THE CONSULTING GROUP

ENVIRONMENTAL, GEOLOGICAL, ENGINEERING AND HEALTH & SAFETY CONSULTING & PROGRAM MANAGEMENT

WORKPLAN

for

Material Sampling, Analysis, Profiling And Disposal
Niles Blvd. Street and Sidewalk Renovation Project
City of Fremont, California

prepared for

City of Fremont - Public Works Department
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Niles Blvd. Street and Sidewalk Renovation Project
City of Fremont, California

prepared for

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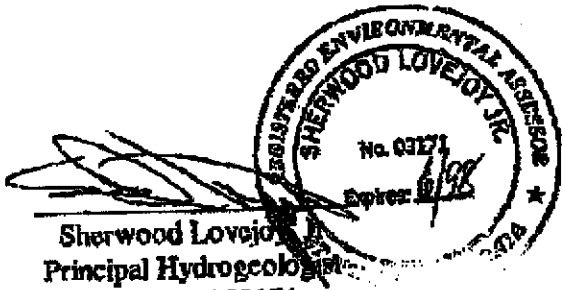

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WORKPLAN

MATERIAL SAMPLING, ANALYSES, PROFILING AND DISPOSAL, NILES BLVD. STREET AND SIDEWALK RENOVATION PROJECT, FREMONT, CALIFORNIA

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1.0 - INTRODUCTION

1.1 - INTRODUCTION

The Consulting Group (TCG) has been contracted by the City of Fremont - Development & Environmental Services Department (City) to perform investigative sampling and analysis prior to street and sidewalk renovation. This project is the renovation of the streets and sidewalks in downtown Niles. This workplan is being prepared in response to requirements of the City of Fremont - Fire Department (COF-FD). The workplan will be sent to the COF-FD for their review and approval.

1.2 - SITE BACKGROUND

During the removal of roadbase material along the northeast side of Niles Blvd., the general contractor, Granite Construction, collected samples of roadbase for analysis for oil & grease (O&G) and total lead (tPb) in order to meet landfill requirements for the material. The sample results indicated that the roadbase material contained both O&G and tPb at elevated concentrations.

The City then collected 11 samples from the same length of excavation for confirmation analysis for O&G and lead. The samples were composited into three composites (CF-N #1 - 4, CF-N #5-8, and CF-N #9-11) and analyzed for O&G and tPb. The results (shown in Table 1) of the composite analyses indicate that O&G ranged from 560 parts-per-million (ppm) to 2300 ppm., while tPb ranged from 9.9 ppm to 180 ppm..

Based on these composite laboratory results, the individual samples that made-up the composite samples were analyzed. O&G ranged from 96 ppm to 1100 ppm, while tPb ranged from 15 ppm to 350 ppm.. The composite samples that exceeded 50 ppm[1] tPb were then analyzed for soluble lead (sPb). The results of sPb analyses indicated that it ranged from 5.9 milligrams/liter (mg/L) and 7.3 mg/L. Both these results are above the STLC action level. The individual samples (those that

1 5 ppm represents the soluble threshold limit concentration (STLC) for lead when determining whether or not a waste is hazardous. 50 ppm, when analyzing by the total threshold limit concentration (TTLC) procedures, is the trigger level for analyzing a sample for soluble lead using the STLC procedures (WET test).

exceeded 50 ppm on the TTLC analysis) were then analyzed for sPb. The results indicated that sPb ranged from 1.7 mg/L to 85 mg/L. All but one sample exceeded the STLC action level.

Based on these laboratory results, TCG performed pothole sampling at five locations along an excavated portion of the street to collect samples of the native soil for O&G and tPb analysis. The results (shown in Table 2) indicate that O&G was below method detection limits (MDLs) in all five samples. Results for tPb ranged from 8.2 ppm to 98 ppm. The sample that exceeded 50 ppm, using TTLC procedures, was analyzed for sPb, using STLC procedures. The result of this analysis was 2.5 mg/L, which is below the STLC action level.

A meeting was held with the City, TCG, and COF-FD to discuss the results of sample analyses and how to proceed with the street and sidewalk renovation project. It was determined that more in-depth sampling was going to be required to determine if the conditions found in the initial sampling were prevalent across the entire project area. This workplan addresses the characterization of the entire project area.

1.3 - SITE DESCRIPTION

The project is located on Niles Blvd. The project area extends approximately 3,100 lineal ft from Niles Underpass to Sullivan Underpass. The project scope is to remove selected portions of the street and the sidewalks on both sides of the street.

STLC

2.0 - SCOPE-OF-WORK

2.1 - INTRODUCTION

Pb is the compound of concern for this project. This concern is both from a construction health & safety standpoint as well as from a potential disposal standpoint if the roadbase material is excavated from its present location. A health & safety plan (HASP) will be prepared for the excavation and removal portion of the project and will be on-site during these operations.

The overall goal of the sampling and analysis tasks is to determine if:

1. the road base is a hazardous waste over the entire project area or only select areas; and
2. If the roadbase is hazardous, can it be treated and left in place or does it need to be removed and disposed of a regulated waste.

2.2 - SCOPE-OF-WORK

2.2.1 - Health & Safety Plan

A HASP will be prepared as required by the Occupational Safety and Health Administration (OSHA); Title 29 of the Code of Federal Regulations (29 CFR); California OSHA (Cal-OSHA); Title 8 of the California Code of Regulations (8 CCR); and DTSC. It will be prepared for all phases of material handling work. Updates to the HASP will be made as the project evolves.

2.2.2 - Pothole Sampling and Analysis

This task is designed to collect a sufficient number of samples to adequately characterize the aggregate quality of the roadbase material.

The length of the project is approximately 3,100 lineal ft. The average width of the streets is 64 ft. The square footage of the project is 198,400 ft^2. We have determined a potential roadbase removal volume of 8 inches in depth across the project area. Using this depth, the cubic footage of material that could be removed is 132,928 ft^3. The cubic footage correlates to 4,923 yd^3 of roadbase material

associated with this sampling area.

The sampling and analysis approach is to collect a set of 4 samples (composite group), each sample from a distinct sampling location, within a grid block representing approximately 200 yd^3 of slag material. This calculates to 25 composite groups made up of 100 samples. The grid blocks will be uniform., having a dimension of 64 ft wide by 126 ft long.

The samples will be collected from approximately 6 inches below grade in a 1 ft by 1 ft pothole that will be opened up using a jack hammer and a backhoe. The samples will be collected, directly from the pothole after scraping the initial 4 to 6 inches, in 4 ounce glass jars. The jars will be sealed, labeled with a location designation and a composite group designation, and refrigerated for transport under strict chain-of-custody (COC) procedures to ChromaLab, Inc. of Pleasanton, California, a California-certified laboratory (ChromaLab).

Each composite group will be composited, by the laboratory, by removing a small amount of material from each sample container, to make one composite sample. The four individual samples that made up the composite will be saved after compositing in case there is a need to analyze them on an individual basis. The composite sample will be analyzed for total lead (Pb) using the CAM TTLC procedures. The samples will be analyzed on a standard 1-week turnaround basis[2].

The results of the tPb analyses will be reviewed and a decision will be made as to whether or not STLC analyses are necessary. The determining factor will be the TTLC and STLC action levels. Typically if a compound concentration is greater than 10 times the STLC action level when analyzed by the TTLC procedure then the STLC procedure will be performed. If the decision is made to run STLC analyses, the laboratory, using the same procedures for compositing as described above, will utilize the same set of samples for compositing and analysis. No additional metals beyond those analyzed for TTLC will be analyzed for during this program.

2.2.3 - Material Profiling and Management

Once the analytical results are received, TCG will review them and determine what the next step should be. We will look at the results in relation to the TTLC and STLC action levels, to alternative technologies for stabilization and solidification, and the local landfill requirements to determine how

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2 The City may choose to expedite that analysis to 24-hr or 48-hr rush turnaround.

the material should best be handled. Once this review is done, we will present options to the City on how to proceed with handling the roadbase material.

2.2.4 - On-Site Supervision During Materials Handling and Removal

TCG will provide on-site supervisory services to the City. We will provide a crew to monitor site activities, maintain health and safety requirements and document all work performed. If material is removed from the site, we will also manage the documentation that must accompany all material leaving the site and ensure its completion.

2.2.5 - Final Report Preparation

Once all field work and laboratory work is completed, TCG will prepare a technical report that describes the work performed, the results of analytical testing and documents material treatment and/or disposal. The report will be prepared in draft for the City's review and comment. Once comments are received, TCG will incorporate, where appropriate, these comments and prepare a final report for the City that can be presented to COE-FD, as well as act as permanent documentation of the work performed.

2.3 - Visual Inspection And Confirmatory Sampling And Analysis

Since the condition of the roadbase material has not been determined it is not clear whether or not confirmatory sampling beneath any excavations will be necessary. Given this, TCG has prepared a description of work for this task in the event it becomes necessary. This task will be needed if any excavations are performed to remove roadbase/slag material as was the case in the first phase of street reconstruction.

Once roadbase material[3] has been removed, TCG will perform visual inspection and confirmatory sampling and analysis. The visual inspection will consist of confirming that the roadbase material has been removed and the native soil is evident in the bottom of the excavation. Areas where any roadbase material is evident will be further excavated to the native soil.

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3 This sampling program is designed for only those areas where hazardous levels of lead have been found in the roadbase requiring its removal. Areas where roadbase is not hazardous will not be subject to this program.

The sampling approach will be to collect one composite group (4 samples per group), each sample from a distinct sampling location, within a grid block representing 200 yd^3 of native soil. The grid block for this protocol assumes an average thickness of native soil of 6 inches.

The samples will be collected from approximately 6 inches below grade in a 1 ft by 1 ft pothole that is opened up using plastic or plastic-coated hand trowels. The samples will be collected by scraping the material and placing it into 4 ounce glass jars. The jars will be sealed, labeled with a location designation, and a composite group designation, and refrigerated for transport under strict COC procedures to ChromaLab.

The laboratory will perform the same compositing procedures as used in the initial pothole sampling task and the samples will be analyzed for tPb using TTLC procedures. The samples will be analyzed on a 24-hour rush turnaround basis in order to keep project moving and reduce standby time..

The results of the rush TTLC analyses will be reviewed and a decision will be made as to whether or not STLC analyses will be performed. The protocol will be the same as the pothole sampling task.

The results of both the visual inspection and the analyses will be reviewed to determine if the slag material has adequately been removed from the excavation areas. If the analyses indicate that there may be Pb left in the native soil that exceed the TTLC or STLC action levels, we will, with the City, determine the most prudent approach to additional work that may be required.

2.4 - Material Profiling And Disposal

The intent of this task is to remove the roadbase material and to handle it according to State and Federal requirements. At this time, we do not know if this will mean the removal and disposal or treatment. If disposal becomes necessary TCG will work with BFI's landfills (Vasco Road Landfill, a Class III municipal waste landfill, located in Livermore, California, or Keller Canyon Landfill, a Class II "designated" waste landfill, located in Pittsburg, California), Forward's Class II "designated" waste, located in Manteca, California, and CWMI's Kettleman Hills Class I hazardous waste landfill as the potential destination(s) of the roadbase material, provided it meets their acceptance criteria.

Once the laboratory results are available and have been reviewed, and it has been determined that disposal of material is required, we will work with the disposal facilities to determine the acceptability of the slag material into the facilities. Once we have determined which landfill facility is the

appropriate place for the disposal of the slag material we will work with the specific facility to determine the documentation and transportation requirements.

Once the slag material has been accepted by a facility, we will prepare the necessary tracking documentation and supervise the loading and transport of the slag material from the project site to the disposal facility. The roadbase material will be excavated and placed directly in trucks for transport to the selected disposal facility. There will be no double handling or temporary storage of this material.

3.0 REFERENCES

California Code of Regulations; Title 8; Department of Industrial Relations - California Occupational Safety and Health Regulations (Title 8).

California Code of Regulations; Title 22; Social Security; Division 4: Environmental Health and Division 4.5: Chapter 11: Identification of Hazardous Waste; article 3: Characterization of Hazardous Waste (Title 22).

Code of Federal Regulations; Title 29; part 1910: Occupational Safety and Health Standards (29 CFR).

Code of Federal Regulations; Title 40; part 261; subpart B - Criteria for identifying the Characteristics of Hazardous Waste and for Listing Hazardous Waste, and subpart C - Characteristics of Hazardous Waste (40 CFR).

Designated Level Methodology for Waste Classification and Cleanup Level Determination; California Regional Water Quality Control Board; Central Valley Region (Marshack Document).

U. S. EPA; *AGGREGATE HANDLING AND STORAGE PILES*; pp. 11.2.3-1 through 11.2.3-5; September 1988

TABLES

Table 1 - Oil & Grease, Lead, and Organochlorine Pesticide Analytical Results (6 inch depth)
Niles Blvd. Improvement Project
TCG Project #980202

Compound	Sample #										
	CF-N #1	CF-N #2	CF-N #3	CF-N #4	CF-N #5	CF-N #6	CF-N #7	CF-N #8	CF-N #9	CF-N #10	CF-N #11
O&G (ppm)	97	410	96	650	ND	480	1100	110	110	220	280
Lead (ppm)	120	350	86	42	15	350	160	110	NA	NA	NA
O-P (ppb)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Test (mg/L)	8.1	5.8	85	NA	NA	25	6.8	1.7	NA	NA	NA

Notes: Shaded = composite results; O&G = oil & grease, O-P = organochlorine pesticides; --- = missing result; NA = not analyzed for; ND = not detected (above method detection limit); bold = >10 X STLC (50 ppm lead), using TTLC Analysis; underline = >100 ppm threshold (O&G); ***bold italics*** = > ***STLC, using STLC Analysis.***

Table 2 - Oil & Grease and Lead Analytical Results (3 foot depth)
Nifes Blvd. Improvement Project
TCG Project #980282

Compound	Sample #				
	#2	#6	#7	#10	#11
O&G (ppm)	ND	ND	ND	ND	ND
Lead (ppm)	8.2	98	9.5	11	9.6
Wet Test (mg/L)	NA	2.9	NA	NA	NA

Notes: O&G = oil & grease, NA = not analyzed for; ND = not detected (above method detection limit); bold = >10 X STLC (50 ppm lead).