global environmental solutions

NW Lake Street Investigation Work Plan

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NW Lake Street Investigation Work Plan

Prepared for:

City of Portland

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.

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CONTENTS

ACRONYMS

ADEC	Alaska Department of Environmental Concentration
BFR	Bureau of Fire and Rescue
bgs	Below Ground Surface
CAP	Columbia American Plating
CMS	Container Management Services
COIs	Contaminants of Interest
DEQ	Department of Environmental Quality
DQO	Data Quality Objectives
EPA	Environmental Protection Agency
GSE	Grouping and Segregation Error
IS	Incremental Sampling
IMACC	IMACC Corporation
JSCS SLVs	Joint Source Control Strategy Screening Level Values
MLS	Mid Lake Street
NLS	North Lake Street
PAHs	Polynuclear aromatic compounds
PCBs	Polychlorinated biphenyls
PID	Photo-ionization Detector
QAPP	Quality Assurance Project Plan
RBC	Risk Base Concentration
RSD	Relative Standard Deviation
SLS	South Lake Street
SLV	Screening Level Value
SVOC	Semi-Volatile Organic Compound
TPH	Total Petroleum Hydrocarbon
USCS	Unified Soil Classification System

1. INTRODUCTION

SLR International Corporation (SLR), on behalf of IMACC Corporation (IMACC) the owner of real property located at 3000 NW St. Helens Road, has prepared this NW Lake Street Investigation Work Plan (Work Plan) to further investigate potentially impacted soils along NW Lake Street (Site), previously identified during source investigation and source control activities conducted by the City of Portland ("City") in the east-central branch of the Outfall Basin 18 stormwater conveyance system.

One purpose of the City's 2010 source investigation sampling event was to investigate a potential erodible soils pathway of PCBs, pesticides, and metals to the east-central sub-basin conveyance system. The investigation results, which are reported in City of Portland Outfall Basin 18 East-Central Subbasin Source Investigation Report, May 2012 ("City Report"),[1] seemed to confirm the potential pathway via impacted surficial soils being tracked by vehicle and/or stormwater flow from NW Lake Street to the City storm line on NW 35th Avenue.

Although select results from NW Lake Street soil samples exceeded stringent JCSC SLVs for certain analytes and could therefore pose a potential concern for stormwater migration to the Portland Harbor Superfund Site; they appear to not likely be a human health risk. Comparison of detectable results of metals, pesticides, and PCBs to State of Oregon DEQ Risk Based Concentration (RBC) screening levels for soil ingestion, dermal contact, and inhalation, indicate that all concentrations are below occupational screening levels. Therefore, further investigation of the extent of the impact to NW Lake Street surficial soils is warranted only to address their potential impacts to stormwater, not human health.

This Work Plan includes an overview of findings from the source investigation and source control activities conducted by the City and the proposed incremental sampling program.

[1] A copy of the City Report is attached as Appendix A.

2. SITE BACKGROUND

2.1 SITE DESCRIPTION

NW Lake Street is an unpaved public roadway located in the Guilds Lake industrial area of Portland, Oregon. The road originates at Northwest 35th Avenue and travels approximately 450 feet southwest; where it terminates at a retention wall below St. Helens Avenue. It is bounded by IMACC (3000 NW St. Helens Road) and Former Columbia America Plating (3003 NW 35th Avenue) facilities on the north/northwest and to the South/Southeast by Harris Rebar (2727 NW 35th Avenue) and PDX Auto Glass (2700 NW St. Helens Road). BNSF railroad tracks bisect Lake Street and adjacent properties.

2.2 NEIGHBORING PROPERTIES

IMACC Property

IMACC leases its property to Container Management Services, LLC (CMS). CMS operates a container reconditioning facility west/northwest of the Site. Additional operations at the IMACC Property include steel drum recycling and storage.

Former Columbia American Plating (CAP)

The former CAP facility was a medium-sized commercial metal plating facility that performed several kinds of electroplating. It bounds the Site to the west/northwest. In 2003, the City's Bureau of Fire and Rescue (BFR) closed the CAP facility because the facility was deemed unsafe. The US Environmental Protection Agency (US EPA) and the Oregon Department of Environmental Quality (DEQ) participated in the clean-up of the former CAP facility.

Current operations include storage, sale and distribution of petroleum products. The outside area is used for parking for Carson Oil vehicles.

Harris Rebar

Harris Rebar operates a rebar fabricating facility southeast of the Site. Harris Rebar is owned by Nucor.

PDX Auto Glass

PDX Auto Glass operates a mobile auto glass repair facility southeast of the Site.

BNSF Right of Way

BNSF maintains railroad tracks which bisect Lake Street, as well as the IMACC Property. Based on interviews with nearby businesses, the railroad line appears to be relatively inactive.

2.3 HISTORICAL SAMPLING

The 2012 City Report identified the Site as being part of the east-central sub-basin of Basin 18. The drainage area for this sub-basin has been identified as having upland sources to the basin of polychlorinated biphenyls (PCBs), pesticides, and certain metals based on inline investigations conducted by the City in the east-central sub-basin between 2003 and early 2009.

As part of the on-going investigation of the sub-basin; the City, in September 2010, collected four composite surface soil samples (0 – 2 inches below the ground surface) from the NW Lake Street right-of-way. Samples were collected from the following areas:

- *West end of Lake Street*
- *Lake Street at Railroad*
- *East of Railroad*
- *East end of Lake Street*

Additionally, fourteen (14) solids samples were collected from four catch basins along NW 35th Avenue and near the Site; to investigate the possibility that soil tracked from the Site is a potential source of contaminants to a stretch of NW 35th Avenue where runoff discharges to adjacent catch basins within the east-central sub-basin.

Figure 6 of the City Report shows the locations and results of the prior sampling activities at the Site. Tabulated results are presented in Tables 1 through 3.

According to the City Report, the following constituents exceeded Portland Harbor Joint Source Control Strategy Screening Level Values (JSCS SLVs):

Metals

Lead was detected above JSCS SLVs in each of the four surficial soil samples collected from the Site. The following metals exceeding JSCS SLVs were detected in catch basin samples: cadmium, chromium, lead, mercury, nickel, and zinc.

PCBs

Concentrations of Total PCBs, for both Aroclors and Congeners, were detected above JSCS SLVs in soil and catch basin samples.

Pesticides

The following pesticides were detected above JSCS SLVs in select soil samples and catch basin samples: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Total DDx, dieldrin, heptachlor, and Total chlordane.

2.4 ANALYSIS OF DATA

According to the City, the investigation results seem to demonstrate a complete erodible surficial soils pathway of PCBs and pesticide impacted soils from the Site to the Outfall Basin 18 east-central sub-basin via vehicle tracking on Lake Street and/or stormwater migration through the City's stormwater line on NW 35th Avenue.

Although select results from prior soil samples exceed stringent JCSC SLVs for certain analytes and could therefore pose a potential concern for stormwater migration to the Portland Harbor Superfund Site; they appear to not be a human health risk. Comparison of detectable results of metals, pesticides, and PCBs to State of Oregon DEQ Risk Based Concentration (RBC) screening levels for soil ingestion, dermal contact, and inhalation, indicate that all concentrations are below occupational screening levels.

In addition, the conclusion is based on four discrete data points and one duplicate sample collected on the Site. A more comprehensive analysis of surface soils should involve incremental sampling that is representative of the entire Site. Based on the results of the incremental sampling, remedial alternatives, if any, can be developed and evaluated. The incremental sampling workplan outlined in section 3 of this report develops such an analysis.

3. INCREMENTAL SOIL SAMPLING

This section discusses the proposed sample locations, sampling methods, contaminant of interest (COIs), analytical detection limits, and data quality considerations.

The primary objectives of this proposed sampling effort are to characterize the potential impacts to surficial soils on the Site. Because impacts to Site soils were not likely due to localized activities occurring directly on the Site, but rather the result of migration and tracking from other sources; sampling will focus on soils consisting of the upper 1.5 feet of surficial soils.

3.1 INCREMENTAL SAMPLING

Incremental sampling (IS) will be used to further characterize soil conditions along a portion of the Site for each decision unit. IS involves the unbiased collection of multiple relatively uniform aliquots of soil throughout the decision units, and combining these aliquots into a single mass. Replicate samples from the composite are then submitted to the laboratory for analyses. When compared to a discrete sampling approach, IS has the potential to give more reliable and reproducible central tendency concentration estimates for a particular decision unit with fewer overall samples.

DECISION UNITS

The decision units established for the IS program will be based on determining the potential soil impacts in the areas of the Site sampled during the previous investigation conducted by the City of Portland. Figure 2 shows the approximate boundaries of the three (3) proposed decision units. Each of these decision units is further discussed below:

South Lake Street (SLS) Decision Unit

The South Lake Street decision unit (SLS) includes the area in which surficial samples *West End of Lake Street* and *Lake Street at Railroad* were collected in 2010. This unit extends from St. Helens Road to the railroad tracks.

Mid Lake Street (MLS) Decision Unit

The decision unit designated Mid Lake Street (MLS) includes the area where the surficial soil sample *East of Railroad* was collected in 2010. This unit extends from railroad tracks to the extension of the IMACC property line.

North Lake Street (NLS) Decision Unit

Soil in the North Lake Street decision unit (NLS) includes the area where the surficial soil sample *East End of Lake Street* was collected in 2010.

3.2 SAMPLING METHODS

IS will be performed in each decision unit following draft guidance by the Alaska Department of Environmental Conservation (ADEC, 2009) for Multi-Increment® sampling. Using a systematic random approach, a total of 30 aliquots will be collected in each decision unit. By collecting samples from multiple, randomly selected locations, this sampling method helps eliminate error and address distributional heterogeneity, also referred to as grouping and segregation error (GSE).

Approximately thirty (30) direct-push soil borings will be advanced within each decision unit, to a depth of approximately 1.5 feet below ground surface (bgs). At each boring or increment location, at least 30 grams of soil/sediment will be collected into a new clean container (i.e. glass jar or plastic sealable bag) from the acetate liner contained within the steel sampling tubes advance by the direct push rig.

As stated above, because impacts to the Site soils were not likely due to localized activities occurring directly on Site, but rather the result of migration and tracking from other sources; sampling will focus on surficial soils. Sampling will include three sampling depths at each increment location – one surface sample at 0 to 0.5 feet bgs, one sub-surface sample at 0.5 to 1.0 feet bgs, and one sub-surface sample at 1 – 1.5 feet bgs. The analysis of the subsurface sample from 0-0.5 feet and 0.5-1 feet will be completed, but the subsurface sample at 1-1.5 feet will be held pending results of the shallower samples. A digital scale will be used to measure each aliquot. Once an aliquot is collected, SLR will move directly to the next sample increment location, until all 30 aliquots have been collected. Sample aliquots will be stored in a cooler with ice until delivered to the analytical laboratory. Sampling equipment that will be used during sampling at the Site includes:

- Sample containers (glass jars or plastic sealable bags)
- Digital scale

3.2.1 SUB-SAMPLING

Once field sampling is complete, all of the increment samples will be delivered to the analytical laboratory for sample preparation and analyses. Sample preparation will include sieving each increment sample entirely; a portion of the sample will be ground into a fine powder for metal analysis grinding for metals analysis, if necessary; and compositing into one representative sample per decision unit. Appendix B contains a sampling processing outline supplied by the laboratory sub-contractor.

3.2.2 QUALITY ASSURANCE AND CONTROL

Triplicate samples will be collected as required by guidance in order to verify that an increment sample truly represents the decision unit. Collection of a triplicate sample allows for the calculation of relative standard deviation (RSD). Results of all three samples will be included in the final report. According to the ADEC guidance (ADEC, 2009), a minimum of one triplicate sample is required for all IS projects and should be collected from decision units with known or suspected reportable levels of contamination. Therefore, a triplicate sample will be collected

from the MLS Decision Unit; which encompasses the City's *East of Railroad* sample location. The *East of Railroad* sample location contained the maximum concentration of PCBs and pesticides.

The triplicate samples will be collected at independent locations in relation to the initial random samples. To collect samples in triplicate, SLR will mark the initial sample increment with a flag or stake (never taken from co-located or adjacent locations) so when returning to the initial sample increment location, SLR can be sure to move in a different direction for sampling the second sample. The same procedure will be repeated for the third sample. The distance between the original and triplicate samples will be sufficient to evaluate variability.

3.3 CHEMICALS OF INTEREST

The criteria utilized for the development of COI list for the NW Lake Street Investigation was based on results from the previously conducted soil and catch basin investigations and from constituents likely found on neighboring facilities. Therefore, based on these criteria, soil samples collected from each decision unit will be analyzed for the following:

- Total metals (to include aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, and zinc)
- Total petroleum hydrocarbons as diesel (TPH-D) and motor oil (TPH-Mo)
- Polychlorinated biphenyls (PCBs)
- Polynuclear aromatic compounds (PAHs)
- Organochlorine Pesticides (including the following DDX isomers: 4,4'-DDD, 4,4'-DDT, 4,4'-DDE, 2,4'-DDD, 2,4'-DDT, 2,4'-DDE)
- Phthalates

3.4 ANALYTICAL METHODS

The analytical methods proposed for analyses are listed in the table below. To the extent practical, laboratory reporting limits will be below the JSCS SLVs. Proposed laboratory reporting limits and method detection limits are included in Appendix C.

TABLE B
PROPOSED ANALYTICAL METHODS

Proposed Analyte	Method*	Minimum Sample Volume
Metals, Total Recoverable	EPA 200.8/245.1/6020A/7471A (varies)	10 grams
Total petroleum hydrocarbons as diesel (TPH-D) and motor oil (TPH-Mo)	NWTPH-Dx	1 gram

Polychlorinated biphenyls (PCBs)	EPA 8082A	1 gram
Polynuclear aromatic compounds (PAHs)	EPA 8270D	1 gram
Organochlorine Pesticides (including the following DDX isomers: 4,4'-DDD, 4,4'-DDT, 4,4'-DDE, 2,4'-DDD, 2,4'-DDT, 2,4'-DDE)	EPA 8081B	1 gram
Phthalates	EPA 8270D	1 gram

*Analytical methods may alter

3.5 DATA QUALITY ASSURANCE AND CONTROL

A Quality Assurance Project Plan (QAPP) developed in accordance with DEQ and EPA Guidance (EPA 2002) is presented as Appendix D. The QAPP presents the quality and quality control activities developed for the investigation. The QAPP also identifies the data quality assurance objectives including both analytical and field data; quality control; and data management. Data quality objectives (DQO) have been established to meet the goals of the investigation and to ensure collection of representative data.

To meet the established DQO, laboratory reporting limits will be below JSCS SLVs to the extent feasible. It may not be feasible to achieve the SLV for all chemicals because the SLVs for some are very low.

As described in Section 3.2.2, triplicate samples will be collected from the SLS decision unit to better verify that IS results are representative of the decision unit (ADEC, 2009).

4. SCHEDULE

Planned field activities will begin within four weeks after the approval of the Work Plan.

A NW Lake Street Investigation Summary Report will be submitted within eight weeks of the receipt of analytical results.

5. REFERENCES

City of Portland, 2012. Outfall Basin 18 East-Central Subbasin Source Investigation Report, May 2012.

FIGURES

REFERENCED FROM : GOOOGLE EARTH PRO

0 500 1000 2000

APPROXIMATE SCALE (FEET)

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SLR

Site	NW Lake Street Portland, OR 97210
Drawing	Vicinity Map
Date March 24, 2016	Scale AS SHOWN
File Name Vicinity_Map_Lake_St	Project No. 102.01276.00001
Fig. No.	1

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N

N.W. 35TH AVE.

COLUMBIA AMERICAN
PLANTING FACILITY

NLS

HARRIS REBAR

MLS

CMS FACILITY

SLS

PDX
AUTO GLASS

N.W. ST. HELENS RD.

LEGEND

CATCH BASIN

BUILDING

PAVED SURFACE

DECISION UNITS

NLS – NORTH LAKE STREET

MLS – MIDDLE LAKE STREET

SLS – SOUTH LAKE STREET

GRAPHICAL SCALE (FEET)

0 35 70

Site
NW Lake Street
Portland, OR 97210

Drawing
Site Plan Showing
NW Lake Street Sampling Plan

Date March 24, 2016

Scale AS SHOWN

Fig. No. 2

File Name Lake St Sampling Plan

Project No. 102.01276.00001

SLR

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TABLES

TABLE 1 - METALS

East-Central Sub-Basin Sampling
NW Lake Street
Portland, Oregon

Sample ID	Date	Sample Depth (fbg)	Analyte (mg/kg) Cd	Cr	Cu	Pb	Hg	Ni	Ag	Zn
Surficial Soil Samples										
West End of Lake Street	09/14/10	0 - 0.5	0.79	42.4	36.7	**93.9**	0.054	13.2	0.25	179
West End of Lake Street - DUP	09/14/10	0 - 0.5	0.89	59.7	34.8	**94.1**	0.048	26.1	0.22	185
Lake Street at Railroad	09/14/10	0 - 0.5	0.63	39.9	41.0	**104**	0.052	16.6	0.31	239
East of Railroad	09/14/10	0 - 0.5	0.71	51.0	50.2	**148**	**0.086**	16.9	1.04	264
East End of Lake Street	09/14/10	0 - 0.5	**1.08**	51.3	46.6	**157**	0.066	17.8	0.44	237
Catch Basin Samples										
ANB622	09/14/10	NA	**2.12**	75.0	104	**74.4**	**0.081**	45.2	0.45	872
ANB621	09/14/10	NA	**2.83**	**124**	129	**118**	**0.130**	55.3	0.64	1,317
APN941	09/14/10	NA	**1.53**	**180**	136	**124**	**0.077**	52.0	0.65	884
ANF164	09/14/10	NA	**2.47**	84.7	114	**151**	**0.075**	41.5	0.43	644

JSCS SLV - Toxicity	**4.98**	**111**	**149**	**128**	**1.06**	**48.6**	**5**	**459**
JSCS SLV - Bioaccumulation	**1**	**NE**	**NE**	**17**	**0.07**	**NE**	**NE**	**NE**
RBC[1]	**1,100**	**NE**	**47,000**	**800**	**350**	**22,000**	**5,800**	**NE**

Notes:

ND<5 = not detected at or above stated laboratory detection limit
mg/kg = milligrams per kilogram
NE = not established

Cd = Cadmium
Cr = Chromium
Cu = copper
Pb = lead
Hg = mercury
Ni = nickel
Ag = silver
Zn = zinc

TABLE 2 - ORGANOCHLORINE PESTICIDES
East-Central Sub-Basil Sampling
Portland, Oregon

			Analytes (µg/kg)										
Sample	**Date**	**Sample Depth (fbg)**	**Aldrin**	**alpha-BHC**	**beta-BHC**	**delta-BHC**	**gamma-BHC**	**4,4'-DDD**	**4,4'-DDE**	**4,4'-DDT**	**Estimated Total DDx[1]**	**Dieldrin**	**Endosulfan - I**
Surficial Soil Samples													
West End of Lake Street	09/14/10	0 - 0.5	ND<3	ND<1	ND<1	ND<1	ND<1	**7.7**	**6.1**	**72**	86	**13**	ND<3.9
West End of Lake Street - DUP	09/14/10	0 - 0.5	ND<0.97	ND<0.97	ND<4	ND<0.97	ND<0.97	ND<6.9	**4.7**	**70**	75	**13**	ND<3.5
Lake Street at Railroad	09/14/10	0 - 0.5	ND<1	ND<1	ND<1.4	0.31 J	ND<1	ND<5.4	**5.7**	**61**	67	**13**	ND<4.3
East of Railroad	09/14/10	0 - 0.5	ND<5.5	ND<0.99	ND<0.99	ND<0.99	ND<0.99	**21**	**26**	**140**	187	**21**	ND<9.9
East End of Lake Street	09/14/10	0 - 0.5	ND<0.97	ND<0.97	ND<1.2	ND<0.97	ND<0.97	**6.2**	**5.4**	**58**	70	**7.3**	ND<1.2
Catch Basin Samples	**39974**	**3.5 - 4**											
ANB622	09/14/10	NA	ND<0.97	ND<0.97	ND<2.3	ND<0.97	ND<1.4	2.3	**2.3**	ND<9.6	4.6	ND<0.97	2.9
ANB621	09/14/10	NA	0.74 J	ND<1.0	ND<1.0	ND<1.0	ND<1.6	ND<1.4	**1.3**	ND<11	1.3	ND<1.0	ND<1.0
APN941	09/14/10	NA	ND<1.2	ND<0.98	ND<6.9	ND<0.98	ND<0.98	**1.3**	ND<1.1	**19**	20	ND<0.98	ND<0.98
ANF164	09/14/10	NA	1.1	ND<0.99	ND<2.9	ND<0.99	ND<0.99	**3.5**	**3.2**	**20**	27	ND<2.5	ND<0.99

JSCS SLV - Toxicity	**40**	**NE**	**NE**	**NE**	**4.99**	**28**	**31.3**	**62.9**	**NE**	**61.8**	**NE**
JSCS SLV - Bioaccumulation	**NE**	**NE**	**NE**	**NE**	**NE**	**0.33**	**0.33**	**0.33**	**0.33**	**0.0081**	**NE**
RBC	**130**	**360**	**NE**	**NE**	**2,100**	**12,000**	**8,200**	**8,500**	**NE**	**140**	**4,900,000**

NOTES:

ND<5 = not detected at or above stated laboratory detection limit
µg/kg = micrograms per kilogram
RBC = Generic risk based concentrations, Soil Ingestion, Dermal Contact, and Inhalation - occupational
JSCS SLV = Portland Harbor Joint Source Control Strategy Screening Level Value
fbg = feet below grade
J = Result is between the method reporting limit and method detection limit.
1 = Estimated total DDx is the sum of DDD, DDE, and DDT
2 = Total Chlordane is the sum of alpha and beta chlordane
NE = not established
Bold = Exceeds JSCS Bioaccumulation screening level values
= exceeds JSCS toxicity screening level values
= exceeds RBC screening level values

TABLE 2 - ORGANOCHLORINE PESTICIDES
East-Central Sub-Basil Sampling
Portland, Oregon

			Analytes (µg/kg)											
Sample	**Date**	**Sample Depth (fbg)**	**Endosulfan - II**	**Endosulfan sulfate**	**Endrin**	**Endrin aldehyde**	**Heptachlor**	**Heptachlor epoxide**	**Methoxychlor**	**Endrin Ketone**	**Toxaphene**	**alpha-chlordane**	**beta-chlordane**	**Total Chlordane[2]**
Surficial Soil Samples														
West End of Lake Street	09/14/10	0 - 0.5	ND<22	ND<4	ND<1	ND<3.5	ND<1	ND<1	ND<5.9	ND<1	ND<420	61	74	**135**
West End of Lake Street - DUP	09/14/10	0 - 0.5	ND<25	ND<2.7	ND<0.97	ND<3.6	ND<0.97	ND<0.97	ND<4.9	ND<0.97	ND<570	60	74	**134**
Lake Street at Railroad	09/14/10	0 - 0.5	ND<19	ND<1.8	ND<1	ND<3.2	ND<1	ND<1.9	ND<5.9	ND<1.2	ND<600	82	90	**172**
East of Railroad	09/14/10	0 - 0.5	ND<21	ND<6.1	ND<0.99	ND<8.7	ND<0.99	ND<0.99	ND<6.2	ND<11	ND<580	120	140	**260**
East End of Lake Street	09/14/10	0 - 0.5	ND<4.5	1.7	ND<0.97	ND<1.4	ND<0.97	ND<0.97	ND<2.5	ND<6.4	ND<290	17	23	**40**
Catch Basin Samples	**39974**	**3.5 - 4**												
ANB622	09/14/10	NA	ND<2.3	2.5	ND<0.97	ND<0.97	3.4	ND<0.97	ND<1.9	0.95 J	ND<140	1.4	2.8	**4.2**
ANB621	09/14/10	NA	ND<3.8	3.9	ND<1.0	ND<1.0	3.2	ND<1.0	ND<2.8	ND<1.1	ND<140	2.5	4.8	**7.3**
APN941	09/14/10	NA	ND<1.6	1.7	ND<0.98	ND<0.98	16	0.81 J	ND<0.98	ND<0.98	ND<97	2.3	3.0	**5.3**
ANF164	09/14/10	NA	ND<0.99	ND<2.0	ND<0.99	ND<0.99	0.61 J	ND<0.99	ND<2.1	0.49 J	ND<280	5.8	8.4	**14**

JSCS SLV - Toxicity	**NE**	**NE**	**207**	**NE**	**10**	**16**	**NE**	**NE**	**NE**	**NE**	**NE**	**17.6**
JSCS SLV - Bioaccumulation	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.37**
RBC	**4,900,000**	**NE**	**250,000**	**NE**	**450**	**240**	**NE**	**NE**	**2,100**	**NE**	**NE**	**7,400**

NOTES:

ND<5 = not detected at or above stated laboratory detection limit
µg/kg = micrograms per kilogram
RBC = Generic risk based concentrations, Soil Ingestion, Dermal Contact, and Inhalation - occupational
JSCS SLV = Portland Harbor Joint Source Control Strategy Screening Level Value
fbg = feet below grade
J = Result is between the method reporting limit and method detection limit.
1 = Estimated total DDx is the sum of DDD, DDE, and DDT
2 = Total Chlordane is the sum of alpha and beta chlordane
NE = not established
Bold = Exceeds JSCS Bioaccumulation screening level values
= exceeds JSCS toxicity screening level values
= exceeds RBC screening level values

TABLE 3 - POLYCHLORINATED BYPHENYLS

East-Central Sub-Basin Sampling
NW Lake Street
Portland, Oregon

			Analytes (µg/kg)										
Sample ID	**Date**	**Sample Depth (fbg)**	**Aroclor 1016**	**Aroclor 1221**	**Aroclor 1232**	**Aroclor 1242**	**Aroclor 1248**	**Aroclor 1254**	**Aroclor 1260**	**Aroclor 1262**	**Aroclor 1268**	**Total PCBs Aroclor**	**Total PCBs Congeners**
Surficial Soil Samples													
West End of Lake Street	09/14/10	0 - 0.5	ND<40	ND<80	ND<40	ND<40	ND<40	125	ND<40	ND<40	ND<40	**125**	**234**
West End of Lake Street - DUP	09/14/10	0 - 0.5	ND<10	ND<20	ND<10	ND<10	ND<10	151	57	ND<10	ND<10	**208**	**248**
Lake Street at Railroad	09/14/10	0 - 0.5	ND<40	ND<80	ND<40	ND<40	ND<40	85	63	ND<40	ND<40	**148**	**235**
East of Railroad	09/14/10	0 - 0.5	ND<40	ND<80	ND<40	ND<40	ND<40	151 E	110	ND<40	ND<40	**261 E**	**385**
East End of Lake Street	09/14/10	0 - 0.5	ND<10	ND<20	ND<10	ND<10	ND<10	98	48	ND<10	ND<10	**146**	**183**
Catch Basin Samples													
ANB622	09/14/10	NA	ND<10	ND<20	ND<10	ND<10	ND<10	44	57	ND<10	ND<10	**101**	**81.7**
ANB621	09/14/10	NA	ND<10	ND<20	ND<10	ND<10	ND<10	56	42	ND<10	ND<10	**98**	**92.7**
APN941	09/14/10	NA	ND<10	ND<20	ND<10	ND<10	ND<10	29	38	ND<10	ND<10	**67**	**90.0**
ANF164	09/14/10	NA	ND<10	ND<20	ND<10	ND<10	ND<10	112	76	ND<10	ND<10	**188**	**177**

JSCS SLV - Toxicity	**530**	**NE**	**NE**	**NE**	**1,500**	**300**	**200**	**NE**	**NE**	**676**	**676**
JSCS SLV - Bioaccumulation	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**0.39**	**0.39**
RBC	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**590**	**590**

NOTES:

PCBs = polychlorinated biphenyls
µg/kg = micrograms per kilogram
RBC = Generic risk based concentrations, Soil Ingestion, Dermal Contact, and Inhalation - occupational
JSCS SLV = Portland Harbor Joint Source Control Strategy Screening Level Value
fbg = feet below grade
E = Estimated value
NE = not established
Bold = Exceeds JSCS Bioaccumulation screening level values
= exceeds JSCS toxicity screening level values
= exceeds RBC screening level values

APPENDIX A

FIGURE 6 – OUTFALL BASIN 18 EAST-CENTRAL SUBBASIN SOURCE INVESTIGATION REPORT

NW YEON AVE

CONTAINER RECOVERY

VAN WATERS & ROGERS - PORTLAND

SCHNITZER INVESTMENT - NEAR NW 35TH AND YEON

TRUMBULL ASPHALT PLANT

NW 35TH AVE

ANRFS HOLDINGS INC.

HILL INVESTMENT CO.

WILHELM TRUCKING

NW ST HELENS RD

COLUMBIA AMERICAN PLATING CO.

CONTAINER MANAGEMENT SERVICES

NW GUAM ST

CB ANB622

Total PCB Aroclors	101
Total PCB Congeners	81.7
Total DDx	4.6
Total Chlordane	4.2
Heptachlor	3.4
Cd	2.12
Cu	104
Pb	74.4
Mn	NA

CB ANB621

Total PCB Aroclors	98
Total PCB Congeners	92.7
Total DDx	1.3
Total Chlordane	7.3
Heptachlor	3.2
Cd	2.83
Cu	129
Pb	118
Mn	NA

CB APN941

Total PCB Aroclors	67
Total PCB Congeners	90.0
Total DDx	20
Total Chlordane	5.3
Heptachlor	16
Cd	1.53
Cu	136
Pb	124
Mn	NA

CB ANF164

Total PCB Aroclors	188
Total PCB Congeners	177
Total DDx	27
Total Chlordane	14
Heptachlor	0.61 J
Cd	2.47
Cu	114
Pb	151
Mn	NA

West End Lake St
Composite

Total PCB Aroclors	125
Total PCB Congeners	234
Total DDx	86
Total Chlordane	135
Heptachlor	ND
Cd	0.79
Cu	36.7
Pb	93.9
Mn	NA

West End Lake St
Composite (DUP)

Total PCB Aroclors	208
Total PCB Congeners	248
Total DDx	75
Total Chlordane	134
Heptachlor	ND
Cd	0.89
Cu	34.8
Pb	94.1
Mn	NA

Lake St at Railroad
Composite

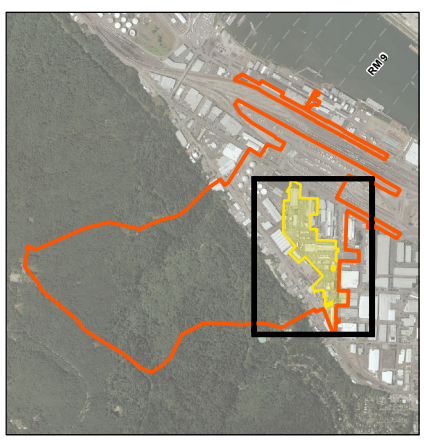
Total PCB Aroclors	148
Total PCB Congeners	235
Total DDx	67
Total Chlordane	172
Heptachlor	ND
Cd	0.63
Cu	41.0
Pb	104
Mn	NA

East of Railroad
Composite

Total PCB Aroclors	261 J
Total PCB Congeners	385
Total DDx	187
Total Chlordane	260
Heptachlor	ND
Cd	0.71
Cu	50.2
Pb	148
Mn	NA

East End of Lake St
Composite

Total PCB Aroclors	146
Total PCB Congeners	183
Total DDx	70
Total Chlordane	40
Heptachlor	ND
Cd	1.08
Cu	46.6
Pb	157
Mn	NA



LEGEND

- Sample Location
- Composite Sample
- Outfall Basin 18
- East-Central Subbasin

Sample Types

- Catch Basin Solids Sample
- Surface Soil Sample

All Other Features

- Storm Line
- Manhole (MH)
- Catch Basin (CB)
- DEQ ECSI Site
- Tax Lot

NOTES:

All PCB and pesticide results are presented in micrograms per kilogram (µg/Kg)
All metal results are presented in milligrams per kilogram (mg/Kg).
NA = Not Analyzed
ND = Not Detected
J = Estimated

N

0 125 250
Feet

FIGURE 6

Basin 18 East-Central Subbasin
September 2010 Erodible Soils Pathway Results

Disclaimer:
Information contained on this map is accurate according to available records, however the City of Portland makes no warranty, expressed or implied, as to the completeness or accuracy of the information published.

Prepared By:
May 9, 2012
005_SC\R\OF_Basin_18\OF18_EastSubbasin_Report

Source:
City of Portland BES, Aerial Photo 2010

ENVIRONMENTAL SERVICES
CITY OF PORTLAND
1120 SW Fifth Avenue, Room 1000
Portland Oregon, 97204-1912

APPENDIX B

SAMPLING PROCESSING OUTLINE

Appendix B

Apex Laboratories RSM Sample Processing Outline

When processing the ISM samples for SLR Consulting, Apex Laboratories, LLC will use the entire sample volume from each DU (i.e., 30 incremental subsamples from each DU) to create a well-mixed and representative sub sample. The ISM sample for each DU will be processed following the procedures of using Apex Laboratories SOP G-105 RSM. This SOP is consistent with the ITRC ISM February 2012 Final guidance. The process for this project is summarized below:

- The DU sample composite including interstitial water will be air-dried at room temperature (approximately 20 degrees Celsius). Samples will be dried on baking sheets covered with Teflon sheeting to protect the sample from both metals and phthalate contamination.
- Once ISM sample has been spread out on Teflon lined pans they will be sampled using Japanese 2-D Slab cake technique for the determination of sample moisture. Additional 2-D Slab Cake sampling of 30 increments each will be taken to create sample for mercury and NWTPH-Dx testing. This process will increase the fundamental error for these tests but minimize the potential loss of volatile compounds.
- Wet soil will be worked and turned following Apex SOP G 105 RSM during drying to prevent sediments from hardening into “bricks.’’ This processing will also decrease the sample drying time.
- Once air dried, all of the DU sample from the pans will be sieved. The material greater than 2mm will be returned to the original ISM sampling container and will not be part of the sample. Approximately 150 grams of sieved sediment will representatively sub-sampled using the Japanese 2-D Slab Cake method using 50 sub increments. The samples will be ground using a cool grinding technique until soil is a fine powder (50-60 micron diameter). Cool grinding is a process to preserve lower boiling components. Once grinding is complete the material will be transferred back to the Teflon lined baking tray.
- Ground sample is placed on the baking tray with the Teflon sheet and evenly spread for 2-D Japanese slab cake. From the slab cake representative aliquots will be collected and placed into VOA vials for each requested analyses. Due to the small uniform size of particles standard sample masses can be used for all organic and inorganic methods proposed while reducing the fundamental error (FE) significantly.
- Grinder blanks will be analyzed for metals to monitor metals that traditionally have been transferred to samples from hardened steel puck and ring. Apex Laboratories uses Tungsten (W) bowl, ring and puck to prevent metal alloy contamination.
- The remaining sample will be returned to an RSM container for frozen archiving. If additional material is needed for future testing, the entire archived sample will be thawed and a Japanese slab cake will be formed and additional aliquots will be taken following the Japanese slab cake procedure for ground material.
- Sufficient sample volume will be representatively subsampled by the laboratory to create laboratory QA/QC samples.

APPENDIX C

PROPOSED LABORATORY REPORTING/METHOD DETECTION LIMITS

Appendix C
Proposed Laboratory Reporting Limts
SW-8 Area Assessment

	JSCS SLVs	RL (µg/kg)	MDL (µg/kg)
Metals			
Al	NE	50,000	25,000
Sb	64,000	1,000	500
As	7,000	1,000	500
Cd	1,000	200	100
Cr	111,000	1,000	500
Cu	149,000	1,000	500
Pb	17,000	200	100
Mn	1,100,000	1,000	500
Hg	70	**80**	40
Ni	48,600	1,000	500
Se	2,000	1,000	500
Ag	5,000	200	100
Zn	459,000	400	200
PCBs			
Aroclor 1016	530	4	2
Aroclor 1221	NE	4	2
Aroclor 1232	NE	4	2
Aroclor 1242	NE	4	2
Aroclor 1248	1,500	4	2
Aroclor 1254	300	4	2
Aroclor 1260	200	4	2
Aroclor 1262	NE	4	2
Aroclor 1268	NE	4	2
Pesticides			
alpha-BHC	NE	1	0.5
beta-BHC	NE	1	0.5
gamma-BHC	4.99	1	0.5
delta-BHC	NE	1	0.5
Heptachlor	10	1	0.5
Aldrin	40	1	0.5
Heptachlor epoxide	16	1	0.5
Endosulfan - I	NE	1	0.5
Dieldrin	0.0081	**1**	**0.5**
4,4'-DDE	0.33	**1**	**0.5**
Endrin	207	1	0.5
Endosulfan - II	NE	1	0.5
4,4'-DDD	0.33	**1**	**0.5**
Endrin aldehyde	NE	1	1
Endosulfan sulfate	NE	1	0.5
4,4'-DDT	0.33	**1**	**0.5**
Endrin Ketone	NE	1	0.5

Appendix C
Proposed Laboratory Reporting Limts
SW-8 Area Assessment

	JSCS SLVs	RL (µg/kg)	MDL (µg/kg)
Methoxychlor	NE	3	1.5
Toxaphene	NE	30	15
Chlordane	0.37	**1**	**0.5**
Oxychlordane	NE	1	0.5
cis-Nanochlor	NE	1	0.5
trans-Nanochlor	NE	1	0.5
2,4'-DDE	NE	1	0.5
2,4'-DDD	NE	1	0.5
2,4'-DDT	NE	1	0.5
PAHs			
Acenaphthene	300	4.00	2.00
Acenaphthylene	200	4.00	2.00
Anthracene	845	4.00	2.00
Benz(a)anthracene	1,050	4.00	2.00
Benzo(a)pyrene	1,450	6.00	3.00
Benzo(b)fluoranthene	NE	6.00	3.00
Benzo(k)fluoranthene	1,300	6.00	3.00
Benzo(b+k)fluoranthene(s)	NE	12.0	6.00
Benzo(g,h,i)perylene	300	4.00	2.00
Chrysene	1,290	4.00	2.00
Dibenz(a,h)anthracene	1,300	4.00	2.00
Fluoranthene	2,230	4.00	2.00
Fluorene	536	4.00	2.00
Indeno(1,2,3-cd)pyrene	100	4.00	2.00
1-Methylnaphthalene	NE	8.00	4.00
2-Methylnaphthalene	200	8.00	4.00
Naphthalene	561	8.00	4.00
Phenanthrene	1,170	4.00	2.00
Pyrene	1,520	4.00	2.00
Phthalates			
Bis(2-ethylhexyl)phthalate	330	80.0	40.0
Butyl benzyl phthalate	NE	80.0	40.0
Diethylphthalate	600	20.0	10.0
Dimethylphthalate	NE	20.0	10.0
Di-n-butylphthalate	60	20.0	10.0
Di-n-octyl phthalate	NE	80.0	40.0

APPENDIX D

QUALITY ASSURANCE PROJECT PLAN

CONTENTS

1. INTRODUCTION

The purpose of this Quality Assurance Project Plan (QAPP) is to present the quality assurance and quality control activities for the soil investigation to be conducted at NW Lake Street, located in Portland, Oregon (Site). This QAPP covers the soil sampling work to be undertaken by SLR International Corp described under the March 2016 NW *Lake Street Investigation Work Plan* (Work Plan).

1.1 PROJECT ORGANIZATION

Primary responsibility for project quality rests with SLR International Corp project manager (PM), Mr. Mohammad Bazargani. The PM will review all project deliverables before submittal to the City of Portland or other appropriate regulatory agency. Where quality assurance problems or deficiencies are observed, the PM will identify the appropriate corrective action to be initiated.

1.2 DATA QUALITY OBJECTIVES

Established prior to data collection, data quality objectives (DQO) specify the quality of data required to meet the stated goals of the project and to ensure collection of representative data. All investigative activities should be conducted and documented in accordance with the specified DQO. An important DQO for this project is to obtain appropriate quantitation limits so that the data generated can be compared to the Portland Harbor Joint Source Control Strategy Screening Level Values (JSCS SLVs) for soil and stormwater sediment (JSCS SLVs Final December, 2005).

Results of previously conducted sampling activities conducted in the NW Lake Street Area indicated concentrations of the Lead; Total PCBs, for both aroclors and congeners; 4,4'-DDD; 4,4'-DDE; 4,4'-DDT; Total DDx; dieldrin; and total chlordane were detected above JSCS SLVs. Therefore, if site-specific data from the proposed NW Lake Street investigation shows no exceedances of JSCS SLVs, it can generally be concluded that additional evaluation activities are not needed in the NW Lake Street Area.

The DQOs for this project have been designated at either data quality assurance objectives (Section 2.0) or field data quality assurance objectives (Section 3.0).

2. DATA QUALITY ASSURANCE OBJECTIVES

The applicable data quality assurance objectives are dictated by the intended use of the data and the nature of the analytical methods. The accuracy, precision, representativeness, completeness, and comparability data quality assurance objectives are explained below.

2.1 ACCURACY

Accuracy is the agreement between the measured value and the true value. Accuracy can be expressed as the difference between two values or the difference as a percentage of the reference or true value (ratio). Accuracy depends on the magnitude of the systematic (bias) and random (precision) errors in the measurement. Bias due to sample matrix effects will be assessed by spiking samples with known standards and calculating the recovery for the standards.

2.2 PRECISION

Precision is a measurement of mutual agreement among individual measurements of the same property under prescribed similar conditions. It is expressed in terms of the standard deviation or relative percent difference (RPD). Precision is determined through laboratory quality control parameters such as surrogate recoveries, matrix spikes, or quality control check samples. Separate field control samples will not be collected for this scope of work. Quality control objectives for surrogate recovery, percent recovery, and RPD for matrix spikes will be those currently established by the testing laboratory.

2.3 REPRESENTATIVENESS

Representativeness is a measure of how closely the measured results reflect the actual concentration or distribution of chemical compounds in the media sampled. Sampling plan design, sampling techniques, and sample handling protocols are included in the associated Work Plan to ensure that samples collected are representative of site conditions within the limitations of the collection technologies. Sampling locations were selected based on their representativeness in further assessing the soil conditions in the NW Lake Street Area. This documentation establishes protocols for assurance of sample identification and integrity.

2.4 COMPLETENESS

Completeness is a measure of the amount of valid data obtained from the analytical system compared to the total data collected. The completeness of the data will be assessed during quality control reviews. The completeness goal of this project will be 90 percent. Audits, internal control checks, and preventative maintenance will be implemented to help maintain the above quality assurance objectives.

2.5 COMPARABILITY

Comparability expresses the confidence with which one data set can be compared to another. Data comparability will be ensured by monitoring the control of sample collection, analytical

methods, and data recording. Comparability of laboratory and field data will be maintained by using EPA-defined procedures, where available. Data comparability will be maintained by use of consistent methods and units. The laboratory predicted method detection limits (MDL) and method reporting limits (MRL) for the proposed sampling protocol are included as Appendix B to the Work Plan document.

3. FIELD DATA QUALITY ASSURANCE OBJECTIVES

This QAPP also presents the field data quality assurance objectives for this project including field measurements and observations, field equipment calibration, chain-of-custody procedures, and sample handling procedures.

3.1 FIELD MEASUREMENT AND OBSERVATION

All field measurements and observations will be recorded in the project log notes. Sufficient information will be recorded so that all field activities can be reconstructed without reliance on personnel memory. All entries will be recorded directly in waterproof ink and legibly and will be signed and dated by the person conducting the work. If changes are made, the changes will not obscure the previous entry, and the changes will be signed and dated. At a minimum, the following data will be recorded:

- Purpose of activity
- Location of activity
- Description of sampling reference point(s)
- Date and time of any activity
- Sample number and volume
- Sample transporting procedures
- Field measurements made
- Calibration records for field instruments
- Relevant comments regarding field activities
- Signatures of responsible personnel

If photographs are taken as part of the field activities, the following information will be documented on a photo log:

- Date, time, and subject or location of photograph
- Photographer
- Weather conditions
- Viewing direction
- Description and reason of photograph taken

3.2 FIELD INSTRUMENT CALIBRATION

The field instruments to be used during field activities will be calibrated at the beginning of each day of use and again throughout the day, as required, according to manufacturers' specifications. All calibration records will be recorded in the project log notes including date, project number, instrument make and model, and instrument response to calibration.

3.3 CHAIN-OF-CUSTODY PROCEDURES

The management of samples collected in the field will follow specific procedures to ensure sample integrity. To ensure sample integrity, the samples will be handled by as few people as possible and the sample collector will be responsible for the care and custody of the samples. Sample possession will be tracked from collection to analysis. Each time the samples are transferred between parties, both the sender and receiver will sign and date the chain-of-custody form and specify what samples have been transferred. When a sample shipment is sent to the laboratory, the original form will be placed with the samples and transmitted to the laboratory. A copy of the form will be retained in the project files. A chain-of-custody record will be completed for each batch of samples hand delivered or shipped to the laboratory.

The following information will be included on the chain-of-custody form:

- Sample number
- Sampler signature
- Sample collection date and time
- Place of collection
- Sample type
- Inclusive dates of possession
- Signature of sender and receiver

In addition to the chain-of-custody form, other components of sample tracking will include the sample labels and seals, field logs, sample shipment receipt, and laboratory log book. The sample labels and seals will include the following information:

- Project name and number
- Name of sampler
- Date and time of sample collection
- Sample location and number
- Analysis required
- Preservation

3.4 SAMPLE HANDLING PROCEDURES

Sampling plan design, sampling techniques, sampling location, and sample handling protocols are included in the Sampling Plan to ensure that samples collected are representative of site conditions within the limitations of the collection technologies.

The following table summarizes the sample handling requirements:

ANALYSIS	SAMPLE CONTAINER	CONTAINER SIZE	PRESERVATION AND HANDLING	HOLDING TIMES (DAYS)
Metals	Glass Jar	4 – 8 oz	Fill jar and close with Teflon lined cap; keep in dark; cool to 4°F	180
NWTPH-Dx	Glass Jar	4 – 8 oz	Fill jar and close with cap; keep in dark; cool to 4°F	14
Polychlorinated Biphenyl (PCB)	Glass Jar	4 – 8 oz	Fill jar and close with cap; keep in dark; cool to 4°F	365
PAHs and Phthalates	Glass Jar with Teflon lined cap	4 – 8 oz	Fill jar and close with Teflon lined cap; keep in dark; cool to 4°F	14
Organochlorine Pesticides	Glass Jar	4 – 8 oz	Fill jar and close with cap; keep in dark; cool to 4°F	14

4. QUALITY CONTROL

Quality control checks consist of measurements performed in the field and laboratory. The analytical methods that will be performed as a part of this project have routine quality control checks performed to evaluate the precision and accuracy, and to determine whether the data are within the quality control limits.

4.1 LABORATORY QUALITY CONTROL METHODS

Specific procedures and frequencies for laboratory quality control are detailed by the analytical method in the laboratory's Quality Assurance Plan.

4.2 FIELD QUALITY ASSURANCE

A triplicate sampling quality control (QC) program will be used to assess sample collection procedures, sample representativeness, environmental conditions during sample collection and shipment, and the adequacy of equipment decontamination. SLR followed the "Draft Guidance on Multi-Increment Soil Sampling" by the Alaska Department of Environmental Conservation (ADEC, 2009). Although validation guidelines have not been established for field QA samples, their analysis is useful in identifying possible problems resulting during sample collection or sample processing in the field. All field QA samples will be documented on the sampling forms and verified by the Quality Assurance/Quality Control (QA/QC) manager or designee.

Triplicate samples will be collected in the Mid Lake Street (MLS) decision unit.

4.3 PREVENTATIVE MAINTENANCE

Preventative maintenance on field instruments will be performed by a qualified field technician following the manufacturer's instructions and maintenance schedules. Maintenance will be documented in the instrument log book with the date and initials of the individual performing the maintenance. The instrument calibration results will be routinely compared against the preventative maintenance record to verify the effectiveness of the maintenance.

5. DATA MANAGEMENT

This section addresses issues related to data sources, data processing, and data evaluation.

5.1 FIELD DATA MANAGEMENT

Accurate documentation of field activities (e.g. surface conditions, field notes) will be maintained using field data forms. Entries will be made in sufficient detail to provide an accurate record of field activities without reliance on memory. Field log entries will be dated and include a chronological description of task activities, names of individuals present, names of visitors, weather conditions, etc.

5.2 ANALYTICAL DATA MANAGEMENT

All analytical data will be entered into one table of all of the soil data collected as part of the Soil Assessment. The data may require some manipulation, such as common unit conversions. Standard data reports will be generated to present the data.

5.3 SAMPLE MANAGEMENT

Sample management will include proper documentation of the samples in the daily field notes, meeting the chain-of-custody requirements, and proper management of sample-related documents.

6. LIMITATIONS

The preparation of this plan was performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.