Supplemental Agreement	Organization and Address: Maul Foster and Alongi						
Number A							
Nulliper. 4	1329 N. State Street, Suite 301						
	Bellingham, WA 98225						
Original Contract Number:	Execution Date of Supplement:						
2014-180	October 10, 2018						
City Engineering Project Number: 2389	Completion Date of Supplement:						
	June 30, 2019						
Project Title:	Maximum Amount Payable this Supplement:						
Former Tiger Oil Site Interim Remedial Action	\$375,000						
Maximum Total Amount Payable for the Agreement:	\$759,502						

Section 1: Supplemental Agreement

The City of Yakima, Washington desires to supplement the contract agreement entered into with Maul Foster Alongi, Inc, and executed on October 8, 2014 by <u>Resolution No. 2014-121</u> and identified as <u>Contract 2014-180</u>. All provisions in the basic contract remain in effect except as expressly modified by this supplement. The changes to the agreement are described as follows:

Section 2: Scope of Services

The additional task to be performed as part of this Supplemental Contract is to provide post interim action professional services, which includes:

- 1. Perform groundwater monitoring.
- 2. Conduct an indoor air and sub-slab vapor assessment of the Xochimilco Mexican restaurant and the former One Love smoke shop buildings.
- 3. Perform high resolution site characterization and natural source zone depletion assessment in order to determine the extents of the underground gas plumes.
- 4. Perform vacuum-enhanced extraction interim remedial action.

Section 5: Compensation

Payment for this supplemented work will, as shown on Exhibit A is not to exceed \$375,000, bringing the total amount of the Agreement to \$759,502.

If you concur with this supplement and agree to the changes as stated above, please sign the appropriate spaces below and return to this office for final action.

Ву:_____

Ву:_____

Consultant Signature

City Manager

Date

EXHIBIT A

HIGH RESOLUTION SITE CHARACTERIZATION AND POST-REMEDIATION ACTIONS SCOPE OF WORK TIGER OIL WEST NOB HILL BLVD SITE, YAKIMA, WASHINGTON

Task 14—Project Management

Purpose:

Facilitate ongoing and consistent communication between the Washington State Department of Ecology (Ecology), City of Yakima (City), and Maul Foster & Alongi, Inc. (MFA) team to ensure consensus regarding site characterization, data interpretation, and remedy approaches, and compliance with the amended consent decree.

Scope:

MFA will participate in meetings and/or conference calls with Ecology, City, and City-identified individuals, as appropriate; and will schedule and coordinate with MFA staff, Ecology, City, and other appropriate parties to complete this scope of work. This task includes participation in monthly project status conference calls, and periodic face-to-face meetings; quarterly project progress reporting; budget management and invoicing; and responding to City and/or Ecology communications related to invoicing, budget tracking, and other requests.

Assumptions:

- Up to three project status meetings held in the Yakima area
- Project status conference calls will be held monthly

Deliverables:

• Quarterly Progress Reports (in letter format) for 2019 biennium (four [4] total reports)

Schedule:

- Activities will be conducted throughout the life of the change order associated with this scope of work
- Progress reports will be issued quarterly

Task 15—2019 Groundwater Monitoring

Purpose:

Assess the effectiveness of interim remedial actions that have been conducted at the site, and to support decision making regarding additional actions that may be needed to achieve a satisfaction of consent decree.

Scope:

This task includes:

- Perform fieldwork, laboratory analysis, and investigation-derived waste disposal in accordance with the Groundwater Monitoring Plan
- Complete data validation, interpretation, and reporting following each monitoring event

Schedule:

- Groundwater monitoring plan addendum will be issued within two weeks of notice-to-proceed
- The first monitoring event will be conducted within one month of notice-to-proceed; subsequent monitoring events will be conducted semi-annually thereafter

Assumptions:

 Assumes two (2) monitoring events (semi-annual sampling) consistent with the Groundwater Monitoring Plan • Draft revisions will be issued in electronic format; final revisions will be issued in electronic and hard copy format.

Deliverables:

• Semi-annual groundwater monitoring summary reports (two [2] total provided in letter report format consistent with prior reports)

Task 16—Indoor Air and Sub-Slab Vapor Assessment

Purpose:

Evaluate whether indoor air quality of existing buildings has been adversely impacted by the historical fueling operations at the site.

Scope:

MFA will conduct an indoor air quality evaluation within the Xochimilco Mexican restaurant and the former One Love smoke shop buildings. A sub-slab vapor assessment will also be conducted beneath the foundations of these buildings. Vapor assessment activities will be conducted in accordance with Ecology Publication No. 09-09-047, Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, as amended by Ecology Implementation Memorandum No. 14, Updated Process for Initially Assessing the Potential for Petroleum Vapor Intrusion.

Schedule:

- Sampling and analysis plan (draft) will be prepared in first quarter of 2019
- Fieldwork dependent upon sampling and analysis plan review/finalization timeframe and coordination with property owners/operators; anticipated second quarter of 2019
- Findings report (draft) will be issued within eight weeks of completion of fieldwork

Assumptions:

- Ecology will lead communications efforts with businesses/property owners.
- City will assist with coordinating building access.
- Two indoor air quality samples will be collected at each building via individually certified SUMMA canisters.
- Sub-slab assessment will be conducted via an installation of small holes using a hand drill in which a vapor pin will be installed for sample collection. Up to three soil gas samples will be collected at each building.
- Laboratory analyses for indoor air and soil gas samples will be analyzed on a standard 7business days turn-around-time (TAT).
- This task will be conducted separately from the light non-aqueous phase liquid (LNAPL) assessment task.
- Draft revisions will be issued in electronic format; final revisions will be issued in electronic and hard copy format.

Deliverables:

- Indoor Air and Sub-slab Vapor Assessment Sampling and Analysis Plan (draft and final revisions in report format)
- Indoor Air and Sub-slab Vapor Assessment Findings Report (draft and final revisions in technical memorandum format)

Task 17—High Resolution Site Characterization and Natural Source Zone Depletion Assessment Purpose:

Determine the extent of LNAPL distribution, evaluate its transport and storage zones and determine the potential for mobility and/or fluid recovery, and evaluate the potential efficacy of Natural Source Zone Depletion (NSZD) as a viable option for managing the remaining contamination at the site.

Scope:

MFA will subcontract Columbia Technologies to perform the high-resolution site characterization (HRSC) LNAPL and dissolved-phase assessment using laser-induced fluorescence (LIF), membrane interface probe (MIP), and hydraulic profiling tool (HPT) subsurface assessment technologies to characterize the site. Assessment activities will include:

- Assessment of the extent of residual LNAPL and dissolved-phase plume impact
- Assessment of the transport pathways and the degree of saturated phase degradation
- · Measurement of the LNAPL and dissolved phase plume concentrations and constituents
- Evaluate NSZD in the saturated and vadose zones
- Determination of LNAPL transmissivity
- Measurement of vadose degradation rates
- Evaluate the vapor phase degradation of the residual phase LNAPL
- Update the conceptual site model

Schedule:

- Fieldwork dependent upon sampling and analysis plan review/finalization timeframe; anticipated in fourth quarter of 2019
- Findings report (draft) will be issued within eight weeks of completion of fieldwork

Assumptions:

- City will assist with coordinating site access.
- Up to seven (7) transects of temporary borings will be advanced in the core area of LNAPL and dissolved phase plume to assess the hydrostratigraphy and soil permeability as well as delineate the LNAPL and dissolved phase contamination distribution at the site. Findings from the initial HRSC will inform subsequent locations for assessment of LNAPL transmissivity and NSZD.
- Up to 30 borings will be advanced via direct push drilling methodology. It is anticipated that the field phase of this assessment may take up to 8 days.
- Laboratory analyses for soil and groundwater samples will be analyzed on a 48-hour to 72-hour TAT to provide supplemental data for field assessments of LNAPL and dissolved-phase plume assessments.
- Draft revisions will be issued in electronic format; final revisions will be issued in electronic and hard copy format.

Deliverables:

• HRSC and NSZD Assessment Findings Report (in report format)

Task 18—Vacuum-Enhanced Extraction Interim Remedial Action (Optional)

Purpose:

Enhance/expedite attainment of groundwater cleanup levels through removal of LNAPL.

Scope:

MFA and applicable subcontractors will conduct up to three events of vacuum-enhanced LNAPL (i.e., free product) recovery (in situ bioslurping) if the HRSC assessment (Task 17) determines that fluid recovery is viable. Each event of LNAPL recovery will be spaced in 3 to 4-week increments. The LNAPL extraction will be conducted from existing monitoring wells located within the current and/or prior free product plume area. All extracted materials (groundwater and contaminants) will be transported to and disposed of at an appropriately permitted treatment/disposal facility.

Schedule:

• Dependent upon completion of Task 17; fieldwork anticipated in second or third quarter of 2019

Assumptions:

• Each event will be comprised of two extraction phases. Depending on the rate of the LNAPL recharge, the second extraction phase, within each event, may take place on the same day or the following day to allow the LNAPL to recharge to its maximum extent for additional extraction.

- Total extracted volume for each event will not exceed vacuum truck capacity (3,000 gallons).
- Draft revisions will be issued in electronic format; final revisions will be issued in electronic and hard copy (three) format.

Deliverables:

- Interim Remedial Action Work Plan/Sampling and Analysis Plan (in report format)
- Interim Remedial Action Report (in report format)

Task 19—Contingency

Purpose:

Provide funding to allow for addition and/or revision of tasks agreed to by Ecology, the City, and MFA.

Scope:

To be developed by Ecology, the City, and MFA, as warranted.

Schedule:

Additional activities may be conducted throughout the life of the change order associated with this scope of work

Assumptions:

• To be determined.

Deliverables:

• To be determined

EXHIBIT B ESTIMATED BUDGET W NOB HILL TIGER OIL SITE: HRSC AND POST-REMEDIATION PROFESSIONAL SERVICES

Task	Maul Foster & Alongi, Inc.				Culture states at any			.		
lask	Hours	Labor		Direct		Subcontractors			IUIAI	
14 Project Management	112	\$	18,300	\$	2,140	\$	-	\$	20,440	
Principal	66	\$	11,220		-		-	\$	11,220	
Senior Geologist	40	\$	6,600		-		-	\$	6,600	
Administrative Assistant	6	\$	480		-		-	\$	480	
Document Production	-		-	\$	300					
Travel	-		-	\$	1,840		-	\$	1,840	
15 Groundwater Monitoring 2019	196	\$	23,070	\$	6,500	\$	10,530	\$	40,100	
Principal	4	\$	680		-		-	\$	680	
Senior Geologist	8	\$	1,320		-		-	\$	1,320	
Project Geologist	134	\$	15,410		-		-	\$	15,410	
Project Chemist	28	\$	3,360							
Administrative Assistant	10	\$	800		-					
CADD/GIS	12	\$	1,500		-		-	\$	1,500	
Field Equipment	-		-	\$	6,000		-	\$	6,000	
Analytical Laboratory	-		-			\$	9,770	\$	9,770	
IDW Disposal Subcontractor	-		-			\$	760	\$	760	
Document Production	-		-	\$	500	Ť		\$	500	
16 Indoor Air and Sub-slab Vaport Assessment	156	\$	19,440	\$	3,800	\$	3,795	\$	27,035	
Principal	14	\$	2.380	Ċ	-		-	\$	2.380	
Senior Geologist	20	\$	3.300		_		-	\$	3,300	
Project Geologist	90	\$	10.350		-		-	\$	10.350	
Project Chemist	10	\$	1,200		-		-	\$	1,200	
Administrative Assistant	12	\$	960		_		_	\$	960	
Field Equipment	-	Ŷ	-	\$	3 300		_	\$	3 300	
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Principal	28	₽ \$	4 760	Ψ	0,755	Ψ	-	₽ \$	4 760	
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Project Geologist	16	¢ 2	1 0 2 0		-		-	¢	1 0 2 0	
Administrative Aggistant	10	¢	1,920		-		-	¢	1,920	
Administrative Assistant	12	Φ	900	¢	-		-	¢	900	
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CADD/GIS	10	Ф	2,000	¢	-			¢	2,000	
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HRSC Subcontractor	- 100	¢	-	¢	2 000	¢	12,738	\$ ¢	12,138	
Action (Optional)	122	Þ	15,000	Э	3,000	Э	12,708	Ъ	30,708	
Principal	4	\$	680		-		-	\$	680	
Senior Geologist	15	\$	2,475		-		-	\$	2,475	
Project Geologist	103	\$	11,845		-		-	\$	11,845	
Field Equipment	-	Ľ	-	\$	3,000		-	\$	3,000	
Vacuum Truck Extraction & Disposal	-		-	Ĺ		\$	12.708	\$	12,708	
Total Estimated Cost										
Contingency (15%)										
Grand Total \$										
Total Cost								·	., -	