July 7, 2015

Mr. Mark Detterman
Alameda County Environmental Health Services
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: **Workplan - Soil and Groundwater Investigation**
Tidewater Business Park
4723 Tidewater Avenue, Oakland, California
PSI Project No. 575-872-1

Dear Mr. Detterman:

Please accept our submittal of the Workplan for Soil and Groundwater Investigation for the subject site dated July 1, 2015 and prepared by Professional Service Industries, Inc. Please refer to the attached report for details.

> I declare, under penalty of perjury, that the information and/or recommendations contained in the attached Workplan are true and correct to the best of my knowledge, without independently investigating or verifying the information contained therein.

If you have any questions regarding this report or any aspect of the project, please call Mr. Frank Poss with PSI at 510-434-9200 (x303).

Sincerely,

Mr. Morgan Muir
Property Owner
4723 Tidewater Avenue
Oakland, California 94601

c c : Mr. Frank Poss, PSI

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WORKPLAN - SOIL AND GROUNDWATER INVESTIGATION

TIDEWATER BUSINESS PARK
4723 TIDEWATER AVENUE
OAKLAND, CALIFORNIA

WORKPLAN - SOIL AND GROUNDWATER INVESTIGATION

TIDEWATER BUSINESS PARK
4723 TIDEWATER AVENUE
OAKLAND, CALIFORNIA

prepared for

Mr. Morgan Muir
4723 Tidewater Avenue
Oakland, California 94601

prepared by

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, California 94601
(510) 434-9200

July 1, 2015
575-872

TABLE OF CONTENTS

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION i

1.0 INTRODUCTION 1

2.0 SITE BACKGROUND 1

3.0 SUBSURFACE INVESTIGATION 2
- 3.1 SOIL BORINGS 2
- 3.2 SOIL CLASSIFICATION 2
- 3.3 GROUNDWATER SAMPLING 3
- 3.4 DECONTAMINATION PROCEDURES 4
- 3.5 LABORATORY ANALYSIS PROGRAM 4

4.0 REPORT PREPARATION 6

FIGURES

FIGURE 1: SITE LOCATION MAP
FIGURE 2: PROPOSED DRILLING LOCATION MAP

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

The information provided in this Workplan prepared by PSI, Project Number 575-872, is intended exclusively for Mr. Morgan Muir for the evaluation of groundwater contamination as it pertains to the subject site in Oakland, California at the time the activities were conducted. The professional services to be provided will be performed in accordance with practices generally accepted by other environmental professionals, geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface soil and groundwater sampling, there is no guarantee that the work conducted will identify any and all sources or locations of petroleum hydrocarbons or hazardous substances or chemicals in the soil or groundwater.

This Workplan is issued with the understanding that Mr. Muir is responsible for ensuring that the information contained in this report is brought to the attention of the appropriate regulatory agency. This Workplan has been reviewed by a geologist who is registered in the State of California and whose signature and license number appear below.

Professional Service Industries, Inc.

Brand Burfield, PG 6986
Project Geologist

Frank Poss
Department Manager
Principal Consultant

1.0 INTRODUCTION

PSI understands that the subject property consists of an approximately 14,092 square foot building on 1.13 acres in the Tidewater Business Park with an address of 4723 Tidewater Avenue, Oakland, California. As there are several parcels at the Tidewater Business Park, the subject property is defined as only the 4723 Tidewater Avenue property. The site is currently used as a light industrial business park. The location of the site can be found on Figure 1.

2.0 SITE BACKGROUND

The Tidewater Business Park is identified as a SLIC (Spills, Leaks, Investigation, and Cleanup) site by the Regional Water Quality Control Board (RWQCB). The designation is due to the presence of petroleum hydrocarbons found in composite soil samples collected in 1988. The 1988 soil sampling was conducted on the entire Tidewater Business Park, in which the subject property is a portion. Two of the five composite soil samples were collected from the subject property (TWBP1 and TWBP2). These soil sample locations can be found on Figure 2. The soil samples were collected from 1 to 3.5 feet below ground surface and were analyzed individually and as composite samples. The results of the analysis indicated metal concentrations below State of California hazardous waste criteria and volatile organic compound (VOC) and semi-volatile organic compound (SVOC) concentrations below detection limits. The Total Petroleum Hydrocarbon as Motor Oil (TPH-MO) concentrations were 80 milligrams per kilogram (mg/kg) and 527 mg/kg from the soil samples collected from TWBP1 and TWBP2, respectively. Due to the elevated concentration of TPH-MO, the Tidewater Business Park was designated as a SLIC site.

In a conversation with Mr. Mark Detterman of the Alameda County Department of Environmental Health (ACEHD), he stated that to obtain a NFA for only the subject property, a new SLIC site would need to be designated for the subject property. This would not release the responsibility of the SLIC designation for the remainder of the parcels of the Tidewater Business Park.

3.0 SUBSURFACE INVESTIGATION

This section describes the proposed methodology to conduct a soil and groundwater investigation at the site to investigate possible soil and groundwater impact at the subject property. The objectives of these sampling procedures are to establish protocols for conducting an investigation that will help assess the current soil and groundwater conditions at the site.

3.1 SOIL BORINGS

Prior to drilling, PSI will obtain a drilling permit from the Alameda County Department of Public Works (ACDPW), as well as complete Underground Service Alert (USA) notification. Six soil borings are scheduled to be advanced at the subject property. Three borings will be located along a railroad spur located at the front of the property, two borings will be located behind the building, and one boring will be located in the front of the building. The borings will be advanced to an expected depth of 10 to 15 feet below ground surface (bgs) to facilitate groundwater sample collection (groundwater is anticipated to be 6 to 10 feet below ground surface). The proposed drilling locations are presented in Figure 2.

A Geoprobe drill rig will be used for each of the borings and a State of California-licensed driller will provide the drilling services. Soil samples will be collected at 1, 2.5, 5, and 10 feet, and at first encountered groundwater. The borings will be advanced to approximately 5 feet below first encountered groundwater to facilitate the collection of a groundwater sample.

3.2 SOIL CLASSIFICATION

Soil will be described by a PSI professional and recorded on a field boring log for each boring drilled. The data recorded on the logs will be based on examination of soil samples retrieved and drilling conditions observed in the field. Boring logs will include information regarding the location of the boring, type of sampler used and geologic descriptions of materials encountered. Soils will be classified in general accordance with the Unified Soil Classification System. Other information to be recorded on the logs will include indications of contamination and the occurrence of groundwater. Field screening of collected soil samples for organic vapors will be performed using a PID. Organic vapor measurements will be recorded on standard field forms. All soil samples will be submitted to the laboratory; however, only one soil sample per boring will be analyzed. The soil samples selected for analyses will be based on PID readings, olfactory evidence, and visual observations. The sample with what appears to be the highest impact from each boring will be scheduled for analyses. If a boring has no sample that indicates impact, the sample collected from one foot below grade will be chosen for analyses.

3.3 GROUNDWATER SAMPLING

A grab groundwater sample will be collected from each of the borings using disposable polyethylene tubing lowered through the drill stem. Groundwater samples will be collected into lab-supplied preserved containers using positive displacement and a check valve. If

depth to groundwater or slow recharge inhibits the collection of groundwater samples using this method, temporary casing will be installed in the borings.

Following groundwater sample collection, the samples will be logged on a chain-of-custody record, placed in a chilled ice chest, and transported to the laboratory for analysis. Sample preservatives will be used as instructed by the analytical laboratory. All transportation and handling of the groundwater samples will follow chain-of-custody protocol.

After groundwater samples are collected, soil borings will be backfilled with neat cement mixed at a ratio of 5 gallons of water per 94-pound sack of cement.

3.4 DECONTAMINATION PROCEDURES

Decontamination procedures will be implemented to maintain sample integrity and to prevent cross-contamination between sampling locations. All re-usable sampling equipment will be cleaned prior to use at a new sampling location. Equipment to be decontaminated includes:

- Stainless-steel drilling and sampling equipment

Soil and water from equipment cleaning and drilling activities will be stored on site in individually labeled 55-gallon drums. Disposition of the soil and water will be determined upon receipt of laboratory analytical results of the soil and water samples.

3.5 LABORATORY ANALYSIS PROGRAM

The soil and groundwater samples collected during this investigation will be submitted to a State of California Department of Health Services certified environmental laboratory.

The selected samples will be analyzed for the following constituents:

- Total Petroleum Hydrocarbon Speciation (TPH-Speciation) according to EPA Method 8015M
- Volatile Organic Compounds (VOCs) according to EPA Method 8260.
- Semi-Volatile Organic Compounds (SVOCs) according to EPA Method 8270
- CAM Metals (17 Metals) according to EPA Method 6010.
- Polychlorinated Biphenyls (PCBs) according to EPA Method 8081

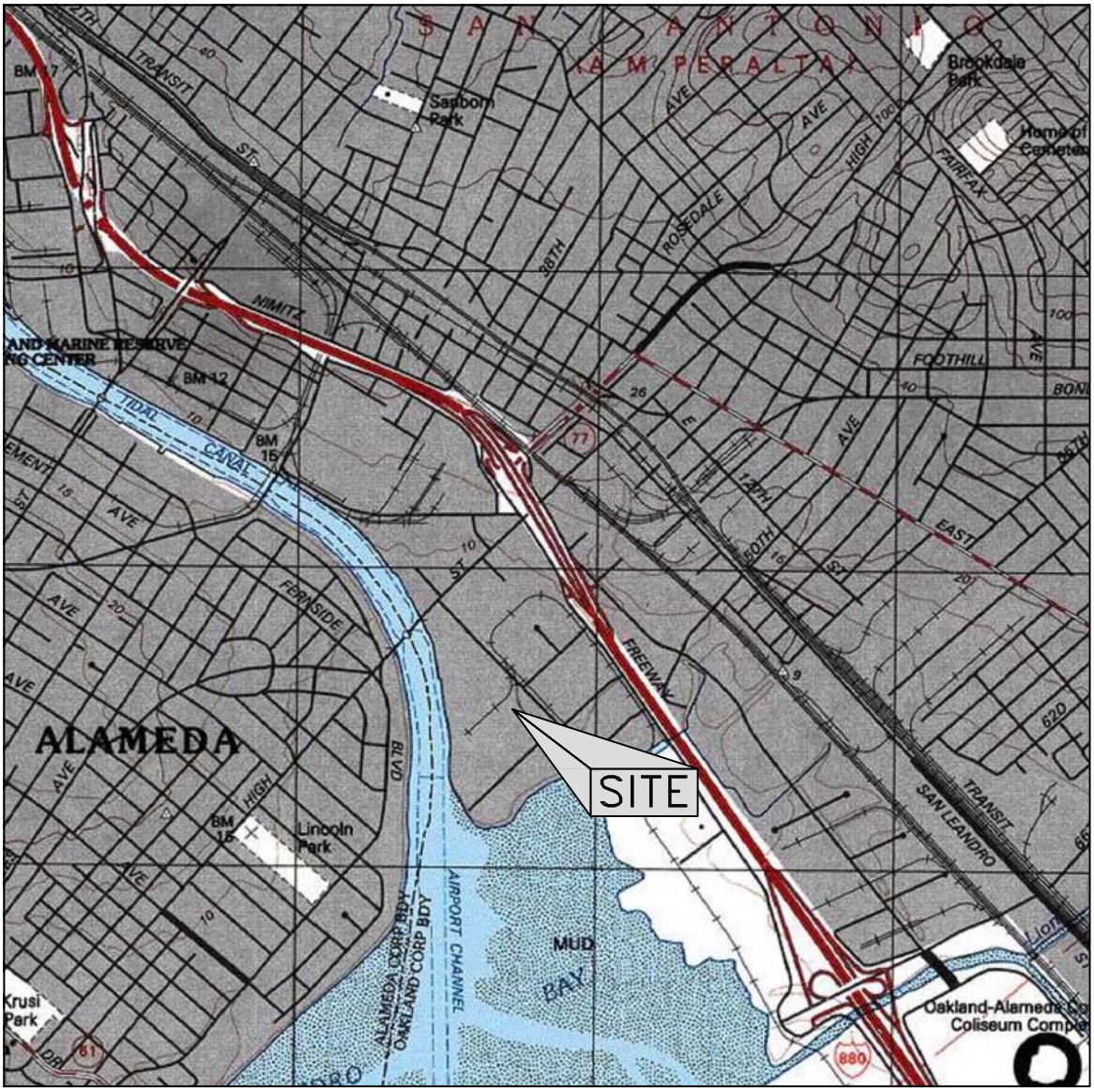
As stated earlier, all groundwater samples will be analyzed for the entire analytical suite. One soil sample selected from each of the borings will be analyzed for TPH-Speciation. If TPH-Speciation results in no detections, no additional analyses will be performed. If detectable concentrations of TPH are identified, the remainder of the analytical suite will be analyzed for that sample. The only exception is that the one-foot soil sample from each of the borings drilled along the railroad spur will be analyzed for metals and PCBs.

4.0 REPORT PREPARATION

Upon completion of the site investigation outlined in this Workplan, a report will be prepared presenting the investigative methodology implemented, findings, and conclusions for the subject site. The reports will include the following elements:

- Title sheet,
- Signature page,
- Table of contents,
- Investigative summary,
- Introductory narrative of the project,
- Investigative methods,
- Investigative results and field observations,
- Data evaluation and discussion,
- Remedial activity summary,
- Tables and Figures,
- Summary table (s) indicating laboratory results,
- Copies of original laboratory documentation, including analytical methods, contaminant concentrations, and detection limits,
- Field procedure forms, and chain-of-custody records,
- Conclusions, and
- Recommendations.

FIGURES



REFERENCE:
U.S.G.S. OAKLAND EAST, CALIFORNIA, 7.5 MINUTE SERIES TOPOGRAPHIC MAP, DATED 1997.

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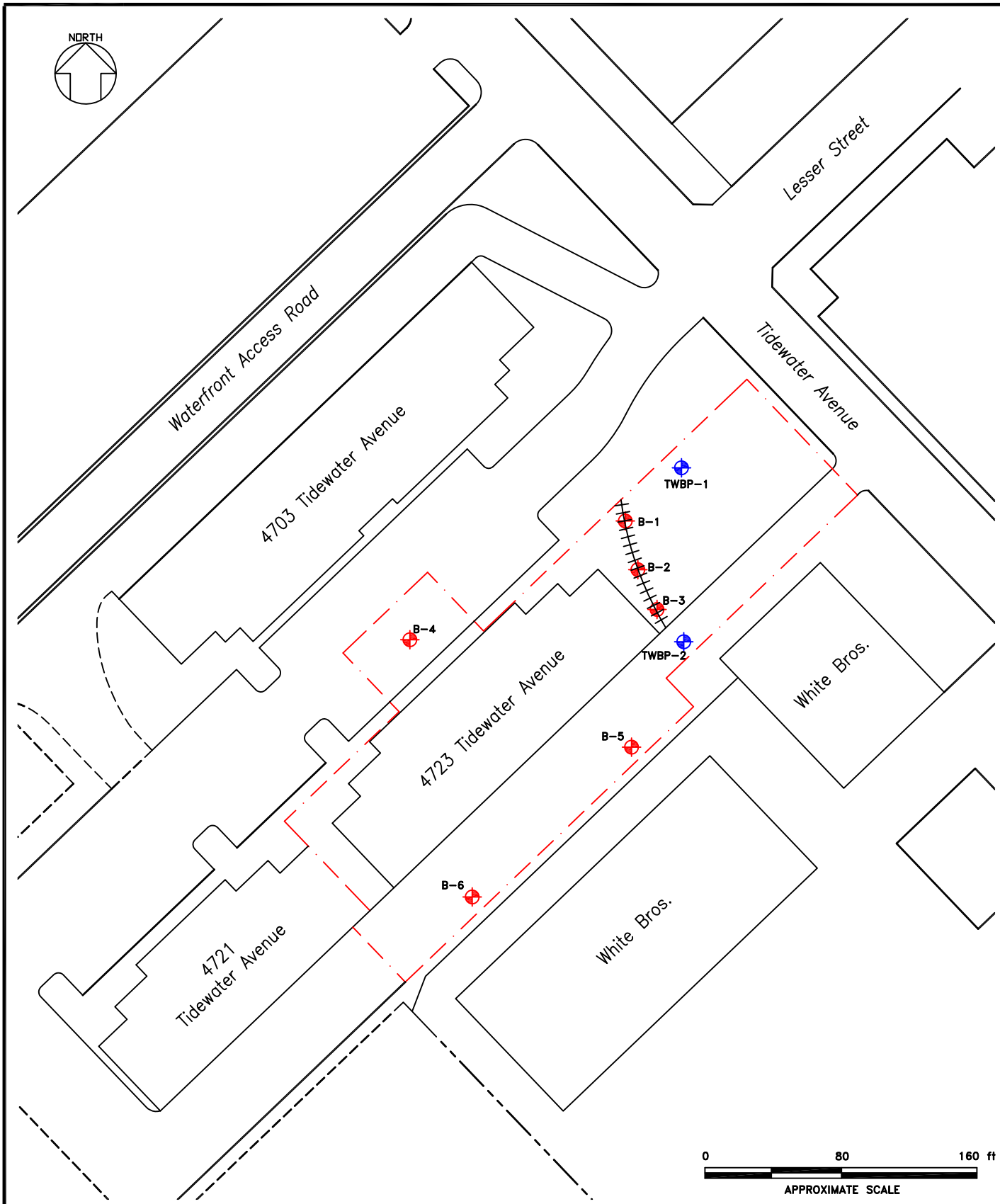
Project Name:	Drawn By:	Date:	File No.:	Figure No.:
MORGAN MUIR *4723 TIDEWATER AVENUE, OAKLAND, CALIFORNIA*	S.R.	7/15	872-001	1
Title: SITE LOCATION MAP	**Approved By:** F.P.	**Project No.:** 575-872		



LEGEND

- SUBJECT PROPERTY BOUNDARY
- B-6 PROPOSED BORING LOCATION
- TWBP-2 PREVIOUS SOIL SAMPLE LOCATION

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Project Name:	Drawn By:	Date:	File No.:	Figure No.:
MORGAN MUIR *4723 TIDEWATER AVENUE, OAKLAND, CALIFORNIA*	S.R.	7/15	872-002	2
Title: SITE PLAN	**Approved By:** F.P.	**Project No.:** 575-872		