QUANTUM Engineering
and Geologic Consulting

October 6, 2017

Ted Uecker
Washington Department of Ecology
4601 Monroe, Suite 202
Spokane, WA 99205-1295

Re: Dusty Four Star Supply-Semi Annual Monitoring Report
Correspondence #117.41

Dear Mr. Uecker:

Semi annual monitoring was performed at Four Star Supply, (formerly Dusty Farm Coop) on September 16, 2017. This report provides data regarding samples collected at that time. All wells were sampled with the exception of GW5, GW7, GW9 and the onsite wellhead. The four afore-mentioned locations have revealed numerous consecutive, samples below the minimum detection limits of the laboratory for NWTPH-G and BTEX. Sampling of these wells is not considered critical for operation of the groundwater treatment system, but will be included in the sampling plan when the site nears closure.

Wells MW2 through MW5, GW1 and GW3 were opened and allowed to equilibrate to atmospheric pressure prior to collection of static water levels. All wells were sampled using low-flow sampling techniques and samples were collected in laboratory certified containers, placed on ice and transported to the laboratory for analyses. Samples were analyzed using Method 8260C for benzene, toluene, ethylbenzene and total xylene (BTEX). Gasoline analyses were performed using method NWTPH-Gx.

Recent samples were below the Model Toxic Control Act (MTCA) Method A standard for groundwater with the exception of MW2 and MW3. MW2 and MW3 revealed benzene at 20.0 μg/L 6.4 μg/L respectively, compared to the MTCA Method A Standard of 5.0μg/L.

Methyl tert-butyl ether (MTBE) was revealed at low levels in several of the wells. MW3 revealed 21.0 μg/L and GW1 revealed 20.0 μg/L of MTBE compared to the current MTCA Method A standard for groundwater of 20.0 μg/L. Since site remedial action was initiated in 2001 under the 1993 MTCA, MTBE is not actually a chemical of concern for this site. MTBE is being reported as part of the analytical procedure by the laboratory and is provided here as additional information.

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Operation of the collection and treatment system was suspended in late winter due to high water levels in the recharge trench. During the recent April sampling event, the static water level was checked in the recharge trench and found to be only < 2.0-feet below ground level.

Attempts to resume operation of the pump and treat system resulted in high-level alarm conditions in the lift station for the recharge trench. Further examination and diagnostics revealed that the discharge piping on the lift station to be faulty and not capable of delivering water to the recharge trench. Fortunately, a plugged recharge trench was not the cause of the alarm conditions as originally thought. Lift station contents as well as accumulated solids will be removed and disposed by a septic hauler. A sample of the lift station contents revealed BTEX and NWTPH-Gx, diesel range organics (DRO), residual range organics (RRO) and oil and grease to be below the detection limits of the laboratory and considered to be safe for disposal. Removal of accumulated solids will also protect the recharge trench from possible carry-over and plugging of the field in the future.

A data summary table and supporting laboratory data are attached for your review. If you have any questions or need any additional information, please feel free to call.

Sincerely,

James S. De Smet, PE, PG

Cc: Don Boyd, CDA Service
Dave Appel, Four Star Supply
Terry Miller, Four Star Supply

Groundwater Data Summary
Dusty Farm Coop

Well ID	Date	TPH-G	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO	Heavy Oil	SWL
	8/10/2001*			ND						9.20
	3/25/02	129000.00	13700.00	30600.00	2410.00	14200.00				3.11
	6/27/02	120000.00	19700.00	38500.00	2310.00	15000.00				6.11
MW1	12/3/02*									
	1/24/2003**									4.73
	4/3/03	108000.00	13100.00	21000.00	1870.00	11500.00				4.18
	7/30/03	98200.00	4670.00	11100.00	1250.00	7550.00	ND	6900.00	633.00	7.13
	12/10/03*									8.30
	4/9/2004**									5.10
	9/7/2004**									8.30
	2/17/2005**									5.77
	5/12/2005**									5.40
	10/25/2005**									8.00
	3/15/2006**									3.60
	7/26/2006**									7.13
	11/21/2006**									8.10
	3/13/2007**									5.00
	6/28/2007**									6.69
	9/26/2007*									9.30
	12/21/2007*									7.20
	3/25/2008*									4.06
	6/30/2008*									6.02
	9/23/2008*									7.98
	12/4/2008*									7.28
	3/19/2009*	Well Abandone								
	6/25/09	Well Abandone								
	12/3/09	Well Abandone								
	4/25/11	Well Abandone								
	5/8/12	Well Abandone								
	11/16/12	Well Abandone								
	5/2/13	Well Abandone								
	10/1/13	Well Abandone								
	3/11/15	Well Abandone								
	9/10/15	Well Abandone								
	5/21/16	Well Abandone								
	4/19/17	Well Abandone								
	9/16/17	Well Abandone								
	8/10/01	32000.00	838.00	ND	389.00	4410.00				7.45
	3/25/02	12700.00	19900.00	29800.00	1850.00	12200.00				3.33
	6/27/02	72300.00	13300.00	21500.00	1130.00	8230.00				5.95
	12/03/02*									
MW2	1/24/2003**									4.95
	4/3/03	218000.00	24900.00	53100.00	3330.00	18100.00				4.22
	7/30/03*									7.50
	12/10/2003*									7.85
	4/9/04	1420.00	192.00	280.00	32.60	208.00				4.75
	9/7/2004**									8.02
	2/17/2005**									5.67
	5/12/2005**									5.53
	10/25/2005**									7.77
	3/15/2006**									
	7/26/2006**									7.15
	11/21/2006**									8.20
	3/13/07									4.20
	6/28/07									6.80
	9/26/07									9.33
	12/21/07									7.10
	3/25/08									4.35
	6/30/08									6.20
	9/23/08									8.25
	12/4/08									7.32
	3/19/09									3.19
	6/25/09									6.20
	12/3/09									6.76
	3/31/10	29600.00	2730.00	ND	1480.00	3190.00				4.95
	6/24/10	23500.00	3020.00	ND	69.40	3080.00				5.35
	11/12/10	Not Sampled								
	4/25/11	Not Sampled								
	11/21/11	Not Sampled								
	5/8/12	Not Sampled								
	11/16/12	6750.00	591.00	10.00	6.80	274.30				
	5/2/13	6360.00	614.00	10.30	ND	ND				
	10/1/13	3710.00	527.00	4.27	ND	34.20				
	4/23/14	2860.00	65.20	ND	1.05	9.38				5.15
	10/7/14	2100.00	201.00	2.28	20.50	39.82				9.23
	3/11/15	2000.00	98.00	ND	6.80	11.00	ND			5.32
	9/10/15	1600.00	110.00	4.70	98.00	23.10				8.67
	5/21/16	1600.00	46.00	1.80	5.40	11.00	2.70			4.70
	9/20/16	1500.00	50.00	5.70	84.00	43.00				8.27
	4/19/17	560.00	16.00	ND	ND	ND	3.90			
	9/16/17	610.00	20.00	ND	9.00	10.00	3.00			7.20
	8/10/01	25900.00	2380.00	ND	515.00	3180.00				9.20
	3/25/02	42500.00	4540.00	8900.00	758.00	4380.00				4.97
	6/27/02	3760.00	1320.00	474.00	25.90	168.00				7.68
	12/3/02	10500.00	6750.00	91.00	5.47	43.10				
MW3	1/24/2003**									6.55
	4/3/03	3550.00	1760.00	56.70	2.93	47.70				5.94
	7/30/03	24400.00	4820.00	431.00	ND	358.00	462.00	3470.00	1290.00	8.95
	12/10/03	13100.00	9140.00	12.90	ND	1.82				9.20
	4/9/04	3540.00	1590.00	68.60	5.04	91.20				6.55
	9/7/04	18000.00	8760.00	182.00	ND	113.00				9.65
	2/17/05	3990.00	490.00	77.40	9.13	50.80				4.45
	5/12/05	4090.00	733.00	588.00	45.30	274.00				7.45

Well ID	Date	TPH-G	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO	Heavy Oil	SWL
	10/25/05	18600.00	1140.00	1890.00	233.00	1210.00				9.52
	3/15/06	2440.00	88.70	176.00	54.90	381.00				5.55
	7/26/06	6700.00	1620.00	124.00	ND	253.00				8.94
	11/21/06	10500.00	1640.00	839.00	210.00	1170.00				9.70
	3/13/07	ND	224.00	144.00	55.40	379.00				6.50
	6/28/07	555.00	197.00	14.70	5.57	25.60				8.53
	9/26/07	3720.00	954.00	217.00	87.00	467.00				11.01
	12/21/07	5440.00	1170.00	296.00	144.00	778.00				8.92
	3/25/08	977.00	32.70	10.70	19.80	140.00				6.00
	6/30/08	888.00	71.10	7.25	24.20	165.00				7.97
	9/23/08	927.00	461.00	17.00	27.70	118.00		524.00	ND	9.95
	12/4/08	3640.00	352.00	210.00	125.00	354.00				9.38
	3/19/09	843.00	15.40	11.40	15.20	185.00				4.83
	6/25/09	605.00	37.30	2.24	7.10	94.80				6.99
	12/3/09	1450.00	125.00	10.90	66.30	217.00				8.78
	3/31/10	721.00	31.80	ND	22.70	82.10				6.81
	6/24/10	447.00	979.00	4.13	ND	6.29				7.05
	11/12/10	263.00	31.50	ND	5.77	6.46				Bad Probe
	4/25/11	ND	1.18	ND	ND	ND				5.29
	11/21/11	ND	ND	ND	ND	ND				9.56
	5/8/12	ND	12.60	ND	ND	ND				4.54
	11/16/12	413.00	67.50	0.74	22.10	5.22				8.77
	5/2/13	98.00	10.90	ND	ND	ND				***
	10/1/13	259.00	34.30	ND	3.64	1.12				
	4/23/14	165.00	9.31	ND	ND	ND				6.91
	10/7/14	135.00	22.00	ND	ND	0.50				10.86
	3/11/15	ND	8.40	ND	ND	ND	20.00			7.02
	9/10/15	120.00	36.00	ND	ND	ND				10.36
	5/21/16	ND	19.00	ND	ND	ND	17.00			6.60
	9/20/16	ND	3.00	ND	ND	ND				9.98
	4/19/17	ND	19.00	ND	ND	ND	11.00			3.25
	9/16/17	ND	6.40	ND	ND	ND	21.00			8.81
	8/10/01	736.00	79.30	ND	2.22	114.00				9.65
	3/25/02	1130.00	199.00	4.87	ND	14.30				5.75
	6/27/02	1530.00	541.00	29.20	4.24	28.10				8.11
	12/3/02	2680.00	728.00	8.80	ND	46.70				
MW4	1/24/2003**									4.32
	4/3/03	3350.00	1450.00	13.40	ND	2.61				6.41
	8/13/03	5420.00	199.00	2.26	ND	ND	160.00	551.00	ND	9.36
	12/10/03	2860.00	1170.00	6.24	ND	ND				9.69
	4/9/04	5300.00	8000.00	18.80	ND	7.19				7.12
	9/7/04	4460.00	2220.00	9.93	ND	6.24				10.04
	2/17/05	3270.00	452.00	8.85	ND	ND				8.06
	5/12/05	3950.00	1390.00	7.06	ND	ND				8.04
	10/25/05	1810.00	323.00	8.10	ND	ND				9.99
	3/15/06	1650.00	489.00	ND	ND	ND				6.09
	7/26/06	1660.00	180.00	2.75	ND	2.00				9.31
	11/21/06	674.00	61.00	ND	ND	ND				10.24
	3/13/07	1270.00	48.00	ND	ND	ND				7.19
	6/28/07	576.00	38.50	ND	ND	ND				9.01
	9/26/07	125.00	9.09	ND	ND	ND				10.70
	12/21/07	192.00	30.00	ND	ND	2.72				9.54
	3/25/08	ND	7.90	ND	ND	ND				6.65
	6/30/08	ND	2.27	ND	ND	ND				8.41
	9/23/08	275.00	17.20	ND	ND	ND		ND	274.00	10.42
	12/4/08	350.00	5.01	ND	ND	ND				9.94
	3/19/09	177.00	1.68	ND	ND	ND				5.56
	6/25/09	385.00	2.37	ND	ND	ND				7.31
	12/3/09	ND	1.22	ND	ND	ND				9.33
	3/31/10	157.00	0.80	ND	ND	ND				7.19
	6/24/10	326.00	1.65	ND	ND	ND				7.50
	11/12/10	320.00	1.94	ND	ND	ND				Bad Probe
	4/25/11	105.00	0.68	ND	ND	ND				5.66
	11/21/11	119.00	0.70	ND	ND	ND				9.97
	5/8/12	121.00	ND	ND	ND	ND				5.06
	11/16/12	454.00	ND	ND	ND	ND				9.35
	5/2/13	189.00	ND	ND	ND	ND				***
	10/1/13	353.00	2.84	ND	ND	ND				
	4/23/14	124.00	ND	ND	ND	ND				7.50
	10/7/14	123.00	ND	ND	ND	ND				11.37
	3/11/15	120.00	ND	ND	ND	ND	15.00			7.71
	9/10/15	240.00	ND	ND	ND	ND				10.90
	5/21/16	300.00	ND	ND	ND	ND	11.00			7.14
	9/20/16	300.00	0.80	ND	ND	ND				10.55
	4/19/17	ND	ND	ND	ND	ND	21.00			3.79
	9/16/17	ND	3.30	ND	ND	ND	7.50			9.35
	8/10/01	3380.00	535.00	ND	90.90	663.00				7.50
	3/25/02	3690.00	933.00	56.10	3.01	406.00				3.32
	6/27/02	779.00	183.00	46.30	5.05	61.70				6.07
	12/3/02	525.00	185.00	6.02	ND	49.40				
MW5	1/24/2003**									4.90
	4/3/03	915.00	245.00	4.51	ND	40.30				4.34
	8/13/03	539.00	102.00	3.21	3.09	40.80	ND	ND	ND	7.25
	12/10/03	411.00	121.00	ND	ND	32.30				7.47
	4/9/04	514.00	226.00	ND	ND	16.70				4.90
	9/7/04	395.00	158.00	ND	ND	28.20				7.91
	2/17/05	1880.00	203.00	2.42	ND	125.00				5.61
	5/12/05	842.00	189.00	ND	ND	9.66				5.59
	10/25/05	154.00	12.20	ND	ND	ND				
	3/15/06	1630.00	53.10	2.84	ND	148.00				3.60
	7/26/06	457.00	21.40	ND	ND	3.09				7.20
	11/21/06	119.00	1.74	ND	ND	ND				7.93
	3/13/07	431.00	5.00	ND	ND	ND				4.39
	6/28/07	428.00	1.25	ND	ND	ND				6.73
	9/26/07	105.00	ND	ND	ND	ND				9.28
	12/21/07	ND	0.93	ND	ND	ND				6.92
	3/25/08	485.00	1.05	ND	ND	ND				3.65
	6/30/08	182.00	ND	ND	ND	ND				5.97

Well ID	Date	TPH-G	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO	Heavy Oil	SWL
	9/23/08	ND	0.94	ND	ND	ND		282.00	ND	8.19
	12/4/08	119.00	ND	ND	ND	ND				7.41
	3/19/09	ND	ND	ND	ND	ND				2.81
	6/25/09	101.00	ND	ND	ND	ND				5.04
	12/3/09	142.00	ND	ND	ND	ND				6.79
	3/31/10	ND	ND	ND	ND	ND				4.25
	6/24/10	ND	ND	ND	ND	ND				4.69
	11/12/10	ND	ND	ND	ND	ND				Bad Probe
	4/25/11	ND	ND	ND	ND	ND				2.62
	11/21/11	ND	ND	ND	ND	ND				7.80
	5/8/12	ND	ND	ND	ND	ND				2.99
	11/16/12	ND	ND	ND	ND	ND				7.06
	5/2/13	ND	ND	ND	ND	ND				***
	10/1/13	ND	ND	ND	ND	ND				
	4/23/14	ND	ND	ND	ND	ND				5.10
	10/7/14	ND	ND	ND	ND	ND				9.29
	3/11/15	ND	ND	ND	ND	ND	11.00			4.73
	9/10/15	ND	ND	ND	ND	ND				7.65
	5/21/16	ND	ND	ND	ND	ND	12.00			4.24
	9/20/16	ND	ND	ND	ND	ND				8.21
	4/19/17	ND	ND	ND	ND	ND	6.40			1.97
	9/16/17	ND	ND	ND	ND	ND	7.20			7.22
	5/11/01	85.50	ND	ND	ND	1.52				
	3/25/02	ND	ND	ND	ND	ND				
Well Head	6/27/02	ND	ND	ND	ND	ND				
	12/3/02	ND	0.51	ND	ND	ND				
	4/3/03	ND	ND	ND	ND	ND				
	8/13/03	100.00	ND	ND	ND	ND	ND	ND	ND	
	12/10/03	ND	ND	ND	ND	ND				
	4/9/04	ND	ND	ND	ND	ND				
	9/7/04	ND	ND	ND	ND	ND				
	2/17/05	ND	ND	ND	ND	ND				
	5/12/05	ND	ND	ND	ND	ND				
	3/15/06	ND	ND	ND	ND	ND				
	7/26/06	ND	ND	ND	ND	ND				
	11/21/06	ND	ND	ND	ND	ND				
	3/13/07	ND	ND	ND	ND	ND				
	6/27/07	ND	ND	ND	ND	ND				
	9/26/07	ND	ND	ND	ND	ND				
	12/21/07	ND	ND	ND	ND	ND				
	3/25/08	ND	ND	ND	ND	ND				
	6/30/08	ND	ND	ND	ND	ND				
	9/23/08	ND	ND	ND	ND	ND		ND	ND	
	12/4/08	ND	ND	ND	ND	ND				
	3/19/09	Not Sampled								
	6/25/09	Not Sampled								
	12/3/09	Not Sampled								
	12/3/09	Not Sampled								
	3/31/10	Not Sampled								
	6/30/10	Not Sampled								
	5/8/12	Not Sampled								
	11/16/12	Not Sampled								
	5/2/13	Not Sampled								
	10/1/13	Not Sampled								
	4/23/14	Not Sampled								
	10/7/14	Not Sampled								
	3/11/15	Not Sampled								
	9/10/15	Not Sampled								
	5/21/16	Not Sampled								
	9/20/16	Not Sampled								
	4/19/17	Not Sampled								
	9/16/17	Not Sampled								
	1/24/03	120.00	ND	ND	ND	ND				4.95
	4/3/03	ND	2.66	ND	ND	ND				4.67
GW1	7/30/03	148.00	1.28	2.12	3.37	31.40	ND	ND	ND	7.51
	12/10/03	ND	ND	ND	ND	ND				7.77
	4/9/04	ND	ND	ND	ND	ND				4.14
	9/7/04	ND	8.78	ND	ND	ND				7.79
	2/17/05	ND	13.70	ND	MD	ND				5.84
	5/12/05	ND	3.20	ND	ND	ND				
	10/25/2005*									
	3/15/06	ND	0.79	ND	ND	ND				4.00
	7/26/06	1540.00	684.00	ND	ND	8.77				7.95
	11/21/06	ND	2.24	ND	ND	ND				8.35
	3/13/07	ND	ND	ND	ND	ND				4.55
	6/28/07	1850.00	1090.00	ND	ND	3.59				7.33
	9/26/07	3720.00	954.00	217.00	87.00	467.00				9.72
	12/21/07	ND	1.68	ND	ND	ND				7.53
	3/25/08	ND	ND	ND	ND	ND				3.94
	6/30/08	ND	ND	ND	ND	ND				6.57
	9/23/08	ND	ND	ND	ND	ND		ND	ND	8.31
	12/4/08	ND	ND	ND	ND	ND				7.66
	3/19/09	ND	ND	ND	ND	ND				2.48
	6/25/09	ND	ND	ND	ND	ND				6.50
	12/3/09	ND	ND	ND	ND	ND				6.96
	3/31/10	ND	ND	ND	ND	ND				4.71
	6/24/10	ND	ND	ND	ND	ND				5.19
	11/12/10	ND	ND	ND	ND	ND				Bad Probe
	4/25/11	ND	ND	ND	ND	ND				3.01
	11/21/11	ND	ND	ND	ND	ND				8.12
	5/8/12	ND	ND	ND	ND	ND				3.13
	11/16/12	ND	ND	ND	ND	ND				7.33
	5/2/13	ND	ND	ND	ND	ND				***
	10/1/13	ND	ND	ND	ND	ND				
	4/23/14	ND	ND	ND	ND	ND				5.23
	10/7/14	ND	ND	ND	ND	ND				9.41
	3/11/15	ND	ND	ND	ND	ND	14.00			5.27
	9/10/15	ND	ND	ND	ND	ND				8.85

Well ID	Date	TPH-G	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO	Heavy Oil	SWL
	5/21/16	ND	ND	ND	ND	ND	9.10			4.78
	9/20/16	ND	ND	ND	ND	ND				8.44
	4/19/17	ND	ND	ND	ND	ND	ND			1.90
	9/16/17	ND	ND	ND	ND	ND	11.00			7.39
	1/24/03	100.00	ND	ND	ND	ND				5.09
	4/3/03	179.00	50.70	6.20	ND	ND				4.68
GW3	7/30/03	294.00	84.40	2.00	2.38	25.90	ND	ND	ND	7.65
	12/10/03	107.00	12.50	ND	ND	ND				7.91
	4/9/04	232.00	47.00	ND	ND	23.00				5.20
	9/7/04	642.00	375.00	ND	ND	ND				8.34
	2/17/05	ND	8.16	ND	ND	ND				6.19
	5/12/05	ND	7.25	ND	ND	ND				6.38
	10/25/2005*									
	3/15/06	119.00	3.12	ND	ND	ND				4.09
	7/26/06	200.00	62.20	ND	ND	ND				7.77
	11/21/06	ND	ND	ND	ND	ND				8.49
	3/13/07	ND	ND	ND	ND	ND				5.20
	6/28/07	ND	8.68	ND	ND	ND				7.25
	9/26/07	ND	ND	ND	ND	ND				9.74
	12/21/07	ND	1.04	ND	ND	ND				7.55
	3/25/08	ND	ND	ND	ND	ND				4.55
	6/30/08	ND	ND	ND	ND	ND				6.60
	9/23/08	ND	17.40	ND	ND	ND		276.00	ND	8.36
	12/4/08	ND	ND	ND	ND	ND				7.94
	3/19/09	ND	2.43	ND	ND	ND				2.25
	6/25/09	ND	2.69	ND	ND	ND				5.98
	12/3/09	ND	ND	ND	ND	ND				7.38
	3/31/10	ND	0.75	ND	ND	ND				5.19
	6/24/10	ND	ND	ND	ND	ND				5.52
	11/12/10	ND	ND	ND	ND	ND				Bad Probe
	4/25/11	ND	ND	ND	ND	ND				3.78
	11/21/11	ND	ND	ND	ND	ND				8.29
	5/8/12	ND	2.14	ND	ND	ND				3.43
	11/16/12	126.00	ND	ND	ND	ND				7.42
	5/2/13	ND	ND	ND	ND	ND				
	10/1/13	183.00	ND	ND	ND	ND				
	4/23/14	ND	1.78	ND	ND	1.03				5.40
	10/7/14	Not Sampled								
	3/11/15	Not Sampled								
	9/10/15	ND	ND	ND	ND	ND				
	5/21/16	ND	ND	ND	ND	ND	1.40			5.13
	9/20/16	ND	ND	ND	ND	ND				8.80
	4/19/17	ND	ND	ND	ND	ND	2.80			2.45
	9/16/17	ND	0.98	ND	ND	ND	20.00			7.58
	1/24/03	ND	ND	ND	ND	ND				6.29
	4/3/03	ND	21.50	2.61	ND	ND				5.53
	7/30/03	108.00	2.07	ND	1.17	17.80	40.90	ND	ND	8.58
GW5	12/10/03	164.00	1.14	11.20	ND	15.40				8.89
	4/9/04	ND	3.05	ND	ND	3.38				
	9/7/04	329.00	172.00	ND	ND	ND				9.30
	2/17/05	1680.00	340.00	ND	ND	ND				7.55
	5/12/05	1200.00	416.00	ND	ND	ND				
	10/25/2005*									
	3/15/06	233.00	47.80	ND	ND	ND				5.53
	7/26/06	227.00	83.30	ND	ND	ND				8.95
	11/21/06	1380.00	535.00	ND	ND	ND				9.65
	3/13/07	1980.00	894.00	ND	ND	1.64				6.93
	6/28/07	197.00	59.80	ND	ND	ND				8.65
	9/26/07	284.00	106.00	ND	ND	ND				10.93
	12/21/07	245.00	86.60	ND	ND	ND				8.69
	3/25/08	ND	6.19	ND	ND	ND				5.63
	6/30/08	ND	2.17	ND	ND	ND				7.75
	9/23/08	ND	0.62	ND	ND	ND		ND	ND	9.51
	12/4/08	ND	ND	ND	ND	ND				8.96
	3/19/09	ND	ND	ND	ND	ND				4.28
	6/25/09	ND	ND	ND	ND	ND				6.41
	12/3/09	ND	ND	ND	ND	ND				8.62
	3/31/10	ND	ND	ND	ND	ND				6.20
	6/24/10	Not Sampled								6.82
	11/12/10	ND	ND	ND	ND	ND				Bad Probe
	4/25/11	ND	ND	ND	ND	ND				4.75
	11/21/11	ND	ND	ND	ND	ND				10.88
	5/8/12	ND	ND	ND	ND	ND				4.64
	11/16/12	141.00	ND	ND	ND	ND				8.48
	5/2/13	ND	ND	ND	ND	ND				***
	10/1/13	124.00	ND	ND	ND	ND				
	4/23/14	ND	ND	ND	ND	ND				6.70
	10/7/14	Not Sampled								
	3/11/15	Not Sampled								
	9/10/15	Not Sampled								
	5/21/16	Not Sampled								
	9/20/16	Not Sampled								
	4/19/17	Not Sampled								
	9/16/17	Not Sampled								
	1/24/03	ND	ND	ND	ND	ND				7.52
	4/3/03	ND	ND	ND	ND	ND				6.43
GW7	7/30/03	ND	ND	ND	ND	4.06	ND	ND	ND	9.44
	12/10/03	ND	ND	ND	ND	ND				9.79
	4/9/04	ND	1.06	ND	ND	ND				7.65
	9/7/04	ND	ND	ND	ND	ND				10.10
	2/17/05	ND	4.26	ND	ND	ND				8.32
	5/12/05	ND	ND	ND	ND	ND				8.20
	10/25/2005*									
	3/15/06	ND	ND	ND	ND	ND				6.05
	7/26/06	ND	1.45	ND	ND	ND				9.41
	11/21/06	ND	ND	ND	ND	ND				10.30

Well ID	Date	TPH-G	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO	Heavy Oil	SWL
	3/13/07	ND	0.55	ND	ND	ND				7.35
	6/28/07	ND	ND	ND	ND	ND				9.02
	9/26/07	ND	ND	ND	ND	ND				11.45
	12/21/07	ND	ND	ND	ND	ND				9.62
	3/25/08	ND	ND	ND	ND	ND				6.55
	6/30/08	ND	ND	ND	ND	ND				8.35
	9/23/08	ND	ND	ND	ND	ND		ND	ND	10.36
	12/4/08	ND	ND	ND	ND	ND				9.87
	3/19/09	ND	ND	ND	ND	ND				5.38
	6/25/09	ND	ND	ND	ND	ND				7.26
	12/3/09	ND	ND	ND	ND	ND				9.36
	3/31/10	ND	ND	ND	ND	ND				7.10
	6/24/10	Not Sampled								7.97
	11/12/10	Not Sampled								
	4/25/11	Not Sampled								
	11/21/11	Not Sampled								
	5/8/12	Not Sampled								
	11/16/12	Not Sampled								
	5/2/13	Not Sampled								
	10/1/13	Not Sampled								
	4/23/14	Not Sampled								
	10/7/14	Not Sampled								
	3/11/15	Not Sampled								
	9/10/15	Not Sampled								
	5/21/16	Not Sampled								
	9/20/16	Not Sampled								
	4/19/17	Not Sampled								
	9/16/17	Not Sampled								
	1/24/03	ND	ND	ND	ND	ND				7.97
	4/3/03	ND	ND	ND	ND	ND				6.80
GW9	7/30/03	ND	0.70	ND	1.12	8.94	ND	ND	578.00	9.68
	12/10/03	118.00	0.89	5.71	ND	8.96				9.98
	4/9/04	ND	ND	ND	ND	ND				7.24
	9/7/04	ND	ND	ND	ND	3.49				10.30
	2/17/05	ND	2.39	ND	ND	ND				8.48
	5/12/05	ND	ND	ND	ND	ND				8.69
	10/25/2005*									
	3/15/06	ND	ND	ND	ND	ND				6.77
	7/26/06	119.00	0.85	ND	ND	ND				***
	11/21/06	ND	ND	ND	ND	ND				***
	3/13/07	ND	ND	ND	ND	ND				***
	6/28/07	ND	ND	ND	ND	ND				***
	9/26/07	ND	ND	ND	ND	ND				***
	12/21/07	ND	ND	ND	ND	ND				***
	3/25/08	ND	ND	ND	ND	ND				***
	6/30/08	ND	ND	ND	ND	ND				***
	9/23/08	ND	ND	ND	ND	ND		ND	ND	***
	12/4/08	ND	ND	ND	ND	ND				***
	3/19/09	ND	ND	ND	ND	ND				***
	6/25/09	ND	ND	ND	ND	ND				***
	12/3/09	ND	ND	ND	ND	ND				***
	3/31/10	ND	ND	ND	ND	ND				***
	6/30/10	Not Sampled								
	11/12/10	Not Sampled								
	4/25/11	Not Sampled								
	11/21/11	Not Sampled								
	5/8/12	Not Sampled								
	11/16/12	Not Sampled								
	5/2/13	Not Sampled								
	10/1/13	Not Sampled								
	4/23/14	Not Sampled								
	10/7/14	Not Sampled								
	3/11/15	Not Sampled								
	9/10/15	Not Sampled								
	5/21/16	Not Sampled								
	9/20/16	Not Sampled								
	4/19/17	Not Sampled								
	9/16/17	Not Sampled								
Method A Std. (µg/L)		1000.0	5.0	40.0	30.0	20.0	N/A	1000.00	1000.00	

Shaded Cell Indicates Exceedence of WDOE Method A Cleanup Standards (WAC 173-340, December, 1993)

*No sample taken-free product in well

**Static Water Level Survey Only

***No SWL measurement-casing bent or probe malfunction

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st Ave
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: 590-7087-1
Client Project/Site: Dusty/117

For:
Quantum Engineering
S. 2641 Silver Beach Lp.
Coeur d Alene, Idaho 83824

Attn: Jim DeSmet

Authorized for release by:
10/3/2017 11:57:37 AM

Randee Arrington, Project Manager II
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Table of Contents

Case Narrative

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Job ID: 590-7087-1

Laboratory: TestAmerica Spokane

Narrative

Receipt
The samples were received on 9/19/2017 1:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.8º C.

Receipt Exceptions
The following sample was collected in an inappropriate container for NWTPH-Dx: Lift Basin (590-7087-7). A sample aliquot was taken from the1664B container for analysis per the client's approval.

GC/MS VOA
Methods 8260C and NWTPH-Gx: The following samples were received and analyzed with headspace in the sample container: MW3 (590-7087-2), MW4 (590-7087-3), MW5 (590-7087-4) and GW1 (590-7087-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664B: Analysis for Hexane Extractable Material (HEM) was performed for the following sample: Lift Basin (590-7087-7). Since the HEM result was below the reporting limit (RL), the result for Silica Gel Treated - Hexane Extractable Material (SGT-HEM) was reported as a non-detect. All HEM quality control criteria were met.

Method 1664B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of 4: Lift Basin (590-7087-7). The sample was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-7087-1	MW2	Water	09/16/17 00:00	09/19/17 13:30
590-7087-2	MW3	Water	09/16/17 00:00	09/19/17 13:30
590-7087-3	MW4	Water	09/16/17 00:00	09/19/17 13:30
590-7087-4	MW5	Water	09/16/17 00:00	09/19/17 13:30
590-7087-5	GW1	Water	09/16/17 00:00	09/19/17 13:30
590-7087-6	GW3	Water	09/16/17 00:00	09/19/17 13:30
590-7087-7	Lift Basin	Water	09/16/17 00:00	09/19/17 13:30

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: MW2

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**20**		0.40		ug/L			09/21/17 19:01	1
Ethylbenzene	**9.0**		1.0		ug/L			09/21/17 19:01	1
m,p-Xylene	**9.0**		2.0		ug/L			09/21/17 19:01	1
Methyl tert-butyl ether	**3.0**		1.0		ug/L			09/21/17 19:01	1
o-Xylene	**1.4**		1.0		ug/L			09/21/17 19:01	1
Toluene	ND		1.0		ug/L			09/21/17 19:01	1
Xylenes, Total	**10**		3.0		ug/L			09/21/17 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 125*		*09/21/17 19:01*	*1*
4-Bromofluorobenzene (Surr)	*114*		*69 - 120*		*09/21/17 19:01*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*09/21/17 19:01*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/21/17 19:01*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	**610**		150		ug/L			09/21/17 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*68.7 - 141*		*09/21/17 19:01*	*1*

Client Sample ID: MW3

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-2
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**6.4**		0.40		ug/L			09/21/17 19:23	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 19:23	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 19:23	1
Methyl tert-butyl ether	**21**		1.0		ug/L			09/21/17 19:23	1
o-Xylene	ND		1.0		ug/L			09/21/17 19:23	1
Toluene	ND		1.0		ug/L			09/21/17 19:23	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 125*		*09/21/17 19:23*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*09/21/17 19:23*	*1*
Dibromofluoromethane (Surr)	*98*		*80 - 120*		*09/21/17 19:23*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/21/17 19:23*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*09/21/17 19:23*	*1*

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Client Sample ID: MW4

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3.3**		0.40		ug/L			09/21/17 19:45	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 19:45	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 19:45	1
Methyl tert-butyl ether	**7.5**		1.0		ug/L			09/21/17 19:45	1
o-Xylene	ND		1.0		ug/L			09/21/17 19:45	1
Toluene	ND		1.0		ug/L			09/21/17 19:45	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 125*		*09/21/17 19:45*	*1*
4-Bromofluorobenzene (Surr)	*108*		*69 - 120*		*09/21/17 19:45*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*09/21/17 19:45*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/21/17 19:45*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 19:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*68.7 - 141*		*09/21/17 19:45*	*1*

Client Sample ID: MW5

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-4
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/21/17 20:07	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 20:07	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 20:07	1
Methyl tert-butyl ether	**7.2**		1.0		ug/L			09/21/17 20:07	1
o-Xylene	ND		1.0		ug/L			09/21/17 20:07	1
Toluene	ND		1.0		ug/L			09/21/17 20:07	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 125*		*09/21/17 20:07*	*1*
4-Bromofluorobenzene (Surr)	*105*		*69 - 120*		*09/21/17 20:07*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*09/21/17 20:07*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*09/21/17 20:07*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*68.7 - 141*		*09/21/17 20:07*	*1*

Client Sample ID: GW1

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/21/17 20:29	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 20:29	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 20:29	1
Methyl tert-butyl ether	**11**		1.0		ug/L			09/21/17 20:29	1
o-Xylene	ND		1.0		ug/L			09/21/17 20:29	1
Toluene	ND		1.0		ug/L			09/21/17 20:29	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*70 - 125*		*09/21/17 20:29*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*09/21/17 20:29*	*1*
Dibromofluoromethane (Surr)	*104*		*80 - 120*		*09/21/17 20:29*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/21/17 20:29*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*68.7 - 141*		*09/21/17 20:29*	*1*

Client Sample ID: GW3

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.98**		0.40		ug/L			09/21/17 20:51	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 20:51	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 20:51	1
Methyl tert-butyl ether	**20**		1.0		ug/L			09/21/17 20:51	1
o-Xylene	ND		1.0		ug/L			09/21/17 20:51	1
Toluene	ND		1.0		ug/L			09/21/17 20:51	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 125*		*09/21/17 20:51*	*1*
4-Bromofluorobenzene (Surr)	*103*		*69 - 120*		*09/21/17 20:51*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*09/21/17 20:51*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*09/21/17 20:51*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*68.7 - 141*		*09/21/17 20:51*	*1*

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Client Sample ID: Lift Basin

Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/21/17 21:34	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 21:34	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 21:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/21/17 21:34	1
o-Xylene	ND		1.0		ug/L			09/21/17 21:34	1
Toluene	ND		1.0		ug/L			09/21/17 21:34	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 21:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 125*		*09/21/17 21:34*	*1*
4-Bromofluorobenzene (Surr)	*107*		*69 - 120*		*09/21/17 21:34*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*09/21/17 21:34*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*09/21/17 21:34*	*1*

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 21:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*68.7 - 141*		*09/21/17 21:34*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.25		mg/L		09/22/17 10:17	09/22/17 14:36	1
Residual Range Organics (RRO) (C25-C36)	ND		0.42		mg/L		09/22/17 10:17	09/22/17 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*86*		*50 - 150*	*09/22/17 10:17*	*09/22/17 14:36*	*1*
n-Triacontane-d62	*83*		*50 - 150*	*09/22/17 10:17*	*09/22/17 14:36*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		4.7		mg/L		10/02/17 13:20	10/02/17 13:20	1
SGT-HEM (TPH)	ND		4.7		mg/L		10/02/17 13:20	10/02/17 13:20	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-13881/44
Matrix: Water
Analysis Batch: 13881

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/21/17 11:43	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 11:43	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 11:43	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/21/17 11:43	1
o-Xylene	ND		1.0		ug/L			09/21/17 11:43	1
Toluene	ND		1.0		ug/L			09/21/17 11:43	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 11:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 125*		*09/21/17 11:43*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*09/21/17 11:43*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*09/21/17 11:43*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*09/21/17 11:43*	*1*

Lab Sample ID: MB 590-13881/6
Matrix: Water
Analysis Batch: 13881

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			09/21/17 11:43	1
Ethylbenzene	ND		1.0		ug/L			09/21/17 11:43	1
m,p-Xylene	ND		2.0		ug/L			09/21/17 11:43	1
Methyl tert-butyl ether	ND		1.0		ug/L			09/21/17 11:43	1
o-Xylene	ND		1.0		ug/L			09/21/17 11:43	1
Toluene	ND		1.0		ug/L			09/21/17 11:43	1
Xylenes, Total	ND		3.0		ug/L			09/21/17 11:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 125*		*09/21/17 11:43*	*1*
4-Bromofluorobenzene (Surr)	*102*		*69 - 120*		*09/21/17 11:43*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*09/21/17 11:43*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*09/21/17 11:43*	*1*

Lab Sample ID: LCS 590-13881/1043
Matrix: Water
Analysis Batch: 13881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.0		ug/L		100	80 - 120
Ethylbenzene	10.0	9.51		ug/L		95	80 - 120
m,p-Xylene	10.0	9.12		ug/L		91	80 - 120
Methyl tert-butyl ether	10.0	10.7		ug/L		107	71 - 128
o-Xylene	10.0	9.06		ug/L		91	80 - 120
Toluene	10.0	9.85		ug/L		98	80 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 125*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 590-13881/1043
Matrix: Water
Analysis Batch: 13881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		69 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: LCSD 590-13881/7
Matrix: Water
Analysis Batch: 13881

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			10.0	9.99		ug/L		100	80 - 120	0	25
Ethylbenzene			10.0	9.35		ug/L		94	80 - 120	2	25
m,p-Xylene			10.0	9.04		ug/L		90	80 - 120	1	25
Methyl tert-butyl ether			10.0	10.7		ug/L		107	71 - 128	0	12
o-Xylene			10.0	9.19		ug/L		92	80 - 120	1	25
Toluene			10.0	9.63		ug/L		96	80 - 123	2	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 125
4-Bromofluorobenzene (Surr)	101		69 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	93		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-13882/6
Matrix: Water
Analysis Batch: 13882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			09/21/17 11:43	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		68.7 - 141		09/21/17 11:43	1

Lab Sample ID: LCS 590-13882/1005
Matrix: Water
Analysis Batch: 13882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	1100		ug/L		110	80 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		68.7 - 141

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCSD 590-13882/1016
Matrix: Water
Analysis Batch: 13882

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline			1000	1090		ug/L		109	80 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*68.7 - 141*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 590-13914/1-A
Matrix: Water
Analysis Batch: 13915

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 13914

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.24		mg/L		09/22/17 10:17	09/22/17 11:30	1
Residual Range Organics (RRO) (C25-C36)	ND		0.40		mg/L		09/22/17 10:17	09/22/17 11:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*50 - 150*	*09/22/17 10:17*	*09/22/17 11:30*	*1*
n-Triacontane-d62	*93*		*50 - 150*	*09/22/17 10:17*	*09/22/17 11:30*	*1*

Lab Sample ID: LCS 590-13914/2-A
Matrix: Water
Analysis Batch: 13915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 13914

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics (DRO) (C10-C25)			1.60	1.48		mg/L		93	50 - 150		
Residual Range Organics (RRO) (C25-C36)			1.60	1.69		mg/L		106	50 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*105*		*50 - 150*
n-Triacontane-d62	*105*		*50 - 150*

Lab Sample ID: LCSD 590-13914/3-A
Matrix: Water
Analysis Batch: 13915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 13914

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics (DRO) (C10-C25)			1.60	1.29		mg/L		80	50 - 150	14	25
Residual Range Organics (RRO) (C25-C36)			1.60	1.60		mg/L		100	50 - 150	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*98*		*50 - 150*
n-Triacontane-d62	*102*		*50 - 150*

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Method: 1664B - HEM and SGT-HEM

Lab Sample ID: MB 490-464737/1-A
Matrix: Water
Analysis Batch: 464740

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 464737

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		4.0		mg/L		10/02/17 13:20	10/02/17 13:20	1
SGT-HEM (TPH)	ND		4.0		mg/L		10/02/17 13:20	10/02/17 13:20	1

Lab Sample ID: LCS 490-464737/2-A
Matrix: Water
Analysis Batch: 464740

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 464737

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM (Oil & Grease)	41.7	40.1		mg/L		96	78 - 114
SGT-HEM (TPH)	20.8	19.1		mg/L		92	64 - 132

Lab Chronicle

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Client Sample ID: MW2
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 19:01	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 19:01	MRS	TAL SPK

Client Sample ID: MW3
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 19:23	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 19:23	MRS	TAL SPK

Client Sample ID: MW4
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 19:45	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 19:45	MRS	TAL SPK

Client Sample ID: MW5
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 20:07	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 20:07	MRS	TAL SPK

Client Sample ID: GW1
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 20:29	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 20:29	MRS	TAL SPK

Client Sample ID: GW3
Date Collected: 09/16/17 00:00
Date Received: 09/19/17 13:30

Lab Sample ID: 590-7087-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 20:51	MRS	TAL SPK

Lab Chronicle

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Client Sample ID: GW3

Lab Sample ID: 590-7087-6

Date Collected: 09/16/17 00:00
Matrix: Water
Date Received: 09/19/17 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 20:51	MRS	TAL SPK

Client Sample ID: Lift Basin

Lab Sample ID: 590-7087-7

Date Collected: 09/16/17 00:00
Matrix: Water
Date Received: 09/19/17 13:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	13881	09/21/17 21:34	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	13882	09/21/17 21:34	MRS	TAL SPK
Total/NA	Prep	3510C			239.2 mL	2 mL	13914	09/22/17 10:17	NMI	TAL SPK
Total/NA	Analysis	NWTPH-Dx		1			13915	09/22/17 14:36	NMI	TAL SPK
Total/NA	Prep	1664B			820 mL	960 mL	464737	10/02/17 13:20	BAD	TAL NSH
Total/NA	Analysis	1664B		1			464740	10/02/17 13:20	BAD	TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Laboratory: TestAmerica Spokane

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C569	01-06-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Nashville

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-17
A2LA	ISO/IEC 17025		0453.07	12-31-17
Alaska (UST)	State Program	10	UST-087	01-01-18
Arizona	State Program	9	AZ0473	05-05-18
Arkansas DEQ	State Program	6	88-0737	04-25-18
California	State Program	9	2938	10-31-18
Connecticut	State Program	1	PH-0220	12-31-17
Florida	NELAP	4	E87358	06-30-18
Georgia	State Program	4	E87358(FL)/453.07(A2LA)	12-31-17
Illinois	NELAP	5	200010	12-09-17
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	10-31-17
Kentucky (UST)	State Program	4	19	06-30-18
Kentucky (WW)	State Program	4	90038	12-31-17
Louisiana	NELAP	6	30613	06-30-18
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-18
Massachusetts	State Program	1	M-TN032	06-30-18
Minnesota	NELAP	5	047-999-345	12-31-17
Mississippi	State Program	4	N/A	06-30-18
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-18
New Hampshire	NELAP	1	2963	10-09-17
New Jersey	NELAP	2	TN965	06-30-18
New York	NELAP	2	11342	03-31-18
North Carolina (WW/SW)	State Program	4	387	12-31-17
North Dakota	State Program	8	R-146	06-30-18
Ohio VAP	State Program	5	CL0033	07-06-19
Oklahoma	State Program	6	9412	08-31-18
Oregon	NELAP	10	TN200001	04-27-18
Pennsylvania	NELAP	3	68-00585	06-30-18
Rhode Island	State Program	1	LAO00268	12-30-17
South Carolina	State Program	4	84009 (001)	02-28-18
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-20
Texas	NELAP	6	T104704077	08-31-18
USDA	Federal		P330-13-00306	12-01-19
Utah	NELAP	8	TN00032	07-31-18
Virginia	NELAP	3	460152	06-14-18
Washington	State Program	10	C789	07-19-18

Accreditation/Certification Summary

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Laboratory: TestAmerica Nashville (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
West Virginia DEP	State Program	3	219	02-28-18
Wisconsin	State Program	5	998020430	08-31-18
Wyoming (UST)	A2LA	8	453.07	12-31-17

Method Summary

Client: Quantum Engineering
Project/Site: Dusty/117

TestAmerica Job ID: 590-7087-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	TAL SPK
1664B	HEM and SGT-HEM	1664B	TAL NSH

Protocol References:

1664B = 1664B

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TAL SPK = TestAmerica Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

11922 E. First Ave., Spokane WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave., Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

10/3/2017

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT:

INVOICE TO: Quantum

REPORT TO: Quantum Engineering
ADDRESS: 2641 S. Iver Beach

PHONE: FAX: 208/664-5200

P.O. NUMBER:

PROJECT NAME: Dusty
PROJECT NUMBER: 117
SAMPLED BY: JSD

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: 10 STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: GAS BTEX	REQUESTED ANALYSES: TPH Gas	REQUESTED ANALYSES: TPH Diesel	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	MW2	9/16/17				4	W	2	4°C HCl	
2	MW3							2		
3	MW4							2		
4	MW5							2		
5	GW1							2		
6	GW3							2		
7	Lift+Basin			X	X	X		3		
8										
9										
10										

RELEASED BY: Jim Desmet DATE: 9/19/17
PRINT NAME: Jim Desmet FIRM: Quantum TIME: 13:30

RECEIVED BY: Sheila Kraft DATE: 9/19/17
PRINT NAME: Sheila Kraft FIRM: TA Spok TIME: 1330

RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

TEMP: 5.8°C PAGE 1 OF 1

590-7087 Chain of Custody

TAL-1000 (0714)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

590-7087 Chain of Custody

COOLER RECEIPT FORM

Cooler Received/Opened On 9/21/2017 @1015

Time Samples Removed From Cooler_____ Time Samples Placed In Storage_____ (2 Hour Window)

1. Tracking # 4260 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 14740456 pH Strip Lot_____ Chlorine Strip Lot_____

2. Temperature of rep. sample or temp blank when opened: 2.1 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: (1) Front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) MDM

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA


Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence #_____

I certify that I unloaded the cooler and answered questions 7-14 (intial) ES

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) ES

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) ES

I certify that I attached a label with the unique LIMS number to each container (intial) ES

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# ES

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

TestAmerica Spokane
11922 East 1st Ave
Spokane, WA 99206
Phone (509) 924-9200 Fax (509) 924-9290

Chain of Custody Record

590-7087

America
R IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamerica...	Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington	Job #: 590-7087-1
Address: 2960 Foster Creighton Drive,	Due Date Requested: 9/29/2017		
City: Nashville	TAT Requested (days):		
State, Zip: TN, 37204			
Phone: 615-726-0177(Tel) 615-726-3404(Fax)	PO #:		
Email:	WO #:		
Project Name: Dusty/117	Project #: 59000335		
Site:	SSOW#:		

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1664B/1664B_SPE HEM and SGT-HEM	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
Lift Basin (590-7087-7)	9/16/17	Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by: Sheila Kratz	Date/Time: 9/20/17 1530	Company TA Spok	Received by:	Date/Time: 9-21-17 10:15	Company	
Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.1

Login Sample Receipt Checklist

Client: Quantum Engineering

Job Number: 590-7087-1

Login Number: 7087
List Number: 1
Creator: Kratz, Sheila J

List Source: TestAmerica Spokane

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Did not receive all required containers.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	False	Refer to Job Narrative for details.
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	False	Sample splitting required for subcontract purposes.
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Login Sample Receipt Checklist

Client: Quantum Engineering

Job Number: 590-7087-1

Login Number: 7087
List Number: 2
Creator: Stewart, Eric S

List Source: TestAmerica Nashville
List Creation: 09/21/17 04:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	