

Red Hill Oil/Water Interface Measurements January 2014 to Present

Date	RHMW01			RHMW01R			RHMW02			RHMW03			RHMW05		
	Elevation = 101.9955 ft ¹			Elevation = 101.7570 ft			Elevation = 104.5970 ft ¹			Elevation = 120.8980 ft ¹			Elevation = 101.3102 ft ¹		
	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL
15-Jan-14	83.94	18.06	0				86.62	17.98	0	NT	NT	NT	NT	NT	NT
16-Jan-14	NT	NT	NT				NT	NT	NT	NT	NT	NT	83.09	18.22	0
22-Jan-14	83.53	18.47	0				86.20	18.40	0	NT	NT	NT	82.87	18.44	0
23-Jan-14	83.58	18.42	0				86.24	18.36	0	NT	NT	NT	82.94	18.37	0
24-Jan-14	83.57	18.43	0				86.23	18.37	0	NT	NT	NT	82.93	18.38	0
27-Jan-14	83.55	18.45	0				86.23	18.37	0	NT	NT	NT	82.93	18.38	0
28-Jan-14	83.56	18.44	0				86.25	18.35	0	102.52	18.38	0	82.94	18.37	0
29-Jan-14	83.56	18.44	0				86.22	18.38	0	NT	NT	NT	82.94	18.37	0
30-Jan-14	83.53	18.47	0				86.21	18.39	0	NT	NT	NT	82.93	18.38	0
31-Jan-14	83.53	18.47	0				86.19	18.41	0	NT	NT	NT	82.88	18.43	0
3-Feb-14	83.54	18.46	0				86.20	18.40	0	NT	NT	NT	82.91	18.40	0
4-Feb-14	83.54	18.46	0				86.20	18.40	0	NT	NT	NT	82.89	18.42	0
10-Feb-14	84.49	17.51	0				86.16	18.44	0	102.47	18.43	0	82.83	18.48	0
24-Feb-14	83.54	18.46	0				86.24	18.36	0	102.47	18.43	0	82.97	18.34	0
4-Mar-14*	NT	NT	NT				NT	NT	NT	NT	NT	NT	NT	NT	NT
13-Mar-14*	NT	NT	NT				NT	NT	NT	NT	NT	NT	NT	NT	NT
28-Mar-14	83.76	18.24	0				86.42	18.18	0	102.65	18.25	0	83.18	18.13	0
7-Apr-14*	83.42	18.58	0				86.43	18.17	0	NT	NT	NT	83.21	18.10	0
21-Apr-14	83.93	18.07	0				86.58	18.02	0	102.80	18.10	0	83.27	18.04	0
8-May-14*	84.03	17.97	0				86.68	17.92	0	NT	NT	NT	83.46	17.85	0
22-May-14*	83.81	18.19	0				86.47	18.13	0	NT	NT	NT	83.15	18.16	0
27-May-14	83.91	18.09	0				86.60	18.00	0	102.85	18.05	0	83.31	18.00	0
10-Jun-14*	83.93	18.07	0				86.55	18.05	0	NT	NT	NT	83.34	17.97	0
23-Jun-14	84.06	17.94	0				86.72	17.88	0	103.99	16.91	0	83.54	17.77	0
21-Jul-14	84.13	17.87	0				86.80	17.80	0	102.98	17.92	0	83.49	17.82	0
27-Aug-14	84.01	17.99	0				86.65	17.95	0	102.87	18.03	0	83.04	18.27	0
25-Sep-14	84.64	17.36	0				87.27	17.33	0	103.51	17.39	0	84.10	17.21	0
28-Oct-14	83.79	18.21	0				86.51	18.09	0	102.78	18.12	0	83.21	18.10	0
20-Nov-14	83.87	18.13	0				86.56	18.04	0	102.78	18.12	0	83.35	17.96	0
23-Dec-14	83.67	18.33	0				86.37	18.23	0	102.64	18.26	0	83.05	18.26	0
28-Jan-15	83.63	18.37	0				86.35	18.25	0	102.63	18.27	0	83.03	18.28	0
27-Feb-15	83.68	18.32	0				86.28	18.32	0	102.52	18.38	0	83.06	18.25	0
26-Mar-15	83.83	18.17	0				86.04	18.56	0	102.79	18.11	0	83.24	18.07	0
21-Apr-15	84.33	17.67	0				86.97	17.63	0	103.18	17.72	0	83.72	17.59	0
28-May-15	84.29	17.71	0				86.97	17.63	0	103.24	17.66	0	83.95	17.36	0
25-Jun-15	84.58	17.42	0				87.28	17.32	0	103.57	17.33	0	83.75	17.56	0

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	Elevation = 101.9955 ft ¹			Elevation = 101.7570 ft			Elevation = 104.5970 ft ¹			Elevation = 120.8980 ft ¹			Elevation = 101.3102 ft ¹		
	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL
21-Jul-15	84.58	17.42	0				87.24	17.36	0	103.44	17.46	0	83.76	17.55	0
27-Aug-15	84.44	17.56	0				87.13	17.47	0	103.41	17.49	0	83.69	17.62	0
23-Sep-15	84.26	17.74	0				86.94	17.66	0	103.21	17.69	0	83.63	17.68	0
20-Oct-15	84.00	18.00	0				86.38	18.22	0	103.38	17.52	0	Obstructed	NT	NT
18-Nov-15	84.25	17.75	0				86.93	17.67	0	103.24	17.66	0	84.62 ²	16.69	0
17-Dec-15	83.76	18.24	0				86.36	18.24	0	102.56	18.34	0	83.18	18.13	0
20-Jan-16	83.31	18.69	0				85.97	18.63	0	102.21	18.69	0	Obstructed	NT	NT
17-Feb-16	83.17	18.83	0				85.81	18.79	0	102.10	18.80	0	Obstructed	NT	NT
15-Mar-16	82.89	19.11	0				85.60	19.00	0	101.82	19.08	0	82.26	19.05	0
20-Apr-16	82.97	19.03	0				85.63	18.97	0	101.91	18.99	0	82.31	19.00	0
23-May-16	83.14	18.86	0				85.81	18.79	0	102.03	18.87	0	82.50	18.81	0
21-Jun-16	83.16	18.84	0				85.77	18.83	0	102.03	18.87	0	82.54	18.77	0
20-Jul-16	83.32	18.68	0				85.99	18.61	0	102.31	18.59	0	82.63	18.68	0
23-Aug-16	83.27	18.73	0				85.96	18.64	0	102.20	18.70	0	82.63	18.68	0
21-Sep-16	83.13	18.87	0				85.74	18.86	0	102.06	18.84	0	82.44	18.87	0
19-Oct-16	83.01	18.99	0				85.69	18.91	0	101.95	18.95	0	82.39	18.92	0
17-Nov-16	82.92	19.08	0				85.56	19.04	0	101.82	19.08	0	82.24	19.07	0
20-Dec-16	82.67	19.33	0				85.36	19.24	0	101.61	19.29	0	82.01	19.30	0
31-Jan-17	82.45	19.55	0				85.13	19.47	0	101.46	19.44	0	82.04	19.27	0
22-Feb-17	82.37	19.63	0				85.01	19.59	0	101.31	19.59	0	81.72	19.59	0
24-Mar-17	82.49	19.51	0				85.19	19.41	0	101.45	19.45	0	81.84	19.47	0
20-Apr-17	82.59	19.41	0				85.25	19.35	0	101.5	19.40	0	81.94	19.37	0
26-May-17	82.45	19.55	0				85.13	19.47	0	101.39	19.51	0	81.80	19.51	0
22-Jun-17	82.94	19.06	0				85.59	19.01	0	101.89	19.01	0	82.30	19.01	0
21-Jul-17	83.43	18.57	0				86.5	18.10	0	Transducer Installed	NT	NT	82.81	18.50	0
20-Mar-18	83.56	18.44	0				86.24	18.36	0	102.55	18.35	0	82.89	18.42	0
25-Apr-18	83.47	18.53	0				86.14	18.46	0	102.38	18.52	0	82.86	18.45	0
22-May-18	83.61	18.39	0				86.29	18.31	0	102.56	18.34	0	82.97	18.34	0
20-Jun-18	83.63	18.37	0				86.34	18.26	0	102.57	18.33	0	82.99	18.32	0
25-Jul-18	83.55	18.45	0				86.33	18.27	0	102.58	18.32	0	82.90	18.41	0
21-Aug-18	Transducer Installed	NT	NT				86.32	18.28	0	102.58	18.32	0	Transducer Installed	NT	NT
30-Oct-18	82.64	19.36	0				85.34	19.26	0	101.58	19.32	0	81.99	19.32	0
24-Jan-19	82.30	19.70	0				84.96	19.64	0	101.22	19.68	0	81.66	19.65	0

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	Elevation = 101.9955 ft ¹			Elevation = 101.7570 ft			Elevation = 104.5970 ft ¹			Elevation = 120.8980 ft ¹			Elevation = 101.3102 ft ¹		
	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL
26-Apr-19	82.45	19.55	0				85.18	19.42	0	101.41	19.49	0	81.88	19.43	0
29-Jul-19	82.67	19.33	0				85.34	19.26	0	101.57	19.33	0	82.06	19.25	0
29-Oct-19	83.15	18.85	0				85.84	18.76	0	102.19	18.71	0	82.09	19.22	0
31-Jan-20	Obstructed	NT	0				85.88	18.72	0	102.17	18.73	0	82.52	18.79	0
23-Apr-20	82.93	19.07	0				85.68	18.92	0	101.82	19.08	0	82.27	19.04	0
24-Jul-20	83.28	18.72	0				85.94	18.66	0	102.13	18.77	0	82.63	18.68	0
15-Oct-20	83.69	18.31	0				86.39	18.21	0	102.56	18.34	0	83.12	18.19	0
27-Jan-21	83.53	18.47	0				86.23	18.37	0	102.46	18.44	0	82.87	18.44	0
22-Apr-21	83.85	18.15	0				86.53	18.07	0	102.72	18.18	0	83.26	18.05	0
20-May-21	84.00	18.00	0				Obstructed	NT	NT	Obstructed	NT	NT	83.42	17.89	0
16-Jun-21	84.10	17.90	0				86.79	17.81	0	102.99	17.91	0	83.53	17.78	0
16-Jul-21	84.14	17.86	0				86.89	17.71	0	103.11	17.79	0	83.62	17.69	0
20-Aug-21				84.06	17.70	0	85.96	18.64	0	103.17	17.73	0	83.67	17.64	0
17-Sep-21				84.14	17.62	0	87.02	17.58	0	103.22	17.68	0	83.79	17.52	0
15-Oct-21				84.17	17.59	0	87.06	17.54	0	103.26	17.64	0	83.80	17.51	0
19-Nov-21				84.26	17.50	0	87.12	17.48	0	103.32	17.58	0	83.89	17.42	0
17-Dec-21				83.31	18.45	0	86.22	18.38	0	102.45	18.45	0	82.94	18.37	0
14-Jan-22				82.90	18.86	0	85.78	18.82	0	102.01	18.89	0	82.49	18.82	0
18-Feb-22				83.23	18.53	0	86.11	18.49	0	102.32	18.58	0	82.85	18.46	0
18-Mar-22				83.30	18.46	0	86.21	18.39	0	102.43	18.47	0	82.90	18.41	0
22-Apr-22 ³	83.40	18.60	0				86.16	18.44	0	104.26	16.64	0	82.85	18.46	0
19-May-22				83.20	18.56	0	86.10	18.50	0	102.35	18.55	0	82.80	18.51	0
17-Jun-22				83.27	18.49	0	86.18	18.42	0	102.39	18.51	0	82.90	18.41	0
15-Jul-22				83.44	18.32	0	86.35	18.25	0	102.57	18.33	0	83.07	18.24	0
19-Aug-22				83.64	18.12	0	86.53	18.07	0	102.75	18.15	0	83.24	18.07	0
16-Sep-22				83.82	17.94	0	87.45	17.15	0	102.90	18.00	0	83.44	17.87	0
20-Oct-22				83.85	17.91	0	86.72	17.88	0	102.95	17.95	0	83.85	17.46	0
21-Nov-22				83.59	18.17	0	86.73	17.87	0	102.96	17.94	0	83.50	17.81	0
20-Dec-22				83.67	18.09	0	85.58	19.02	0	102.8	18.10	0	83.30	18.01	0
17-Jan-23				85.53	16.23	0	82.62	21.98	0	102.9	18.00	0	83.30	18.01	0
14-Feb-23				83.67	18.09	0	86.60	18.00	0	102.81	18.09	0	83.28	18.03	0
21-Mar-23				83.69	18.07	0	86.59	18.01	0	103.02	17.88	0	83.33	17.98	0
18-Apr-23				83.69	18.07	0	86.63	17.97	0	103.05	17.85	0	83.30	18.01	0
16-May-23				83.68	18.08	0	87.58	17.02	0	102.81	18.09	0	83.34	17.97	0
19-Jun-23				83.57	18.19	0	86.49	18.11	0	102.73	18.17	0	83.14	18.17	0

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Date	RHMW01			RHMW01R			RHMW02			RHMW03			RHMW05		
	Elevation = 101.9955 ft ¹			Elevation = 101.7570 ft			Elevation = 104.5970 ft ¹			Elevation = 120.8980 ft ¹			Elevation = 101.3102 ft ¹		
	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL	DTW (TOC)	SWL	LNAPL
17-Jul-23				83.97	17.79	0	87.52	17.08	0	103.09	17.81	0	83.61	17.70	0

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Notes:

1 - Elevations updated based on Well Elevation Survey Report, Red Hill Bulk Fuel Storage Facility (DON 2018)

2 - Dedicated groundwater pump obstructing path of interface meter probe; Depth measured based on elevation of water when pump removed from well (RHMW05)

3 - Measurement taken at RHMW01 versus RHMW01R in error

January 2014 to August 2015, Measurements recorded by Environmental Science International from unless otherwise noted

From September 2015, Measurements recorded by Element Environmental, LLC

* - Measurements recorded by NAVFAC HI.

All units in feet (ft).

DTW (TOC) - depth to water from top of well casing

LNAPL - light non-aqueous phase liquid

█ or NT - measurement not taken

SWL - static water level