Table A-1: Sampling Design Matrix - Phase 1
Ground Water Sampling

Sample Location	Sample Identification	Sampling Method	Analyses										
			Field Parameters	[1]Total Dissolved Solids	VOCs (low water)	SVOCs	Total (Unfiltered) TAL Metals (includes Mercury)	Dissolved (Filtered) TAL Metals (includes Mercury)	[1]Cyanide	[1]Hexavalent Chromium	PCBs	[1]PFCs	[1]TPH
CMT and Monitoring Wells													
MW-01	MW-01	Micro Purge and Sample	1	1			1	1		1			
MW-02	MW-09	Micro Purge and Sample	1	1			1	1		1			
MW-03	MW-03	Micro Purge and Sample	1	1			1	1		1			
WW-01	WW-01	Micro Purge and Sample	1	1	1	1	1	1	1	1	1	1	1
WW-02	WW-02	Micro Purge and Sample	1	1			1	1		1			
		Subtotal Monitoring Wells	**5**	**5**	**1**	**1**	**5**	**5**	**1**	**5**	**1**	**1**	**1**
		Total Ground Water Samples	**5**	**5**	**1**	**1**	**5**	**5**	**1**	**5**	**1**	**1**	**1**
Ground Water QC Samples													
Field duplicates	Same as original with "-D" added to the ID, for example MW-16-D	1 per 10 samples	0	0	1	1	1	1	1	1	1	1	1
MS/MSDs	Same as original sample identification	1 per 20 samples (extra volume consisting of one container for MS and one container for MSD per each MS/MSD sample)	0	0	1	1	1	1	1	1	1	1	1
Trip blanks	TB with number; for example TB-1, TB-2, etc.	1 per cooler containing aqueous samples for VOC analysis	0	0	1	0	0	0	0	0	0	0	0
Equipment blanks	ER with number; for example ER-1, ER-2, etc.	1 per day per set of for nondedicated equipment per team	0	0	1	1	1	1	1	2	1	1	1
Total Ground Water Samples Including QC			**5**	**5**	**5**	**4**	**8**	**8**	**4**	**9**	**4**	**4**	**4**

NOTES:
Field parameters: pH, temperature, conductivity, dissolved oxygen, oxidation-reduction potential, and turbidity
[1] Total dissolved solids, cyanide, hexavalent chromium, PFCs, and TPH analyses for ground water samples will be conducted by a private laboratory.

MS = Matrix spike
MSD = Matrix spike duplicate
QC = Quality control
PBC = Polychlorinated biphenyls
PFCs = Perfluorochemicals
SVOCs = Semivolatile organic compounds
TAL = Total analyte list
TPH = Total petroleum hydrocarbons
VOCs = Volatile organic compounds

Objective of Sampling - To verify whether or not contaminants of potential concern are present within the alluvial ground water, and to define the nature and extent of ground water impact.
Activities to be Conducted - The tasks of this field investigation that will be performed during Phase 1 include: (1) Collection of ground water samples from the newly installed ground water monitoring wells, and (2) Collect a ground water samples from existing onsite water wells.
Sample Locations - See Figure A-1 in Appendix A of the Sampling and Analysis Plan

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Table A-3: Sampling Design Matrix - Phase 1
Sediment Sampling

Sample Location	Boring Total Depth (ft bgs)	Sample Medium	Rationale	Number of Sample Locations	Sample Identification	Sampling Tool	Sampling Depth (ft bgs)	Analysis: Field Screening by PID	VOCs	SVOCs	TAL Metals (includes Mercury)	[1]Cyanide	[1]Hexavalent Chromium	PCBs	[1]AVS/SEM	[1]PFCs	[1]ORP	[1]pH	[1]TOC	[1]TPH
Sediment Samples																				
LSED- 1	0.5	Sediment	To assess delineate nature and extent	1	LSED-1-0.0-0.5	Core sampler or scoop	0.0 - 0.5	Yes	1	1	1	1	1	1	1	1	1	1	1	1
LSED- 2	0.5	Sediment		1	LSED-2-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 3	0.5	Sediment		1	LSED-3-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 4	0.5	Sediment		1	LSED-4-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 5	0.5	Sediment		1	LSED-5-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 6	0.5	Sediment		1	LSED-6-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 7	0.5	Sediment		1	LSED-7-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 8	0.5	Sediment		1	LSED-8-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 9	0.5	Sediment		1	LSED-9-0.0-0.5		0.0 - 0.5	Yes	1	1	1	1	1	1	1	1	1	1	1	1
LSED- 10	0.5	Sediment		1	LSED-10-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 11	0.5	Sediment		1	LSED-11-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 12	0.5	Sediment		1	LSED-12-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 13	0.5	Sediment		1	LSED-13-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 14	0.5	Sediment		1	LSED-14-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 15	0.5	Sediment		1	LSED-15-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 16	0.5	Sediment		1	LSED-16-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 17	0.5	Sediment		1	LSED-17-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 18	0.5	Sediment		1	LSED-18-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 19	0.5	Sediment		1	LSED-19-0.0-0.5		0.0 - 0.5	Yes			1		1							
LSED- 20	0.5	Sediment		1	LSED-20-0.0-0.5		0.0 - 0.5	Yes			1		1							
							Total Sediment Samples		**2**	**2**	**20**	**2**	**20**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Sediment Investigation QC Samples																				
Field Duplicates	NA	Sediment	Quality Control	Same as original with "-D" added to the ID, for example MW-16-0.5-2.0-D		1 per 10 samples		0	1	1	2	1	2	1	1	1	1	1	1	1
MS/MSDs	NA	Sediment		Same as original sample identification		1 per 20 samples (extra volume consisting of one container for MS and one container for MSD per each MS/MSD sample)		0	1	1	1	1	1	1	1	1	1	1	1	1
							Total Sediment Samples Associated with Soil Investigation Including QC		**4**	**4**	**23**	**4**	**23**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
Water QC Samples																				
Trip blanks	NA	Water	Quality Control	TB with number; for example TB-1, TB-2, etc.		1 per cooler containing equipment rinsate for equipment used during soil investigation		0	2	0	0	0	0	0	0	0	0	0	0	0
Equipment blanks	NA	Water		ER with number; for example ER-1, ER-2, etc.		1 per day per set of nondedicated equipment per team		0	0	0	0	0	0	0	0	2	0	0	0	0
							Total Water QC Samples Associated with Sediment Investigation		**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

NOTES:

[1] Cyanide, hexavalent chromium, AVS/SEM, PFCs, pH and ORP, and TPH analyses for sediment samples will be conducted by a private laboratory.

AVS/SEM = Acid volatile sulfide/simultaneously extracted metals

bgs = Below ground surface
ft = foot (feet)
MS = Matrix spike
MSD = Matrix spike duplicate
NA = Not Applicable
ORP = Oxidation reduction potential
PCB = Polychlorinated biphenyls
PFCs = Perfluorochemicals
PID = Photoionization detector
QC = Quality control
SVOC = Semivolatile organic compound
TAL = Target Analyte List
TB = Trip Blank
TPH = Total petroleum hydrocarbons
VOC = Volatile organic compound

Objective of Sampling - To determine potential points of entry of sediment entering the nearby drainge systems from the site, and to determine the nature and extent of contaminants of potential concern associated with sediment.

Activities to be Conducted - The tasks of this field investigation that will be performed during Phase 1 include collection of sediment samples for laboratory analyses.

Sample Locations - See Figure A-3 in Appendix A of the Sampling and Analysis Plan

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Table A-4: Sampling Design Matrix - Phase 1
Surface Water Sampling

Sample Location	Sample Medium	Number of Sample Locations	Sample Identification	Sampling Tool	Sampling Depth [1]	Analyses for Surface Water Samples														
						Field Parameters	VOCs (low water)	SVOCs	Total (Unfiltered) TAL Metals (includes Mercury)	Dissolved (Filtered) TAL Metals (includes Mercury)	[2]Cyanide	Hexavalent Chromium	PCBs	[2]PFCs	[2]TPH	[2]Hardness	[2]Total Dissolved Solids	[2]Total Suspended Solids	[2]Alkalinity	[2]Total Organic Carbon
Surface Water Samples																				
LSW- 1	Surface water at Sediment Sample Location	1	LSW-1	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LSW- 2	Surface water at Sediment Sample Location	1	LSW-2	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 3	Surface water at Sediment Sample Location	1	LSW-3	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 4	Surface water at Sediment Sample Location	1	LSW-4	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 5	Surface water at Sediment Sample Location	1	LSW-5	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 6	Surface water at Sediment Sample Location	1	LSW-6	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 7	Surface water at Sediment Sample Location	1	LSW-7	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 8	Surface water at Sediment Sample Location	1	LSW-8	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 9	Surface water at Sediment Sample Location	1	LSW-9	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LSW- 10	Surface water at Sediment Sample Location	1	LSW-10	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 11	Surface water at Sediment Sample Location	1	LSW-11	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 12	Surface water at Sediment Sample Location	1	LSW-12	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 13	Surface water at Sediment Sample Location	1	LSW-13	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 14	Surface water at Sediment Sample Location	1	LSW-14	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 15	Surface water at Sediment Sample Location	1	LSW-15	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 16	Surface water at Sediment Sample Location	1	LSW-16	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 17	Surface water at Sediment Sample Location	1	LSW-17	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								

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Table A-4: Sampling Design Matrix - Phase 1
Surface Water Sampling

Sample Location	Sample Medium	Number of Sample Locations	Sample Identification	Sampling Tool	Sampling Depth [1]	Analyses for Surface Water Samples														
						Field Parameters	VOCs (low water)	SVOCs	Total (Unfiltered) TAL Metals (includes Mercury)	Dissolved (Filtered) TAL Metals (includes Mercury)	[2]Cyanide	Hexavalent Chromium	PCBs	[2]PFCs	[2]TPH	[2]Hardness	[2]Total Dissolved Solids	[2]Total Suspended Solids	[2]Alkalinity	[2]Total Organic Carbon
LSW- 18	Surface water at Sediment Sample Location	1	LSW-18	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 19	Surface water at Sediment Sample Location	1	LSW-19	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
LSW- 20	Surface water at Sediment Sample Location	1	LSW-20	Peristaltic pump or disposable scoop	0.0 - 1.0 or shallower	1			1	1		1								
Total Surface Water Samples						**20**	**2**	**2**	**20**	**20**	**2**	**20**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Water QC Samples																				
Field duplicates	Surface Water	Same as original with "-D" added to the ID, for example SW-7-D		1 per 10 samples		0	1	1	2	2	1	2	1	1	1	1	1	1	1	1
MS/MSDs	Surface Water	Same as original sample identification		1 per 20 samples (extra volume consisting of one container for MS and one container for MSD per each MS/MSD sample)		0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Trip blanks	Water	TB with number; for example TB-1, TB-2, etc.		1 per cooler containing aqueous samples for VOC analysis		0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Equipment blanks	Water	ER with number; for example ER-1, ER-2, etc.		1 per day per set of for nondedicated equipment per team		0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Total Samples Including QC Samples						**20**	**6**	**4**	**23**	**23**	**4**	**23**	**4**	**6**	**4**	**4**	**4**	**4**	**4**	**4**

NOTES:

[1] Feet below water surface for surface water samples

[2] Cyanide, hexavalent chromium, PFCs, hardness, total dissolved solids, total suspended solids, alkalinity, total organic carbon, and TPH analyses for surface water samples will be conducted by a private laboratory.

Analyses for hexavalent chromium may be eliminated if it is not detected in soil or ground water samples

Field parameters for surface water are pH, temperature, and conductivity, dissolved oxygen, and oxidation reduction potential.

MS = Matrix spike
MSD = Matrix spike duplicate
PCB = Polychlorinated biphenyls
PFCs = Perfluorochemicals
TPH = Total petroleum hydrocarbons
VOCs = Volatile organic compounds

Objective of Sampling - To determine points of entry from the site to the nearby drainge systems, and determine the nature and extent of contaminants of potential concern associated with surface water in these asjacent drainge systems.
Activities to be Conducted - The tasks of this field investigation that will be performed during Phase 1 include collection of surface water samples for laboratory analyses.
Sample Locations - See Figure A-4 in Appendix A pf the Sampling and Analysis Plan

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Table A-5: Sample Design Matrix
Investigation-Derived Waste Sampling

Sample Location	Sample Identification	Sampling Method	TCLP Metals	TCLP VOCs	TCLP SVOCs	TCLP Metals	TCLP Pesticides	TCLP Herbicides	Total Petroleum Hydrocarbons	Reactivity	Corrosivity	Ignitability
Investigation Derived Waste Samples - Water												
IDW (drummed water)	IDW-W - YYMMDD	Composite sample from drummed water	1	1	1	1	1	1	1	1	1	1
IDW (drummed water)	IDW-W - YYMMDD	Composite sample from drummed water	1	1	1	1	1	1	1	1	1	1
		Subtotal IDW Sampling Event - Water	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Investigation Derived Waste Samples - Soil Cuttings												
IDW (drummed soil cuttings)	IDW-S- - YYMMDD	Composite sample from soil cuttings	1	1	1	1	1	1	1	1	1	1
IDW (drummed soil cuttings)	IDW-S- - YYMMDD	Composite sample from soil cuttings	1	1	1	1	1	1	1	1	1	1
		Subtotal IDW Sampling Event - Soil Cuttings	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
		Total IDW Samples	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**
QC Samples (Not Applicable)												
Field duplicate	Same as original with "-D" added to the ID, for example MW-16-D	1 per 10 samples	0	0	0	0	0	0	0	0	0	0
MS/MSDs	Same as original sample identification	1 per 20 samples (extra volume only; not included in total sample count)	0	0	0	0	0	0	0	0	0	0
Trip blanks	TB with number; for example TB-1, TB-2, etc.	1 per cooler containing aqueous samples for VOC analysis	0	0	0	0	0	0	0	0	0	0
Equipment blanks	ER with number; for example ER-1, ER-2, etc.	1 per day per set of for nondedicated equipment per team	0	0	0	0	0	0	0	0	0	0
Total IDW Samples Including QC			**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**	**4**

NOTES:
Objective of Sampling: To sample investigation-derived waste for waste characterization purposes.
Activities to be Conducted: Sampling of drummed purge and decontamination water as well as soil cuttings generated during new monitoring well installation.
Sample Locations: Designated onsite investigation-derived waste staging area.
IDW = Investigation-derived waste.
MS = Matrix spike.
MSD = Matrix spike duplicate.
QC = Quality control.
S = Soil (for soil cuttings sample).
SVOCs = Semivolatile organic compounds.
TCLP = Toxicity Characteristic Leaching Procedure.
VOCs = Volatile organic compounds.
W = Water (for aqueous sample).

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