Cumulative Groundwater Measurements and Analytical Results for Outside-Tunnel Wells
Red Hill Bulk Fuel Storage Facility

Well Name	Sample ID	Date Sampled	8015C: TPH-d (µg/l)	8015C: TPH-g (µg/l)	8015C: TPH-o (µg/l)	8260C: TPH-g (µg/l)	1,1,1-Trichloroethane (µg/l)	1,1,2-Trichloroethane (µg/l)	1,1-Dichloroethane (µg/l)	1,1-Dichloroethylene (µg/l)	1,2,3-Trichloropropane (µg/l)	1,2,4-Tricholorobenzene (µg/l)	1,2-Dibromo-3-chloropropane (µg/l)	1,2-Dibromoethane (µg/l)	1,2-Dichlorobenzene (µg/l)	1,2-Dichloroethane (µg/l)	1,2-Dichloropropane (µg/l)	1,3-Dichlorobenzene (µg/l)	1,3-Dichloropropene (total of cis/trans) (µg/l)	1,4-Dichlorobenzene (µg/l)	Acetone (µg/l)	Benzene (µg/l)	Bromodichloromethane (µg/l)	Bromoform (µg/l)	Bromomethane (µg/l)	Carbon Tetrachloride (µg/l)	Chlorobenzene (µg/l)	Chloroethane (µg/l)	Chloroform (µg/l)	Chloromethane (µg/l)	cis-1,2-Dichloroethylene (µg/l)	Dibromochloromethane (µg/l)	Ethylbenzene (µg/l)	Hexachlorobutadiene (µg/l)	Methyl ethyl ketone (2-Butanone) (µg/l)	Methyl isobutyl ketone (4-Methyl-2-Pentanone) (µg/l)	Methyl tert-butyl Ether (µg/l)	Methylene chloride (µg/l)	Napthalene (µg/l)	Styrene (µg/l)	Tetrachloroethane, 1,1,1,2- (µg/l)	Tetrachloroethane, 1,1,2,2- (µg/l)	Tetrachloroethylene (µg/l)	Toluene (µg/l)	trans-1,2-Dichloroethylene (µg/l)	Trichloroethylene (µg/l)	Vinyl chloride (µg/l)	Xylenes (total) (µg/l)	8270C: Acenaphthene (µg/l)	Acenaphthylene (µg/l)	Anthracene (µg/l)	Benzo[a]anthracene (µg/l)	Benzo[g,h,i]perylene (µg/l)	Benzo[a]pyrene (µg/l)	Benzo[b]fluoranthene (µg/l)	Benzo[k]fluoranthene (µg/l)	Chrysene (µg/l)	Dibenzo[a,h]anthracene (µg/l)	Fluoranthene (µg/l)	Fluorene (µg/l)	Indeno[1,2,3-cd]pyrene (µg/l)	1-Methylnaphthalene (µg/l)	2-Methylnaphthalene (µg/l)	Naphthalene (µg/l)	Phenanthrene (µg/l)	Pyrene (µg/l)	6020: Dissolved Lead (µg/l)
DOH EAL Drinking Water Toxicity	-	-	190	100	4400	100	200	5.0	2.4	7.0	0.6	70	0.04	0.04	600	0.15	5.0	180	0.43	75	22,000	5.0	0.12	80	8.7	5.0	100	21,000	70	1.8	70	0.16	700	0.86	7,100	2,000	12	4.8	17	100	0.52	0.067	5.0	1,000	100	5.0	2.0	10,000	370	240	1,800	0.092	1,500	0.20	0.092	0.92	9.2	0.0092	1,500	240	0.092	4.7	24	17	240	180	15
DOH EAL Gross Contamination	-	-	100	100	100	100	970	50,000	50,000	1,500	50,000	3,000	10	50,000	10	7,000	10	5.0	50,000	5.0	20,000	170	50,000	510	50,000	520	50	16	2,400	50,000	50,000	50,000	30	6.0	8,400	1,300	5.0	9,100	21	10	50,000	500	170	40	260	310	3,400	20	20	2,000	22	4.7	0.13	0.81	0.75	0.40	1.0	0.52	130	950	0.095	10	10	21	410	68	50,000
OWDFMW01	OWDFMW01-WG-01	[illegible]	[illegible] U	<30.0 U	-	-	<0.310 U	<0.310 U	<0.310 U	<0.310 U	<0.310 U	<0.310 U	[illegible] U	[illegible] U	<0.310 U	[illegible] U	<0.310 U	<0.310 U	<0.310 U	<0.150 U	<3.10 U	**0.470**	[illegible] U	<0.310 U	<0.940 U	<0.310 U	<0.150 U	<0.310 U	<0.300 U	<0.310 U	<0.310 U	<0.150 U	<0.310 U	<0.310 U	<3.10 U	<3.10 U	<1.50 U	<1.00 U	<0.620 U	<0.310 U	<0.150 U	[illegible] U	<0.310 U	<0.310 U	<0.310 U	<0.310 U	<0.310 U	<0.620 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	[illegible] U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0164 U	<0.0339 U	<0.0164 U	<0.0164 U	<0.310 U
	OWDFMW01	[illegible]	[illegible] U	<30 U	-	-	<0.31 U	<0.31 U	<0.31 U	-	<0.31 U	<0.31 U	[illegible] U	[illegible] U	<0.31 U	[illegible] U	<0.31 U	<0.31 U	<0.15 U	<0.15 U	<3.1 U	<0.12 U	[illegible] U	<0.31 U	<0.94 U	<0.31 U	<0.15 U	<0.31 U	<0.30 U	<0.31 U	<0.31 U	<0.15 U	<0.31 U	<0.31 U	<3.1 U	<3.1 U	-	<1 U	<0.62 U	<0.31 U	<0.15 U	[illegible] U	<0.31 U	<0.31 U	<0.31 U	<0.31 U	<0.31 U	<0.62 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	[illegible] U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0168 U	<0.0346 U	<0.0168 U	<0.0168 U	<0.31 U
	OWDFMW01-WG-03	[illegible]	[illegible]	<60.0 U	-	-	<0.620 U	<0.620 U	<0.620 U	<0.620 U	[illegible] U	<0.620 U	[illegible] U	[illegible] U	<0.620 U	[illegible] U	<0.620 U	<0.620 U	[illegible]	<0.300 U	<6.20 U	<0.240 U	[illegible] U	<0.620 U	<1.88 U	<0.620 U	<0.300 U	<0.620 U	<0.600 U	<0.620 U	<0.620 U	[illegible] U	<0.620 U	<0.620 U	<6.20 U	<6.20 U	<3.00 U	<2.00 U	<1.24 U	<0.620 U	<0.300 U	[illegible] U	<0.620 U	<0.620 U	<0.620 U	<0.620 U	<0.620 U	<1.24 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	[illegible] U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0320 U	<0.0664 U	<0.0320 U	<0.0320 U	<0.620 U
	OWDFMW01-WG-04	[illegible]	[illegible] J	<60.0 U	-	-	<0.620 U	<0.620 U	<0.620 U	<0.620 U	[illegible] U	<0.620 U	[illegible] U	[illegible] U	<0.620 U	[illegible] U	<0.620 U	<0.620 U	[illegible]	<0.300 U	<6.20 U	<0.240 U	[illegible] U	<0.620 U	<1.88 U	<0.620 U	<0.300 U	<0.620 U	<0.600 U	<0.620 U	<0.620 U	[illegible] U	<0.620 U	<0.620 U	<6.20 U	<6.20 U	<3.00 U	<2.00 U	<1.24 U	<0.620 U	<0.300 U	[illegible] U	<0.620 U	<0.620 U	<0.620 U	<0.620 U	<0.620 U	<1.24 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	[illegible] U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0352 U	<0.0730 U	<0.0352 U	<0.0352 U	<0.620 U
	ES007	[illegible]	<80.8 U	-	-	<12.12 U	<0.28 U	<0.40 U	<0.38 U	<0.60 U	[illegible] U	<0.42 U	[illegible] U	[illegible] U	<0.34 U	[illegible] U	<0.34 U	<0.22 U	<0.36 U	<0.38 U	**1.4** J	<0.32 U	[illegible] U	<0.28 U	<0.48 U	<0.20 U	<0.42 U	<0.42 U	<0.14 U	<0.62 U	<0.32 U	[illegible] U	<0.46 U	<0.38 U	<1.20 U	<3.80 U	<0.38 U	<0.70 U	-	<0.50 U	<0.26 U	[illegible] U	<0.30 U	<0.34 U	<0.38 U	<0.32 U	<0.46 U	<0.38 U	<0.12 U	<0.12 U	<0.10 U	[illegible] U	[illegible] U	<0.14 U	[illegible] U	<0.14 U	<0.10 U	[illegible] U	<0.16 U	<0.12 U	[illegible] U	<0.12 U	<0.12 U	<0.10 U	<0.14 U	<0.16 U	**0.60**
	ES008	[illegible]	<80.8 U	-	-	<12.12 U	<0.28 U	<0.40 U	<0.38 U	<0.60 U	[illegible] U	<0.42 U	[illegible] U	[illegible] U	<0.34 U	[illegible] U	<0.34 U	<0.22 U	<0.36 U	<0.38 U	<1.90 U	<0.32 U	[illegible] U	<0.28 U	<0.48 U	<0.20 U	<0.42 U	<0.42 U	<0.14 U	<0.62 U	<0.32 U	[illegible] U	<0.46 U	<0.38 U	<1.20 U	<3.80 U	<0.38 U	<0.70 U	-	<0.50 U	<0.26 U	[illegible] U	<0.30 U	<0.34 U	<0.38 U	<0.32 U	<0.46 U	<0.38 U	<0.12 U	<0.12 U	<0.10 U	[illegible] U	[illegible] U	<0.14 U	[illegible] U	<0.14 U	<0.10 U	[illegible] U	<0.16 U	<0.12 U	[illegible] U	<0.12 U	<0.12 U	<0.10 U	<0.14 U	<0.16 U	**0.57**
	ES017	[illegible]	<50.8 U	-	-	<12.12 U	<0.28 U	<0.40 U	<0.38 U	<0.60 U	[illegible] U	<0.42 U	[illegible] U	[illegible] U	<0.34 U	[illegible] U	<0.34 U	<0.22 U	<0.36 U	<0.38 U	<1.90 U	**0.54** J	[illegible] U	<0.28 U	<0.48 U	<0.20 U	<0.42 U	<0.42 U	<0.14 U	<0.62 U	<0.32 U	[illegible] U	<0.46 U	<0.38 U	<1.20 U	<3.80 U	<0.38 U	<0.70 U	-	<0.50 U	<0.26 U	[illegible] U	<0.30 U	<0.34 U	<0.38 U	<0.32 U	<0.46 U	<0.38 U	<0.12 U	<0.12 U	<0.10 U	[illegible] U	[illegible] U	<0.14 U	[illegible] U	<0.14 U	<0.10 U	[illegible] U	<0.16 U	<0.12 U	[illegible] U	<0.12 U	<0.12 U	<0.10 U	<0.14 U	<0.16 U	<0.22 U
	ES018	[illegible]	<80.8 U	-	-	<12.12 U	<0.28 U	<0.40 U	<0.38 U	<0.60 U	[illegible] U	<0.42 U	[illegible] U	[illegible] U	<0.34 U	[illegible] U	<0.34 U	<0.22 U	<0.36 U	<0.38 U	<1.90 U	**0.69** J	[illegible] U	<0.28 U	<0.48 U	<0.20 U	<0.42 U	<0.42 U	<0.14 U	<0.62 U	<0.32 U	[illegible] U	<0.46 U	<0.38 U	<1.20 U	<3.80 U	<0.38 U	<0.70 U	-	<0.50 U	<0.26 U	[illegible] U	<0.30 U	<0.34 U	<0.38 U	<0.32 U	<0.46 U	<0.38 U	<0.12 U	<0.12 U	<0.10 U	[illegible] U	[illegible] U	<0.14 U	[illegible] U	<0.14 U	<0.10 U	[illegible] U	<0.16 U	<0.12 U	[illegible] U	<0.12 U	<0.12 U	<0.10 U	<0.14 U	<0.16 U	<0.22 U

Notes:

* duplicate samples

** - Samples ES087 and ES088 possibly switched prior to analysis.

HDOH, EHE Guidance EALs for Drinking Water Action Levels for Human Toxicity (Table D-3a) and Groundwater Gross Contamination Action Levels where groundwater IS a current or potential source of drinking water (Table G-1)

Background historical data are from February 2005 to July 2012.

Non-detects (from October 2012 and on) are the LOD values.

a - Used MDL values for non detects

d - no analytical lab reports available, used summary table from DOH Quarterly GW Reports

µg/l - micrograms per liter

Grey highlight - exceeds EALs

Bold - detected values

B - analyte was present in the associated method blank

BU - sample analyzed after holding time expired

HD - the chromatographic pattern was inconsistent with the profile of the reference fuel standard

ICH - Initial calibrtn. verif. recov. above method CL for this analyte

IH - Calibrtn. verif. recov. below method CL for this analyte

IJ - Calibrtn. verif. recov. above method CL for this analyte

J - indicates an estimated value

U - indicates that the compound was analyzed for but not detected at or above the stated limit. The stated limit is the LOD unless otherwise specified.

ED_006532_00009890-00001