

DISCLAIMER: Sampling Plan will be updated/revised in coordination with Department of Health.

	SAMPLE TYPE	METHOD	LOCATIONS	FREQUENCY/DURATION	START DATE	REPORTING	NOTES
2.a.	Soil Vapor Concentrations	Photo-ionization Detector (PID)	Tanks 13, 14, 15, 16, 17, 18, 20 - At all available (2 or 3) soil vapor monitoring points (SVMPs) - Background reading at each tank - 20 May 21: Include Tanks 2-12	Daily, 7 days per week for 3 weeks	- 10-12 May 21: Initial PID readings at Tanks 13-16 - 13 May 21: Daily PID readings at Tanks 13-17 and 20 - 20 May 21: Include Tanks 2-12	- Excel spreadsheet - April monthly results	
2.b.	Summa Canister Samples	Method TO-15	Tanks 13, 14, 15, 16, 17, 18, 20 - At shallow SVMPs	- One time - Additional targeted sampling if increased trends in PID readings are observed	- 10 May 21: Initial Summa canister sample of tunnel air near the collection sump - 11 May 21: Summa canister sample at Tank 13 shallow SVMP - 13 May 21: With 4 canisters on hand, prioritize sampling of shallow SVMPs at tanks 20, 17, 16, and 15	- Laboratory report with chromatograms - Expedited laboratory turnaround time of 7 days	Evaluating method change to Modified TO-15 PIANO or TO-17 - Pending DOH Direction
2.c.	Headspace Monitoring	PID	RHMW01R, RHMW02, RHMW03 - 2 inches in well casing - Breathing zone 15 May 21: Include RHMW01 and RHMW05	Daily, 7 days per week for 3 weeks	- 12 May 21: Initial test at RHMW01R during GW sampling event - 13 May 21: Initial tests at RHMW01R, 02, 03 during GW sampling event - 15 May 21: Begin daily monitoring	Excel spreadsheet	
	Fuel Product Gauging	Oil/water interface probe	RHMW01R, RHMW02, RHMW03 15 May 21: Include RHMW01 and RHMW05	Daily, 7 days per week for 3 weeks	- 12 May 21: Initial test at RHMW01R during GW sampling event - 13 May 21: Initial tests at RHMW01R, 02, 03 during GW sampling event - 15 May 21: Begin daily monitoring	Excel spreadsheet	
	Groundwater Sampling	TPH-g/d/o, BTEX, 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene	RHMW01R, RHMW02, RHMW03	- Every Monday, Wednesday, and Friday for 3 weeks - Followed by normal quarterly LTM schedule	- 12-13 May 21: 1st sample collection - 19-20 May 21: 2nd sample collection - 24 May : Initiate three times a week sampling	- Laboratory report with chromatograms prior to data validation - Expedited laboratory turnaround time	

AVERAGE SOIL VAPOR CONCENTRATION READINGS

DATE	SV02 S	SV02 M	SV02 D	SV03 S	SV03 M	SV03 D	SV04 S	SV04 M	SV04 D	SV05 S	SV05 M	SV05 D	SV06 S	SV06 M	SV07 S	SV07 M	SV07 D	SV08 S	SV08 M	SV08 D	SV09 S	SV09 M	SV09 D	SV10 S	SV10 M/D	SV11 S	SV11 M/D	SV12 S	SV12 M	SV12 D	SV13 S	SV13 M	SV13 D	SV14 S	SV14 M	SV14 D	SV15 S	SV15 M	SV15 D	SV16 S	SV16 M	SV16 D	SV17 S	SV17 M	SV17 D	SV18 S	SV18 D	SV20 S	SV20 M	SV20 D
4/22/2021	241	234	248	180	175	446	149	157	186	187	416	1170	3993	243	293	235	477	263	238	227	222	223	367	269	242	259	257	304	368	346	770	693	550	404	361	475	175	NC2	170	207	185	191	289	320	363	1009	1184	223	173	184

DISCLAIMER: Preliminary Data: Undergoing Validation - Subject to Change.

Notes:

* Air compressor used to clear obstruction prior to collecting sample

** "M/D" monitoring points were constructed to screen both middle & deep depth intervals along the respective underground storage tank.

NC - Not collected

NC1 - Not collected due to tank maintenance

NC2 - Not collected due to obstruction in vapor line

Red Hill Bulk Fuel Storage Facility
Notice of Interest 20210507-0852 JP-5 spill that occurred on 6 May 2021
2.a. Soil Vapor Concentrations at Tanks 13-18 and 20

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AVERAGE SOIL VAPOR CONCENTRATION READINGS (PPBV)																																																			
DATE	SV02 S	SV02 M	SV02 D	SV03 S	SV03 M	SV03 D	SV04 S	SV04 M	SV04 D	SV05 S	SV05 M	SV05 D	SV06 S	SV06 M	SV07 S	SV07 M	SV07 D	SV08 S	SV08 M	SV08 D	SV09 S	SV09 M	SV09 D	SV10 S	SV10 M	SV11 S	SV11 M	SV12 S	SV12 M	SV12 D	SV13 S	SV13 M	SV13 D	SV14 S	SV14 M	SV14 D	SV15 S	SV15 M	SV15 D	SV16 S	SV16 M	SV16 D	SV17 S	SV17 M	SV17 D	SV18 S	SV18 D	SV20 S	SV20 M	SV20 D	
5/10/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	252	347	201	0	0	0	432	NC2	184	219	142	109	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3
5/11/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1,896	1,014	930	702	480	740	816	NC2	866	687	682	691	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3
5/12/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	0	0	0	0	0	0	0	NC2	0	0	0	0	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3	NC3
5/13/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1,623	1,202	1,024	1,164	813	1,401	546	NC2	363	336	266	183	57,667	49,333	4,787	120,000	121,333	9,837	232,667	14,433	
5/14/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1,568	1,322	1,423	1,095	1,057	1,045	860	NC2	779	730	672	520	44,130	45,733	11,923	114,700	67,563	2,958	206,267	17,277	
5/15/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	961	973	1,013	687	612	634	720	NC2	365	655	431	272	33,670	26,477	13,337	122,000	41,970	0	23,460	7,203	
5/16/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	313	241	534	70	0	14	383	NC2	135	141	73	25	34,030	15,053	8,552	139,500	28,987	3,487	39,533	5,158	
5/17/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2,180	1,153	1,000	601	797	803	813	NC2	315	327	148	237	30,280	13,807	8,750	118,667	19,067	6,866	50,070	3,618	
5/18/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	297	231	385	165	177	178	342	NC2	58	0	0	255	162,300	23,963	7,971	65,667	10,250	7,129	32,700	3,725	
5/19/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	480	445	443	524	379	424	445	NC2	152	242	138	237	136,333	92,333	6,363	146,667	15,833	8,796	32,900	7,321	
5/20/2021	87	77	85	199	191	252	239	132	108	339	1,103	1,002	4,776	310	414	166	491	196	203	238	137	271	173	177	24	171	127	304	236	200	199	446	481	246	430	237	239	NC2	42	63	8	55	96,333	29,967	7,251	105,067	18,667	5,536	24,333	5,285	
5/21/2021	197	97	792	94	177	170	128	46	132	580	776	691	5,021	416	408	322	7,201	253	275	298	413	370	318	236	214	348	382	530	320	232	1,123	557	721	258	242	326	409	NC2	164	244	97	153	NC1	NC1	NC1	118,167	25,133	6,469	34,563	5,417	
5/22/2021	512	425	466	513	428	419	2,108	532	644	688	1,199	620	5,238	864	2,428	633	3,915	602	660	753	603	665	778	646	579	613	559	1,178	642	619	937	847	1,066	845	806	718		1,030	NC2	792	788	636	588	30,340	14,330	5,622	66,800	5,611	5,137	16,000	7,003

BACKGROUND TUNNEL AIR READINGS (PPBV)																			
DATE	Tank 2	Tank 3	Tank 4	Tank 5	Tank 6	Tank 7	Tank 8	Tank 9	Tank 10	Tank 11	Tank 12	Tank 13	Tank 14	Tank 15	Tank 16	Tank 17	Tank 18	Tank 20	
5/10/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	6,900	4,300	8,200	10,300	41,000	70,000	71,000	
5/11/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	5,455	5,037	5,068	6,308	NC	NC	NC	
5/12/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	11,000	8,369	130	610	NC	NC	NC	
5/13/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	36,550	30,120	2,617	1,239	39,740	38,730	11,900	
5/14/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	32,630	12,640	4,288	4,266	38,500	17,000	17,230	
5/15/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	11,310	3,975	3,015	3,160	31,300	23,310	51,300	
5/16/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	10,180	3,628	3,930	4,295	39,960	21,270	33,510	
5/17/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	32,190	2,571	2,694	1,172	29,000	15,000	7,500	
5/18/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	13,500	1,930	496	2,487	10,360	9,023	7,568	
5/19/2021	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	6,620	1,237	631	634	5,300	9,000	6,000	
5/20/2021	1,301	1,270	1,219	1,150	1,089	1,101	1,297	1,079	1,008	1,067	1,255	2,438	1,261	613	348	10,700	7,800	7,700	
5/21/2021	1,323	1,168	1,051	1,154	1,606	1,578	1,364	2,303	1,352	1,404	1,317	1,968	1,053	650	598	NC4	15,200	6,200	
5/22/2021	3,317	3,228	3,251	3,464	3,316	3,422	3,520	3,592	3,872	3,787	3,799	5,004	4,601	3,907	4,050	13,100	17,100	16,000	

Notes:
* Air compressor used to clear obstruction prior to collecting sample
** "M/D" monitoring points were constructed to screen both middle & deep depth intervals along the respective underground storage tank.
NC - Not collected
NC1 - Not collected due to tank maintenance
NC2 - Not collected due to obstruction in vapor line
NC3 - Not collected - monitoring vault potentially compromised by release. Replacing tubing and cleaning valves. Sampling to begin 14 May

Red Hill Bulk Fuel Storage Facility

Notice of Interest 20210507-0852 JP-5 spill that occurred on 6 May 2021

2.c. Monitoring Wells: RHMW01, RHMW01R, RHMW02, RHMW03, and RHMW05 - Headspace and Fuel Product Gauging

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	RHMW01						RHMW01R						RHMW02						RHMW03						RHMW05					
DATE	TIME	AMBIENT	HEADSPACE	DTW	PRODUCT?	THICKNESS	TIME	AMBIENT	HEADSPACE	DTW	PRODUCT?	THICKNESS	TIME	AMBIENT	HEADSPACE	DTW	PRODUCT?	THICKNESS	TIME	AMBIENT	HEADSPACE	DTW	PRODUCT?	THICKNESS	TIME	AMBIENT	HEADSPACE	DTW	PRODUCT?	THICKNESS
		(ppmv)	(ppmv)	(ft btoc)	(Yes/No)	(ft)		(ppmv)	(ppmv)	(ft btoc)	(Yes/No)	(ft)		(ppmv)	(ppmv)	(ft btoc)	(Yes/No)	(ft)		(ppmv)	(ppmv)	(ft btoc)	(Yes/No)	(ft)		(ppmv)	(ppmv)	(ft btoc)	(Yes/No)	(ft)
5/12/2021	NC1	NC1	NC1	NC1	NC1	NC1	1553	2.2	0.1	83.69	No	NA	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1	NC1
5/13/2021	NC1	NC1	NC1	NC1	NC1	NC1	1150	1.3	0.3	83.85	No	NA	1000	1.1	0.1	86.77	No	NA	1030	0.8	0.1	103.02	No	NA	NC1	NC1	NC1	NC1	NC1	NC1
5/15/2021	1111	5.158	3.902	83.97	No	NA	1103	5.158	0.378	83.76	No	NA	1123	4.833	0.594	86.66	No	NA	1128	3.985	0.413	102.88	No	NA	1048	5.094	0.345	83.38	No	NA
5/16/2021	1105	4.463	3.508	83.87	No	NA	1110	4.463	0	83.63	No	NA	1123	4.054	0	86.57	No	NA	1143	3.548	0.036	102.79	No	NA	1049	4.753	0	83.24	No	NA
5/17/2021	1310	5.415	5.100	83.96	No	NA	1304	5.170	0	83.73	No	NA	1328	7.511	0.174	86.62	No	NA	1336	3.314	0.280	102.83	No	NA	1318	5.601	0.140	83.33	No	NA
5/18/2021	1307	2.53	2.15	83.95	No	NA	1304	2.53	0	83.74	No	NA	1315	5.056	0	86.66	No	NA	1324	0.965	0	102.87	No	NA	1256	2.174	0	83.39	No	NA
5/19/2021	0856	2.482	2.165	83.99	No	NA	0859	2.482	0.200	83.78	No	NA	0907	1.926	0.270	86.68	No	NA	0917	1.149	0.105	102.94	No	NA	0848	2.556	0.260	83.48	No	NA
5/19/2021	NC1	NC1	NC1	NC1	NC1	NC1	1400	0.3	0.0	83.74	No	NA	1600	0.1	0.0	86.67	No	NA	1620	0.1	0.0	102.91	No	NA	NC1	NC1	NC1	NC1	NC1	NC1
5/20/2021	0939	1.476	1.290	84.00	No	NA	0942	1.476	0.204	NM	NA	NA	0947	1.040	0.180	NM	NA	NA	1128	0.811	0.068	NM	NA	NA	0931	1.622	0.130	83.42	No	NA
5/20/2021	NC1	NC1	NC1	NC1	NC1	NC1	1130	1.7	0.2	83.81	No	NA	1015	0.7	0.0	86.74	No	NA	1210	1.1	0.0	102.93	No	NA	NC1	NC1	NC1	NC1	NC1	NC1
5/21/2021	0724	1.562	1.378	84.03	No	NA	0722	1.562	NM	NM	NA	NA	1056	1.339	0.202	86.74	No	NA	1048	0.689	0.181	102.95	No	NA	0717	1.456	0.080	83.44	No	NA
5/21/2021	NC1	NC1	NC1	NC1	NC1	NC1	1500	0.2	0.4	83.81	No	NA	1540	0.1	0.1	86.72	No	NA	1622	0.1	0	102.94	No	NA	NC1	NC1	NC1	NC1	NC1	NC1
5/22/2021	0745	3.440	3.202	84.05	No	NA	0750	3.440	0.227	83.84	No	NA	0945	3.386	0.590	86.73	No	NA	1246	4.060	0.507	102.97	No	NA	0734	3.525	0.152	83.44	No	NA

DTW = Depth-to-water

ft = feet

ft btoc = feet below top of casing

NA = Not applicable

NM = No measurement taken, due to equipment installed in well.

ppmv = parts-per-million, volume

NC1- Not collected due to headspace and fuel product gauging occurring only where groundwater sampling was being conducted.

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