

**SITE CHARACTERIZATION
REPORT**

Performed at:
Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington 98422

AEROTECH
Environmental Consulting Inc.

April 19, 2018

Anchorage Seattle Portland

Cost-effective environmental solutions
for the western United States and Alaska

www.AerotechEnvironmental.com

SITE CHARACTERIZATION REPORT

Performed at:
Swindahl Properties
2218 Marine View Drive
Tacoma, Washington 98442

April 19, 2018

Performed by:

AEROTECH Environmental Consulting Inc.

13925 Interurban Avenue South, Suite No. 210

Seattle, Washington 98168

Fax 206 402 3872

866 800 4030

www.AerotechEnvironmental.com

SITE CHARACTERIZATION

Client: **SWINDAHL PROPERTIES, LLC**

Address: 2218 Marine View Drive
Tacoma, Washington 98442

Point of Contact: Carl Swindahl
Owner, Swindahl Properties, LLC
253-272-9319

Property: **SWINDAHL PROPERTIES**
2218 Marine View Drive
Tacoma, Washington 98442

County: Pierce County, Washington

Parcel Number: 0321264056

Commercial Activity: Shipyard

UST Site Assessor: Nicholas Gerkin (ICC No. 8452487)

Licensed Geologist: Justin Foslien (Washington State License No. 2540)

Project Number: 218-4036

Report Date: April 19, 2018

EXECUTIVE SUMMARY

The subject of this Phase I Environmental Site Assessment is a rectangular-shaped approximately 5.98-acre (260,470 square foot) Parcel of industrial land located on the Hylebos Waterway in Tacoma, Washington. Significant bodies of water include Commencement Bay approximately two miles northwest.

The subject Property is configured with four buildings and a small boatyard that comprise the facility for the fiberglass and steel boat manufacturer, Modutech Marine, Inc. Two adjoining office buildings are situated in the center of the Parcel facing northeast toward Marine View Drive. Asphalt paved parking spaces are provided northeast of the buildings. Adjacent to the east is the manufacturing and production warehouse. A fabrication and spray building is situated along the east Property border. South of the building are material storage sheds, including a metal shipping container housing shelves of petroleum products. West of the warehouse are two large canvas tents that are used for sandblasting vessels. The eastern portion of the Property houses several boats, trailers, electric hoists, metal parts and pieces, and wood products.

The contiguous office buildings comprise approximately 6,560 square feet and are configured with offices, a reception area, restrooms, and a conference room. The warehouse comprises approximately 19,136 square feet and houses the marine manufacturing, repair, and production operations. Additionally, the warehouse contains an electrical room, an employee break area, a welding shop, and an approximately 1,530 square foot mezzanine used for storage. The building along the southeast Property boundary comprises approximately 4,440 square feet and is divided into two sections; one side was used for spray applications and the other side was used for fabrication.

The marina houses 50 covered slips and is accessible via a dock in the southeast corner of the Property. There are no permanent live-on board residents.

Vehicular access onto the Property is provided by a driveway entrance on the south side of Marine View Drive.

The subject Property was first developed sometime prior to 1940 with the construction of a residence and a garage or shed. Between 1960 and 1965, the residence was vacant. By 1969, the former structures were demolished, and the present-day warehouse was constructed to occupy the ship building plant, Tide Bay Inc. By 1975, the Property occupied Martinolich Ship Builders. In 1980, a two-story office building and a dock marina were constructed. By then, the boat manufacturer, Marine Technical Services, occupied the Property. In 1985, a material storage shed was constructed. In 2013, an additional two-story office building was constructed onto the existing structure. The subject Property has occupied the steel and fiberglass marine boat manufacturer, Modutech Marine Inc, since 1986 throughout to present-day.

The subject Property is located in an industrially dominated area. To the north is Marine View Drive (Highway 509) followed by a steep bluff. To the south is the Hylebos Waterway. To the east is a storage yard. To the west is the Hylebos Waterway.

During a Site Inspection conducted by the Department of Ecology on June 17, 1992, inspectors confirmed the presence of sandblast grit spread along the roads and surfaces in certain areas of the Site. Following a request by Ecology to stop contaminants from spent sandblast grit from reaching the Hylebos Waterway, Modutech Inc removed the waste sandblast grit from the subject Property. The Model Toxics Control Act requires confirmation sampling to confirm that remedial efforts have been successful at a Site. Based on the information provided, confirmatory sampling had not been completed.

Upon completion of the *Phase I Environmental Site Assessment*, dated February 26, 2018, further action was recommended due to the lack of confirmatory sampling.

Mr. Carl Swindahl of Swindahl Properties, LLC retained Aerotech Environmental Consulting (“Aerotech”) to conduct a *Site Characterization* to confirm removal of the sand grit materials and define the extent of any remaining soil and groundwater above MTCA Method A Screening Levels.

Conclusions & Recommendations:

Soil borings were advanced in areas where the approximate locations of former suspect fill areas. Samples were collected from depths ranging from 3 to 12 feet below ground surface. Soil samples collected from soil borings SB04, SB07, SB08, SB11, SB20, SB25, and SB27 contained of Arsenic and Lead above the MTCA Method A Cleanup Levels.

A groundwater monitoring well network consisting of MW1 through MW4 was installed to evaluate the impact of Arsenic and Lead to groundwater beneath the Site. Groundwater samples collected from monitoring wells MW1 through MW4 did not contain concentrations of Arsenic and Lead above the MTCA Method A Cleanup Levels.

The presence of Arsenic and Lead in the subsurface has been confirmed above the MTCA A Cleanup Levels. Vertical and Horizontal definition of the extent of metals above cleanup standard has been achieved with the exception of area near SB25.

Further Action is Recommended. 1) Delineation of soil to the north in the vicinity of SB25; 2) Continue groundwater monitoring to verify no impacts to groundwater beneath the Site; and 3) Perform a Remedial Investigation and Feasibility Study with a Disproportionate Cost Analyses to evaluate options to address the remaining concentrations of Arsenic and Lead to be submitted to the Ecology Voluntary Cleanup Program to achieve a No Further Action Determination.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
INTRODUCTION	6
Property Exterior Description:	6
Property Interior Description:	7
Previously Identified Contaminants of Concern:	8
FIELD WORK	9
Notifications – “Public Utilities:	9
Private Utilities Location:	9
Site Activities:	9
Drilling Activities:	9
Soil Sample Collection:	10
Equipment Decontamination:	10
Site Restoration:	10
Installation and Design of Groundwater Monitoring Wells:	10
GEOLOGY AND HYDROGEOLOGY	12
Physical Setting Source:	12
Surface Characteristics:	12
Geology - Regional:	12
Geology - On-Site Conditions:	12
Subsurface Hydrogeological Characteristics – Groundwater Occurrence:	13
ANALYTICAL RESULTS	14
Volatile Organic Compounds (“VOCs”)	14
Metals	14
APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS	14
Analytical Methodology:	14
STATEMENT OF THE SITE ASSESSOR	15
STATEMENT OF THE LICENSED GEOLOGIST	15

INTRODUCTION

Mr. Carl Swindahl of Swindahl Properties, LLC, engaged Aerotech Environmental Consulting, Inc. (“Aerotech”) of Seattle, Washington to perform a *Site Characterization Report* at the subject property. The purpose of this report is to summarize environmental characterization activities completed at the subject property herein referred to as the “Site”. Aerotech advanced twenty-eight soil borings throughout the Site.

SECTION I.

SITE DESCRIPTION

Property Exterior Description:

This *Site Characterization Report* is an environmentally-based risk assessment of a rectangular-shaped approximately 5.98-acre (260,470 square foot) Parcel of industrial land located in Tacoma, Washington, occupied by Modutech Marine Inc.

The Property is configured with two adjoining office buildings situated in the center of the Parcel facing northeast toward Marine View Drive. Asphalt paved parking spaces are provided northeast of the buildings. Adjacent to the east is the manufacturing and production warehouse. A fabrication and spray building is situated along the east Property border. South of the building are material storage sheds, including a metal shipping container housing shelves of petroleum products. A metal awning extends north and south off of the container. The south side houses used boat-size refrigerators and other appliances, small propane tanks, spools of metal wiring, metal pipes, and other miscellaneous items. The north side houses tarps, plastic barrels, a plastic fuel tote, a metal tote labeled diesel, and 55 gallon drums labeled Hetron FR 650 T-20 Resin.

To the south is a tarped canopy housing a large plastic container labeled “used oil only” that contained five gallon buckets, oil funnels, and used filters. Several propane tanks were stored behind the container. A wooden shelf was located along the northern wall of the canopy. Next to the shelf were 55 gallon drums and plastic barrels labeled Chevron Rando HD ISO; “Bad gas”, dated December 1, 2016; and “power cool 50/50”. The items are situated atop a concrete slab, however, no secondary containment was present.

Situated along the northeast corner of the warehouse is a shipping container used as an employee break area. To the south is a small metal awning that covers a fuel tank and associated piping. A 500 gallon above ground storage tank and a fuel tote are located at the southeast corner of the warehouse. Several large boats are parked along the eastern side of the warehouse. West of the warehouse are two large canvas tents that are used for sandblasting vessels. Plastic sheets covered the gravel under the tents. A fuel tote was stored on a concrete slab inside one of the tents.

The northwest corner of the Property stores heavy equipment such as cranes and hydraulic lifts. Additionally, there are two shipping containers. The eastern portion of the Property houses several boats, trailers, electric lifts, metal parts and pieces, and wood products. The southern portion of the Property consists primarily of concrete slabs up to the edge of the waterway, but contains some gravel areas as well.

In the southeast corner of the Property is a metal ramp that extends into the marina. The north portion of the ramp is used as a pressure wash station that contains a catch basin that filters to the warehouse where the water is reused. Adjacent east of the wash station is an electric hoist and a small shed. Behind the shed is an Aquip stormwater filtration system that was implemented in 2012. According to the Property Owner, Mr. Carl Swindahl, the water is disposed of by Clean Harbors approximately every five months.

The marina houses 50 covered slips and is accessible via dock in the southeast corner of the Property. There are no permanent live-on board residents.

Vehicular access onto the Property is provided by a driveway entrance on the south side of Marine View Drive.

As observed and notated by the Aerotech Environmental Assessor during the on Site Reconnaissance activities, there were no readily observed visual indicators of active underground storage tanks, stained soils, stressed vegetation, oily sheens, or discolorations on standing water surfaces. There was no evidence of foul odors. Additionally, the Site Reconnaissance did not reveal the presence of discarded drums, barrels, or containers, construction debris, damaged or discarded containers of chemicals, paints, or pesticides. There are no waste storage or treatment lagoons, pits, ponds, or surface impoundments on the Site, or the adjoining properties.

Property Interior Description:

The contiguous office buildings comprise approximately 6,560 square feet and are configured with offices, a reception area, restrooms, and a conference room. An exterior staircase is located on the south side of the buildings.

The warehouse comprises approximately 19,136 square feet and houses the marine manufacturing and production operations. Within the warehouse is an electric crane that runs along the ceiling; a fork lift; steel tug boat parts, batteries, and other heavy machine equipment. The southeast corner of the warehouse is used for manufacturing fiberglass boats. Several 55 gallon drums labeled Hydrex 100 33350-15 were stored along the wall next to an air compressor. Additionally, the warehouse contains an electrical room, an employee break area, a welding shop, and an approximately 1,530 square foot mezzanine used for storage. The warehouse contains concrete flooring. Product staining was observed during the Site Inspection.

The building along the southeast Property boundary comprises approximately 4,440 square feet and is divided into two sections. One side was used for spray applications and the other side was used for fabrication. The building contains concrete flooring. Metal shards were observed covering the floor in the fabrication area. Several five gallon buckets of Pyrotek vibration damping compound were stored on wooden pallets.

Site History and Reported Conditions:

The subject Property was first developed sometime prior to 1940 with the construction of a residence and a garage or shed. Between 1960 and 1965, the residence was vacant. By 1969, the former structures were demolished, and the present-day warehouse was constructed to occupy the ship building plant, Tide Bay Inc. By 1975, the Property occupied Martinolich Ship Builders. In 1980, a two-story office building and a dock marina were constructed. By then, the boat

manufacturer, Marine Technical Services, occupied the Property. In 1985, a material storage shed was constructed. In 2013, an additional two-story office building was constructed onto the existing structure. The subject Property has occupied the steel and fiberglass marine boat manufacturer, Modutech Marine Inc, since 1986 throughout to the present-day.

The subject Property is located in an industrially dominated area. To the north is Marine View Drive (Highway 509) followed by a steep bluff. To the south is the Hylebos Waterway. To the east is a storage yard. To the west is the Hylebos Waterway.

Previously Identified Contaminants of Concern:

A *Phase I Environmental Site Assessment*, completed February 26, 2018 by Aerotech, identified Contaminants of Concern as compounds related to spent sandblast grit: Metals (“MTCA 5”) which include Arsenic, Chromium, Cadmium, Lead and Mercury.

SECTION II. FIELD WORK

Notifications – “Public Utilities:

Due to the age and nature of the Site, a “public” utilities notification was performed prior to the start of work. Aerotech requested the notification on March 5, 2018, and was issued ticket number 18077555 by the Utilities Underground Location Center (“UULC”).

According to the UULC the utilities in the vicinity of the Site that required notification included:

Company	Marking Concerns	Customer Service	Repair
COMCAST CABLE	(800)762-0592	(800)266-2278	(855)537-6296
PUGET SOUND ENERGY GAS	(888)728-9343	(888)225-5773	(888)225-5773
CTLQL-CENTURYLINK	(800)778-9140	(800)283-4237	(800)573-1311
CTLQL-CENTURYLINK	(800)778-9140	(800)283-4237	(800)573-1311
CITY OF TACOMA PUB WORKS SIG	(253)591-5287	(253)591-5287	(253)591-5287
TACOMA WATER DEPARTMENT	(253)502-8398	(253)502-8344	(253)502-8344
TACOMA PWR & CLICK NETWORK	(253)502-8263	(253)502-8600	(253)383-0982
TACOMA SEWER DEPARTMENT	(253)591-5585	(253)591-5585	(253)591-5585
WSDOT OLYMPIC REGION-AREA 1	(253)983-7550	(253)983-7550	(253)983-7550

Private Utilities Location:

Additionally, Aerotech engaged personnel of Mountain View Locating Services LLC. (“Mountain View”) of Bonney Lake, Washington to locate building and site utilities on March 7, 2018, prior to the start of the on Site drilling activities. No anticipated or unexpected situations were discovered or encountered during the “private” locating activities.

Based in part upon the pavement markings made by utility location technicians; the locations of utility fixtures such as water, electrical, or manholes, and the presence of anomalies detected by induction or ground penetrating radar methodologies final soil boring and monitoring well locations were chosen. Refer to Figure 4 for details regarding the soil boring locations and site features.

Site Activities:

Twenty-eight soil borings were completed during the *Site Characterization*, performed on March 8, March 28, and April 2, 2018, under contract with Aerotech. All the work was performed during business hours. No unusual or unforeseen circumstances occurred during the Site activities.

Drilling Activities:

During the March 8, March 28 and April 2 mobilizations, drilling operations utilized a Truck-mounted Direct Push Drilling Rig. The subsurface soil borings were performed by equipment owned and operated by Licensed Driller from Standard Environmental Probe of Olympia.

Additional drilling operations on April 5 utilized a hollow-stem auger drill rig to install monitoring wells at the Site. The subsurface soil borings were performed by equipment owned and operated by a Licensed Driller from Boretech Drilling of Bellevue, Washington.

All subsurface work was overseen by State of Washington Licensed Geologist, Mr. Justin Foslien (State of Washington License No. 2540). The laboratory analytical services were performed by a State of Washington licensed lab, Advance Analytical Labs located in Renton, Washington.

Soil Borings:

Soil borings were advanced at twenty-eight (28) locations on Site. Soil borings SB1 through SB16 were advanced to determine if any residual compounds associated with the waste sandblast grit. Locations of the soil borings were predominately based on the approximate location of former suspect fill areas. Additional soil borings (SB17 through SB28) were advanced to delineate the extent of Arsenic and Lead present in the subsurface soil. Boring locations are depicted on Figure 4. No visual or olfactory indications of contamination in the soil borings were observed with the exception of a slight odor noted at the 4 foot interval at SB08.

Soil Sample Collection:

A total of forty-eight (48) discrete soil samples were collected and submitted for analyses from twenty-eight (28) soil boring locations.

Soils from each location were visually inspected for color quality and evidence of discoloration, and physically observed for the purpose of recording composition and noting color, where distinctive. Each sample was handled with a fresh pair of clean latex gloves. Samples were then placed into sterile four-ounce glass jars and/or 40cc glass vials preserved with 5 ml of methanol in accordance with procedures specified for USEPA Method 5035A.

Each sample was given a unique identifier number and placed into an iced cooler for preservation. Samples were held in the custody of Nicholas Gerkin or Justin Foslien until delivery to Advanced Analytical Inc. of Redmond, Washington.

Equipment Decontamination:

All sample acquisition equipment was decontaminated before and after the completion of each borehole to eliminate the potential for cross-contamination between borings, as required. All reusable sampling equipment for soil sampling, drive rods, and probes were decontaminated after each sampling point by washing with an Alconox-distilled water solution and rinsing with distilled water.

Site Restoration:

Each borehole was backfilled with soil cuttings and/or gravel and patched with asphalt or concrete to match with the surrounding grade.

Installation and Design of Groundwater Monitoring Wells:

On April 5, 2018 groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4 were installed at the subject Site.

At each well location, a two-inch diameter Schedule 40 PVC groundwater monitoring well was installed to a depth approximately 19 feet bgs. Fifteen feet of 2-inch diameter No. 10 PVC slotted screen was installed between a depth of 4.0 and 19.0 feet bgs in order to accommodate a wider range of fluctuations in groundwater levels due to the proximity of the Site to both the Puyallup River and Commencement Bay, where the magnitude of range of low and high tide may often exceeds 10 feet. The annular space in each case was completed with clean Colorado silica sand sized to the No 10 screen (No 10 to No 20 grade), to a depth of 1.0 feet above the top of the well screen interval. The remaining annular space was sealed with bentonite chips to within one foot of the surface to prevent the infiltration of surface water or contaminants to the depth of the screened interval. The well was completed with a sealable pressure cap, and cement was placed above the bentonite to secure a flush mounted well-head monument.

Well design details are depicted in the attached Soil Boring Logs. The Department of Ecology does not permit groundwater to be collected from a newly installed groundwater well until the well system has been allowed to chemically equilibrate for a period of at least 72 hours. This waiting period is designed to allow the groundwater environment to return to its natural state, representing conditions prior to the disturbance caused by the well installation process. Groundwater monitoring wells were developed by Aerotech on April 5, 2018 and subsequently sampled on April 9, 2018. Standard operating procedures for well development as well as field documentation are included in the Appendices.

Well Identification	Well Tag	Total Depth (feet bgs)	Approximate Screened Interval (feet bgs)	Elevation of Well Head (feet bgs)
MW1	BJN093	18.5	4-19	11.75
MW2	BJN094	18.9	4-19	10.27
MW3	BJN095	19.3	4-19	10.72
MW4	BJN096	19.6	4-19	11.02

SECTION III.

GEOLOGY AND HYDROGEOLOGY

Physical Setting Source:

In order to ascertain the physical setting of the subject Property, a review was conducted of the appropriate current United States Geological Survey ("USGS") 7.5 Minute Topographic Quadrangle (quad) Map. The USGS 7.5 minute quad map has an approximate scale of 1" to 2,000 feet, shows physical features such as wetlands, water bodies, roadways, mines, and buildings. These physical and natural features shown should be the areas of visual emphasis, when conducting the on-site inspection of the subject Property. The USGS 7.5 quad map is considered to be the only Standard Physical Setting Source, and is sufficient as a single reference. The applicable USGS 7.5 minute topo map is the Quadrangle 6005511 - Tacoma North, WA., photo revised in 2014 (Figure 3).

Surface Characteristics:

The precise Property location is N 47° 16' 25.71" / W 122° 22' 44.61" as determined by DeLorme mapping data. The Site is located within Universal Transverse Mercator Zone No.10. The Site elevation is approximately 13 feet above mean sea level. As observed during the Site visit and confirmed on the USGS topographic map, the subject Property exhibits a surficial drainage towards the southwest, based upon overall Site topography. Additionally, the assumed general groundwater flow is to the southwest.

Geology - Regional:

The Geologic map of the Tacoma North 7.5-Minute Quadrangle mapped the Site as artificial fill (af). As discussed above, depth to shallow groundwater is assumed to be approximately 5 feet below ground surface (bgs). However, the groundwater table is likely subject to tidal fluctuations. Inferred groundwater flow direction is generally to the southwest, towards the Hylebos Waterway.

Geology - On-Site Conditions:

The predominant subsurface across the Site is artificial fill consisting of fine to medium grained sand and gravelly sand with occasional pieces of debris intermixed. Along the eastern portion of the Site along the shoreline, the fill material extended to from the grade surface to approximately 10 to 12 feet below grade surface. The fill decreases in thickness from the grade surface to approximately 4 feet below grade surface toward MW1 and the western portion of the Site. Beneath the fill, a well sorted silty Sand with alternating layers of fine sand and silt indicated the historical tide flat deposits.

GENERALIZED LITHOLOGY

0-10 ft	Fill – Asphalt, then Gravelly Sand GP
---------	--

10 – 19 feet below grade	SP – Brown well sorted sand and silt.
--------------------------	---------------------------------------

Subsurface Hydrogeological Characteristics – Groundwater Occurrence:

Groundwater was observed in soil borings at approximately 8 to 9 feet below ground surface. Groundwater monitoring wells installed at locations MW1 through MW4 were measured and surveyed to create a potentiometric surface map illustrated on Figure 5. The newly installed groundwater monitoring well network verified the assumed groundwater flow direction is indeed toward the southwest.

SECTION IV. ANALYTICAL RESULTS

Volatile Organic Compounds (“VOCs”)

A sample at location SB08 from 4 feet below grade surface was submitted for analyses of volatile organic compounds (“VOCs”) based on a slight odor observed in the field. No VOCs were detected above the minimum laboratory reporting limits.

Metals

Soil samples collected from Soil Borings SB04, SB07, SB08, SB11, SB20, SB25, and SB27 contained of Arsenic and Lead above the MTCA Method A Cleanup Levels.

Groundwater samples collected from monitoring wells MW1 through MW4 did not contain concentrations of Arsenic and Lead above the MTCA Method A Cleanup Levels.

APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS

The analytical parameters were chosen based upon the results of previous investigations to provide a comprehensive characterization of the subsurface soils and groundwater present at the Site Areas of Concern and to comply with State of Washington recommendations.

Analytical Methodology:

Soil:	VOCs USEPA 8260B
Soil:	Metals (“MTCA 5”) USEPA 7010/7471
Water:	Arsenic and Lead USEPA 7010

Laboratory analysis was provided by:

Advanced Analytical Laboratory, LLC
4078 148 Avenue NE
Redmond, WA 98052
425.702.8571
aachemlab@yahoo.com

STATEMENT OF THE SITE ASSESSOR

I have performed this *Site Characterization* in accordance with generally accepted environmental practices, procedures, and regulatory requirements, as of the date of this Report. I have employed the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of this part. I have the specific qualifications based upon education, training, and experience necessary to conduct Remedial Investigations.

Signature of Washington Certified UST Site Assessor:


Signature – Nicholas Gerkin (Certificate No. 8452487)

STATEMENT OF THE LICENSED GEOLOGIST

As stipulated in the Regulatory Code of the State of Washington Title 18, Chapter 18.220, the undersigned is a licensed Geologist in the State of Washington, and has met the statutory requirements of RCW § 18.220.060 for such licensing including, but not limited to, educational requirements, work and field experience, examination proficiency, and acceptance by the State Licensing Board.

The undersigned Licensed Geologist has supervised the geological work performed as described in attached Report – a majority of said work being performed by employees of the firm which employs undersigned Licensed Geologist – as delineated in RCW Title 18, Chapter 18.220, Paragraph 190.

Signature of Licensed Washington Geologist:


Signature – Justin Francis Foslien (License No. 2540)



JUSTIN FRANCIS FOSLIEN

APPENDIX

- Analytical Results Tables & Figures
- Photographs
- Project Contract Documents
- Laboratory Analytical Reports and Chains of Custody
- Boring Logs
- Standard Operating Procedures
- Field Documentation
- *Phase I Environmental Site Assessment, Modutech Marine, Inc., Riley Group, Inc., September 2009*
- *Focused Phase II Subsurface Investigation, Modutech Marine, Inc., Riley Group, Inc., November 2009*

- Analytical Results Tables & Figures

GROUNDWATER ANALYTICAL RESULTS

Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington 98422

MW1

Well Depth	Sampling Date	Ground Water Level	Elevation (TOC north)*	Water Level Elevation	Dissolved Arsenic	Total Arsenic	Dissolved Lead	Total Lead
Feet		Feet Below TOC	Feet Above MSL	Feet Above MSL	µg/L	µg/L	µg/L	µg/L
18.5	04/11/18	2.41	11.75	9.34	<2	3	<2	<2
MTCA Method A Cleanup Levels					5	5	15	15

MW2

Well Depth	Sampling Date	Ground Water Level	Elevation (TOC north)*	Water Level Elevation	Dissolved Arsenic	Total Arsenic	Dissolved Lead	Total Lead
Feet		Feet Below TOC	Feet Above MSL	Feet Above MSL	µg/L	µg/L	µg/L	µg/L
18.9	04/11/18	8.70	10.27	1.57	<2	<2	<2	<2
MTCA Method A Cleanup Levels					5	5	15	15

MW3

Well Depth	Sampling Date	Ground Water Level	Elevation (TOC north)*	Water Level Elevation	Dissolved Arsenic	Total Arsenic	Dissolved Lead	Total Lead
Feet		Feet Below TOC	Feet Above MSL	Feet Above MSL	µg/L	µg/L	µg/L	µg/L
19.3	04/11/18	9.00	10.72	1.72	<2	<2	<2	<2
MTCA Method A Cleanup Levels					5	5	15	15

MW4

Well Depth	Sampling Date	Ground Water Level	Elevation (TOC north)*	Water Level Elevation	Dissolved Arsenic	Total Arsenic	Dissolved Lead	Total Lead
Feet		Feet Below TOC	Feet Above MSL	Feet Above MSL	µg/L	µg/L	µg/L	µg/L
19.6	04/11/18	6.90	11.02	4.12	<2	<2	<2	<2
MTCA Method A Cleanup Levels					5	5	15	15

EXPLANATION

MTCA = Model Toxic Control Act Cleanup Level (WAC173-340-900)

TOC = Top of Casing MSL = Mean Sea Level

< = not detected at indicated Laboratory Detection Limits -- not analyzed NM = Not Measured

* = TOC Elevations sourced from GeoEngineers' *Results of Ground Water Sampling - December 1994*

Arsenic and Lead by EPA Method 7010

Bolded numbers and red-shaded cells denote concentrations above the MTCA Method A Cleanup Levels for groundwater

TABLE 2
SOIL ANALYTICAL RESULTS

Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington

1 of 3

Aerotech Environmental Consulting, Inc. - Site Characterization Report - April 19, 2018

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	Arsenic	Lead	Chromium	Cadmium	Mercury	VOCs
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB01@3'	SB01	03/08/18	3	2.2	5.4	2.0	<1.0	<0.5	--
SB02@4'	SB02	03/08/18	4	2.9	5.0	2.0	<1.0	<0.5	--
SB03@4'	SB03	03/08/18	4	7.0	1,100	18	<1.0	<0.5	--
SB03A(8)	SB03A	03/28/18	8	<1.0	50	--	--	--	--
SB04@3'	SB04	03/08/18	3	<1.0	6.2	2.0	<1.0	<0.5	--
SB04A(8)	SB04A	04/02/18	8	1.5	27	--	--	--	--
SB05@4'	SB05	03/08/18	4	19	210	4.0	1.6	<0.5	--
SB06@4'	SB06	03/08/18	4	1.7	67	2.1	<1.0	<0.5	--
SB07@4'	SB07	03/08/18	4	45	16	3.1	<1.0	<0.5	--
SB07A(8)	SB07A	03/28/18	8	38	25	--	--	--	--
SB07B(12)	SB07B	04/02/18	12	1.3	1.4	--	--	--	--
SB08@4'	SB08	03/08/18	4	31	20	3.2	<1.0	<0.5	ND
SB08A(8)	SB08A	03/28/18	8	32	30	--	--	--	--
SB08B(12)	SB08B	04/02/18	12	17	30	--	--	--	--
SB09@4'	SB09	03/08/18	4	9.1	160	12	<1.0	<0.5	--
SB10@4'	SB10	03/08/18	4	4.7	25	4.6	<1.0	<0.5	--
SB11@4'	SB11	03/08/18	4	39	97	5.9	<1.0	<0.5	--
SB11A(8)	SB11A	03/28/18	8	1.2	7.7	--	--	--	--
SB12@4'	SB12	03/08/18	4	17	490	9.2	<1.0	<0.5	--
SB12A(8)	SB12A	03/28/18	8	9	290	--	--	--	--
MTC Method A Industrial Cleanup Levels				20	1,000	19	2	2	Varies

TABLE 2
SOIL ANALYTICAL RESULTS

Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington
2 of 3

Aerotech Environmental Consulting, Inc. - Site Characterization Report - DRAFT (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	Arsenic	Lead	Chromium	Cadmium	Mercury	VOCs
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB12B(12)	SB12	03/08/18	12	10	15	--	--	--	--
SB13@4'	SB13	03/08/18	4	11	220	5.9	<1.0	<0.5	--
SB14@4'	SB14	03/08/18	4	6.1	4.8	1.3	<1.0	<0.5	--
SB15@4'	SB15	03/08/18	4	3.4	23	4.5	<1.0	<0.5	--
SB16@4'	SB16	03/08/18	4	14	40	6.2	<1.0	<0.5	--
SB17(4)	SB17	03/28/18	4	1.4	290	--	--	--	--
SB17(8)	SB17	03/28/18	8	<1.0	33	--	--	--	--
SB18(4)	SB18	03/28/18	4	<1.0	3.2	--	--	--	--
SB18(8)	SB18	03/28/18	8	<1.0	6.7	--	--	--	--
SB19(4)	SB19	03/28/18	4	17	850	--	--	--	--
SB19(8)	SB19	03/28/18	8	1.6	33	--	--	--	--
SB20(4)	SB20	03/28/18	4	22	13	--	--	--	--
SB20(8)	SB20	03/28/18	8	1.9	18	--	--	--	--
SB21(4)	SB21	03/28/18	4	14	11	--	--	--	--
SB21(8)	SB21	03/28/18	8	3.8	24	--	--	--	--
SB22(4)	SB22	03/28/18	4	5.9	38	--	--	--	--
SB22(8)	SB22	03/28/18	8	4.7	9.2	--	--	--	--
SB23(4)	SB23	03/28/18	4	2.4	91	--	--	--	--
SB23(8)	SB23	03/28/18	8	1.3	7.6	--	--	--	--
SB24(4)	SB24	04/02/18	4	<1.0	2.7	--	--	--	--
MTCVA Method A Industrial Cleanup Levels				20	1,000	19	2	2	Varies

TABLE 2
SOIL ANALYTICAL RESULTS

Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington

3 of 3

Aerotech Environmental Consulting, Inc. - Site Characterization Report - DRAFT (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	Arsenic	Lead	Chromium	Cadmium	Mercury	VOCs
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SB24(8)	SB24	04/02/18	8	11	12	--	--	--	--
SB25(4)	SB25	04/02/18	4	2.0	4.3	--	--	--	--
SB25(8)	SB25	04/02/18	8	27	260	--	--	--	--
SB26(4)	SB26	04/02/18	4	4.3	470	--	--	--	--
SB26(8)	SB26	04/02/18	8	1.6	26	--	--	--	--
SB27(4)	SB27	04/02/18	4	31	170	--	--	--	--
SB27(8)	SB27	04/02/18	8	2.0	19	--	--	--	--
SB28(4)	SB28	04/02/18	4	<1.0	3.8	--	--	--	--
MTCA Method A Industrial Cleanup Levels				20	1,000	19	2	2	Varies

MTCA = Model Toxic Control Act Cleanup Level (WAC173-340-900)

BGS = Below Ground Surface mg/kg = milligram of analyte per kilogram of soil

< = not detected at indicated Laboratory Detection Limits -- = not analyzed

Lead and Arsenic by EPA Method 7010

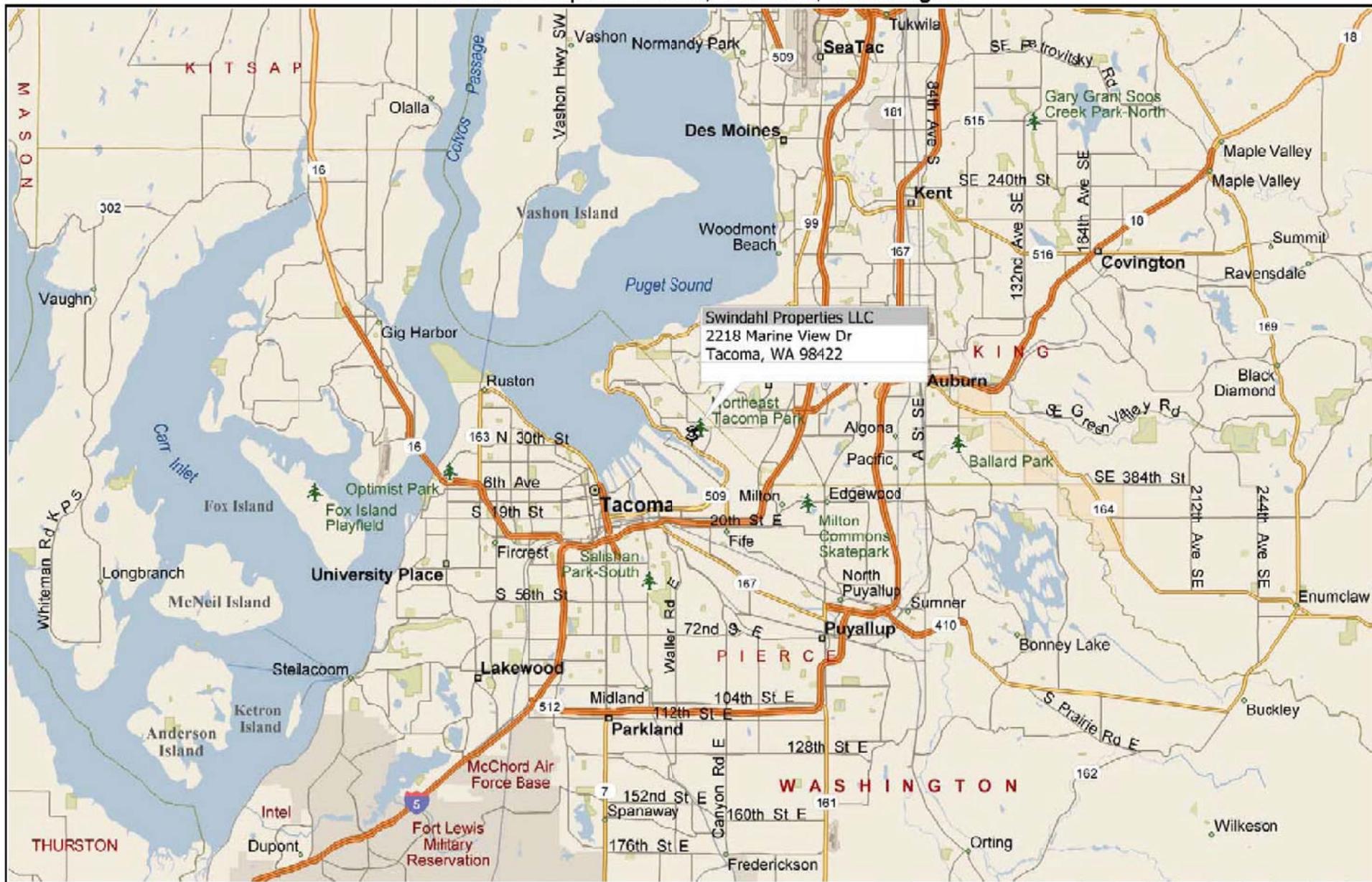
Mercury by EPA Method 7471

VOCs by EPA Method 8260B

ND = Not Detected (minimum detection limit unknown)

Bolded numbers and red-shaded cells denote concentrations above the MTCA Method A Cleanup Levels for soil

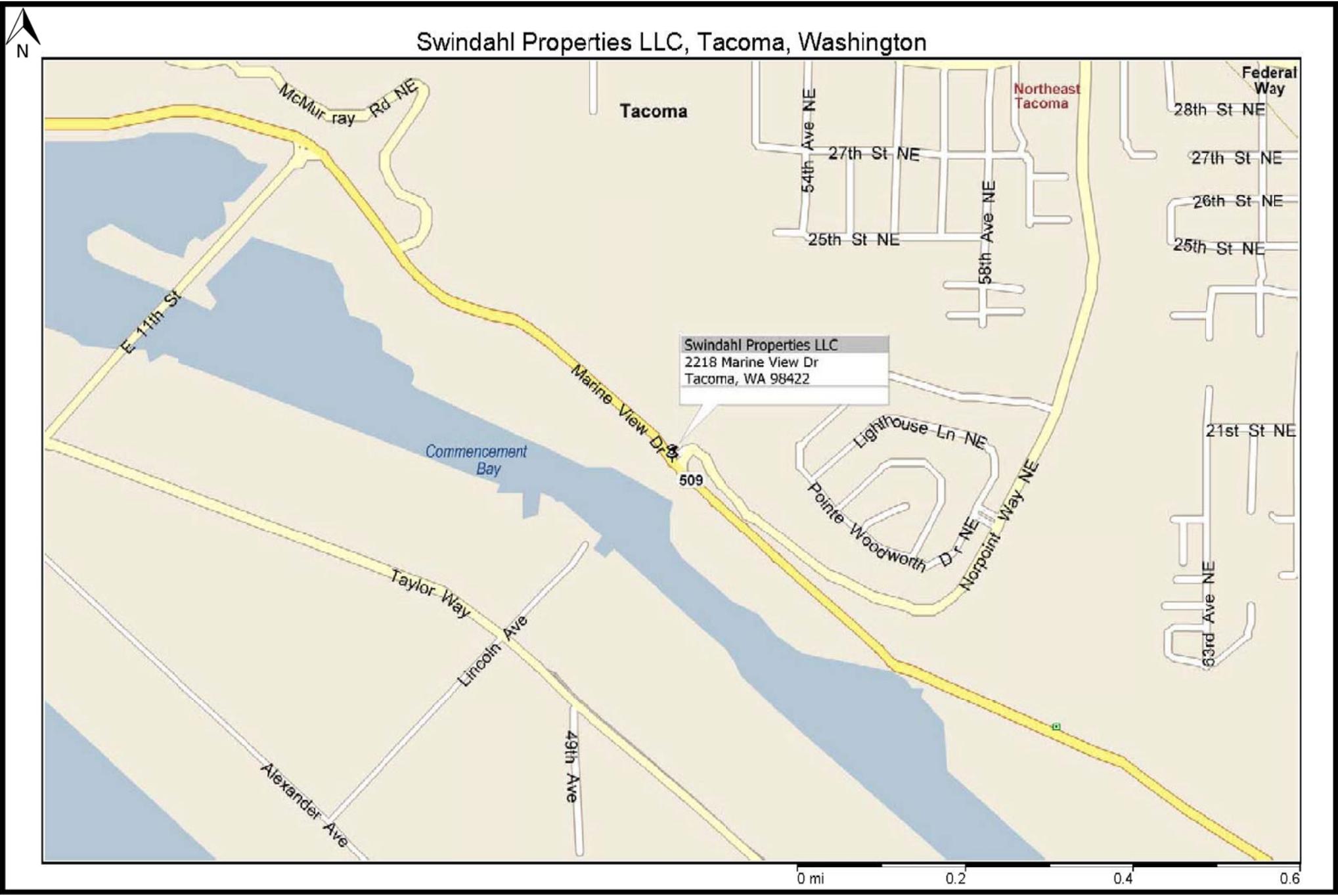
Swindahl Properties LLC, Tacoma, Washington

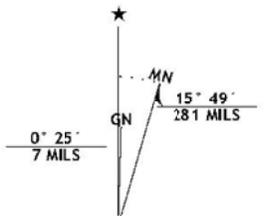
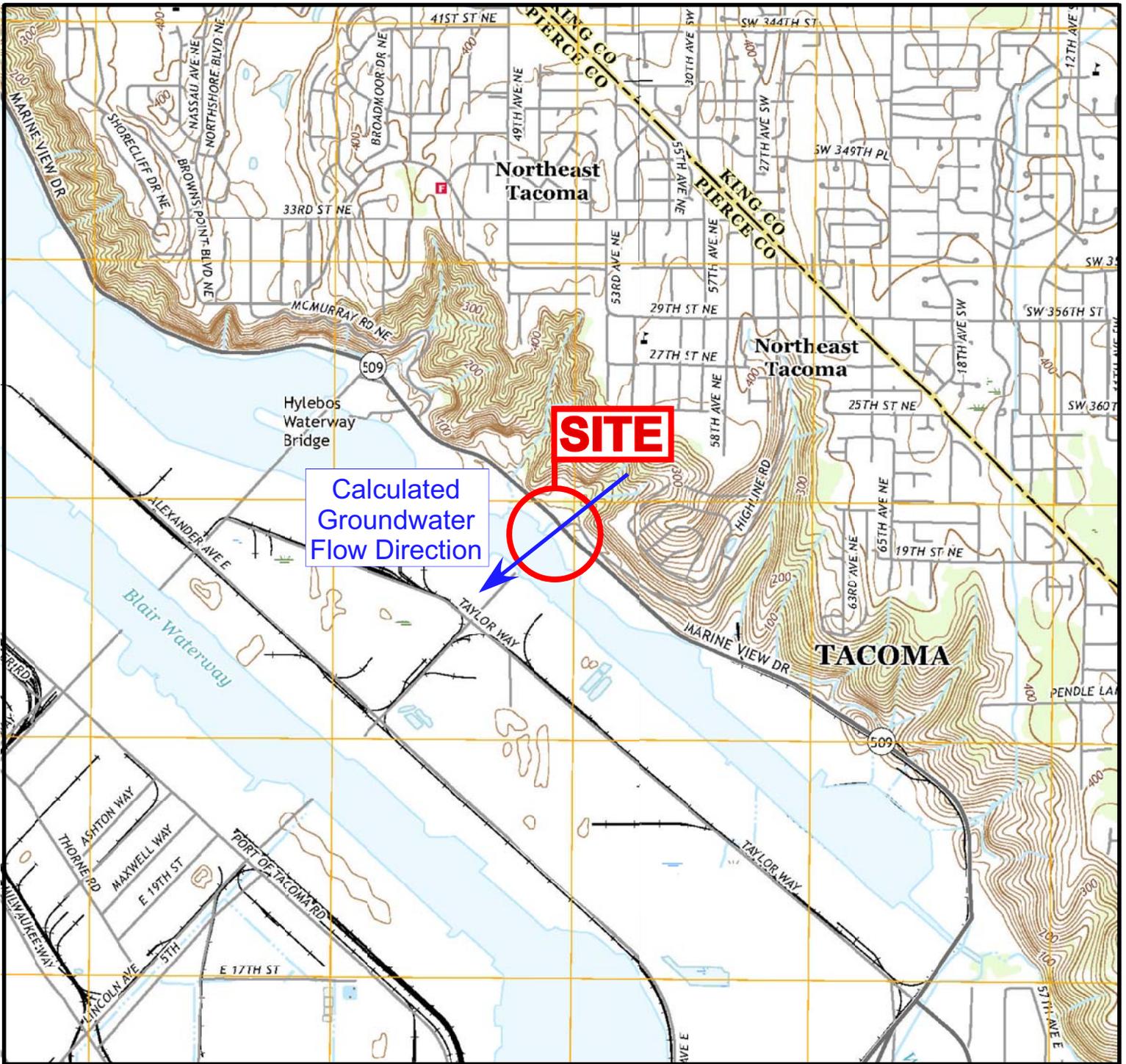


Swindahl Properties LLC
2218 Marine View Dr
Tacoma, WA 98422

0 mi 5 10 15

Swindahl Properties LLC, Tacoma, Washington



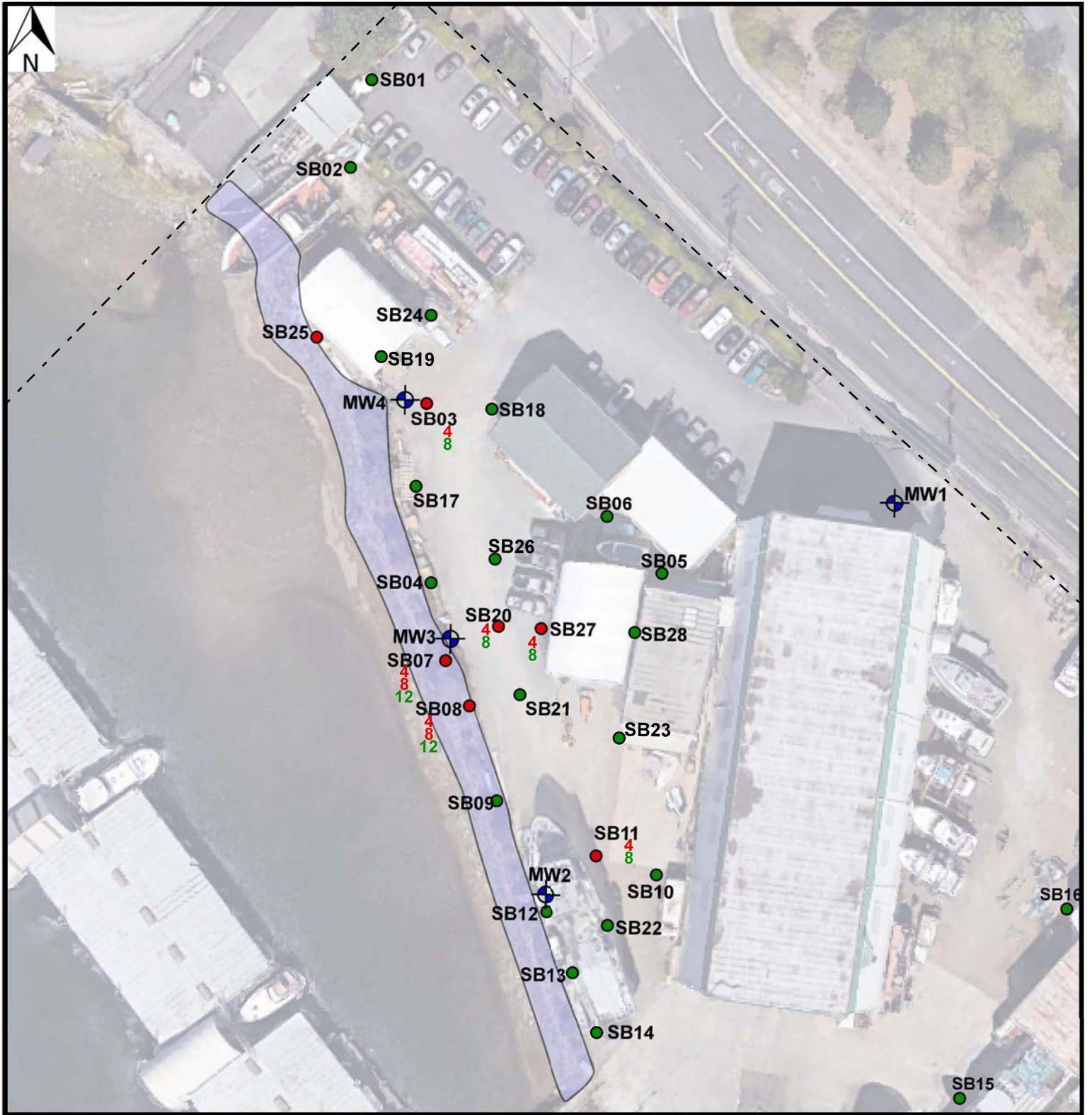


SCALE (mile)

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988



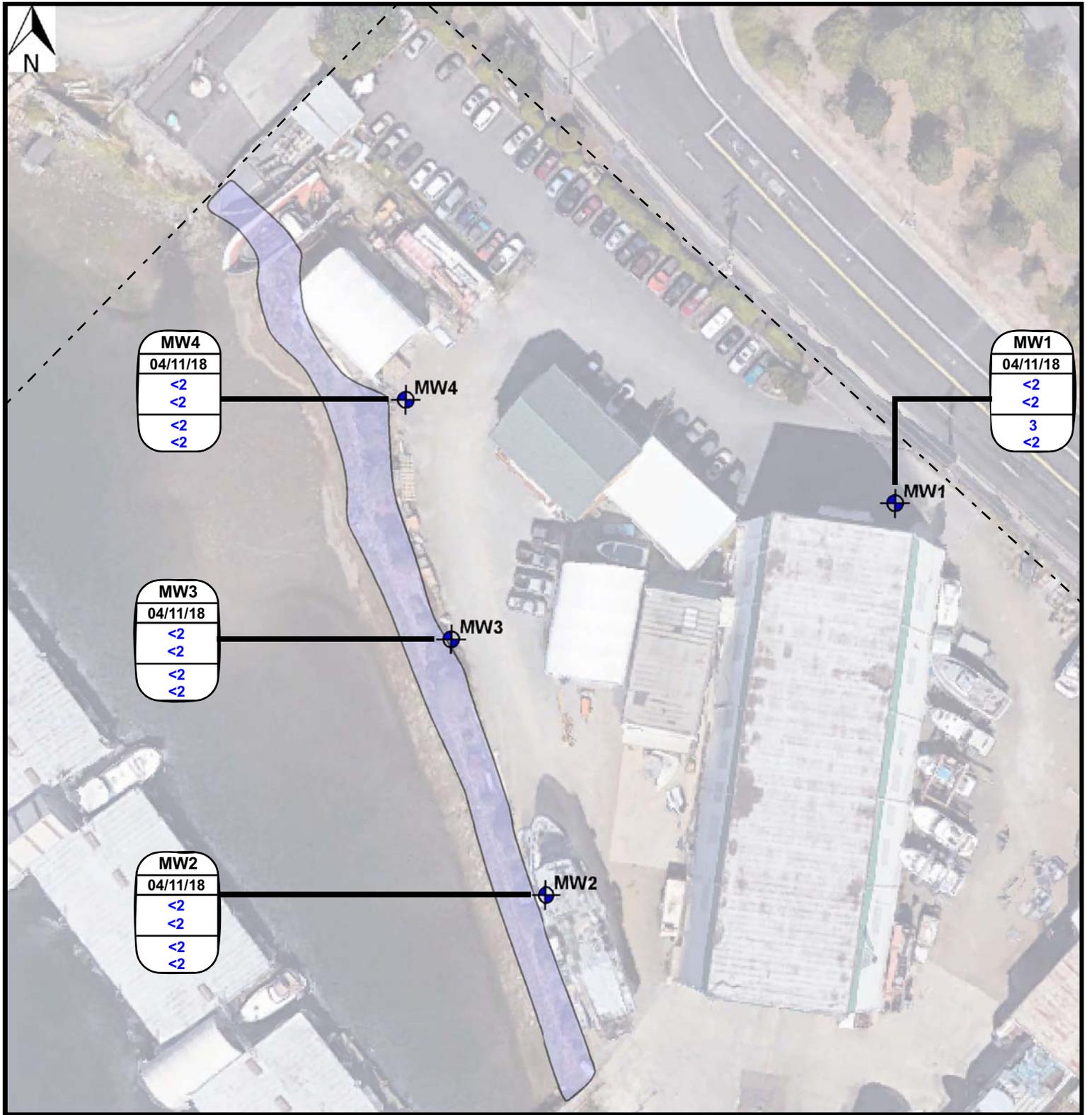
QUADRANGLE LOCATION



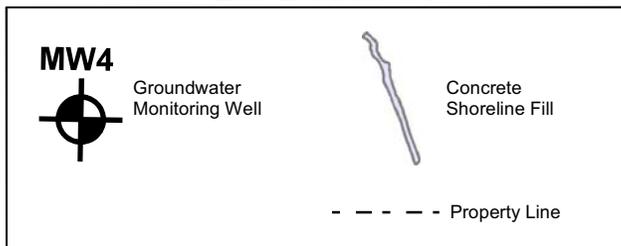
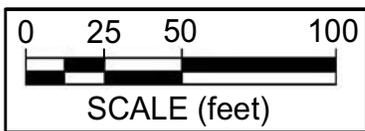
EXPLANATION



SB28 ●	Soil Boring Location		Concrete Shoreline Fill
MW4 ⊕	Groundwater Monitoring Well	- - - - -	Property Line

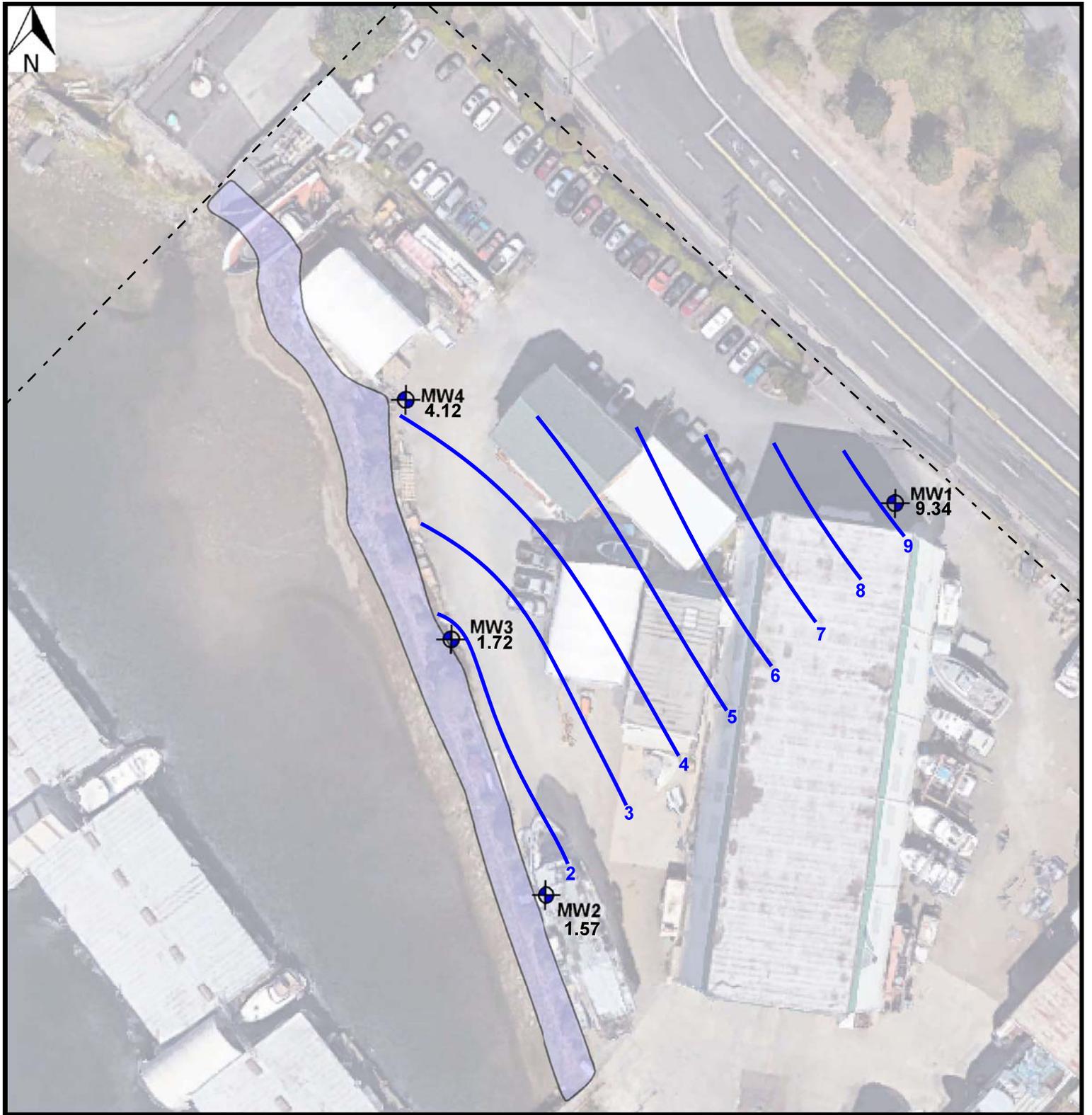


EXPLANATION

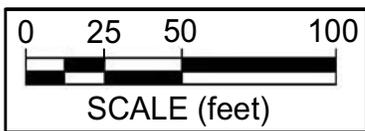


MW1	Well ID
04/11/18	Date
<2	Total Lead
<2	Dissolved Lead
3	Total Arsenic
<2	Dissolved Arsenic

All Concentrations are reported in µg/kg



EXPLANATION



MW4	Groundwater Monitoring Well		Concrete Shoreline Fill
	Groundwater Elevation (Feet Above MSL)		
4.12	Groundwater Elevation (Feet Above MSL)		
	Water Elevation Contour		Property Line

Calculated Groundwater Flow Direction and Gradient:



- Photographs



Black Sandy Gravelly Fill at SB25 Location



Direct Push Drilling at SB03 Location



Fill at SB18 Location with Copper Wire



Direct Push Drilling at SB08 Location



View Looking North Depicting High Tide Line Approximately 4 Feet Below Property Ground Surface



Profile from the SB12 Location. Fill present from 0 to 12 feet Below Ground Surface then by Silt and Sand



Example of Water from an Undeveloped Well (left) and an Aerotech-Developed Well (right)



Fill from 0 to 4 Feet Below Ground Surface, followed by Water-Bearing Sand at MW1 Location



Well Installation at MW3 Location



Hollow Stem Auger Drilling at MW4 Location



Silt with Clay and Intermittent Water Bearing Sand Lenses



Gauging Well During the Development Process

- Project Contract Documents

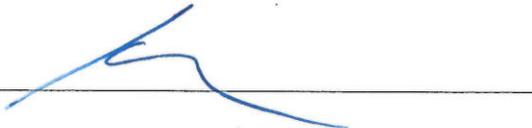
ENVIRONMENTAL CONTRACTOR'S CERTIFICATION

Swindahl Properties LLC
2218 Marine View Drive
Tacoma, Washington 98422

1. Contractor's Name: Aerotech Environmental Consulting, Inc.
2. Contractor's Address: 13925 Interurban Avenue South, Ste. 210, Seattle, Washington 98168
3. Name and title of person completing this certification: Alan T. Blotch / President
4. Answer the following questions about each employee that contractor will have perform the assessment or prepare the report showing the results of the inspection:
 - a. Name and Title of Employee: Alan T. Blotch – Environmental Professional
 - b. Length of experience doing environmental assessments: 31 years
 - c. Education degrees received: Masters of Business Administration
Juris Doctor – Environmental Law
 - d. Relevant training received: ASTM E50 Environmental Assessment Committee Meetings
5. Identify any certifications and approvals issued to contractor pursuant to an official Federal, State or local program or policy to conduct environmental assessments: Registered Environmental Assessor
Issued by State of California
6. Describe the generally recognized standards which the contractor will use to perform the assessment.
Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process
(ASTM E 1903)
7. Disclose the nature of any previous environmental inspections contractor has ever performed for the Owner of the property: Phase I Environmental Site Assessment
8. Disclose the nature of any affiliation or association contractor now has, or ever had, with the above referenced seller of the property, of the above referenced buyer of the property: N/A
9. Describe the liability insurance carried by contractor to cover claims in the event that it fails to discover adverse environmental conditions during an environmental inspection.
Professional Errors & Omissions Coverage \$1,000,000 / claim and \$1,000,000 aggregate liability

THE UNDERSIGNED HEREBY CERTIFIES, UNDER PENALTY OF THE CRIMINAL AND/OR CIVIL PENALTIES IN 18 U.S.C. § 1001 FOR FALSE STATEMENTS TO THE UNITED STATES GOVERNMENT, THAT THE ABOVE INFORMATION IS TRUE AND CORRECT.

Signature



Date

4-19-18