

Lockheed Martin Corporation
6801 Rockledge Drive – MP CCT 246
Bethesda, Maryland 20817



Submitted Electronically via eDEP

September 4, 2018

Subject: **SUBMITTAL OF UPDATED GROUNDWATER MONITORING PLAN
Post-Temporary Solution Operations Maintenance & Monitoring,
Former General Electric Facility, 50 Fordham Road, Wilmington, MA, RTN 3-0518**

Dear MassDEP:

Lockheed Martin Corporation ("Lockheed Martin") is submitting the attached updated groundwater monitoring plan as part of the Post-Temporary Solution Operations Maintenance and Monitoring (OM&M) plan for the above-referenced Site.

The April 2017 Temporary Solution Statement defined the Post-Temporary Solution OM&M plan to include annual groundwater sampling of select monitoring wells. The purpose of the groundwater monitoring program is to document concentrations of site chemicals of concern over time in overburden and bedrock groundwater, and to verify that the contaminant plume is stable and not migrating.

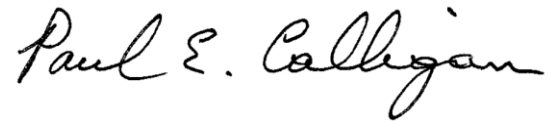
As stated in the Temporary Solution Statement, the preliminary groundwater monitoring plan (Table 9-1) was presented as a close approximation of the annual OM&M groundwater sampling and analysis scope. The groundwater scope outlined in Table 9-1 was performed in September-October 2017 to further build the groundwater dataset at newly installed wells with additional data points.

Lockheed Martin Corporation has further evaluated the overburden and bedrock groundwater data for the site through October 2017 and has updated the annual OM&M groundwater monitoring plan as outlined in the attached Table 1. This OM&M groundwater monitoring plan includes horizontal and vertical coverage of the overburden and bedrock plumes both onsite and on downgradient properties. The analyte list includes the site compounds of concern (i.e., volatile organic compounds [VOCs], 1,4 dioxane, extractable petroleum hydrocarbons/volatile petroleum hydrocarbons [EPH/VPH], total and dissolved arsenic) and relevant MNA parameters that will be useful in documenting attenuation of the detected compounds of concern in groundwater.

This updated OM&M groundwater monitoring plan will be performed beginning with the fall 2018 monitoring event. An expanded groundwater monitoring plan may be performed to support the first five year review of the Temporary Solution for the site. This updated groundwater monitoring plan presented in the attached Table 1 is being submitted as an "addendum" to the Post-Temporary Solution Status Report submitted via eDEP on May 3, 2018.

Any questions you may have may be directed to the Licensed Site Professional (LSP) for this Site, Dr. Daniel Folan, by email at Dan.folan@aec.com or by phone at (978) 905-2100, or to me at paul.e.calligan@lmco.com or by phone at (240) 687-1813.

Sincerely,

A handwritten signature in black ink that reads "Paul E. Calligan". The signature is written in a cursive style with a large, stylized 'P' and 'C'.

Paul E. Calligan, P.G.
Project Manager, Environmental Remediation
Lockheed Martin Corporation

enclosures: Table 1 - Post-Temporary Solution OM&M Updated Groundwater Monitoring Plan

Table 1
Post-Temporary Solution O and M Groundwater Sampling Scope
Former GE Site, Wilmington, MA

Area	Location ID	FLUTE port	Interval	Well Diameter (inch)	Screen Interval (Ft bgs)	VOCS (SW846 -USEPA Method 8260C)	1,4 dioxane (SW846/USEPA Method 8270D SIM) to get DL <0.3 ug/l)	Field Parameters: pH, temperature, conductivity, ORP, DO, and turbidity	CSIA: 13C12C ratio for PCE, TCE, Cis 1,2 -DCE, VC (Pace Analytical)	Isotopic Analysis: O16/O18, H1/H2 and S34/S36	VPH (MassDEP VPH 04 1.1 Revision 1)	EPH and polycyclic aromatic hydrocarbons (PAH) (MassDEP EPH 04 1.1 Revision 1)	Total As, Fe, Mn (SW846 - U SEPA Method 6010C)	Dissolved As, Fe, Mn (field filtered) (SW846 - USEPA Method 6010C)	Chloride (USEPA 300.0)	Nitrite	Nitrate (USEPA 300.0)	Sulfate (USEPA 300.0)	Sulfide	Total organic carbon (SW 846-9060A)	Methane, Ethane, Ethene, Acetylene, Propane (Pace-Microseeps AM20Gax)	Dissolved hydrogen (Pace - Microseeps - Bubble Strip)	Ferrous Iron and Manganese Field Test Kits	Microbial Analysis: Quantaray (Microbial Insights)	
Building 1, inside	AE~26R	R1	Upper Bedrock	Shallow FLUTE	50 - 56	1	1	1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	Modifications Rationale - August 2018
Building 1, inside	AE~26R	R2	Middle Bedrock	Shallow FLUTE	72 - 78	1		1																	
Building 1, inside	AE~26R	R3	Middle Bedrock	Shallow FLUTE	81 - 88	0		0																	Remove AE-26R3; have R2 in middle bedrock with similar data
Building 1, inside	AE~26R	R4	Middle Bedrock	Shallow FLUTE	104 - 114	0		0																	Remove AE-26R4; have R2 in middle bedrock with similar data
Building 1, inside	AE~26R	R5	Lower Bedrock	Shallow FLUTE	123 - 132	1	1	1																	
Building 1, inside	AE~27R	--	Upper Bedrock	2	50 - 60	0		0																	Remove AE-27R; have 5 data points with trends ND or not significant, and not needed for plume figures
Building 1, inside	AE~28R	R1	Upper Bedrock	Shallow FLUTE	45 - 51	1		1																	
Building 1, inside	AE~28R	R2	Middle Bedrock	Shallow FLUTE	75 - 85	1	1	1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	
Building 1, inside	AE~28R	R3	Middle Bedrock	Shallow FLUTE	98 - 108	1	1	1																	
Building 1, inside	AE~28R	R4	Lower Bedrock	Shallow FLUTE	132 - 142	1		1																	
Building 1, inside	AE-26S	--	Overburden	2	25 - 30	1		1					1	1											Move As, Fe, Mn from AE23S to AE26S
Building 1, inside	AE-26D	--	Overburden	2	35 - 40	0		0																	Remove AE-26D; Low CVOCs
Building 1, inside	AE-23R	--	Upper Bedrock	1.5	44.75 - 54.75	1	1	1			1	1													
Building 1, inside	AE-23S	--	Overburden	2	10 - 20	0		0					0	0											Remove AE-23S; Stable CVOCs with little cis12-DCE and no VC; low 1,4-Dioxane; Move Arsenic to AE26S
Building 1, inside	AE~24	--	Overburden	2	7.25 - 17.2.5	1	1	1																	
Tank F	AE~29R	R1	Upper Bedrock	Shallow FLUTE	37 - 44	1		1																	
Tank F	AE~29R	R2	Upper Bedrock	Shallow FLUTE	47 - 54	0		0																	Remove AE29R2; have R1 in upper bedrock with similar data
Tank F	AE~29R	R3	Middle Bedrock	Shallow FLUTE	70 -76	1		1																	
Tank F	AE~29R	R4	Middle Bedrock	Shallow FLUTE	90 - 96	0		0																	Remove AE29R4; have R3 and R5 in middle bedrock
Tank F	AE~29R	R5	Middle Bedrock	Shallow FLUTE	113 - 119	1		1																	
Tank F	AE-29R	R6	Lower Bedrock	Shallow FLUTE	140 -146	1	1	1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	
Tank F - south of Building 1	AE-2R	--	Upper Bedrock	open rock 5"	22 - 36	0		0																	Remove AE-2R; have 4 data points with trends ND or not significant; not needed for plume figures
Tank F	GZA-101R	--	Upper Bedrock	PVC	36 - 38	1		1	0				1	1	1	1	1	1	1		1	1			
Former Tank Farm	AE-100R	R1	Upper Bedrock	FLUTE	18 - 24	1	0	1			1	1													Add VPH/EPH to monitor dissolved phase petroleum downgradient of the LNAPL area; Remove 1,4-Dioxane - have R3 in upper bedrock
Former Tank Farm	AE~100R	R2	Upper Bedrock	FLUTE	43 - 48	0	0	0																	Remove AE-100R2; have R1 and R3 in upper bedrock
Former Tank Farm	AE~100R	R3	Upper Bedrock	FLUTE	50 - 56	1	1	1																	
Former Tank Farm	AE~100R	R4	Middle Bedrock	FLUTE	63 - 68	1	1	1																	
Former Tank Farm	AE~100R	R5	Middle Bedrock	FLUTE	88 - 93	1	0	1	0				1	1	1	1	1	1	1		1	1	0	0	Remove 1,4-Dioxane - have R4 and R6 in middle bedrock
Former Tank Farm	AE~100R	R6	Middle Bedrock	FLUTE	108.5 - 113.5	1	1	1																	
Transect A	AE~101D	--	Overburden	2	20 - 25	1	1	1																	
Transect A	AE~101R	R1	Upper Bedrock	CMT	30.5 - 35.5	1	0	1																	Remove 1,4-Dioxane; have R2 in upper bedrock
Transect A	AE~101R	R2	Upper Bedrock	CMT	55-60	1	1	1																	
Transect A	AE~101R	R3	Middle Bedrock	CMT	80 - 85	1	1	1																	
Transect A	AE~101R	R5	Lower Bedrock	CMT	175 - 180	1	1	1																	
Transect A	AE~101R	R6	Lower Bedrock	CMT	227-232	1	1	1																	
Transect A	AE~101S	--	Overburden	2	10 - 15	1	1	1																	
Transect A	AE~102D	--	Overburden	2	33 - 38	1	1	1																	
Transect A	AE~102M	--	Overburden	2	23 - 28	1	1	1	0		0	0	1	1	1	1	1	1	1	1	1	1	0	0	Remove EPH / VPH (ND in 2017)
Transect A	AE~102RR	R2	Middle Bedrock	FLUTE	75 - 80	1	1	1																	
Transect A	AE~102RR	R4	Lower Bedrock	FLUTE	125 - 130	1	1	1																	
Transect A	AE~102RR	R5	Lower Bedrock	FLUTE	141-146	1	0	1																	Remove 1,4-Dioxane - have R4 and R6 in lower bedrock
Transect A	AE~102RR	R6	Lower Bedrock	FLUTE	153-158	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	0		
Transect A	AE~103D	--	Overburden	2	35 - 40	1	1	1			0	0	1	1	1	1	1	1	1	1	1	1	0		Remove EPH / VPH (ND in 2017)
Transect A	AE~103R	R1	Upper Bedrock	FLUTE	48 - 53	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	0		
Transect A	AE~103R	R2	Middle Bedrock	FLUTE	62-67	0	0	0																	Remove AE-103R2; have R3 and R4 in middle bedrock
Transect A	AE~103R	R3	Middle Bedrock	FLUTE	70 -76	1	0	1																	Remove 1,4-Dioxane; have R4 in middle bedrock
Transect A	AE~103R	R4	Middle Bedrock	FLUTE	98-105	1	1	1																	
Transect A	AE~103R	R5	Lower Bedrock	FLUTE	122 - 128	1	1	1	0				1	1	1	1	1	1	1	1	1	1	0	0	
Transect A	AE~103R	R6	Lower Bedrock	FLUTE	138-144	0	0	0																	Remove AE-103R6; have R7 in lower bedrock
Transect A	AE~103R	R7	Lower Bedrock	FLUTE	162.5-168	1	0	1																	Remove 1,4-Dioxane, have R5 in lower bedrock
Transect A	AE~103S	--	Overburden	2	15 - 20	1	0	1					1	1											Remove 1,4-Dioxane, only need at AE-103D
Transect A	AE~104D	--	Overburden	2	35 - 40	1	1	1																	
Transect A	AE~104R	R1	Upper Bedrock	FLUTE	48 - 54	1	1	1																	
Transect A	AE~104R	R3	Middle Bedrock	FLUTE	97-102	1	1	1																	
Transect A	AE~104R	R4	Lower Bedrock	FLUTE	128-133	1	1	1			1	1													
Transect A	AE~104R	R5	Lower Bedrock	FLUTE	156 - 162	1	0	1																	Remove 1,4-Dioxane - have R4 and R6 in lower bedrock
Transect A	AE~104R	R6	Lower Bedrock	FLUTE	168-174	1	1	1																	
Transect A	AE~104S	--	Overburden	2	15 - 20	1	0	1																	Remove 1,4-Dioxane, only need at AE-104D

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Area	Location ID	FLUTE port	Interval	Well Diameter (inch)	Screen Interval (Ft bgs)	VOCs (SW846 -USEPA Method 8260C)	1,4 dioxane (SW846/USEPA Method 8270D SIM) to get DL <0.3 ug/l)	Field Parameters: pH, temperature, conductivity, ORP, DO, and turbidity	CSIA: 13C/12C ratio for PCE, TCE, Cis 1,2 -DCE, VC (Pace Analytical)	Isotopic Analysis: O16/O18, H1/H2 and S34/S36	VPH (MassDEP VPH 04 3.1 Revision 1)	EPH and polycyclic aromatic hydrocarbons (PAH) (MassDEP EPH 04 1.1 Revision 1)	Total As, Fe, Mn (SW846 - U SEPA Method 6010C)	Dissolved As, Fe, Mn (field filtered) (SW846 - USEPA Method 6010C)	Chloride (USEPA 300.0)	Nitrite	Nitrate (USEPA 300.0)	Sulfate (USEPA 300.0)	Sulfide	Total organic carbon (SW 846-9060A)	Methane, Ethane, Ethene, Acetylene, Propane (Pace-Microseeps AM20Gax)	Dissolved hydrogen (Pace - Microseeps - Bubble Strip)	Ferrous Iron and Manganese Field Test Kits	Microbial Analysis: Quantaray (Microbial Insights)	
Transect A	AE-108R	R1	Upper Bedrock	FLUTE	36.5 - 43.5	1		1	0				1	1	1	1	1	1	1	1	1	1	0	0	Modifications Rationale - August 2018
Transect A	AE-108R	R2	Middle Bedrock	FLUTE	68 - 73	0		0																	Remove AE-108R2; have R3 in middle bedrock
Transect A	AE-108R	R3	Middle Bedrock	FLUTE	84 - 89	1		1																	
Transect A	AE-108R	R4	Lower Bedrock	FLUTE	145 - 150	0		0																	Remove AE-108R4; have R5 in lower bedrock
Transect A	AE-108R	R5	Lower Bedrock	FLUTE	163 - 168	1		1																	
Transect A	AE-109R	R1	Upper Bedrock	FLUTE	38 - 43	1		1																	Sample all eight AE-109R ports for 2 more rounds of VOC data in 2018 and 2019
Transect A	AE-109R	R2	Middle Bedrock	FLUTE	66 - 76	1	1	1																	Add 1,4-Dioxane in middle bedrock
Transect A	AE-109R	R3	Lower Bedrock	FLUTE	126 - 136	1		1																	
Transect A	AE-109R	R4	Lower Bedrock	FLUTE	174 - 180.5	1		1																	
Transect A	AE-109R	R5	Lower Bedrock	FLUTE	183 - 189	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	0		
Transect A	AE-109R	R6	Lower Bedrock	FLUTE	196-201	1	0	1																	Remove 1,4-Dioxane, have R5 and R7 in lower bedrock
Transect A	AE-109R	R7	Lower Bedrock	FLUTE	204 - 214	1	1	1																	
Transect A	AE-109R	R8	Lower Bedrock	FLUTE	245 - 250	1		1																	
Transect A	AE-109D	--	Overburden	2	18 - 23	1	1	1					1	1											Add Arsenic to south end Transect A to bound concentrations in AE-103
Transect A	AE-110R	R1	Upper Bedrock	FLUTE	34 - 44	1		1																	
Transect A	AE-110R	R2	Middle Bedrock	FLUTE	70 - 80	1		1																	
Transect A	AE-110R	R3	Lower Bedrock	FLUTE	128 - 138	0		0																	Remove AE-110R3; two rounds VOCs ND; have R4 and R6 in lower bedrock
Transect A	AE-110R	R4	Lower Bedrock	FLUTE	158 - 168	1		1																	
Transect A	AE-110R	R5	Lower Bedrock	FLUTE	171 - 182	0		0																	Remove AE-110R5; two rounds VOCs ND; have R4 and R6 in lower bedrock
Transect A	AE-110R	R6	Lower Bedrock	FLUTE	190 - 200	1	1	1																	
Transect A	AE-110R	R7	Lower Bedrock	FLUTE	224 -234	0	0	0																	Remove AE-110R7; two rounds VOCs ND; have R4 and R6 in lower bedrock
Transect B	AE-105D	--	Overburden	2	73 - 78	1	1	1																	
Transect B	AE-105R	R1	Middle Bedrock	FLUTE	90.5 - 95.5	1		1																	
Transect B	AE-105R	R2	Middle Bedrock	FLUTE	98 - 103	1	1	1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	
Transect B	AE-105R	R4	Lower Bedrock	FLUTE	125 - 130	1	1	1			1	1													
Transect B	AE-105R	R5	Lower Bedrock	FLUTE	143 - 148	1		1																	
Transect B	AE-105S	--	Overburden	2	35 - 40	1	0	1	0		0	0	1	1	1	1	1	1	1	1	1	1	0	0	Remove EPH/VPH (ND in 2017); Remove 1,4-Dioxane - only need at AE-105D
Transect B	AE-106D	--	Overburden	2	34 - 39	1		1	0		0	0	1	1	1	1	1	1	1	1	1	1	0	0	Remove EPH/VPH (ND 2016 and 2017)
Transect B	AE-106R	R1	Upper Bedrock	FLUTE	47 - 52	1		1																	
Transect B	AE-106R	R3	Middle Bedrock	FLUTE	84 - 88	1		1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	
Transect B	AE-106R	R5	Lower Bedrock	FLUTE	164 - 169	1	1	1			1	1													
Transect B	AE-106S	--	Overburden	2	12 - 17	1		1																	
Transect B	TRC-301R	R4	Middle Bedrock	CMT	65.5 - 69.5	1		1	0				1	1	1	1	1	1	1	1	1	1	0	0	Keep for VOCs, As, Fe, Mn, and MNA
Transect B	TRC-301R	R3	Middle Bedrock	CMT	75.5 - 79.5	0		0					0	0											Remove TRC301R3; have R2 and R4 in middle bedrock; move As, Fe, Mn to TRC301R2
Transect B	TRC-301R	R2	Middle Bedrock	CMT	81.5 - 85.5	1		1					1	1											Move As, Fe, Mn from TRC301R3
Transect B	TRC-301R	R1	Middle Bedrock	CMT	96.5 - 100.5	0		0																	Remove TRC301R1, have R2 and R4 in middle bedrock
Transect B	AE-111R	R1	Upper Bedrock	FLUTE	44 - 54	1		1																	
Transect B	AE-111R	R2	Middle Bedrock	FLUTE	66 - 74	0		0																	Remove AE-111R2; 3 samples ND for VOCs; have R3 in middle bedrock
Transect B	AE-111R	R3	Middle Bedrock	FLUTE	95 - 103	1		1																	
Transect B	AE-111R	R4	Lower Bedrock	FLUTE	140 - 150	0		0																	Remove AE-111R4; 3 samples ND for VOCs; have R5 and R6 in lower bedrock
Transect B	AE-111R	R5	Lower Bedrock	FLUTE	155 - 165	1		1																	
Transect B	AE-111R	R6	Lower Bedrock	FLUTE	168 -173	1		1																	
Transect B	AE-111R	R7	Lower Bedrock	FLUTE	181 - 191	0		0																	Remove AE-111R7; 3 samples ND for VOCs; have R5 and R6 in lower bedrock
Transect B 1/2	AE-112R	R1	Upper Bedrock	FLUTE	41 - 51	1		1					1	1											
Transect B 1/2	AE-112R	R2	Middle Bedrock	FLUTE	62 - 72	0		0					0	0											Remove AE-112R2; have R3 in middle bedrock; Move As, Fe, Mn to AE-112R1
Transect B 1/2	AE-112R	R3	Middle Bedrock	FLUTE	91 - 101	1		1																	
Transect B 1/2	AE-112R	R4	Lower Bedrock	FLUTE	113 - 123	0		0																	Remove AE-112R4; have R5 and R6 in lower bedrock
Transect B 1/2	AE-112R	R5	Lower Bedrock	FLUTE	136 - 146	1		1																	
Transect B 1/2	AE-112R	R6	Lower Bedrock	FLUTE	153 - 163	1		1	0		1	1	1	1	0	0	0	0	0	0	0	0	0	0	Remove MNA as results not indicative of MNA
Transect B 1/2	AE-112R	R7	Lower Bedrock	FLUTE	168 - 175	0		0																	Remove AE-112R7 ; have R5 and R6 in lower bedrock
Transect B 1/2	AE-112D	--	Overburden	2	24.5 - 29.5	1		1					1	1											
Transect C - Concord Street	STM-8S	--	Overburden	0.75	1 - 11	0	0	0																	Remove STM-8S; VOCs mostly ND; well not needed for arsenic, 1,4-Dioxane, petroleum, or MNA
Transect C - Concord Street	STM-8D	--	Overburden	0.75	34.7 - 39.7	1	1	1	0																
Transect C - Concord Street	STM-8M	--	Overburden	0.75	19.5 - 24.5	0	0	0																	Remove STM-8M; VOCs mostly ND; well not needed for arsenic, 1,4-Dioxane, petroleum, or MNA
Transect C - Concord Street	STM-8R	--	Upper Bedrock	0.75	46.5 - 51.5	1	1	1																	
Transect C - Concord Street	STM-8R1	--	Middle Bedrock	2	85 - 90	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	0		
Transect C - Concord Street	STM-3S	--	Overburden	0.75	5 -15	0		0																	Remove STM-3S; VOCs mostly ND; well not needed for arsenic, 1,4-Dioxane, petroleum, or MNA
Transect C - Concord Street	STM-3D	--	Overburden	0.75	49.8 - 54.8	1		1																	
Transect C - Concord Street	STM-3R	--	Middle Bedrock	0.75	66.9 - 71.9	0		0																	Remove STM-3R; VOCs mostly ND; well not needed for arsenic, 1,4-D, petroleum, or MNA

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Former GE Site, Wilmington, MA

Area	Location ID	FLUTE port	Interval	Well Diameter (inch)	Screen Interval (Ft bgs)	VOCs (SW846 -USEPA Method 8260C)	1,4 dioxane (SW846/USEPA Method 82700 SIM) to get DL <0.3 ug/l)	Field Parameters: pH, temperature, conductivity, ORP, DO, and turbidity	CSIA: 13C/12C ratio for PCE, TCE, Cis 1,2 -DCE, VC (Pace Analytical)	Isotopic Analysis: O16/O18, H1/H2 and S34/S36	VPH (MassDEP VPH 04 1.1 Revision 1)	EPH and polycyclic aromatic hydrocarbons (PAH) (MassDEP EPH 04 1.1 Revision 1)	Total As, Fe, Mn (SW846 - USEPA Method 6010C)	Dissolved As, Fe, Mn (field filtered) (SW846 - USEPA Method 6010C)	Chloride (USEPA 300.0)	Nitrite	Nitrate (USEPA 300.0)	Sulfate (USEPA 300.0)	Sulfide	Total organic carbon (SW 846-9060A)	Methane, Ethane, Ethene, Acetylene, Propane (Pace-Microseeps AM20Gax)	Dissolved hydrogen (Pace - Microseeps - Bubble Strip)	Ferrous Iron and Manganese Field Test Kits	Microbial Analysis: Quantaray (Microbial Insights)	Modifications Rationale - August 2018
Upgradient	GZĀ-12	--	Overburden	1.5	9.5 - 24.5	1	1	1					1	1	1	1	1	1	1	1	1	1	0		Add 1,4-Dioxane at upgradient well
EPL Area	AE`03	--	Overburden	2	3 - 13	1		1			1	1	1	1	0	0	0	0	0	0	0	0	0	0	Remove MNA as results not indicative of MNA
EPL Area	AE 04	--	Overburden	2	3 - 13	1		1			1	1	0	0											Remove As, Fe, Mn - good coverage in EPL
EPL Area	GZA-102S	--	Overburden	1.5	1.7 - 10.7	1		1			1	1													Add GZA-102S to monitor dissolved phase petroleum downgradient of the LNAPL area;
EPL Area	PZ-2Š	--	Overburden	4	3.55 - 8.55	1		1			1	1													Add PZ-2S to monitor dissolved phase petroleum downgradient of the LNAPL area;
EPL Area	GZA 105D	--	Overburden	1.5	16 - 26	1	1	1			1	1	0	0											Remove As, Fe, Mn
EPL Area	GZA`105R	--	Upper Bedrock	0.5	34.5 - 36.5	1		1																	
EPL Area	GZA 105S	--	Overburden	1.5	4 - 14	1		1			1	1	1	1	0	0	0	0	0	0	0	0	0	0	Remove MNA as results not indicative of MNA
EPL Area	TRC`101	--	Overburden	1.25	1.5 - 10.5	1		1			1	1													Add TRC-101 to monitor dissolved phase petroleum downgradient of the LNAPL area;
EPL Area	TRC 102	--	Overburden	1.25	2.25 - 12.25	1		1			1	1	1	1											
EPL Area	TRC-103	--	Overburden	1.25	1.25 - 11.25	1		1			1	1													Add TRC-103 to monitor dissolved phase petroleum downgradient of the LNAPL area;
LTGMP	EMW`10D	--	Overburden	2	19 - 29	1		1																	
LTGMP	EMW`10R	--	Upper Bedrock	2	42 - 52	1		1																	
LTGMP	EMW`11D	--	Overburden	2	22 - 32	1		1																	
LTGMP	EMW`11R1	--	Middle Bedrock	0.75	79 - 89	1		1																	
LTGMP	EMW`11R2	--	Middle Bedrock	0.75	104 - 114	1		1	0		1	1	1	1	1	1	1	1	1	1	1	1	0	0	
LTGMP	EMW 11R3	--	Lower Bedrock	0.75	158 - 168	1		1																	
LTGMP	GZA-6	--	Overburden	2	8 - 18	0		1					1	1											Add GZA-6 (As <10 ug/L in 2009) to bound elevated arsenic at GZA-10;
LTGMP	GZA-10	--	Overburden	1.5	13 - 38	0		1					1	1											Add GZA-10 due to elevated arsenic at GZA-10 (131 in 2009 and 85 ug/L in 2015)
LTGMP	GZA-107M	--	Overburden	1.5	14.5 - 24.5	0		0																	Remove GZA-107M based on only low level VOCs in October 2018
LTGMP	GZA-107D	--	Overburden	1.5	39.2 - 44.2	0		0																	Remove GZA-107D based on only low level VOCs in October 2018
LTGMP	GZA`107R	--	Middle Bedrock	0.5	62.2 - 64.2	0		0																	Remove GZA-107R based on only low level VOCs in October 2018
LTGMP	TRC`402	--	Overburden	2	53.3 - 63.3	0		0																	Remove TRC-402; low level VOCs; Well not needed for site monitoring across Ipswich River;
LTGMP	TRC`403	--	Overburden	2	37.5 - 47.5	0		0																	Remove TRC-403; VOCs ND; Well not needed for site monitoring across Ipswich River;
Source Control ` Downgradient	GZA`14	--	Overburden	1.5	39 - 49	0		0			0	0	0	0											Remove GZA-14; have coverage for VOCs and arsenic; remove petroleum
Source Control ` Downgradient	GZA`14A	--	Overburden	1.5	0 - 15	0		1					1	1											Remove VOCs; low level VOCs with other well coverage in the area of Transect B
Source Control ` Downgradient	MW`4	--	Overburden	1.5	18 - 28	1	1	1					1	1											
Source Control ` Downgradient	MW`4A	--	Overburden	1.5	38 - 48	0	0	1					1	1											Remove VOCs and 1,4-Dioxane (only need at MW-4); Kept As, Fe, Mn
Source Control ` Downgradient	MW`5	--	Overburden	1.5	28 - 38	1		1																	
Source Control ` Downgradient	MW`7	--	Overburden	1.5	15 - 25	1		1																	
Source Control ` Downgradient	PS`1D	--	Overburden	0.62	49.25 - 54.25	1		1																	
Source Control ` Downgradient	PS`1M	--	Overburden	0.62	34.25 - 39.25	0		0																	Remove PS-1M; Low level VOCs, little to no cis12DCE or VC
Source Control ` Downgradient	PS`1S	--	Overburden	0.62	12 - 17	1		1																	
Source Control ` Downgradient	PS`2D	--	Overburden	0.62	49.1 - 54.1	1		1																	
Source Control ` Downgradient	PS`2M	--	Overburden	0.62	34 - 39	0		0																	Remove PS-2M; VOCs mostly ND
Source Control ` Downgradient	PS`2S	--	Overburden	0.62	12.5 - 17.5	0		0																	Remove PS-2S; VOCs mostly ND
Source Control ` Downgradient	PS`3	--	Overburden	0.62	2.7 - 7.7	1		1																	
Source Control ` Downgradient	PS`4	--	Overburden	0.62	12.9 - 17.9	0		0																	Remove PS-4; Low level VOCs
Source Control ` Downgradient	PS`5D	--	Overburden	0.62	24.1 - 29.1	1		1																	
Source Control ` Downgradient	PS`5S	--	Overburden	0.62	13 - 18	0		0																	Remove PS-5S; Low level VOCs
Source Control ` Downgradient	PS`8D	--	Overburden	0.62	51.8 - 56.8	1		1					1	1											Add As, Fe, Mn for plume figures
Source Control ` Downgradient	PS`8M	--	Overburden	0.62	34.3 - 39.3	0		0																	Remove PS-8M; VOCs are ND
Source Control ` Downgradient	PS`8S	--	Overburden	0.62	13 - 18	0		0																	Remove PS-8S; VOCs are ND
Source Control ` Onsite	TRC-201R	--	Upper-Middle-Lower Bedrock	6"	38 - 161	1		1																	
Source Control ` Onsite	IP`1R2	--	Middle Bedrock	2	54 - 74	1		1																	
Source Control ` Onsite	TRC 401R	--	Upper Bedrock	0.5	38 - 58	1		1																	

Notes:
** 1 per 20 for wells with non-dedicated sampling equipment

Removed CSIA and Microbial lab analyses, and Fe + Mn field test kits, as the results were not needed to support MNA monitoring. MNA analyses (Anions [chloride, nitrite, nitrate, sulfate, sulfide], total organic carbon, and dissolved gases [methane, ethane, ethane, acetylene, and hydrogen]) were retained at wells where data is indicative of some level of MNA.

2018 - 2021 Totals																			
Total number of samples	118	45	122	0	0	25	25	36	36	20	20	20	20	20	18	20	20	0	0
Duplicates (1 per 20)	6	3	0	0	0	2	2	2	2	1	1	1	1	1	1	1	0	0	0
Equipment blanks (1 per 20**)	4	2	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0
Trip blanks (1 per shipment)	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	138	50	122	0	0	28	28	39	38	22	22	22	22	22	20	22	20	0	0

2016 - 2017 Totals																			
Total number of samples	157	60	157	16	0	25	25	35	35	23	23	23	23	23	21	23	23	22	16
Duplicates (1 per 20)	8	3	0	0	0	2	2	2	2	2	2	2	2	2	2	2	0	0	0
Equipment blanks (1 per 20**)	4	2	0	0	0	1	1	1	0	1	1	1	1	1	1	1	0	0	0
Trip blanks (1 per shipment)	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	184	65	157	16	0	28	28	38	37	26	26	26	26	26	24	26	23	22	16