

**SHELTER ISLAND WATER ADVISORY COMMITTEE –
April, 2023, Height data report **DRAFT****

Summary/Conclusion - “Guarded”

Islanders should maintain *voluntary water conservation measures*.

The well height data in this report was measured on April 12, earlier than the normal timeline. Precipitation was very low until late in the month so the values *may* reflect a weaker aquifer condition than actual. If it plays out that the normal recharge time may end soon the weak starting point for the heavy consumption summer period could create supply issues before summers end.

Discussion:

Section 1A and 1B - National Drought Monitoring and OUTLOOK Forecasting:

Shelter Island remains classified as “D0 Abnormally Dry”.

Section 2 – Chart showing “ranking of monthly well heights by percentile of historic values.”

The chart is a graphic of the data for the Big Four feeder wells showing the percentile rank for the current month versus history for each month.

Big 4 wells dropped to the 25 th percentile – from the previous month’s 41% of median. Data does not include precipitation from late April.

Section 3 - Table of well readings compared to historic and median values.

Table “Well readings compared to the month’s Median for each well.” Current month readings compared to the month history for each well in the month.

The chart illustrates a strong drop in aquifer level between the March 23 and April 12 well heights in all of the shallow wells, reflecting the low precipitation in the start of the month. Data does not reflect precipitation that fell late in April. 3 of Big 4 wells did increase, but much less than the median.

Section 4 - “Comparison of the size of the change in current well readings compared to the historic Median change for that month.” Table showing the current month’s change in well height from previous and comparison to change history.

The chart illustrates the drop in aquifer level between March 23 and April 12 in all of the shallow wells. Normally March to April has 12 of 13 wells gaining height – none of the shallower wells gained this month. Three of four Big 4 wells did increase, but much less than the median.

Section 5 – Raw well height readings for the Big 4 wells

Raw well height graph is independent of the median history. It presents a direct comparison of aquifer heights. Raw data suggests that potentially an early end of the recharge time frame may be in progress, although numbers from May will confirm this. If so, this will be the fifth consecutive year that the year-to-year recharge maximum will be lower than the prior year.

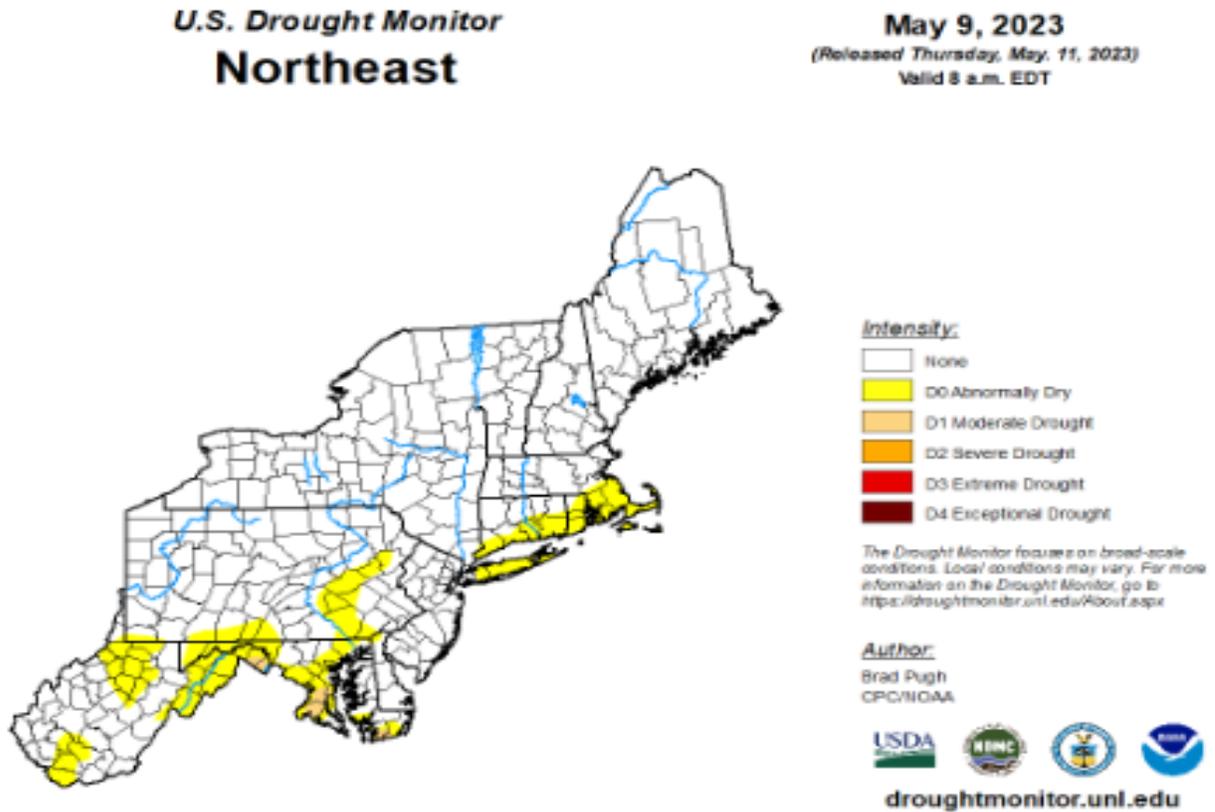
Rainfall Status: Ken Reports:

Precipitation Report – Date: April 12, 2023						
Year	2023	2022	2021	2020	2019	2018
Month to date	0.51 *	3.52	3.94	3.61	5.49	3.73
Year to date	12.2	14.71	13.29	13.23	17.22	17.24

* Note: about 3 to 4 inches precipitation occurred in April after the Month to Date.

Section 1 National Drought Monitoring

A: **CURRENT CONDITIONS:** Shelter Island remains classified as “D0 Abnormally Dry”.



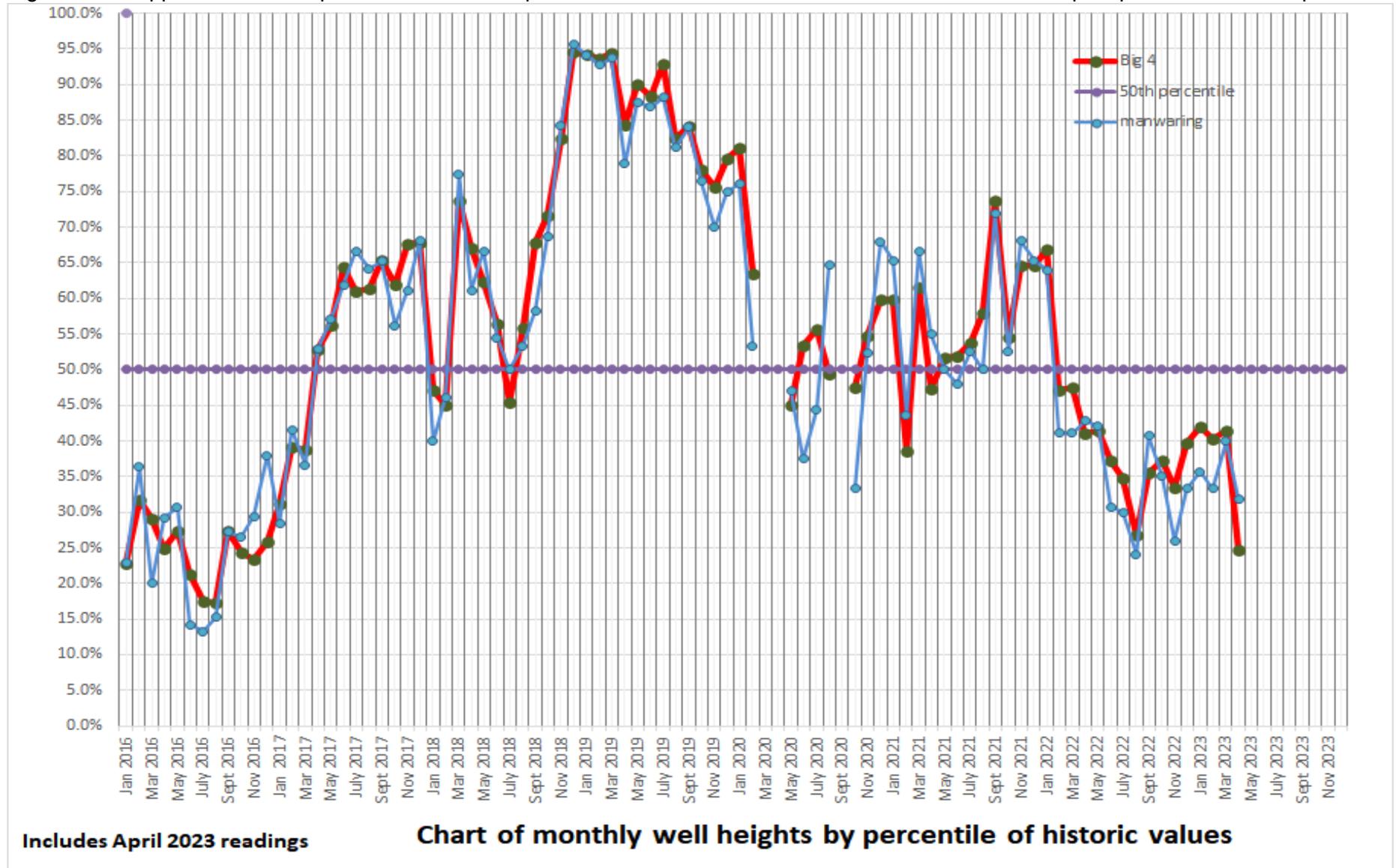
B: ONE- and THREE-MONTH DROUGHT OUTLOOK:

[Forecast per NIDIS [National Integrated Drought Information System]]

No forecast is available as the NIDIS [National Integrated Drought Information System] system does not forecast changes for areas in the “D0 Abnormally Dry” status.

Section 2 - Ranking of monthly well heights by percentile of historic values.

Big 4 wells dropped to the 25 th percentile – from the previous month’s 41% of median. Data does not include precipitation from late April.



Section 3 – Comparison showing readings for the month compared to the median value history

The chart illustrates a strong drop in aquifer level between the March 23 and April 12 well heights in all of the shallow wells, reflecting the low precipitation in the start of the month. Data does not reflect precipitation that fell late in April. 3 of Big 4 wells did increase, but much less than the median.

Well readings compared to the the months Median for each well for:	Manhansett, Well #1	Rocky Point Ave/Belvedere Well #2	Big Ram Island Well #3	Manwaring Rd Well #4	Congdon Well #5	Brander/Lilliput Well #6	Menantic Rd Well #7	Deer Park Lane Well #8	LITTLE RAM Well #9	DERING HARBOR Well #10	HAY BEACH Well #11	Goat Hill Well #12	SHOREWOOD Well #13
April 2023	24	22	20	24	28	23	21	23	10	13	18	21	19
Median Value	3.45	2.07	1.45	4.57	6.27	2.30	1.90	3.96	1.25	1.97	2.52	6.92	1.69
Reading April 12 2023	3.22	2.07	1.45	4.07	5.46	2.28	1.86	3.57	1.11	1.94	2.47	6.42	1.62
Prior Month	3.12	2.23	1.58	4	5.49	2.76	2.37	3.79	1.18	2.14	2.57	6.26	1.9
Change from prev. month	0.10	(0.16)	(0.13)	0.07	(0.03)	(0.48)	(0.51)	(0.22)	(0.07)	(0.20)	(0.10)	0.16	(0.28)
	Big 4			Big 4	Big 4							Big 4	
					10.22								
					7.96								
	7.05	3.61		8.88	7.67								
Note: Readings in this report were taken earlier from the normal schedule and do not reflect precipitation from end of	5.22	2.77		6.86	7.37	2.86	2.73	4.74					
	4.56	2.56	1.91	6.08	7.33	2.84	2.44	4.72			5.65	8.16	
	4.38	2.45	1.81	6.04	7.05	2.78	2.32	4.66			3.24	7.98	2.37
	4.36	2.42	1.77	5.97	6.97	2.77	2.24	4.45			2.99	7.85	2.12
	4.28	2.37	1.72	5.75	6.86	2.68	2.24	4.43		3.60	2.88	7.39	2.07
	4.26	2.28	1.63	5.45	6.67	2.60	2.01	4.26	1.78	2.46	2.87	7.24	1.92
	3.95	2.23	1.57	5.32	6.60	2.49	1.99	4.12	1.61	2.22	2.62	7.09	1.77
	3.75	2.09	1.49	5.22	6.54	2.47	1.97	4.09	1.51	2.10	2.58	7.03	1.73
	3.71	2.08	1.46	5.03	6.35	2.40	1.96	4.04	1.33	2.00	2.58	6.98	1.71
	3.48	2.07	1.45	4.79	6.34	2.33	1.96	3.97	1.29	2.00	2.57	6.96	1.70
MEDIAN	3.45		1.45	4.57	6.27	2.30	1.90	3.96		1.97			1.69
	3.45	2.06	1.44	4.46	6.07	2.28	1.88	3.72	1.21	1.95	2.47	6.88	1.68
	3.39	2.05	1.42	4.42	5.97	2.26	1.87	3.66	1.11	1.94	2.47	6.73	1.68
	3.31	2.02	1.40	4.37	5.90	2.24	1.86	3.61	0.99	1.93	2.46	6.71	1.63
	3.22	1.95	1.35	4.07	5.82	2.22	1.72	3.57	0.96	1.79	2.29	6.66	1.62
	2.99	1.94	1.30	4.05	5.67	2.15	1.71	3.57	0.74	1.74	2.28	6.65	1.57
	2.98	1.93	1.25	3.98	5.59	2.14	1.59	3.53		1.69	2.24	6.61	1.49
	2.98	1.90	1.24	3.92	5.55	2.07	1.36	3.50			2.24	6.42	1.43
	2.91	1.88	1.22	3.83	5.46	1.78	1.34	3.45			2.22	6.26	1.31
	2.77	1.84	1.06	3.74	5.41	1.75	1.18	3.20			2.18	5.78	0.94
	2.69	1.65	1.02	3.50	5.17	1.26	1.00	3.05				5.00	
	1.81	1.30		2.57	4.97	0.86		2.42					
					4.62								
					3.94								
	Big 4			Big 4	Big 4							Big 4	
CURRENT MONTH ANALYSIS													
percentrank current read to historic range	32%	52%	53%	32%	19%	45%	35%	27%	33%	33%	41%	16%	28%
Percent to median	-7%	0%	0%	-11%	-13%	-1%	-2%	-10%	-11%	-2%	-2%	-7%	-4%
historic minimum	1.81	1.30	1.02	2.57	3.94	0.86	1.00	2.42	0.74	1.69	2.18	5.00	0.94

Section 4 - "Comparison of the size of the change in current well readings compared to the historic Median change for that month."

Table showing the current month's change in well height from previous and comparison to change history.

The chart illustrates the drop in aquifer level between the March 23 and April 12 in all of the shallow wells. Normally March to April has 12 of 13 wells gaining height – none of the shallower wells gained this month. Three of four Big 4 wells did increase, but much less than the median.

April 12 2023 SIZE OF CHANGE FROM PREVIOUS MONTH													
Measure in FEET	Manhansett, Well #1	Rocky Point Ave/Belvedere Well #2	Big Ram Island Well #3	Manwaring Rd Well #4	Congdon Well #5	Brander/Liliput Well #6	Menantic Rd Well #7	Deer Park Lane Well #8	Little Ram Well #9	Dering Harbor Well #10	Hay Beach Well #11	Goat Hill Well #12	Shorewood Well #13
Well #	1	2	3	4	5	6	7	8	9	10	11	12	13
Change this month	0.10	(0.16)	(0.13)	0.07	(0.03)	(0.48)	(0.51)	(0.22)	(0.07)	(0.20)	(0.10)	0.16	(0.28)
Med Change	0.24	0.24	0.07	0.36	0.31	0.16	0.19	0.29	(0.09)	0.16	0.25	0.12	0.10
	Big 4			Big 4	Big 4							Big 4	
	1.68							1.18					
	0.85		1.57	1.59	0.94	1.22		0.92					0.88
	0.81	0.51	0.69	0.96	0.88	0.79	1.69	0.81					0.77
	0.70	0.45	0.39	0.82	0.84	0.75	0.74	0.75				0.40	0.40
	0.54	0.44	0.38	0.75	0.75	0.62	0.52	0.63		1.16	0.65	0.59	0.39
	0.46	0.39	0.34	0.61	0.61	0.51	0.48	0.54	0.32	0.45	0.62	0.57	0.38
	0.45	0.38	0.33	0.59	0.43	0.45	0.46	0.49	0.09	0.38	0.57	0.51	0.25
	0.39	0.38	0.26	0.57	0.38	0.35	0.37	0.46	0.00	0.24	0.43	0.24	0.24
	0.27	0.30	0.18	0.47	0.37	0.35	0.36	0.43	(0.07)	0.20	0.33	0.16	0.20
	0.25	0.28	0.10	0.43	0.32	0.23	0.25	0.31	(0.07)	0.17	0.28	0.15	0.16
MEDIAN			0.07	0.36	0.31	0.16	0.19	0.29				0.12	0.16
	0.22	0.19	0.06	0.35	0.26	0.15	0.17	0.15	(0.10)	0.15	0.22	0.09	0.04
	0.21	0.14	0.04	0.29	0.19	0.11	0.02	0.04	(0.14)	0.00	0.15	0.06	0.03
	0.20	0.12	0.02	0.24	0.10	0.02	(0.02)	0.03	(0.21)	(0.04)	0.15	0.05	0.00
	0.10	0.03	(0.11)	0.13	0.06	0.01	(0.30)	(0.02)	(0.91)	(0.17)	0.13	0.03	(0.24)
	0.06	(0.07)	(0.13)	0.12	(0.01)	(0.05)	(0.34)	(0.07)	(1.52)	(0.20)	(0.01)	(0.36)	(0.28)
	0.04	(0.16)	(0.20)	0.07	(0.03)	(0.07)	(0.51)	(0.13)		(1.76)	(0.10)	(0.39)	(0.50)
	0.04	(0.16)	(0.23)	(0.05)	(0.23)	(0.43)	(0.58)	(0.22)				(0.41)	(0.56)
	(0.02)	(0.86)	(0.32)	(0.08)	(0.57)	(0.48)	(1.90)	(0.44)					(1.04)
	(0.11)		(0.59)	(0.55)	(0.58)	(1.03)		(0.68)					
	(0.53)		(1.13)			(1.38)							
	Big 4			Big 4	Big 4							Big 4	
Change history - Current month compared to History													
# of tests	20	16	20	19	19	20	17	20	10	12	12	15	18
# with gain in height	17	12	13	16	14	14	11	14	2	7	10	12	12
# times well gained in Month	17/20	12/16	13/20	16/19	14/19	14/20	11/17	14/20	2/10	7/12	10/12	12/15	12/18
# times w/gain as percent	85%	75%	65%	84%	74%	70%	65%	70%	20%	58%	83%	80%	67%
Current change v Median change	(0.14)	(0.40)	(0.20)	(0.29)	(0.34)	(0.64)	(0.70)	(0.51)	0.02	(0.36)	(0.35)	0.04	(0.38)

Section 5 - "Raw" aquifer readings for the Big 4 wells.

