Chromium, total (µg/L)	Copper, dissolved (µg/L)	Iron, dissolved (µg/L)	Lead, dissolved (µg/L)	Manganese, dissolved (µg/L)	Mercury, dissolved (µg/L)	Nickel, dissolved (µg/L)	Selenium, dissolved (µg/L)	Silver, dissolved (µg/L)	Thallium, dissolved (µg/L)	Zinc, dissolved (µg/L)
Cycle 2 storage										
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	6	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	6	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
14	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
< 10	< 50	770	< 5	30	< 1.0	< 10	< 5	< 10	< 1	260
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	7	< 10	< 1	< 50
< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	8	< 10	< 1	< 50
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< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
Cycle 2 recovery										
20	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	130
10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
11	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	< 50
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< 10	< 50	< 100	< 5	< 30	< 1.0	< 10	< 5	< 10	< 1	120