October 29, 2019

Ms. Albiona Balliu
Sr Project Manager
City of Key West
1300 White Street
Key West, Florida 33040

SUBJECT: Proposal for a Voluntary Source Removal
College Road Affordable Housing Project
Stock Island, Key West, Florida, 33040

1.0 INTRODUCTION

Tetra Tech, Inc. (Tt) is pleased to present this proposal to the City of Key West (City) to prepare a Voluntary Source Removal for the College Road Affordable Housing project. The purpose of this scope is to outline the remedial measures necessary to remove the documented source of petroleum based soil contamination identified by Terracon Consultants, Inc. (Terracon). in the Template Site Assessment Report (TSAR), which was approved by the Florida Department of Environmental Protection (FDEP) Petroleum Restoration Program (PRP) on August 12, 2019. Terracon's suggested on-site remedy includes excavation of soils that exceed Residential Direct Exposure and Leachability Based Soil Cleanup Target Levels (SCTLs) established under Chapter 62-777, F.A.C. Table II. A full version of the FDEP approved Terracon TSAR can be furnished if requested or it is also available to download at no charge on the FDEP Oculus database.

It is our understanding that the subject property is proposed for redevelopment under the Florida Housing Authority under the College Road Affordable Housing Project. Based on the review of the conceptual site plan, the proposed development will consist of (3) raised three story multi-family residential structures with a total of 104 units. The conceptual plans included proposed: drainage, landscape, paved travel ways, parking, elevations, floor plans and various other pre-design components. It is anticipated that a portion

This proposal was prepared at the request of the City in prior discussions. Tt recommends the following scope of work for the Voluntary Source Removal (VSR).

PLEASE NOTE: It is possible that Tetra Tech or another entity may uncover additional areas of concern during the proposed Phase I and Phase II study. If warranted, these potential additional areas of concern will be identified to the City and addressed with additional scope and costing as

needed. However, this scope of work within this proposal was developed based on the FDEP PRP approved TSAR, and is limited to only the sources found within that document at this time.

2.0 VOLUNTARY SOURCE REMOVAL

2.1 Health and Safety Plan

Tetra Tech will prepare and employ an updated Site-Specific Health and Safety Plan (HASP) for the activities conducted at the subject site which complies with the Occupational Safety and Health Administration (OSHA) guidelines specified in 29 CFR 1910.120. The HASP will include information concerning: suspected contaminants to be encountered; effects of the suspected contaminants on humans; site history; a map of restricted site safety boundaries; required detection and protective equipment; personnel site authorization; decontamination procedures; severe weather procedures; visual and written directions for hospital emergencies; and other essential health and safety information. Dust, from the soil excavation will be monitored and corrective action measures will be in place before excavation activities begin (e.g., water for dust suppression). Additionally, the HASP will include specific information related to the excavation, backfill, grading, and restoration activities.

2.2 Permits

Tetra Tech has researched the City of Key West regulations to determine applicable permit requirements for this project. As needed, agency approvals or permits will be applied for and obtained prior to construction. Costs for permits are to be included in the contractor bids. It will be the responsibility of the contractor to obtain all necessary permits.

This subsection identifies standard permits, as generally required, to implement the specified remedy. In conjunction with each permit is an estimate of the lead-time required under normal conditions to obtain the permit.

Permit Type	Responsible Agency	Normal Lead Time
Well abandonment / Installation	SFWMD	2 weeks

2.3 Underground Utilities

Any surface, overhead, or underground structure impediments are to be identified following mobilization. Per the Underground Facility Damage and Prevention and Safety Act, Sections 556.101 – 556.111, F.S., prior to implementation of the planned excavation, the Sunshine One Call service will be contacted to perform a locate of the primary underground utilities (e.g., electric, telephone, water, sewer, gas) that service the subject properties. Underground work shall comply with Sections 553.60-553.64. F.S. A temporary water line exists within the limits of the excavation on its southwest side. It is anticipated that this line will need to be shut off and moved to an area outside of the footprint of the excavation presumably to the north along the property border adjacent to the fence line.

2.4 Well Abandonment

Prior to excavation, the following monitoring wells: MW-1, MW-2, MW-3 and MW-9 will need to be abandoned after pre-construction gauging is performed by Tetra Tech. The abandonment will be conducted by a licensed well driller and consist of filling the wells from bottom to top with

cement grout in accordance with Rule 62-532.500(4), F.A.C. The driller will be responsible for obtaining well abandonment permits, as necessary. The remaining monitoring wells in the vicinity of the construction activities will be marked and protected, as practicable, to avoid damage during construction activities.

2.5 Erosion and Sediment Pollution Control

Based on the relatively small footprint of the planned excavation and governing regulations, a SWPPP and coverage under the General NPDES Permit for Construction Activities may not be required. However, the following Erosion and Sediment Pollution Control measures, at a minimum, will be undertaken by Tetra Tech as Best Management Practices (BMPs):

- Installation of silt fences around the limits of excavation and any soil staging areas.
- Routine inspection and maintenance of silt fences.

Removal and disposal of soil erosion and sediment pollution control measures will be performed at the completion of site activities**.**

2.6 Site Preparation, Soil Excavation, Transportation, & Disposal

2.6.1 Site Preparation

The City will be responsible for removing any equipment, vehicles, or other items from the excavation and staging areas. In addition, we understand there are several trees that are proposed to be preserved and transplanted due to historical and or environmental value.

2.6.2 Soil Excavation

The excavation area will be white-lined during mobilization activities. Exclusion zones will be installed around the work area using barricades and temporary fencing. Barricades will be placed, in addition to industry-typical bright orange plastic mesh, to keep pedestrians and vehicular traffic out of the construction and buffer zones. This is a commercial area and the noise during construction activities is not anticipated to be a concern.

Due to the contaminant concentrations in the soils, methods of dust control suppression will be utilized (e.g., water truck or onsite source). A dust monitor will be utilized to collect readings and monitor potential exposure to workers or pedestrians during excavation activities and mobilization/demobilization. Air monitoring and dust control will be in effect with established action levels. Mitigation for dust control will require the use of water trucks or similar type equipment.

2.6.3 Implementation

The recommended on-site remedy includes removal and disposal of contaminated soils from the site. The soil will be excavated down to a maximum depth of 4 feet bls within (VSRP Drawings CR-04 an CR-05). Caution will be exercised for excavation activities to avoid damage to existing underground items (e.g., monitor wells, etc.). It is anticipated that a portion of the excavation will be done at the water table interface. When encountered, saturated soils will be staged adjacent to the excavation and allowed to gravity drain back into the excavated area.

2.6.4 Transportation and Disposal

The on-site remedy is anticipated to generate approximately 925 tons of petroleum contaminated soil for transportation to an approved landfill facility permitted to accept contaminated soil. Excavated soil will be direct loaded into dump trucks and it will be transported as non-hazardous

solid waste to the approved landfill for disposal. If possible, staging areas will be set up for clean fill and excavated soils to allow for expedited loading and unloading of haul trucks. The final weighing will be performed at the disposal facility. The transportation and disposal will be paid according to these weight tickets. The contractor is responsible for ensuring that contaminated material is not deposited along the truck hauling route. In the event that material is spilled, the contractor must take prompt action to remove the material from the impacted surface.

2.6.5 Site Restoration

This section identifies activities that will be associated with restoring the affected areas. In general, restoration will be to original lines and grades. All areas disturbed by the excavation activities will be restored/stabilized using permanent stabilization activities. It is anticipated that portions of the excavation area will be in future pavement or building structure areas. Therefore, vegetation and or seeding replacement is not anticipated. If requested by the City, previously vegetated areas within the limits of the excavation and the immediate surrounding area will be prepped, seeded (with Bahia grass seed) and/or mulched as needed following the completion of the excavation and backfilling activities. No surface water or subsurface water flow patterns will be changed**.**

2.6.6 Placement of Backfill

Once the required depth is achieved, the excavation will be backfilled with the use of clean imported fill in maximum lifts of 12" followed by vibratory compaction to achieve a finished grade to the existing ground surface. If the bottom of the excavation contains moist or saturated soils, these areas will be backfilled with #57 stone to achieve adequate separation from the water table. The clean fill will be obtained certified clean through due diligence with analysis of natural borrow material, located near the site. Prior to bringing the backfill on-site, two soil samples will have been taken from the off-site source of clean backfill, tested using expedited laboratory analysis, data reviewed, and source of fill approved as specified on VSRP Drawing CR-05. Compaction will be achieved as specified on Drawing CR-04. Compaction tests will be performed at a rate of one test per lift and results should be within an acceptable range. Sieve analysis shall be performed at a testing frequency of 1 test per 300 yd3.

2.6.7 Monitoring Well Replacement/Installation

Replacement monitoring wells, for those removed prior to implementing remedial measures, will be installed following site restoration. Wells will be replaced in the approximate location and installed using similar construction to the existing wells, if applicable. Based on the College Road Affordable Housing conceptual site plan, it may be necessary to shift well locations to not interfere with planned development and the future structure locations. The wells will be used to continue monitoring groundwater conditions following completion of the excavation. The driller will be responsible for obtaining appropriate installation permits, as necessary. See replacement monitoring well details on VSR Drawing CR-04. Tetra Tech will subcontract and oversee the monitoring well replacement activities.

2.6.8 Demobilization

Once the site is restored, demobilization will occur. The excavation equipment will be decontaminated before leaving the site**.**

2.6.9 FDEP Comments on VSR Work Plan

FDEP's review email dated October 18, 2019 on the VSR work plan approval outlined three comments for consideration. Below please find the comments and how Tetra Tech intends to address them:

1. Sidewall samples must be collected, especially as step-outs from SB-2, SB-5, SB-12, and SB-17.

Tetra Tech will collect samples at these locations. A total of 10 samples will be taken for the project, 5 in the main excavation area and 5 others at the MW-6 location.

2. MW-6 is outside of the excavation and contaminated. It should be addressed.

Tetra Tech will excavate around MW-6 and collect sidewall samples and replace the monitoring well.

3. Please note that PRP usually uses a 1.4 tons/cy for soil conversion, which would put the tonnage at about 770 tons. However, the Plan estimates 925 tons (or a 1.69 tons/cy conversion factor).

Tetra Tech believes this will have no bearing on the removal. Weight tickets will be collected and be documented in the Construction Completion Report.

Additionally, Tetra Tech will retain a surveyor to document the limits of excavation, the locations of sidewall samples, and the replacement monitoring wells.

3.0 POST-EXCAVATION MONITORING

3.1 Soil Sampling

As soils have been delineated, confirmatory samples will not be collected for the purposes of achieving Residential SCTLs. The limits of excavation identified in Drawings VSRP CR-03 and CR-04 will be used to accurately and clearly identify the areas of concern in the field. A completion report will be prepared following completion of field work. This report will document the actions taken, waste manifests, weight tickets, before-and-after photographs, and record drawings.

3.2 Post Excavation Groundwater Monitoring

After the completion of the excavation and reinstallation of the monitoring well network a post excavation monitoring program is required by the FDEP. The newly installed monitor well network will be quarterly monitored for a minimum period of one year following the post excavation activities. A post active Remediation Monitoring Groundwater Plan is included as Appendix A.

4.0 PROJECT SCHEDULE, FEE, AND LIMITATIONS

Tt is prepared to begin implementation of this project immediately upon receipt of authorization to proceed from the City. After receipt of authorization to proceed from the City, the Construction Completion Report will be submitted to the City within 20 business days of completion of field activities which includes time allotted for laboratory turn-around.

For this proposal, we have assumed that one electronic and one hard copy of the report will be prepared and submitted to the City.

Tt proposes to perform the scope of work described herein on lump sum basis in accordance with the terms and conditions of our current MSA with the City. The proposed cost to complete the

VSR is $283,381. A summary breakdown of our cost estimate to complete the scope of work is provided in Attachment B. For this proposal we have selected Pace Analytical Laboratories as the primary analytical laboratory. We have selected PDS as the drilling and excavation contractor.

Tt will keep the City abreast of anticipated changes, if any that may occur. We will not initiate additional work without your prior authorization. We appreciate the opportunity to submit this proposal and look forward to working with the City on this project. If you have any questions or require additional information, please feel free to contact the undersigned at your earliest convenience.

Respectfully Submitted,
Tetra Tech, Inc.

Dave Frodsham
Project Manager

City of Key West College Road VSR			Task 1 HASP(4), Well Abandonment (16), Soil Excavation(140), and Clean Fill Soil Sampling (16)		Task 2 Well Reinstallation (20) CCR		Task 3 Post Quarterly Monitoring 48 Reporting 80 Field work		Total	
Name	**Title**	**Unit Rate**	**Qty**	**Price**	**Qty**	**Price**	**Qty**	**Price**	**Qty**	**Price**
Tetra Tech Staff										
S. Ouellette	Sr Technical Professional I	$ 137.00	244.4	$ 33,483	26.0	$ 3,562	62.4	$ 8,549	332.8	$45,594
J. McGovern	Sr Technical Professional III	$ 195.00	13.0	$ 2,535	13.0	$ 2,535	-	$ -	26.0	$5,070
C. Warren	Technical Professional II	$ 126.00	5.2	$ 655	2.6	$ 328	2.6	$ 328	10.4	$1,311
S. McGahee	Sr. Project Manager	$ 210.00	-	$ -	-	$ -	-	$ -	-	$0
F. Martinez	Technical Professional I	$ 104.00	-	$ -	-	$ -	-	$ -	-	$0
A. McDonald	Sr Technical Professional III	$ 195.00	2.6	$ 507	1.3	$ 254	2.6	$ 507	6.5	$1,268
D. Frodsham	Sr Technical Professional II	$ 173.00	19.5	$ 3,374	31.2	$ 5,398	10.4	$ 1,799	61.1	$10,571
L. Boberg	Technician	$ 76.00	10.4	$ 790	-	$ -	2.6	$ 198	13.0	$988
B. Proctor	Sr. Division Manager	$ 235.00	2.6	$ 611	2.6	$ 611	-	$ -	5.2	$1,222
T. Froelich	Sr Technical Professional III	$ 195.00	5.2	$ 1,014	-	$ -	-	$ -	5.2	$1,014
J. Endicott	Technical Professional II	$ 126.00	-	$ -	-	$ -	104.0	$ 13,104	104.0	$13,104
$ -	$ -	$ -	-	$ -	-	$ -	-	$ -	-	$0
$ -	$ -	$ -	-	$ -	-	$ -	-	$ -	-	$0
			-		-		-			
Total Labor Cost			**302.9**	**$ 42,969**	**76.7**	**$ 12,688**	**184.6**	**$ 24,485**	**564.2**	**$80,142**
External Subcontractor										
PDS Excavation Contractor		$ 158,140.60	1.0	$ 158,141	-	$ -	-	$ -	1.0	$158,141
Driller Abandonment (PDS)		$ 3,050.00	1.0	$ 3,050	-	$ -	-	$ -	1.0	$3,050
Driller Reinstall (PDS)		$ 6,000.00	-	$ -	1.0	$ 6,000	-	$ -	1.0	$6,000
Laboratory Pace Analytical		$ 6,000.00	1.0	$ 6,000	-	$ -	-	$ -	1.0	$6,000
Surveyor		$ 8,000.00	1.0	$ 8,000	-	$ -	-	$ -		$8,000
Total External Subcontractor				**$ 175,191**		**$ 6,000**		**$ -**		**$181,191**
Travel										
R/T Airfare		$ 500.00	1.0	$ 500	-	$ -	-	$ -	1.0	$500
Mileage		$ 0.58	-	$ -	-	$ -	-	$ -	-	$0
Rental Car w/Fuel		$ 75.00	16.0	$ 1,200	2.0	$ 150	8.0	$ 600	26.0	$1,950
Misc. Travel Costs (gas, parking, tolls)		$ 50.00	2.0	$ 100	1.0	$ 50	8.0	$ 400	11.0	$550
Lodging		$ 311.00	16.0	$ 4,976	2.0	$ 622	8.0	$ 2,488	26.0	$8,086
Per Diem		$ 69.00	16.0	$ 1,104	2.0	$ 138	8.0	$ 552	26.0	$1,794
Total Travel Costs				**$ 7,880**		**$ 960**		**$ 4,040**		**$12,880**
Other Direct Costs / Rental Equipment/Laboratory										
Shipping		$ 75.00	-	$ -	-	$ -	4.0	$ 300	4.0	$300
Reproduction - B&W		$ 0.08	-	$ -	-	$ -	-	$ -	-	$0
Reproduction - Color		$ 0.42	-	$ -	300.0	$ 126	100.0	$ 42	400.0	$168
Misc. Equip & Supplies		$ 100.00	7.0	$ 700	-	$ -	10.0	$ 1,000	17.0	$1,700
Laboratory (Pace)		$ 1,750.00	-	$ -	-	$ -	4.0	$ 7,000	4.0	$7,000
TBD			-	$ -	-	$ -	-	$ -	-	$0
TBD			-	$ -	-	$ -	-	$ -	-	$0
TBD			-	$ -	-	$ -	-	$ -	-	$0
TBD			-	$ -	-	$ -	-	$ -	-	$0
TBD			-	$ -	-	$ -	-	$ -	-	$0
Total Other Direct Costs				**$700**		**$126**		**$8,342**		**$9,168**
Tetra Tech Owned Equipment										
			-	$ -	-	$ -	-	$ -	-	$0
			-	$ -	-	$ -	-	$ -	-	$0
			-	$ -	-	$ -	-	$ -	-	$0
			-	$ -	-	$ -	-	$ -	-	$0
			-	$ -	-	$ -	-	$ -	-	$0
		$0.00	-	$ -	-	$ -	-	$ -		
Total Tt Equipment				**$0**		**$0**		**$0**		**$0**
Grand Total				**$226,740**		**$19,774**		**$36,867**		**$283,381**