Initial Remedial Investigation
Technical Memorandum

Sample Collection, Analysis & Technical Memorandum
1032 West Marine View Drive
Everett, Washington

Stantec

November 7, 2011

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1.0 Introduction

This technical memorandum presents the results of the initial Remedial Investigation (RI) completed at 1032 West Marine View Drive, Everett, Washington (referred to as 'Site' or 'the Site', see Figure 1, *Site Location Map*). The term 'Property' refers to the real property discussed in this technical memorandum. The RI was completed in general accordance with the Remedial Investigation / Feasibility Study (RI/FS) Work Plan prepared by Stantec Consulting Corporation (Stantec) dated January 17, 2011 and pursuant to Agreed Order No. DE 7818 (Order).

The term 'initial' is used in reference to this RI in accordance with Section F (RI Study Approach) as listed in Appendix B (Scope of Work) of the Order. This section of the Order states in part that:

"The PLPs shall provide Ecology with the results of the investigation (in the form of a technical memo) so that a determination can be made with regard to whether additional investigation is required to define the full nature and extent of contamination. The information provided to Ecology should describe the analytical results of the field activities including the identification of indicator hazardous substances, the affected media, preliminary cleanup levels, the extent of contamination (plotted on maps), and any data gaps that need to be filled to define the nature and extent of contamination and toxic effects. Note that the preliminary cleanup levels may be different than the screening levels used in the RI/FS Work Plan based on a better understanding of the CSM (e.g., contaminants in soil may not be impacting Site groundwater) for the Site. Additional field investigation (if necessary based on initial results) will be conducted to further define the nature and extent of contamination and toxic effects based on findings during the initial investigation."

2.0 Field Investigation

The sample collection portion of the RI field investigation began on April 25 and was concluded on May 6, 2011. During the week of April 25, 2011, a total of 17 borings were advanced for soil and groundwater sampling purposes on the Site (see Figure 2, *Site Plan* and Appendix A, *Boring Logs*) in general accordance with the RI/FS Work Plan. Soils were sampled the week of April 25 and April 29, 2011. The following week, each of the groundwater monitoring wells was purged, screened and sampled in general accordance with the RI/FS Work Plan. All soil and groundwater samples were screened, documented, sampled, transported and analyzed in general accordance with the RI/FS Work Plan.

2.1 SOILS

All soil sample collection occurred between April 25 and April 29, 2011. Soil borings were advanced at the locations shown on Figure 2. In accordance with the Order, the rationale for each location is presented below:

Borings TC-MW-1 to TC-MW-5 – Five boring locations were selected between Buildings B and C to characterize conditions near and associated with the wastewater treatment/chemical storage and discharge areas (TC-MW-1 and TC-MW-2), near the compressor shed (TC-MW-3), in an unpaved area adjacent to Building C (TC-MW-4), and in the vicinity of a paint booth area (TC-MW-5).

Borings TC-MW-6 to TC-MW-8 – Three boring locations were selected along the southern property boundary between the North Marina Ameron-Hulbert (Ameron-Hulbert) Site and the Property to characterize conditions adjacent to the Ameron-Hulbert Site and in the vicinity of the (historically-identified) 'oil-affected area'.

Boring TC-MW-9 – One boring location was selected at the southwest corner of the Property to characterize conditions near the downstream-end of the Property's stormwater drainage system.

Borings TC-MW-10 and TC-MW-11 – Two boring locations were selected west of Building C to characterize conditions on the waterward side of and in the vicinity of Building C.

Borings TC-MW-12 and TC-MW-13 – Two boring locations were selected north of Buildings B and C to characterize conditions north of these buildings.

Boring TC-MW-14 – One boring location was selected inside Building B as close to the penetrant-testing area as feasible to characterize conditions where penetrant oils have been used inside the building and near a sump cut into the concrete floor.

Boring TC-MW-15 and TC-MW-17 – Two borings locations were selected inside Building B in the containment area underneath the process tank lines (when TC Systems was in operation) to characterize conditions underneath the containment floor in the former dip-tank area.

Boring TC-MW-16 – One boring location was selected in the northeast portion of the Property and just north of Building B to characterize conditions where groundwater impacts were identified during the 2009 Phase II Environmental Site Assessment (ESA) conducted by E3RA, Inc. A groundwater sample collected at this location had reported TPH-diesel and -oil at concentrations of 1,200 µg/L and 860 µg/L, respectively[1].

2.1.1 Soil Sampling Activities and Deviations from the Work Plan

Sample Collection
Soil samples were collected in general accordance with the RI/FS Work Plan. During the advancement of borings, soil samples were screened on a continuous basis from the split spoon. Screening involved the use of a photoionization detector as well as visual and passive olfactory observations. In some locations, limited soil recovery did not allow for the screening of the recovered material from the split spoon. In accordance with the Sampling and Analysis Plan (SAP, dated January 21, 2011), if screening methods indicated elevated organic vapors from the photoionization detector (PID), or if other screening methods (visual observation) indicated sampling was warranted at a discrete location, a sample was collected from that location. Samples were also collected from each boring split spoon at the following depth intervals:

- 0.5 to 1.0 foot below ground surface (bgs);
- to 2.0 feet bgs;
- to 3.0 feet bgs, and;
- At locations where screening methods indicated sampling was appropriate.

The core (collected from the split spoon) was divided into the identified sample intervals and the sample intervals were individually homogenized using decontaminated stainless-steel bowls and spoons. The homogenized sample volumes were then placed into the appropriate laboratory supplied sample containers. However, volatile organic compound (VOC) soil samples, including samples for hydrocarbon testing, were collected from the undisturbed soil sample prior to homogenization, as described below.

EPA 5035A soil sampling procedures were used to collect soil samples planned for VOCs or gasoline-range petroleum hydrocarbons (TPH-G) analyses, consistent with Ecology guidance.

Because asphalt or concrete pavement was observed at the sampling locations, sample depths were modified so that the first sample depth interval was directly beneath the surface pavement (or concrete) and underlying base-course material. The adjustments to the depths were noted in the field notes. Subsequent intervals were adjusted were required.

[1] No finalized report was generated as part of the 2009 Phase II ESA conducted by E3RA, Inc.

Analysis Selection and Handling
The most shallow sample interval at each boring location was analyzed for priority pollutant metals, SVOCs, VOCs, and TPH-Dx. Additionally, soil samples from locations TC-SB-1 through TC-SB-4 and TC-SB-15 were analyzed for hexavalent chromium. Sample collection protocol for VOC samples was consistent with EPA 5035 methods. Any sample which displayed visual evidence of abrasive grit (e.g. blasting material) was submitted for organotin analysis.

If the TPH-Dx analytical (with gas chromatogram or GC) results indicated detections in the oil-range, the PCB analysis was added to the follow-on analyses for that soil interval. In addition, if the GC indicated that the shallow samples had detections in the gasoline range, TPH-Gx was added to the analyses for that interval.

If contaminants were detected in the shallow sample interval at concentrations above the Preliminary Screening Levels (PSLs), the next deeper sample was analyzed for the same constituents that were reported in excess of the PSLs.

Each sample was placed into the appropriate laboratory-prepared glassware and labeled in indelible marker with the following information before being placed into an ice-chilled cooler:

- Date and time that the material was collected;
- Unique sample identification number;
- Analysis required for that sample;
- Preservatives used in that glassware, and;
- Client and project reference information.

Soil Logging
After filling the sample containers with the soil and placing them into a chilled cooler, the soil characteristics were logged on a Boring Log and/or Daily Field Report. The following information was recorded on Borings Logs and/or Daily Field Reports.

- The location (lateral and vertical) of the sample collection point;
- Physical soil characteristics (USCS or equivalent);
- Person who collected the material;
- PID or other reading as applicable, and;
- Any unusual characteristics of the sample observed by the field technician.

Drilling Methodology
The borings were advanced using a hollow-stem auger as described in the RI/FS Work Plan. However, in order to ensure that the samples were collected in a continuous manner, the sampler was equipped with a five-foot, continuous-core split-spoon barrel sampler. Due to the number of analyses required by the Order, a Dames & Moore (e.g. three-inch outer diameter) split spoon was required in order to generate sufficient soil volume for screening and analysis. All of the locations requested by Ecology were adjusted to accommodate for subsurface utilities, above-ground structures, or other physical impediments. However, the general location of each requested boring was very close to the RI/FS Work Plan. All of the boring locations were overlain by either concrete or asphalt or road base-course material; this material is not considered representative of Site soil conditions and was not sampled. Therefore, the elevation

designation of each of the soil samples collected is relative to the top of the soil under the base-coarse material.

2.1.2 Site Geology and Soil Observations

The Site is located in an area that was filled with hydraulically placed marine alluvium as well as surface fill materials within the last 60 years. Undocumented fill was encountered below the finish surface materials (asphalt and concrete) which included poorly graded sand, silty sand, sandy silt, metal debris, sawdust, wood debris, and mixtures of soil and debris. The native soil was not penetrated in any of the monitoring well borings; however, based on the geologic mapping of the area, we anticipate that the underlying native soils include pre-Fraser age silt and clay deposits.

2.2 GROUNDWATER

Groundwater samples were collected in general accordance with the RI/FS Work Plan. At each of the aforementioned boring locations (Figure 2), a two-inch groundwater monitoring well was installed. Groundwater monitoring wells were constructed in accordance with requirements contained in Washington State Minimum Standards for Construction and Maintenance of Wells (WAC 173-160). Monitoring well construction incorporate two-inch, schedule 40 PVC sleeves installed to a depth of ~10 feet below static groundwater elevation. The monitoring wells were screened (0.010-inch slotted) sufficient to allow for tidal elevation change encountered at the site with a two-inch sump at the base of the well sleeve. An eight to ten inch diameter monitoring well filter pack of #10 sand surrounding the well casing is standard. Each well was capped with an eight-inch diameter, flush-mounted monument casing secured by two 9/16" bolts. Inside each monument, the top of the monitoring well is further secured by a thread-tightened compression cap. The Ecology-issued unique well identification number tag was fastened to the interior of the well monument.

The monitoring wells were developed after construction to remove formation material from the well borehole and the filter pack prior to groundwater level measurement and sampling. Development was achieved by repeatedly surging the well with a surge block and purging the well until the water runs clear[2], but no less than five well casing volumes. During development, the purged groundwater was monitored for the following field parameters:

- pH
- Conductivity
- Temperature
- Turbidity
- Color
- Other observations

During development, turbidity did not decrease to the 5 Nephelometric Turbidity Units (NTUs) set as an achievement benchmark in the RI/FS Work Plan; the groundwater is inherently too

[2] Turbidity remained elevated during development and purging.

turbid to achieve this goal. Well development activities were recorded on Well Development logs (Appendix B, *Well Development Logs*).

2.2.1 Groundwater Sampling Activities

After developing and prior to each sampling event, each well was purged of groundwater using a centrifugal pump and disposable tubing. To minimize potential tidal influences on groundwater samples, sampling was conducted at a time that corresponds to low-tide conditions as prescribed by Ecology. All groundwater samples were collected using low-flow techniques. Using a peristaltic pump, the groundwater was pumped at a rate at which there was little or no water level drawdown or the water column remained stable and field parameters stabilized. The groundwater 'purge' water was collected and temporarily stored in properly-labeled 55-gallon drums and sealed for future disposal. The drums were disposed of by a licensed soil and groundwater disposal contractor.

2.2.2 Site Hydrogeology and Groundwater Observations

Groundwater was encountered in all of the borings at depths ranging from approximately 5 to 12 feet below the existing site grades. The groundwater occurs under unconfined conditions within the fill materials, which appear to have been placed through surface fill placement and previous dredging operations.

In general, the groundwater gradient within the property extends toward the west-northwest and Puget Sound. However, the near surface soils include fills which vary widely in composition and density. As a result, localized aquitards are present throughout the site, causing directional variations of the groundwater flow. In general, the more fine grained and dense the subsurface materials, the lower the transmissivity and lateral groundwater movement.

Groundwater levels can be affected by a variety of factors. At the Site, the primary factors that influence groundwater level include seasonal precipitation, stormwater and/or groundwater contributions from adjacent properties, permeability of the near surface soils, and tidal fluctuations.

2.3 STORMWATER SYSTEM ASSESSMENT

Selected repairs to the stormwater system were performed late in 2010. A brief summary of the repairs and assessment are discussed in this section.

Stormwater System Maintenance/Repairs: According to Ecology-provided documents, on November 29 through December 3, 2010 Kane Environmental mobilized to the Property in order to:

1. Perform oversight of soils encountered during stormwater system repairs (conducted by Trimaxx Construction, Inc., or Trimaxx) in accordance with the Soil Excavation Plan, and;
2. Prepare a memorandum documenting observations for Ecology's review.

The purpose of the work was to perform maintenance/repairs to the stormwater conveyance system and to correct blockage and elevation variations. The location of the stormwater system improvements is shown on Figure 2 of Stantec's memo dated April 15, 2011. In the area depicted, the soil was excavated from surface to the depth of the existing stormwater conveyance lines. The stormwater lines were removed and disposed of and new six (6)-inch diameter PVC stormwater pipe was installed. A new stormwater catch basin was installed at the southwest corner of the property. A trench was then excavated from the newly-installed catch basin directly west toward the stormwater catch basin at the southeast corner of the O&W Glass property. The new stormwater catch basin (installed on the Norton Industries property) was then connected (by 6-inch PVC tightline) to the stormwater catch basin at the southeast corner of the O&W Glass property.

The stormwater catch basin immediately south of the centerline of Building C had historically been the downgradient discharge point for the property (discharging to the south). As part of these improvements, this discharge point was terminated (by capping). The newly installed catch basin (at the southwest corner of the Norton Industries property) is now the discharge point from the Property, discharging toward the O&W Glass property (via the newly installed pipe between the two properties).

3.0 Analytical Results and Preliminary Screening

All soil and groundwater samples collected during the initial RI field investigation were submitted for analysis to Fremont Analytical Laboratories, Inc. (Fremont) of Seattle, Washington. Fremont is an Ecology-accredited laboratory. All data was validated by EcoChem, Inc., Seattle, Washington in accordance with the RI/FS Work Plan. Analytical data results, including data validation qualifiers, from soil and groundwater samples collected during the RI field investigation are summarized in Appendix C, *Complete Laboratory Analytical Data Summary.*

On April 1, 2011, Ecology updated the values for some of the analytes listed in their CLARC database. In accordance with Ecology's request, the PSLs were updated for those analytes with reported detections exceeding the laboratory's Minimum Reporting Limit (MRL)[3].

3.1 SOIL

Soil samples were collected and analyzed in accordance with the RI/FS Work Plan. The RI/FS Work Plan (and our subsequent update, prepared concurrent with this technical memo) established Preliminary Screening Levels. In some instances, the anticipated MRL was not achievable due to variability in sample composition and matrix. Due to the reporting procedures, data which are not detected at the MRL are displayed with the MRL and a 'non-detect' flag. The complete laboratory data package has been uploaded to Ecology's EIM database and is included in Appendix C.

Soil data in Tables 1 - 6 is a summary of all data in excess of the laboratory's MRL. Tables 1 - 6 summarize the laboratory analytical results of soil analytes reported in excess of the respective MRLs.

Analytes with detections above both the MRL and the PSL in soil are summarized on Tables 13 - 15, in accordance with the RI/FS Work Plan. Detections in excess of the PSL in soil are also graphically displayed on Figures 3-6.

Soil analytes which exceeded the PSL are:

- Certain semi-volatile organic compounds (SVOCs) in borings TC-MW-1, TC-MW-3, TC-MW-4, TC-MW-7 and TC-MW-17;
- Certain metals in borings TC-MW-1, TC-MW-3 through TC-MW-12 and TC-MW-15 through TC-MW-17, and;
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) in borings TC-MW-1 through TC-MW-4 and borings TC-MW-7, -10, -16 and -17.

[3] As memorialized in Groff Murphy's letter to Ecology dated October 7, 2011.

3.2 GROUNDWATER

Groundwater samples were collected from permanent wells installed at each boring location. Groundwater samples were logged for analysis in accordance with the SAP. If the HCID laboratory analytical data confirmed detections of hydrocarbons in the sample, follow-on analysis was conducted for TPH-Dx and/or TPH-Gx. In addition, the five groundwater samples which exhibited the highest concentrations of TPH in the diesel and/or oil range based on the NWTPH-HCID analysis were analyzed for PCBs[4]. Finally, the groundwater sample collected at location TC-MW-1 was analyzed for TPH-Dx and TPH-Gx.

Groundwater samples with reported exceedances of the laboratory's MRL are summarized in Tables 7-12. Groundwater samples with exceedances of the PSL are summarized in Tables 16 - 20 and graphically displayed on Figure 7.

Groundwater samples which exceeded the PSL include:

- Certain SVOCs in groundwater samples collected from monitoring wells TC-MW-14 and TC-MW-17;
- Diesel-range organic (DRO) compounds from monitoring well TC-MW-14;
- Polychlorinated biphenyls (PCBs) in groundwater samples collected from monitoring well TC-MW-7, TC-MW-12 and TC-MW-17; and
- Certain metals in groundwater samples collected from monitoring wells TC-MW-1, TC-MW-3 and TC-MW-5 through TC-MW-17.

As previously mentioned, the turbidity of the water remained elevated during the purging of the wells prior to sampling. In general, the concentrations between dissolved metals and total metals are similar; no order-of-magnitude differences were reported in the data. However, it is possible that the elevated turbidity may have artificially elevated some of the dissolved species data results due to colloidal or other suspended solids in the matrix.

[4] Some of the PCB follow-on analyses were completed outside of holding time allowances.

4.0 Conceptual Site Model

In general, the results of the initial RI are consistent with the Conceptual Site Model presented in the RI/FS Work Plan (Section 4). The following observations are considered noteworthy:

- Exposure pathways in the oil-affected area in the vicinity TC-MW-7 have not been adequately defined. Recent accounts provided by Mr. Schack of Norton Industries indicate that the stormwater conveyance line from the neighboring Ameron-Hulbert site had been clogged, causing an overflow near that area. As such, an additional surface water to soil and groundwater pathway may have existed (outside of the discussion presented in the RI/FS Work Plan).

- The groundwater analytical data from TC-MW-14 indicates elevated concentrations of DRO (8,100 µg/L). The groundwater data for this boring is not consistent with the DRO soil concentrations observed at locations TC-MW-14 and TC-MW-16. Based upon the elevated concentrations of DRO in groundwater relative to the low concentrations observed in the soil samples analyzed, it would appear that an additional source of DRO may exist (east of the Site) not previously identified in the RI/FS Work Plan.

5.0 Data Gaps and Recommendations

Results of the Initial Remedial Investigation have identified the following data gaps:

5.1 SOIL

Except for copper, metals and cPAHs in soil appear to be vertically delineated on the west portion of the Site. However, vertical delineation is incomplete in two locations on the east portion of the Site (TC-MW-1 and TC-MW-7).

At location TC-MW-1, the deepest sample analyzed (at eight feet below ground surface (bgs)) contained concentrations of benzo(g,h,i)perylene, cPAHs, nickel (Ni) and zinc (Zn) in excess of the PSL. At location TC-MW-7, the deepest sample analyzed (at three feet bgs) contained concentrations of carbazole, cPAHs, cadmium (Cd), lead (Pb), mercury (Hg), thallium (Tl) and Zn in excess of the PSL. The lack of a deeper sample with concentrations of the listed analytes below the PSL at these two locations, represent data gaps in the vertical delineation.

In general, soils containing constituent concentrations exceeding the PSLs appear to be horizontally distributed evenly across the site. With exception to TC-MW-7, the lateral distribution and low-level of cPAHs and metals in the soil samples is generally uniform across the Site. Results of soil samples collected from TC-MW-7 (situated in the oil-affected area) display a higher concentration of 1-methylnapthalene, cPAHs, lead, thallium and zinc relative to other boring locations on the Site.

While concentrations of copper in soil exceed the PSL at several locations at the Site, the spatial distribution is generally consistent. The consistent concentrations of copper in soil indicate that it has been properly characterized.

5.2 GROUNDWATER

Concentrations of copper in groundwater were above the PSL in all locations sampled. However, because the distribution of copper in groundwater is generally throughout the Site, it does not represent a data gap.

Exceedances of the PSLs in groundwater are:

- TC-MW-6 – Arsenic(As);
- TC-MW-7 – PCBs, phenanthrene, cPAHs;
- TC-MW-12 – PCBs and As;
- TC-MW-14 – 1-methylnapthalene, pentachlorophenol, phenanthrene, Ni and DRO;
- TC-MW-16 – As, and;
- TC-MW-17 – 1-methylnapthalene, phenanthrene, and PCBs.

These samples were collected from monitoring wells generally situated in the west portion of the Site (with the exception of TC-MW-12 which is situated in the northwest portion of the Site). The observed concentrations of arsenic in groundwater are generally consistent across the Site.

Groundwater data indicates that data gaps, or unbounded detections above the PSL, exist in the following locations:

- South of TC-MW-7 (for PCBs, SVOCs and cPAHs);
- In the vicinity of TC-MW-17 (for PCBs);
- To the south and east of TC-MW-14 (for DRO) and to the east for SVOCs, and;
- In the vicinity of TC-MW-12 for PCBs.

In addition, the groundwater flow direction was not defined during the Initial Remedial Investigation and this represents a data gap.

5.3 RECOMMENDATIONS

The following recommendations are intended to fill the data gaps. Suggested boring locations are provided on Figure 8.

1. In the vicinity of TC-MW-7, the following is recommended:

    - A review of the assessment results from the neighboring Ameron-Hulbert site in order to investigate a potential off-site source (from the south).
    - In order to delineate soil impacts, advance three direct-push borings (one each approximately 30 feet north, east and west of TC-MW-7) to an approximate depth of 20 feet bgs. Soil samples will be collected every five feet, screened and submitted for cPAHs, SVOCs, metals and PCBs analyses.

2. In the northeast corner of Building B (in the vicinity of TC-MW-14 and TC-MW-17), the following is recommended to delineate soil and groundwater impacts:

    - An updated review of environmental database information on the property east of the Site to investigate potential sources east of the Site.
    - Collect groundwater samples for PCBs from TC-MW-1, TC-MW-14 and TC-MW-15.
    - Advance two direct-push borings east of TC-MW-14 and TC-MW-17 as close to east property line as feasible to an approximate depth of 20 feet bgs. Soil samples will be collected every five feet, screened and submitted for DRO, SVOCs, and PCBs. Water samples should be field filtered (in order to reduce the potential for artificially-elevated concentrations due to turbidity) and submitted for the same suite of analyses.

3. In the vicinity of TC-MW-12, the following is recommended in order to delineate PCBs in groundwater:

    - Advance three direct-push borings (one each approximately 30 feet to the north, east and west of TC-MW-12) to an approximate depth of 10 feet bgs (or five feet below encountered groundwater at low tide). Soil samples will be collected every five feet, screened and submitted for analysis. Water samples should be field filtered (in order to reduce the potential for artificially-elevated concentrations due to turbidity). All samples will be analyzed for PCBs.

4. Conduct one round of groundwater elevation gauging using the existing groundwater monitoring well network at high, medium and low tide conditions in order to assess groundwater flow direction.

The focus of this additional work is to establish a boundary for soil and groundwater exceedances. This will allow for a determination of the full nature and extent of contamination in accordance with the Order.

6.0 References

Action Required, Dangerous Waste Compliance Inspection at TC Systems; Department of Ecology; 11-7-2007.

Agreed Order No. DE7818, Remedial Investigation/Feasibility Study and DRAFT Cleanup Action Plan, TC Systems, Inc. Site.

Ameron International Leasehold Environmental Investigation of Oil Affect Area, Port of Everett, Washington; Landau Associates; 6-20-2005.

Chapter 173-204 WAC, Sediment Management Standards; Department of Ecology; Pg 1 -28. 1993.

Draft Scope of Work – TC Systems Phase II ESA, Attached: 3 Figures; Author Unspecified; 7-30-2009.

Draft Scope of Work – TC Systems Phase II ESA; Department of Ecology; 7-30-2009.

Ecology Draft map for scoping purposes; Department of Ecology; 7-22-2009.

Figure 2: 'Site Plan'; Landau Associates; Date Unspecified.

Industrial Stormwater General Permit – Site Coverage; Department of Ecology; 9-16-2009.

Matter of an Administrative Order against TC Systems; Department of Ecology; 3-25-2009.

Norton Background Info; Norton Industries; 5-13-2010.

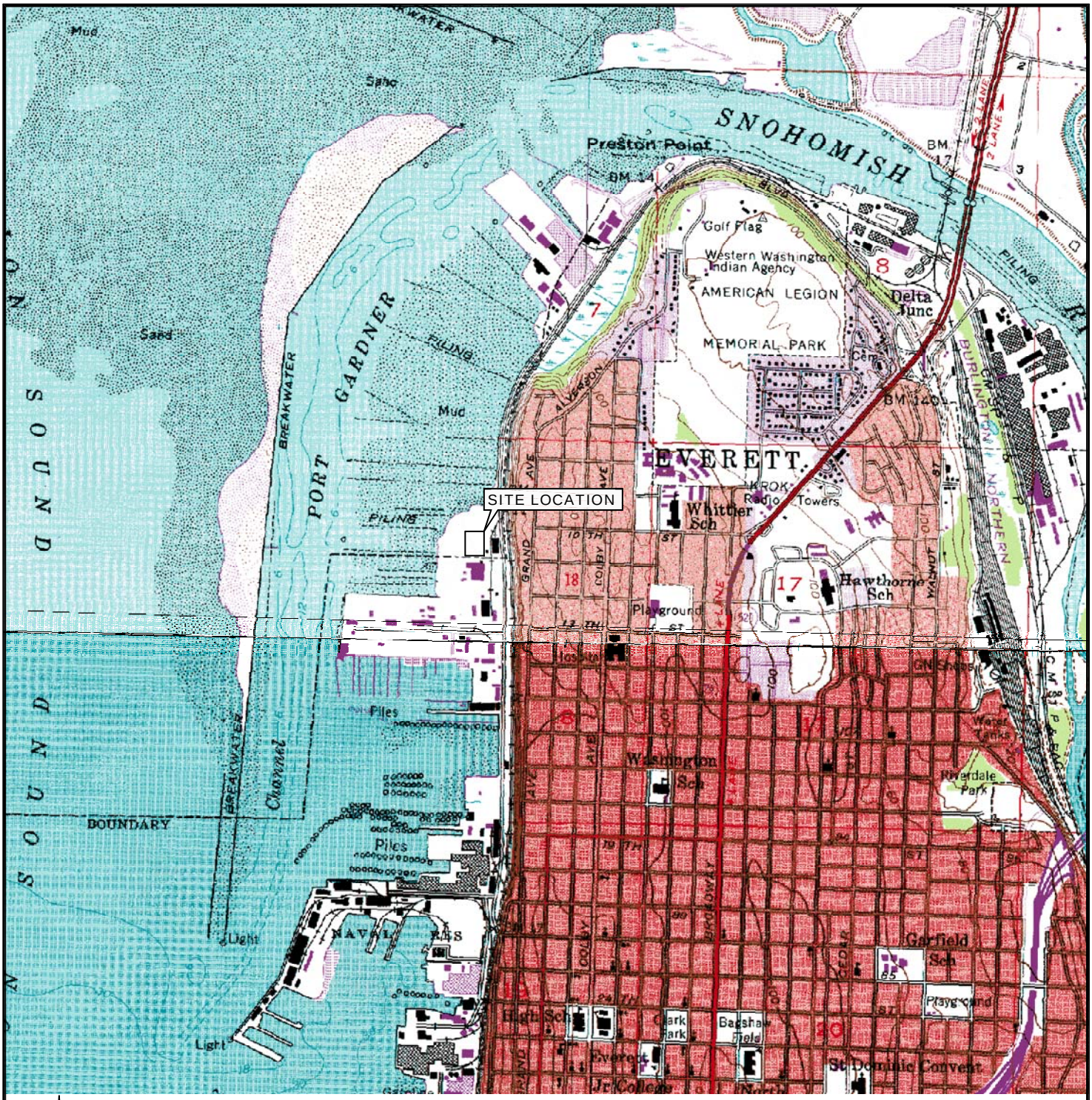
Port of Everett Drawings, Norton Ave. Boat Launch; Port of Everett Records; Date Unspecified.

Reported Release of Hazardous Substances and Potential Liability for the Release at TC Systems (TO: Norton Industries, Inc.); Department of Ecology; 11-20-2009.

Stormwater Compliance Inspection Report (TC Systems); Department of Ecology; 4-20-2004.

TC Systems Storm Drain Sediment Sampling and Analysis Plan; E3RA; 9-15-2009.

FIGURES



REFERENCE: WA Digital Raster Graphics(http://rocky2.ess.washington.edu/data/raster/drgclip/index.html)
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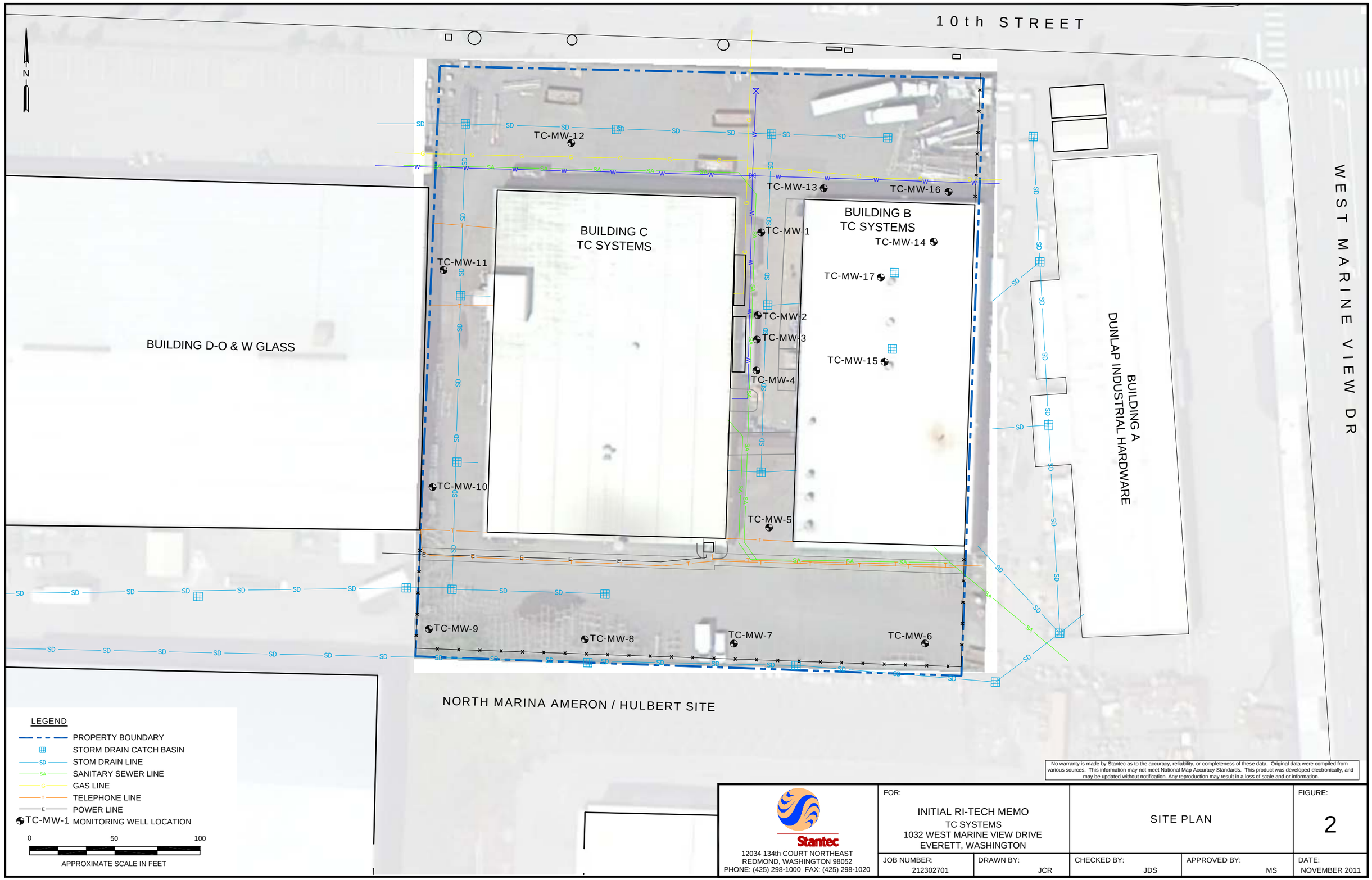
FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

SITE LOCATION MAP

FIGURE: 1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011



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SITE PLAN

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011

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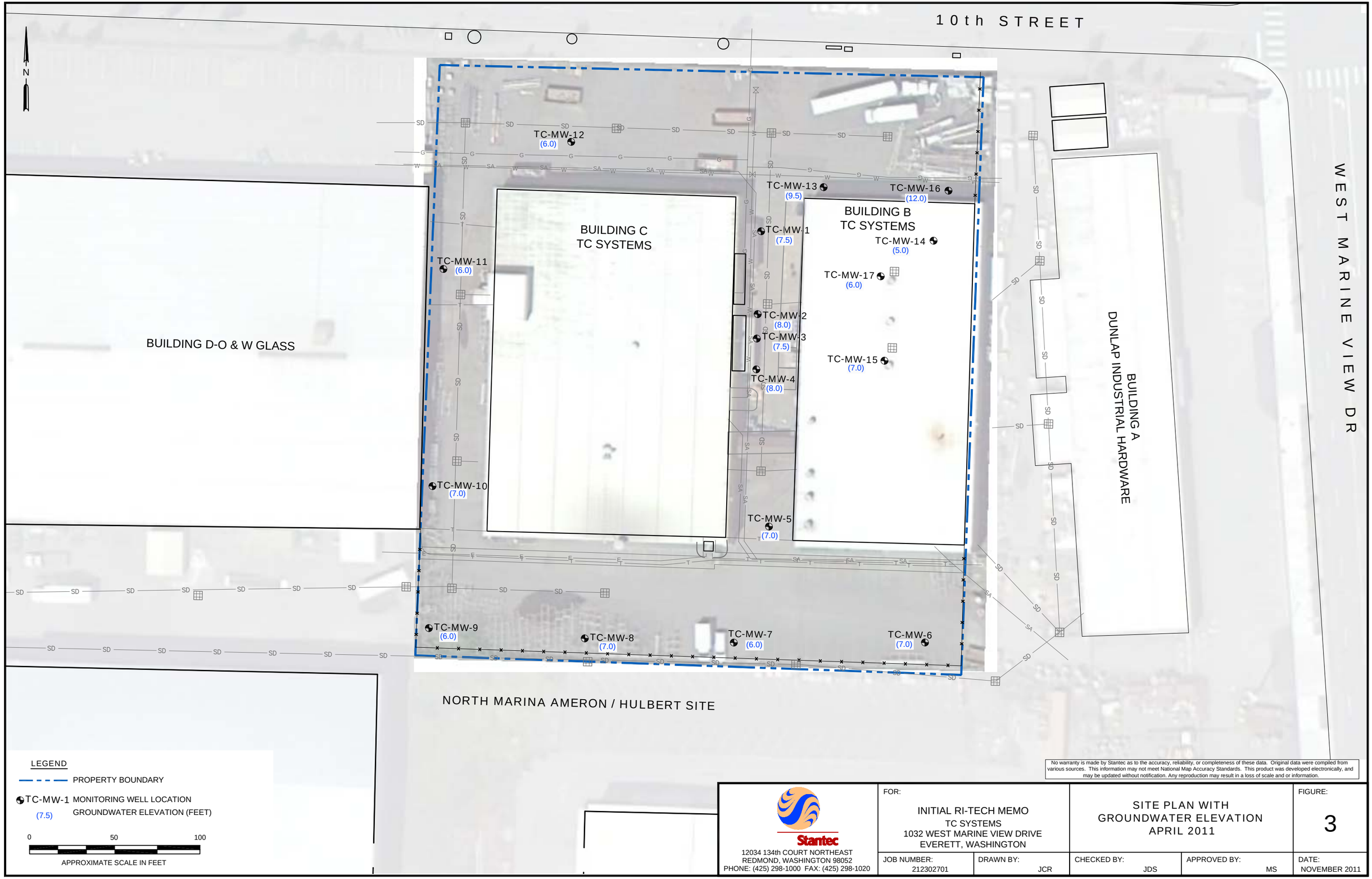

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FOR:
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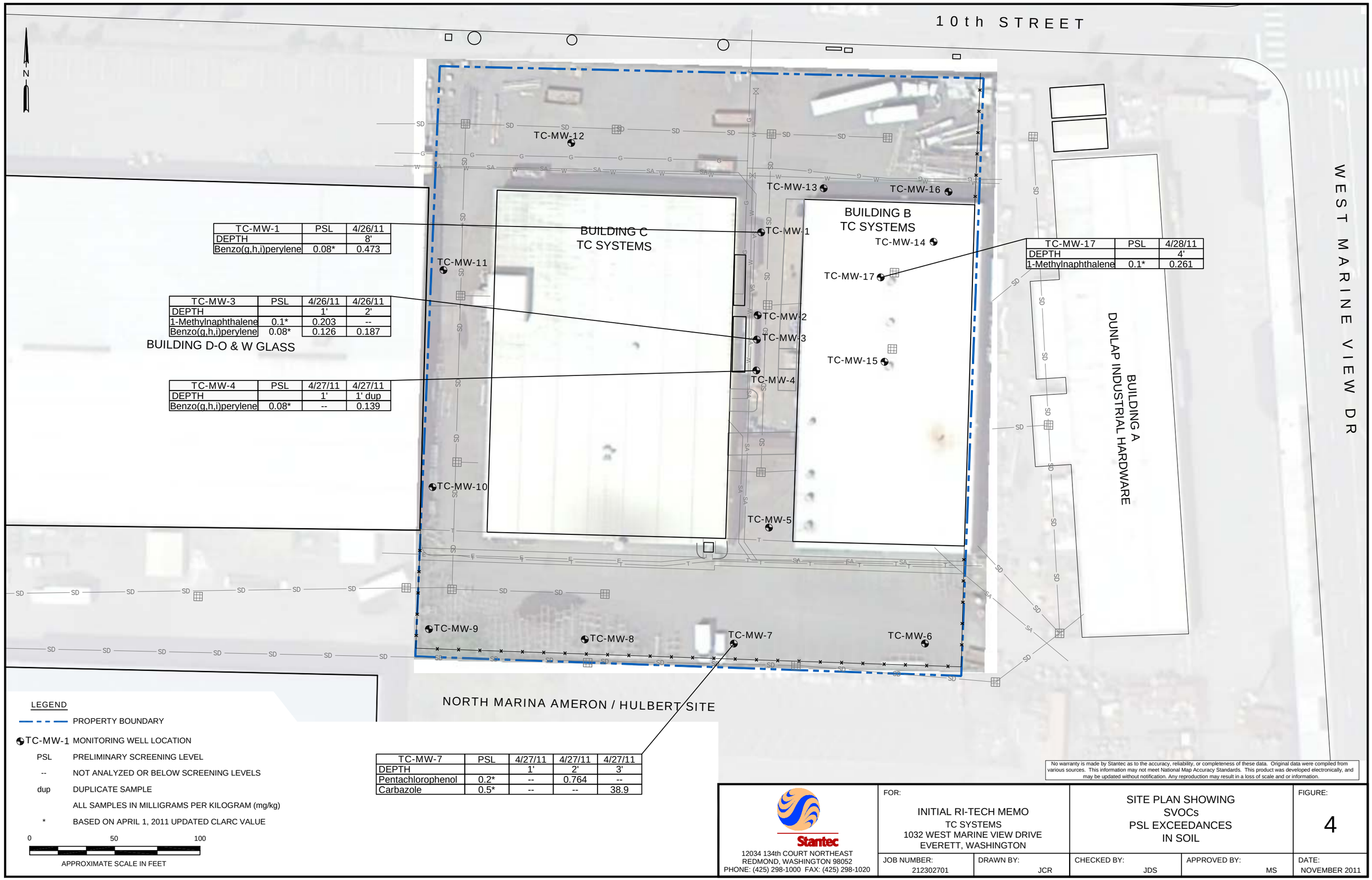
SITE PLAN WITH GROUNDWATER ELEVATION APRIL 2011

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011



TC-MW-1	PSL	4/26/11
DEPTH		8'
Benzo(g,h,i)perylene	0.08*	0.473

TC-MW-3	PSL	4/26/11	4/26/11
DEPTH		1'	2'
1-Methylnaphthalene	0.1*	0.203	--
Benzo(g,h,i)perylene	0.08*	0.126	0.187

TC-MW-4	PSL	4/27/11	4/27/11
DEPTH		1'	1' dup
Benzo(g,h,i)perylene	0.08*	--	0.139

TC-MW-17	PSL	4/28/11
DEPTH		4'
1-Methylnaphthalene	0.1*	0.261

TC-MW-7	PSL	4/27/11	4/27/11	4/27/11
DEPTH		1'	2'	3'
Pentachlorophenol	0.2*	--	0.764	--
Carbazole	0.5*	--	--	38.9

LEGEND

- PROPERTY BOUNDARY
- TC-MW-1 MONITORING WELL LOCATION
- PSL PRELIMINARY SCREENING LEVEL
- -- NOT ANALYZED OR BELOW SCREENING LEVELS
- dup DUPLICATE SAMPLE
- ALL SAMPLES IN MILLIGRAMS PER KILOGRAM (mg/kg)
- * BASED ON APRIL 1, 2011 UPDATED CLARC VALUE

0 50 100

APPROXIMATE SCALE IN FEET

Stantec
12034 134th COURT NORTHEAST
REDMOND, WASHINGTON 98052
PHONE: (425) 298-1000 FAX: (425) 298-1020

FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

SITE PLAN SHOWING
SVOCs
PSL EXCEEDANCES
IN SOIL

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011

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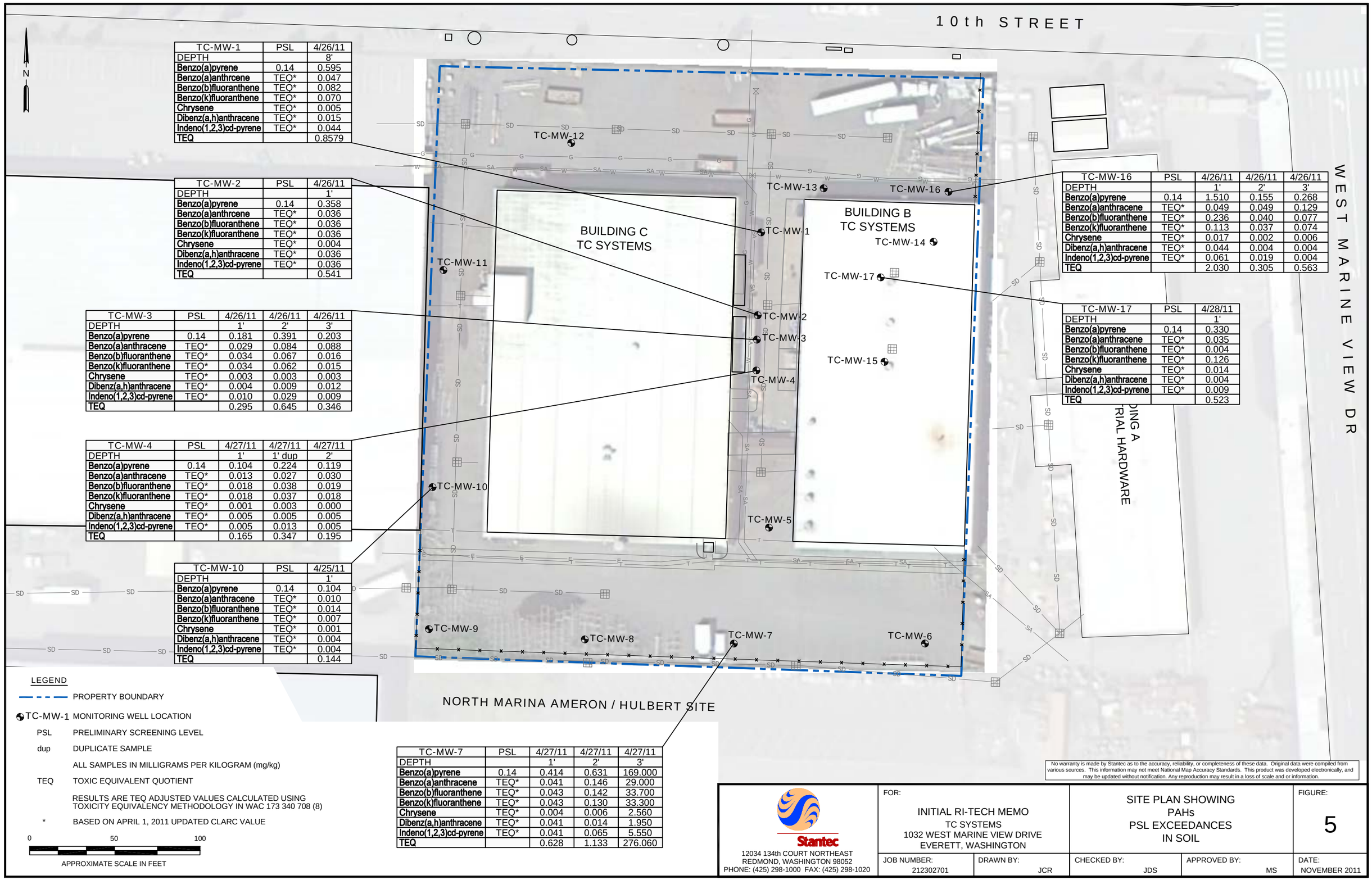


TC-MW-1	PSL	4/26/11
DEPTH		8'
Benzo(a)pyrene	0.14	0.595
Benzo(a)anthrcene	TEQ*	0.047
Benzo(b)fluoranthene	TEQ*	0.082
Benzo(k)fluoranthene	TEQ*	0.070
Chrysene	TEQ*	0.005
Dibenz(a,h)anthracene	TEQ*	0.015
Indeno(1,2,3)cd-pyrene	TEQ*	0.044
TEQ		0.8579

TC-MW-2	PSL	4/26/11
DEPTH		1'
Benzo(a)pyrene	0.14	0.358
Benzo(a)anthrcene	TEQ*	0.036
Benzo(b)fluoranthene	TEQ*	0.036
Benzo(k)fluoranthene	TEQ*	0.036
Chrysene	TEQ*	0.004
Dibenz(a,h)anthracene	TEQ*	0.036
Indeno(1,2,3)cd-pyrene	TEQ*	0.036
TEQ		0.541

TC-MW-3	PSL	4/26/11	4/26/11	4/26/11
DEPTH		1'	2'	3'
Benzo(a)pyrene	0.14	0.181	0.391	0.203
Benzo(a)anthracene	TEQ*	0.029	0.084	0.088
Benzo(b)fluoranthene	TEQ*	0.034	0.067	0.016
Benzo(k)fluoranthene	TEQ*	0.034	0.062	0.015
Chrysene	TEQ*	0.003	0.003	0.003
Dibenz(a,h)anthracene	TEQ*	0.004	0.009	0.012
Indeno(1,2,3)cd-pyrene	TEQ*	0.010	0.029	0.009
TEQ		0.295	0.645	0.346

TC-MW-4	PSL	4/27/11	4/27/11	4/27/11
DEPTH		1'	1' dup	2'
Benzo(a)pyrene	0.14	0.104	0.224	0.119
Benzo(a)anthracene	TEQ*	0.013	0.027	0.030
Benzo(b)fluoranthene	TEQ*	0.018	0.038	0.019
Benzo(k)fluoranthene	TEQ*	0.018	0.037	0.018
Chrysene	TEQ*	0.001	0.003	0.000
Dibenz(a,h)anthracene	TEQ*	0.005	0.005	0.005
Indeno(1,2,3)cd-pyrene	TEQ*	0.005	0.013	0.005
TEQ		0.165	0.347	0.195

TC-MW-10	PSL	4/25/11
DEPTH		1'
Benzo(a)pyrene	0.14	0.104
Benzo(a)anthracene	TEQ*	0.010
Benzo(b)fluoranthene	TEQ*	0.014
Benzo(k)fluoranthene	TEQ*	0.007
Chrysene	TEQ*	0.001
Dibenz(a,h)anthracene	TEQ*	0.004
Indeno(1,2,3)cd-pyrene	TEQ*	0.004
TEQ		0.144

TC-MW-7	PSL	4/27/11	4/27/11	4/27/11
DEPTH		1'	2'	3'
Benzo(a)pyrene	0.14	0.414	0.631	169.000
Benzo(a)anthracene	TEQ*	0.041	0.146	29.000
Benzo(b)fluoranthene	TEQ*	0.043	0.142	33.700
Benzo(k)fluoranthene	TEQ*	0.043	0.130	33.300
Chrysene	TEQ*	0.004	0.006	2.560
Dibenz(a,h)anthracene	TEQ*	0.041	0.014	1.950
Indeno(1,2,3)cd-pyrene	TEQ*	0.041	0.065	5.550
TEQ		0.628	1.133	276.060

TC-MW-16	PSL	4/26/11	4/26/11	4/26/11
DEPTH		1'	2'	3'
Benzo(a)pyrene	0.14	1.510	0.155	0.268
Benzo(a)anthracene	TEQ*	0.049	0.049	0.129
Benzo(b)fluoranthene	TEQ*	0.236	0.040	0.077
Benzo(k)fluoranthene	TEQ*	0.113	0.037	0.074
Chrysene	TEQ*	0.017	0.002	0.006
Dibenz(a,h)anthracene	TEQ*	0.044	0.004	0.004
Indeno(1,2,3)cd-pyrene	TEQ*	0.061	0.019	0.004
TEQ		2.030	0.305	0.563

TC-MW-17	PSL	4/28/11
DEPTH		1'
Benzo(a)pyrene	0.14	0.330
Benzo(a)anthracene	TEQ*	0.035
Benzo(b)fluoranthene	TEQ*	0.004
Benzo(k)fluoranthene	TEQ*	0.126
Chrysene	TEQ*	0.014
Dibenz(a,h)anthracene	TEQ*	0.004
Indeno(1,2,3)cd-pyrene	TEQ*	0.009
TEQ		0.523

LEGEND

- PROPERTY BOUNDARY
- TC-MW-1 MONITORING WELL LOCATION
- PSL PRELIMINARY SCREENING LEVEL
- dup DUPLICATE SAMPLE
- ALL SAMPLES IN MILLIGRAMS PER KILOGRAM (mg/kg)
- TEQ TOXIC EQUIVALENT QUOTIENT
- RESULTS ARE TEQ ADJUSTED VALUES CALCULATED USING TOXICITY EQUIVALENCY METHODOLOGY IN WAC 173 340 708 (8)
- * BASED ON APRIL 1, 2011 UPDATED CLARC VALUE

0 50 100

APPROXIMATE SCALE IN FEET

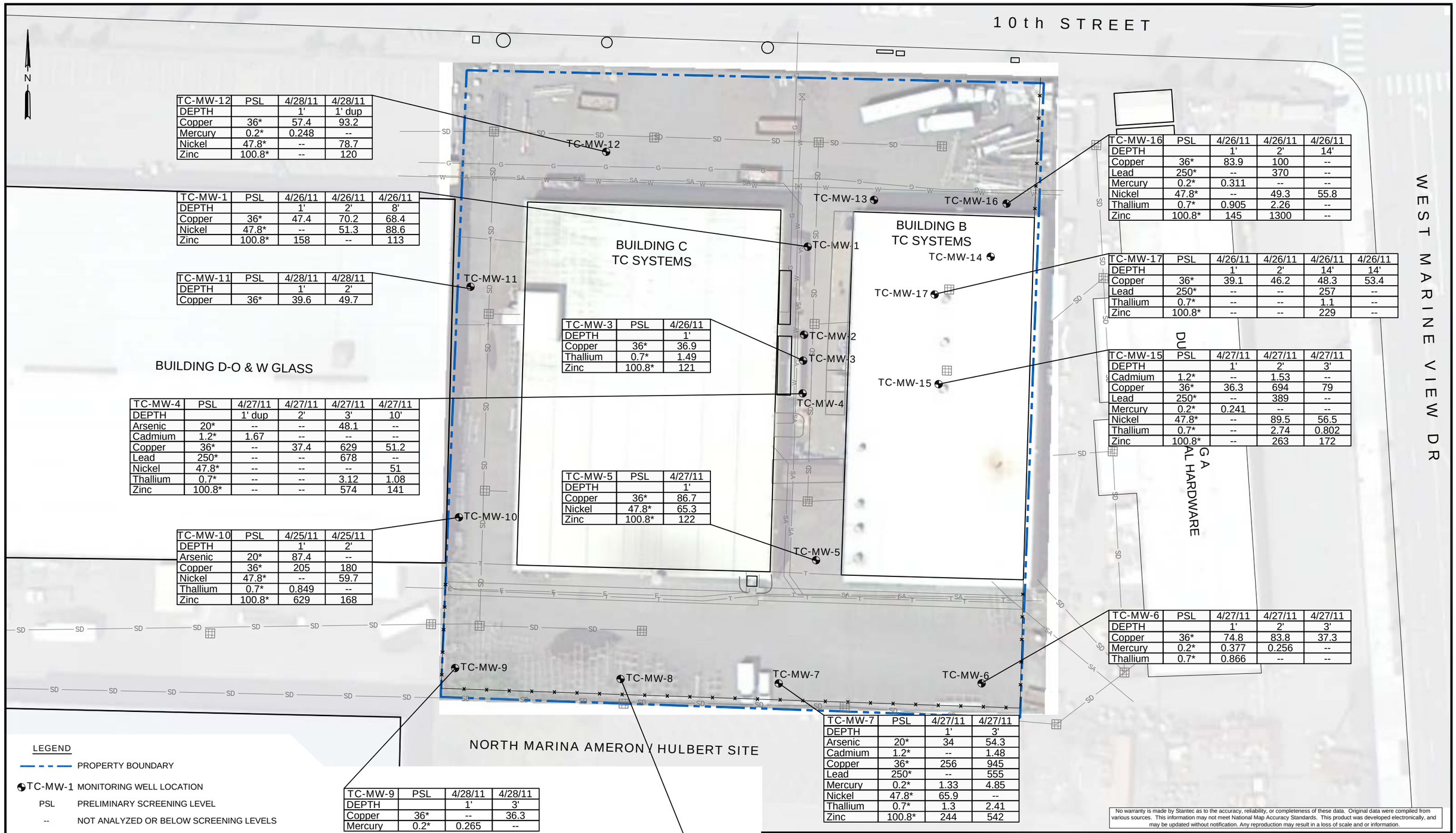
Stantec
12034 134th COURT NORTHEAST
REDMOND, WASHINGTON 98052
PHONE: (425) 298-1000 FAX: (425) 298-1020

FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

SITE PLAN SHOWING
PAHs
PSL EXCEEDANCES
IN SOIL

FIGURE: 5

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011



TC-MW-12	PSL	4/28/11	4/28/11
DEPTH		1'	1' dup
Copper	36*	57.4	93.2
Mercury	0.2*	0.248	--
Nickel	47.8*	--	78.7
Zinc	100.8*	--	120

TC-MW-1	PSL	4/26/11	4/26/11	4/26/11
DEPTH		1'	2'	8'
Copper	36*	47.4	70.2	68.4
Nickel	47.8*	--	51.3	88.6
Zinc	100.8*	158	--	113

TC-MW-11	PSL	4/28/11	4/28/11
DEPTH		1'	2'
Copper	36*	39.6	49.7

TC-MW-3	PSL	4/26/11
DEPTH		1'
Copper	36*	36.9
Thallium	0.7*	1.49
Zinc	100.8*	121

TC-MW-4	PSL	4/27/11	4/27/11	4/27/11	4/27/11
DEPTH		1' dup	2'	3'	10'
Arsenic	20*	--	--	48.1	--
Cadmium	1.2*	1.67	--	--	--
Copper	36*	--	37.4	629	51.2
Lead	250*	--	--	678	--
Nickel	47.8*	--	--	--	51
Thallium	0.7*	--	--	3.12	1.08
Zinc	100.8*	--	--	574	141

TC-MW-5	PSL	4/27/11
DEPTH		1'
Copper	36*	86.7
Nickel	47.8*	65.3
Zinc	100.8*	122

TC-MW-10	PSL	4/25/11	4/25/11
DEPTH		1'	2'
Arsenic	20*	87.4	--
Copper	36*	205	180
Nickel	47.8*	--	59.7
Thallium	0.7*	0.849	--
Zinc	100.8*	629	168

TC-MW-16	PSL	4/26/11	4/26/11	4/26/11
DEPTH		1'	2'	14'
Copper	36*	83.9	100	--
Lead	250*	--	370	--
Mercury	0.2*	0.311	--	--
Nickel	47.8*	--	49.3	55.8
Thallium	0.7*	0.905	2.26	--
Zinc	100.8*	145	1300	--

TC-MW-17	PSL	4/26/11	4/26/11	4/26/11	4/26/11
DEPTH		1'	2'	14'	14'
Copper	36*	39.1	46.2	48.3	53.4
Lead	250*	--	--	257	--
Thallium	0.7*	--	--	1.1	--
Zinc	100.8*	--	--	229	--

TC-MW-15	PSL	4/27/11	4/27/11	4/27/11
DEPTH		1'	2'	3'
Cadmium	1.2*	--	1.53	--
Copper	36*	36.3	694	79
Lead	250*	--	389	--
Mercury	0.2*	0.241	--	--
Nickel	47.8*	--	89.5	56.5
Thallium	0.7*	--	2.74	0.802
Zinc	100.8*	--	263	172

TC-MW-6	PSL	4/27/11	4/27/11	4/27/11
DEPTH		1'	2'	3'
Copper	36*	74.8	83.8	37.3
Mercury	0.2*	0.377	0.256	--
Thallium	0.7*	0.866	--	--

TC-MW-7	PSL	4/27/11	4/27/11
DEPTH		1'	3'
Arsenic	20*	34	54.3
Cadmium	1.2*	--	1.48
Copper	36*	256	945
Lead	250*	--	555
Mercury	0.2*	1.33	4.85
Nickel	47.8*	65.9	--
Thallium	0.7*	1.3	2.41
Zinc	100.8*	244	542

TC-MW-9	PSL	4/28/11	4/28/11
DEPTH		1'	3'
Copper	36*	--	36.3
Mercury	0.2*	0.265	--

TC-MW-8	PSL	4/28/11	4/28/11	4/28/11
DEPTH		1'	2'	3'
Copper	36*	95.1	60.9	38
Nickel	47.8*	129	47.9	--
Thallium	0.7*	--	0.819	--
Zinc	100.8*	--	103	--

LEGEND

- PROPERTY BOUNDARY
- TC-MW-1 MONITORING WELL LOCATION
- PSL PRELIMINARY SCREENING LEVEL
- -- NOT ANALYZED OR BELOW SCREENING LEVELS
- dup DUPLICATE SAMPLE
- ALL SAMPLES IN MILLIGRAMS PER KILOGRAM (mg/kg)
- * BASED ON APRIL 1, 2011 UPDATED CLARC VALUE

0 50 100

APPROXIMATE SCALE IN FEET

Stantec
12034 134th COURT NORTHEAST
REDMOND, WASHINGTON 98052
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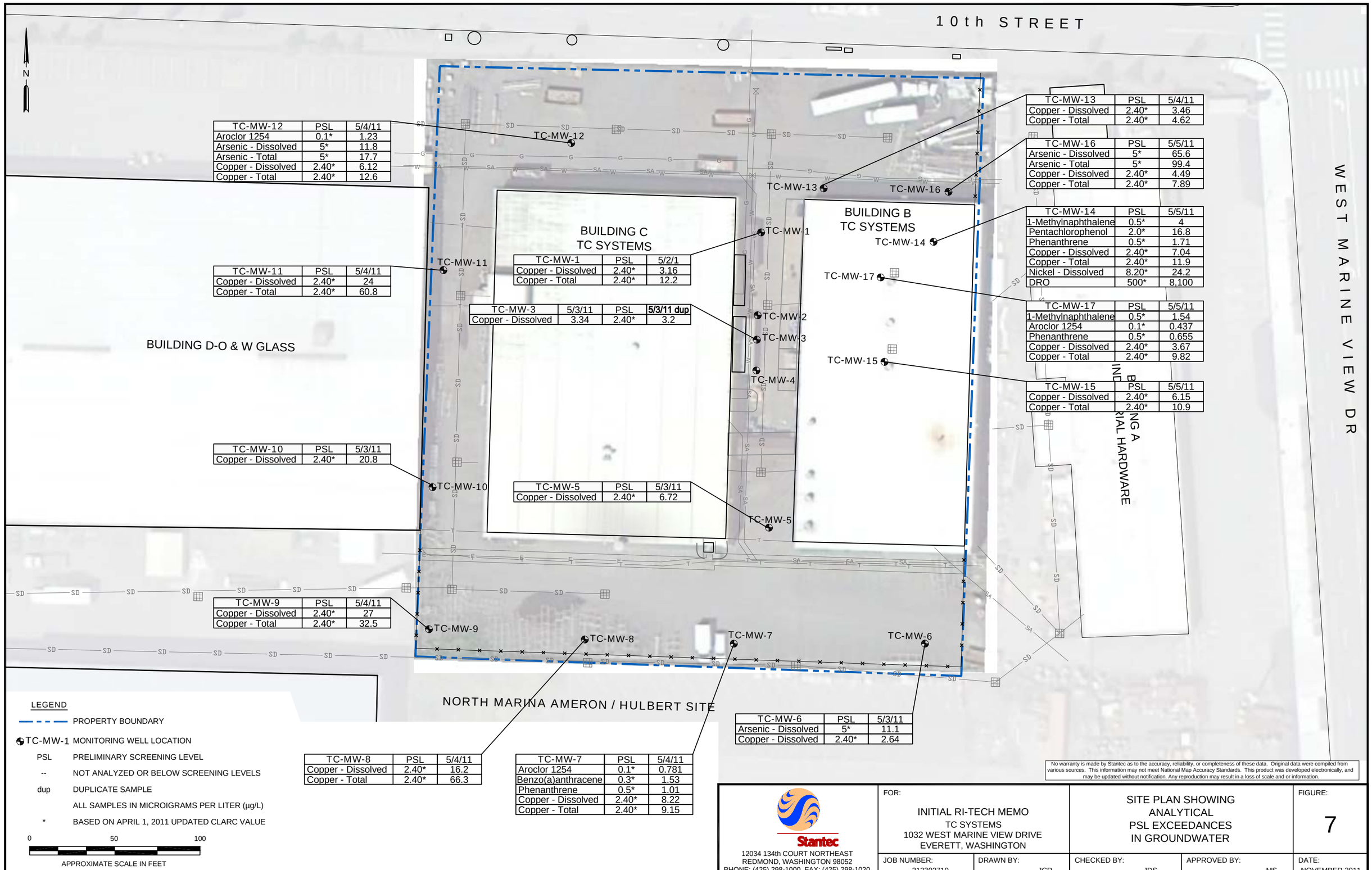
FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

SITE PLAN SHOWING
METALS
PSL EXCEEDANCES
IN SOIL

FIGURE: 6

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302701	JCR	JDS	MS	NOVEMBER 2011



TC-MW-12	PSL	5/4/11
Aroclor 1254	0.1*	1.23
Arsenic - Dissolved	5*	11.8
Arsenic - Total	5*	17.7
Copper - Dissolved	2.40*	6.12
Copper - Total	2.40*	12.6

TC-MW-11	PSL	5/4/11
Copper - Dissolved	2.40*	24
Copper - Total	2.40*	60.8

TC-MW-10	PSL	5/3/11
Copper - Dissolved	2.40*	20.8

TC-MW-9	PSL	5/4/11
Copper - Dissolved	2.40*	27
Copper - Total	2.40*	32.5

TC-MW-1	PSL	5/2/1
Copper - Dissolved	2.40*	3.16
Copper - Total	2.40*	12.2

TC-MW-3	5/3/11	PSL	**5/3/11 dup**
Copper - Dissolved	3.34	2.40*	3.2

TC-MW-5	PSL	5/3/11
Copper - Dissolved	2.40*	6.72

TC-MW-8	PSL	5/4/11
Copper - Dissolved	2.40*	16.2
Copper - Total	2.40*	66.3

TC-MW-7	PSL	5/4/11
Aroclor 1254	0.1*	0.781
Benzo(a)anthracene	0.3*	1.53
Phenanthrene	0.5*	1.01
Copper - Dissolved	2.40*	8.22
Copper - Total	2.40*	9.15

TC-MW-6	PSL	5/3/11
Arsenic - Dissolved	5*	11.1
Copper - Dissolved	2.40*	2.64

TC-MW-13	PSL	5/4/11
Copper - Dissolved	2.40*	3.46
Copper - Total	2.40*	4.62

TC-MW-16	PSL	5/5/11
Arsenic - Dissolved	5*	65.6
Arsenic - Total	5*	99.4
Copper - Dissolved	2.40*	4.49
Copper - Total	2.40*	7.89

TC-MW-14	PSL	5/5/11
1-Methylnaphthalene	0.5*	4
Pentachlorophenol	2.0*	16.8
Phenanthrene	0.5*	1.71
Copper - Dissolved	2.40*	7.04
Copper - Total	2.40*	11.9
Nickel - Dissolved	8.20*	24.2
DRO	500*	8,100

TC-MW-17	PSL	5/5/11
1-Methylnaphthalene	0.5*	1.54
Aroclor 1254	0.1*	0.437
Phenanthrene	0.5*	0.655
Copper - Dissolved	2.40*	3.67
Copper - Total	2.40*	9.82

TC-MW-15	PSL	5/5/11
Copper - Dissolved	2.40*	6.15
Copper - Total	2.40*	10.9

LEGEND

- PROPERTY BOUNDARY
- TC-MW-1 MONITORING WELL LOCATION
- PSL PRELIMINARY SCREENING LEVEL
- -- NOT ANALYZED OR BELOW SCREENING LEVELS
- dup DUPLICATE SAMPLE
- ALL SAMPLES IN MICROIGRAMS PER LITER (µg/L)
- * BASED ON APRIL 1, 2011 UPDATED CLARC VALUE

0 50 100

APPROXIMATE SCALE IN FEET

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12034 134th COURT NORTHEAST
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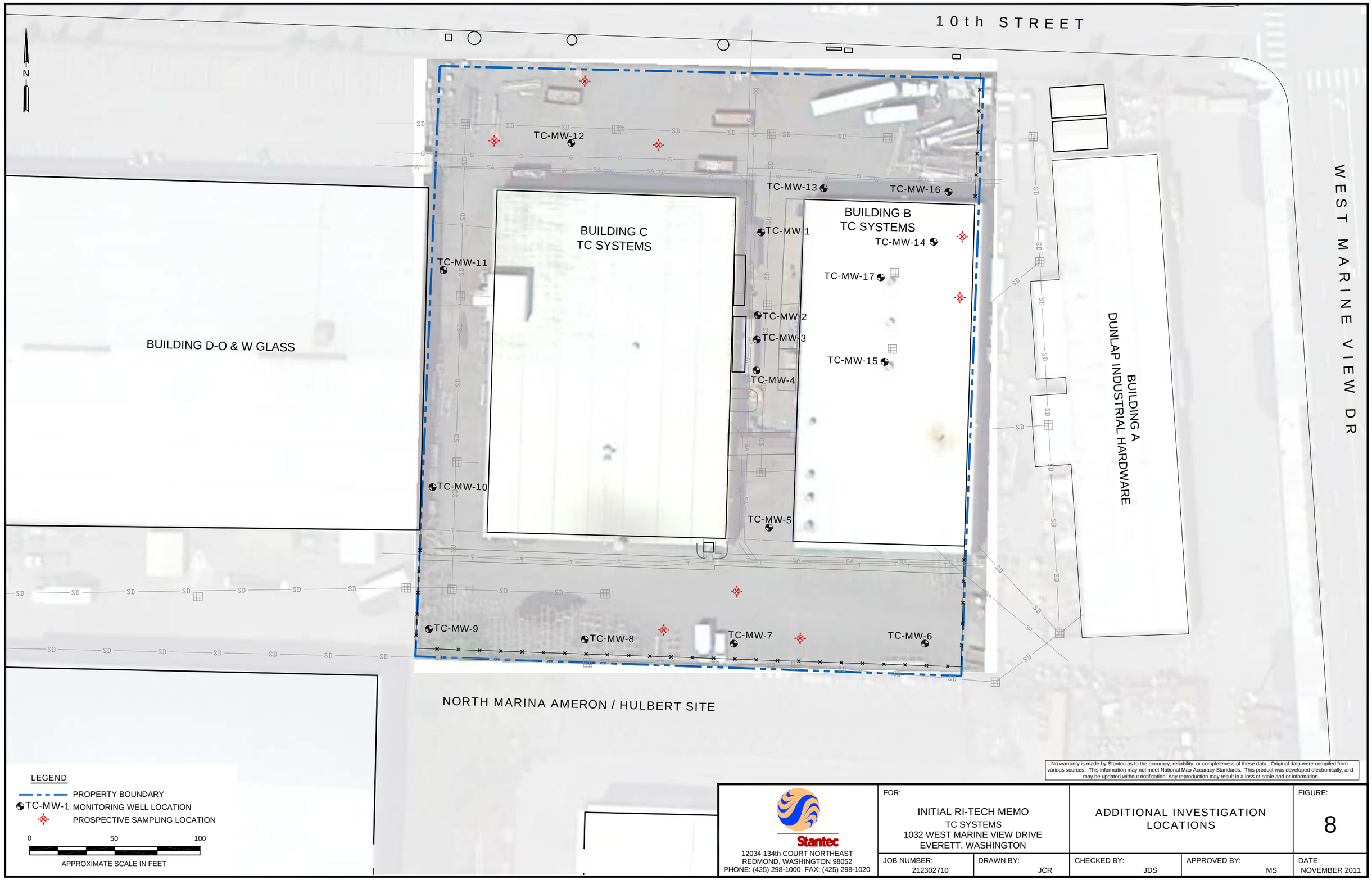
FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

SITE PLAN SHOWING
ANALYTICAL
PSL EXCEEDANCES
IN GROUNDWATER

FIGURE: 7

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302710	JCR	JDS	MS	NOVEMBER 2011

P:\CADD\PROJECTS\OTHER\TC-Norton_Everett-WA\TC-Norton_EverettWA-2011.dwg modified by jresendiz on Nov 07, 2011 - 9:21



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FOR:
INITIAL RI-TECH MEMO
TC SYSTEMS
1032 WEST MARINE VIEW DRIVE
EVERETT, WASHINGTON

ADDITIONAL INVESTIGATION LOCATIONS

FIGURE: 8

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302710	JCR	JDS	MS	NOVEMBER 2011

P:\CADD\PROJECTS\OTHER\TC-Norton_Everett-WA\TC-Norton_EverettWA-2011.dwg modified by jresendiz on Nov 07, 2011 - 9:16

TABLES

Table 1, VOCs - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-16-1'	Sample ID: TC-MW-17-4'
				Date: 4/27/2011	Date: 4/26/2011	Date: 4/28/2011
1,2,4-Trimethylbenzene	0.02	4,000*	--	0.168		
1,3,5-Trimethylbenzene	0.02	800*	--	0.0761		
cis-1,2-Dichloroethene	0.02	0.08*	--		0.0764	
Ethylbenzene	0.03	18.1*	6		0.94	
Naphthalene	0.03	137*	5	20.5		
Toluene	0.02	109*	7		0.0829	
Total Xylenes	0.03	14.6*	9	0.08	1.08	0.09

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 2, SVOCs - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-1'	Sample ID: TC-MW-1-8'	Sample ID: TC-MW-3-1'	Sample ID: TC-MW-3-2'	Sample ID: TC-MW-3-3'	Sample ID: DUP-2 (DUP of TC-MW-4-1')	Sample ID: TC-MW-4-2'	Sample ID: TC-MW-4-3'	Sample ID: TC-MW-4-10'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-15-3'	Sample ID: TC-MW-16-3'	Sample ID: TC-MW-17-4'
				Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/26/2011	Date: 4/28/2011
1-Methylnaphthalene	0.1	0.1*	--			**0.203**											**0.261**
2,4-Dinitrophenol	0.2	13.8*	--				0.234			0.239							
2-Methylnaphthalene	0.1	320*	--										0.212	118			0.319
Benzo(g,h,i)perylene	0.08	0.08*	--		**0.473**	**0.126**	**0.187**		**0.139**								
Benzyl Butyl phthalate	0.1	351*	--										0.13				
Carbazole	0.5	0.5*	--											**38.9**			
Dibenzofuran	0.1	160*	--			0.587								133			
Dimethylphthalate	0.1	80,000*	--	0.558	7.92	1.66	0.112								0.295		
Di-n-butylphthalate	0.1	103*	--		0.422			0.822[b]			1.82	0.537				0.993	
Di-n-octyl phthalate	0.1	1,600*	--										0.118				
Pentachlorophenol	0.2	0.2*	--										**0.764**				

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 3, Hydrocarbons - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-8' Date: 4/26/2011	Sample ID: TC-MW-2-1' Date: 4/26/2011	Sample ID: DUP-2 (DUP of TC-MW-4-1') Date: 4/27/2011	Sample ID: TC-MW-4-10' Date: 4/27/2011	Sample ID: TC-MW-5-1' Date: 4/27/2011	Sample ID: TC-MW-6-1' Date: 4/27/2011	Sample ID: TC-MW-7-1' Date: 4/27/2011	Sample ID: TC-MW-9-1' Date: 4/28/2011	Sample ID: TC-MW-11-1' Date: 4/28/2011	Sample ID: TC-MW-11-2' Date: 4/27/2011	Sample ID: DUP-3 (DUP of TC-MW-12-1') Date: 4/28/2011	Sample ID: TC-MW-16-1' Date: 4/26/2011	Sample ID: TC-MW-17-1' Date: 4/28/2011	Sample ID: TC-MW-17-4' Date: 4/28/2011
Diesel (Fuel Oil)	20	2000*	2,000														1,530
Heavy Oil	50	2000*	2,000	1040	419	122	126	140	215	1,170	142	489	90.2[b]	107		51	
Diesel Range Organics	25.1	2000*	2,000	960		41.2	52.3	47.2		75.6							
Gasoline	5.0	100/50[a] *	100/30[a]												54.7		

-- = No level established

a = MTCA Method A level is 100 mg/kg for gasoline mixtures without benzene and the total of ethyl benzene, toluene and zylene are less than 1% of the gasoline mixture. MTCA Method A Level for all other gasoline mixtures is 30 mg/kg.

* based on April 1, 2011 updated CLARC value

Table 4, PCBs - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-6-1'	Sample ID: TC-MW-7-1'
				Date: 4/27/2011	Date: 4/27/2011
Aroclor 1016	0.1	Total PCBs	1	**0.219**	
Aroclor 1254	0.1	Total PCBs	1	**0.219**	**0.193**

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 5, Metals - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-1' Date: 4/26/2011	Sample ID: TC-MW-1-2' Date: 4/26/2011	Sample ID: TC-MW-1-3' Date: 4/26/2011	Sample ID: TC-MW-1-8' Date: 4/26/2011	Sample ID: TC-MW-2-1' Date: 4/26/2011	Sample ID: TC-MW-3-1' Date: 4/26/2011	Sample ID: TC-MW-3-2' Date: 4/26/2011	Sample ID: TC-MW-4-1' Date: 4/27/2011	Sample ID: DUP-2 (DUP of TC-MW-4-1') Date: 4/27/2011	Sample ID: TC-MW-4-2' Date: 4/27/2011	Sample ID: TC-MW-4-3' Date: 4/26/2011	Sample ID: TC-MW-4-10' Date: 4/27/2011
Antimony	0.2	32*	--	0.529	0.315		0.997	0.258	0.339		0.599		0.998	11.1	1.03
Arsenic	0.1	20*	20	14.2	7.83	3.08	3.55	12.9	6.87	2.85	12.2	7.35	11.2	**48.1**	14.4
Beryllium	0.2	160*	--	0.689	0.396		3.38	0.381	0.543		0.459	0.633	0.3		1.03
Cadmium	0.2	1.2*	2	0.596	0.374		0.843	0.266	0.453		0.278	**1.67**	0.251	1.17	0.604
Chromium	0.1	120000*	19	24.8	29.8	20.3	27.5	26.6	32.8	11.7	24.7	31.1	33.2	33.2	45.4
Copper	0.2	36*	--	**47.4**	**70.2**	15.9	**68.4**	33.1	**36.9**	15.4	27.7	32.8	**37.4**	**629**	**51.2**
Lead	0.2	250*	250	28.2	32.7	15.9	44.5	20.5	163	24	56.8	34	106	**678**	127
Mercury	0.2	0.2*	2												
Nickel	0.1	47.8*	--	35.1	**51.3**	25.1	**88.6**	29	39.2	14.6	25.1	34.6	29	37.1	**51**
Selenium	0.5	7.4*	--												
Silver	0.1	400*	--						0.169		0.12	0.136	0.167	0.175	0.293
Thallium	0.2	0.7*	--	0.309	0.241			0.221	**1.49**		0.506	0.33	0.637	**3.12**	**1.08**
Zinc	0.4	100.8*	--	**158**	93.9	39.4	**113**	69.9	**121**	37.5	74.6	70.5	78.7	**574**	**141**

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 5, Metals - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-5-1' Date: 4/27/2011	Sample ID: TC-MW-5-2' Date: 4/27/2011	Sample ID: TC-MW-6-1' Date: 4/27/2011	Sample ID: TC-MW-6-2' Date: 4/27/2011	Sample ID: TC-MW-6-3' Date: 4/27/2011	Sample ID: TC-MW-7-1' Date: 4/27/2011	Sample ID: TC-MW-7-3' Date: 4/27/2011	Sample ID: TC-MW-8-1' Date: 4/28/2011	Sample ID: TC-MW-8-2' Date: 4/28/2011	Sample ID: TC-MW-8-3' Date: 4/28/2011	Sample ID: TC-MW-9-1' Date: 4/28/2011	Sample ID: TC-MW-9-3' Date: 4/28/2011
Antimony	0.2	32*	--	0.538	1.07	0.698	0.479	0.409	3.71	9.96	0.341	1.61	1.45	0.233	
Arsenic	0.1	20*	20	7.02	5.15	7.72	6.16	5.43	**34**	**54.3**	9.52	16.9	14	7.58	8.81
Beryllium	0.2	160*	--	9.48	1.71	9.15	0.663	0.384	0.495	0.348	10.6	0.422		9.38	12.1
Cadmium	0.2	1.2*	2	0.823	0.359	0.54	0.403	0.284	0.809	**1.48**	0.479	0.439	0.261	0.442	0.367
Chromium	0.1	120000*	19	26	16.2	22.9	51	28.9	61.1	49.7	45	42.1	22.5	24.5	30.5
Copper	0.2	36*	--	**86.7**	23.6	**74.8**	**83.8**	**37.3**	**256**	**945**	**95.1**	**60.9**	**38**	28.1	**36.3**
Lead	0.2	250*	250	34.8	14.7	62.4	51.6	49.2	213	**555**	25.5	121	33.2	8.04	16
Mercury	0.2	0.2*	2			**0.377**	**0.256**		**1.33**	**4.85**[a]				**0.265**	
Nickel	0.1	47.8*	--	**65.3**	22.8	27.5	37.9	30.2	**65.9**	45	**129**	**47.9**	29	36	41.2
Selenium	0.5	7.4*	--								5.97			1.88	7.05
Silver	0.1	400*	--	0.131						0.103		0.111			
Thallium	0.2	0.7*	--	0.499		**0.866**	0.414	0.276	**1.3**	**2.41**	0.414	**0.819**			0.298
Zinc	0.4	100.8*	--	**122**	20.7	56.3	76.3	46.8	**244**	**542**	84.4	**103**	67.9	53.4	58.2

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 5, Metals - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-10-1' Date: 4/25/2011	Sample ID: TC-MW-10-2' Date: 4/25/2011	Sample ID: TC-MW-11-1' Date: 4/28/2011	Sample ID: TC-MW-11-2' Date: 4/27/2011	Sample ID: TC-MW-11-3' Date: 4/28/2011	Sample ID: TC-MW-12-1' Date: 4/28/2011	Sample ID: DUP-3 (DUP of TC-MW-12-1') Date: 4/28/2011	Sample ID: TC-MW-12-2' Date: 4/28/2011	Sample ID: TC-MW-13-1' Date: 4/26/2011
Antimony	0.2	32*	--	10.4	0.676		0.389	0.382	0.364	0.26		
Arsenic	0.1	20*	20	**87.4**	6.97	12	8.61	7.93	8.8	8.69	6.61	4.7
Beryllium	0.2	160*	--	0.399	1.1	7.48	0.441	0.207	9.87	10.3	0.271	0.282
Cadmium	0.2	1.2*	2	0.782	0.644	0.347	0.531	0.372	0.583	0.805		
Chromium	0.1	120000*	19	36.5	43.5	16.8	42.3	27.8	31.7	30.9	32.4	21.8
Copper	0.2	36*	--	**205**	**180**	**39.6**	**49.7**	30.6	**57.4**	**93.2**	20.6	16.9
Lead	0.2	250*	250	83.2	46.9	7.63	41.1	25.6	43.2	43.1	6.68	4.22
Mercury	0.2	0.2*	2						**0.248**			
Nickel	0.1	47.8*	--	32.4	**59.7**	21	46.1	33.1	44.3	**78.7**	30.4	26.1
Selenium	0.5	7.4*	--			2.13			3.22	4.55		
Silver	0.1	400*	--	0.19			0.278	0.197	0.138	0.143		
Thallium	0.2	0.7*	--	**0.849**	0.316		0.389		0.678	0.69		
Zinc	0.4	100.8*	--	**629**	**168**	51.9	75.9	54.6	87.6	**120**	40.8	36

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 5, Metals - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-14-1' Date: 4/29/2011	Sample ID: TC-MW-15-1' Date: 4/27/2011	Sample ID: TC-MW-15-2' Date: 4/27/2011	Sample ID: TC-MW-15-3' Date: 4/27/2011	Sample ID: TC-MW-16-1' Date: 4/26/2011	Sample ID: TC-MW-16-2' Date: 4/26/2011	Sample ID: TC-MW-16-3' Date: 4/26/2011	Sample ID: TC-MW-16-14' Date: 4/26/2011	Sample ID: TC-MW-17-1' Date: 4/28/2011	Sample ID: TC-MW-17-2' Date: 4/28/2011	Sample ID: TC-MW-17-3' Date: 4/28/2011	Sample ID: TC-MW-17-4' Date: 4/28/2011
Antimony	0.2	32*	--			16.7	0.367	0.961	0.906	0.722		0.329	0.623	0.721	0.758
Arsenic	0.1	20*	20	5.64	5.94	10.3	7.35	14.1	12.8	6.95	11.7	8.34	15.4	5.56	13
Beryllium	0.2	160*	--	9.06	1.02	0.59	1.77	0.432	0.351	0.225	0.444	8.47	0.493	0.269	10.5
Cadmium	0.2	1.2*	2	0.336		**1.53**	1.02	0.6	0.35	0.36		0.497	0.307	0.982	0.557
Chromium	0.1	120000*	19	29.2	200	36.7	34	26.5	35.4	17.3	36	28.4	40.6	21.2	20.3
Copper	0.2	36*	--	32.5	**36.3**	**694**	**79**	**83.9**	**100**	32.5	19.9	**39.1**	**46.2**	**48.3**	**53.4**
Lead	0.2	250*	250	7.32	4.12	**389**	99.2	89.9	**370**	65.2	8.46	20.8	35	**257**	23.6
Mercury	0.2	0.2*	2		**0.241**			**0.311**							
Nickel	0.1	47.8*	--	39.9	29.2	**89.5**	**56.5**	36	**49.3**	28.1	**55.8**	36.6	44.4	27.5	36.8
Selenium	0.5	7.4*	--	4.23								4.69			
Silver	0.1	400*	--			0.215	0.199	0.157	0.921	0.121					
Thallium	0.2	0.7*	--			**2.74**	**0.802**	**0.905**	**2.26**	0.322		0.344	0.309	**1.1**	0.352
Zinc	0.4	100.8*	--	54.4	47.3	**263**	**172**	**145**	**1300**	82.5	47	66.5	81	**229**	75.2

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 6, PAHs - Soil Data
Analytical Detections Exceeding MRL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-8' Date: 4/26/2011	Sample ID: TC-MW-2-1' Date: 4/26/2011	Sample ID: TC-MW-3-1' Date: 4/26/2011	Sample ID: TC-MW-3-2' Date: 4/26/2011	Sample ID: TC-MW-3-3' Date: 4/26/2011	Sample ID: TC-MW-4-1' Date: 4/27/2011	Sample ID: DUP-2 (DUP of TC-MW-4-1') Date: 4/27/2011	Sample ID: TC-MW-4-2' Date: 4/27/2011	Sample ID: TC-MW-7-1' Date: 4/27/2011	Sample ID: TC-MW-7-2' Date: 4/27/2011	Sample ID: TC-MW-7-3' Date: 4/27/2011	Sample ID: TC-MW-10-1' Date: 4/25/2011	Sample ID: TC-MW-16-1' Date: 4/26/2011	Sample ID: TC-MW-16-2' Date: 4/26/2011	Sample ID: TC-MW-16-3' Date: 4/26/2011	Sample ID: TC MW-17-1' Date: 4/28/2011
				ADJUSTED TEQ VALUE															
Benzo(a)pyrene	0.08	0.14	0.1[a]	0.595	0.358	0.181	0.391	0.203	0.104	0.224	0.119	0.414	0.631	169.000	0.104	1.510	0.155	0.268	0.330
Benzo(a)anthrcene	0.08	TEQ*	0.1[a]	0.047	0.036	0.029	0.084	0.088	0.013	0.027	0.030	0.041	0.146	29.000	0.010	0.049	0.049	0.129	0.035
Benzo(b)fluoranthene	0.08	TEQ*	0.1[a]	0.082	0.036	0.034	0.067	0.016	0.018	0.038	0.019	0.043	0.142	33.700	0.014	0.236	0.040	0.077	0.004
Benzo(k)fluoranthene	0.08	TEQ*	0.1[a]	0.070	0.036	0.034	0.062	0.015	0.018	0.037	0.018	0.043	0.130	33.300	0.007	0.113	0.037	0.074	0.126
Chrysene	0.08	TEQ*	0.1[a]	0.005	0.004	0.003	0.003	0.003	0.001	0.003	0.000	0.004	0.006	2.560	0.001	0.017	0.002	0.006	0.014
Dibenz(a,h)anthracene	0.08	TEQ*	0.1[a]	0.015	0.036	0.004	0.009	0.012	0.005	0.005	0.005	0.041	0.014	1.950	0.004	0.044	0.004	0.004	0.004
Indeno(1,2,3)cd-pyrene	0.08	TEQ*	0.1[a]	0.044	0.036	0.010	0.029	0.009	0.005	0.013	0.005	0.041	0.065	5.550	0.004	0.061	0.019	0.004	0.009
TEQ				**0.858**	**0.541**	**0.295**	**0.645**	**0.346**	**0.165**	**0.347**	**0.195**	**0.628**	**1.133**	**276.060**	**0.144**	**2.030**	**0.305**	**0.563**	**0.523**

-- = No level established

a = The cleanup level for these compounds is the sum of the concentration of each compound multiplied by its toxicity equivalent factor relative to benzo(a)pyrene, as presented in CLARC Version 3.1.

* based on April 1, 2011 updated CLARC value

Note: This table is limited to those analytes where the detected concentration exceeded the TEQ.

Table 7, VOCs - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: Trip Blank 04/2/11	Sample ID: Trip Blank 05/2/11 #1	Sample ID: Trip Blank 05/2/11 #2	Sample ID: TC-MW-7	Sample ID: TC-MW-14	Sample ID: TC-MW-17
				Date: 5/6/2011	Date: 5/6/2011	Date: 5/6/2011	Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011
Ethylbenzene	1.0	2,100.0*	700					1.4	
Naphthalene	4.0	4,938.0*	160	19.9	19.9	19.9	10	16.4	19.9
Toluene	1.0	15,000.0*	1,000					1.41	

* based on April 1, 2011 updated CLARC value

Table 8, SVOCs - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-1	Sample ID: TC-MW-7	Sample ID: TC-MW-14	Sample ID: TC-MW-15	Sample ID: TC-MW-17
				Date: 5/2/2011	Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011
1-Methylnaphthalene	0.5	0.5*	--		**0.885**	**4**		**1.54**
2,4-Dimethylphenol	1.0	552.8*	--			2.4		
2-Methylnaphthalene	0.5	32.0*	--			6.55	0.513	1.55
Dimethylphthalate	1.0	1,100,000.0*	--	2.26				
Pentachlorophenol	2.0	2.0*	--			**16.8**		

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 9, Hydrocarbons - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-14
				Date: 5/5/2011
Diesel Range Organics	50	500*	500	**8,100**

* based on April 1, 2011 updated CLARC value

Table 10, PCBs - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-7	Sample ID: TC-MW-12	Sample ID: TC-MW-17
				Date: 5/4/2011	Date: 5/4/2011	Date: 5/4/2011
Aroclor 1254	0.1	0.1*	0.1	**0.781**[a]	**1.23**[a]	**0.437**[a]
Total PCBs	0.1	0.1*	0.1	**0.781**[a]	**1.23**[a]	**0.437**[a]

-- = No level established

a = Holding times for preparation or analysis exceeded

* based on April 1, 2011 updated CLARC value

Table 11, Metals - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: Rinsate 1	Sample ID: Rinsate 2	Sample ID: Rinsate 3	Sample ID: TC-MW-1	Sample ID: TC-MW-3	Sample ID: DUP of TC-MW-3	Sample ID: TC-MW-5	Sample ID: TC-MW-6	Sample ID: TC-MW-7	Sample ID: TC-MW-8	Sample ID: TC-MW-9
				Date: 4/26/2011	Date: 4/27/2011	Date: 4/29/2011	Date: 5/2/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/4/2011
Antimony - Dissolved	0.2	640.00*	--									0.239		
Arsenic - Dissolved	1.0	5[a]*	5		1.37						**11.1**			
Arsenic - Total	1.0	5[a]*	5		3.19						ns			
Beryllium - Dissolved	0.2	273.00*	--	1.87	2.77	0.532	10	13	8.08	7.36	2.94	6.8	11.7	8.83
Chromium III - Dissolved	0.5	243,055.00*	100	1.35	1.35			24.6	17.9	22.4	7.25	16.2	27.8	23.5
Copper - Dissolved	0.5	2.40*	--		**4.57**	1.95	**3.16**	**3.34**	**3.2**	**6.72**	**2.64**	**8.22**	**16.2**	**27**
Copper - Total	0.5	2.40*	--		1.58	1.13	**12.2**	ns	ns	ns	ns	**9.15**	**66.3**	**32.5**
Nickel - Dissolved	0.5	8.20*	--				1.95	1.83	2.08	1.57	1.01	0.972	2.04	1.45
Silver - Dissolved	0.2	25,926.00*	--		0.252				0.346	0.27	0.27			
Zinc - Dissolved	1.5	81.00*	--	15.1	2.58		2.7		5.94	6.45	3.91	2	5.55	2.03

-- = No level established

a = Arsenic value is based upon background concentrations of this metal in groundwater per MTCA, WAC 173-340-900; Table 720-1

* based on April 1, 2011 updated CLARC value

Table 11, Metals - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-10	Sample ID: TC-MW-11	Sample ID: TC-MW-12	Sample ID: TC-MW-13	Sample ID: TC-MW-14	Sample ID: TC-MW-15	Sample ID: TC-MW-16	Sample ID: TC-MW-17
				Date: 5/3/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011
Antimony - Dissolved	0.2	640.00*	--	0.673	0.417	0.67	0.255	0.535	0.281		0.746
Arsenic - Dissolved	1.0	5[a]*	5			**11.8**				**65.6**	
Arsenic - Total	1.0	5[a]*	5			**17.7**				**99.4**	
Beryllium - Dissolved	0.2	273.00*	--	10.4	14.8	12.5	8.2	14	6.62	5.35	6.48
Chromium III - Dissolved	0.5	243,055.00*	100	24.7	35.8	21.5	15.5	31.2	22.1	10.8	21.6
Copper - Dissolved	0.5	2.40*	--	**20.8**	**24**	**6.12**	**3.46**	**7.04**	**6.15**	**4.49**	**3.67**
Copper - Total	0.5	2.40*	--	ns	**60.8**	**12.6**	**4.62**	**11.9**	**10.9**	**7.89**	**9.82**
Nickel - Dissolved	0.5	8.20*	--	2.82	5.29	2.47	1.38	**24.2**	2.32		2.57
Silver - Dissolved	0.2	25,926.00*	--								
Zinc - Dissolved	1.5	81.00*	--	5.02	6.49	3.97	2.72	6.62	6.04	2.22	

-- = No level established

a = Arsenic value is based upon background concentrations of this metal in groundwater per MTCA, WAC 173-340-900; Table 720-1

* based on April 1, 2011 updated CLARC value

Table 12, PAHs - Water Data
Analytical Detections Exceeding MRL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-5	Sample ID: TC-MW-7	Sample ID: TC-MW-8	Sample ID: TC-MW-10	Sample ID: TC-MW-11	Sample ID: TC-MW-13	Sample ID: TC-MW-14	Sample ID: TC-MW-15	Sample ID: TC-MW-17
				Date: 5/3/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/3/2011	Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011
Acenaphthene	0.5	642.8*	4800[b]	1.54	2.66	0.62	1.01	0.901	0.532	1.45		2.42
Anthracene	0.5	25925.9*	24000[b]		0.636					1.85		0.699
Benzo [a] anthracene	0.1	0.3*	0.1[c]		**1.53**							
Fluoranthene	0.5	90.2*	3200[b]		3.46					0.718		
Fluorene	0.5	3,456.8*	3200[b]	0.864	1.52					0.868		0.933
Naphthalene	0.1	4938.0*	160							14.6	0.777	8.06
Phenanthrene	0.5	0.5*	--		**1.01**					**1.71**		**0.655**
Pyrene	0.5	2592.6*	--		3.22							

-- = No level established

b = No Method A Cleanup Level is established. Method B level based on direct contact pathway is presented, if available.

c = The cleanup level for these compounds is the sum of the concentration of each compound multiplied by its toxicity equivalent factor relative to benzo(a)pyrene, as presented in CLARC Version 3.1.

* based on April 1, 2011 updated CLARC value

Table 13, SVOCs - Soil Data
Analytical Detections Exceeding PSL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-8'	Sample ID: TC-MW-3-1'	Sample ID: TC-MW-3-2'	Sample ID: DUP-2 (DUP of TC-MW-4-1')	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-17-4'
				Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/28/2011
1-Methylnaphthalene	0.1	0.1*	--		0.203					0.261
Benzo(g,h,i)perylene	0.08	0.08*	--	0.473	0.126	0.187	0.139			
Carbazole	0.5	0.5*	--						38.9	
Pentachlorophenol	0.2	0.2*	--					0.764		

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 14, Metals - Soil Data
Analytical Detections Exceeding PSL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-1' Date: 4/26/2011	Sample ID: TC-MW-1-2' Date: 4/26/2011	Sample ID: TC-MW-1-8' Date: 4/26/2011	Sample ID: TC-MW-3-1' Date: 4/26/2011	Sample ID: DUP-2 (DUP of TC-MW-4-1') Date: 4/27/2011	Sample ID: TC-MW-4-2' Date: 4/27/2011	Sample ID: TC-MW-4-3' Date: 4/26/2011	Sample ID: TC-MW-4-10' Date: 4/27/2011	Sample ID: TC-MW-5-1' Date: 4/27/2011	Sample ID: TC-MW-6-1' Date: 4/27/2011	Sample ID: TC-MW-6-2' Date: 4/27/2011	Sample ID: TC-MW-6-3' Date: 4/27/2011	Sample ID: TC-MW-7-1' Date: 4/27/2011	Sample ID: TC-MW-7-3' Date: 4/27/2011	Sample ID: TC-MW-8-1' Date: 4/28/2011	Sample ID: TC-MW-8-2' Date: 4/28/2011	Sample ID: TC-MW-8-3' Date: 4/28/2011	Sample ID: TC-MW-9-1' Date: 4/28/2011
Arsenic	0.1	20*	20							48.1						34	54.3				
Cadmium	0.2	1.2*	2					1.67									1.48				
Chromium	0.1	120,000*	19																		
Copper	0.2	36*	--	47.4	70.2	68.4	36.9		37.4	629	51.2	86.7	74.8	83.8	37.3	256	945	95.1	60.9	38	
Lead	0.2	250*	250							678							555				
Mercury	0.2	0.2*	2										0.377	0.256		1.33	4.85[a]				0.265
Nickel	0.1	47.8*	--		51.3	88.6					51	65.3				65.9		129	47.9		
Thallium	0.2	0.7*	--				1.49			3.12	1.08		0.866			1.3	2.41		0.819		
Zinc	0.4	100.8*	--	158		113	121			574	141	122				244	542		103		

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 14, Metals - Soil Data
Analytical Detections Exceeding PSL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-9-3' Date: 4/28/2011	Sample ID: TC-MW-10-1' Date: 4/25/2011	Sample ID: TC-MW-10-2' Date: 4/25/2011	Sample ID: TC-MW-11-1' Date: 4/28/2011	Sample ID: TC-MW-11-2' Date: 4/27/2011	Sample ID: TC-MW-12-1' Date: 4/28/2011	Sample ID: DUP-3 (DUP of TC-MW-12-1') Date: 4/28/2011	Sample ID: TC-MW-15-1' Date: 4/27/2011	Sample ID: TC-MW-15-2' Date: 4/27/2011	Sample ID: TC-MW-15-3' Date: 4/27/2011	Sample ID: TC-MW-16-1' Date: 4/26/2011	Sample ID: TC-MW-16-2' Date: 4/26/2011	Sample ID: TC-MW-16-14' Date: 4/26/2011	Sample ID: TC-MW-17-1' Date: 4/28/2011	Sample ID: TC-MW-17-2' Date: 4/28/2011	Sample ID: TC-MW-17-3' Date: 4/28/2011	Sample ID: TC-MW-17-4' Date: 4/28/2011
Arsenic	0.1	20*	20		87.4															
Cadmium	0.2	1.2*	2									1.53								
Chromium	0.1	120,000*	19																	
Copper	0.2	36*	--	36.3	205	180	39.6	49.7	57.4	93.2	36.3	694	79	83.9	100		39.1	46.2	48.3	53.4
Lead	0.2	250*	250									389			370				257	
Mercury	0.2	0.2*	2						0.248		0.241			0.311						
Nickel	0.1	47.8*	--			59.7				78.7		89.5	56.5		49.3	55.8				
Thallium	0.2	0.7*	--		0.849							2.74	0.802	0.905	2.26				1.1	
Zinc	0.4	100.8*	--		629	168				120		263	172	145	1300				229	

-- = No level established

* based on April 1, 2011 updated CLARC value

a = Holding times for preparation or analysis exceeded

Table 15, PAHs - Soil Data
Analytical Detections Exceeding PSL

Analyte	Soil MRL	Preliminary Screening Level (mg/kg)	MTCA Method A (mg/kg)	Sample ID: TC-MW-1-8'	Sample ID: TC-MW-2-1'	Sample ID: TC-MW-3-1'	Sample ID: TC-MW-3-2'	Sample ID: TC-MW-3-3'	Sample ID: TC-MW-4-1'	Sample ID: DUP-2 (DUP of TC-MW-4-1')	Sample ID: TC-MW-4-2'	Sample ID: TC-MW-7-1'	Sample ID: TC-MW-7-2'	Sample ID: TC-MW-7-3'	Sample ID: TC-MW-10-1'	Sample ID: TC-MW-16-1'	Sample ID: TC-MW-16-2'	Sample ID: TC-MW-16-3'	Sample ID: TC-MW-17-1'
				Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/27/2011	Date: 4/25/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/26/2011	Date: 4/28/2011
				ADJUSTED TEQ VALUE															
Benzo(a)pyrene	0.08	0.14	0.1[a]	0.595	0.358	0.181	0.391	0.203	0.104	0.224	0.119	0.414	0.631	169.000	0.104	1.510	0.155	0.268	0.330
Benzo(a)anthrcene	0.08	TEQ*	0.1[a]	0.047	0.036	0.029	0.084	0.088	0.013	0.027	0.030	0.041	0.146	29.000	0.010	0.049	0.049	0.129	0.035
Benzo(b)fluoranthene	0.08	TEQ*	0.1[a]	0.082	0.036	0.034	0.067	0.016	0.018	0.038	0.019	0.043	0.142	33.700	0.014	0.236	0.040	0.077	0.004
Benzo(k)fluoranthene	0.08	TEQ*	0.1[a]	0.070	0.036	0.034	0.062	0.015	0.018	0.037	0.018	0.043	0.130	33.300	0.007	0.113	0.037	0.074	0.126
Chrysene	0.08	TEQ*	0.1[a]	0.005	0.004	0.003	0.003	0.003	0.001	0.003	0.000	0.004	0.006	2.560	0.001	0.017	0.002	0.006	0.014
Dibenz(a,h)anthracene	0.08	TEQ*	0.1[a]	0.015	0.036	0.004	0.009	0.012	0.005	0.005	0.005	0.041	0.014	1.950	0.004	0.044	0.004	0.004	0.004
Indeno(1,2,3)cd-pyrene	0.08	TEQ*	0.1[a]	0.044	0.036	0.010	0.029	0.009	0.005	0.013	0.005	0.041	0.065	5.550	0.004	0.061	0.019	0.004	0.009
TEQ				**0.858**	**0.541**	**0.295**	**0.645**	**0.346**	**0.165**	**0.347**	**0.195**	**0.628**	**1.133**	**276.060**	**0.144**	**2.030**	**0.305**	**0.563**	**0.523**

-- = No level established

a = The cleanup level for these compounds is the sum of the concentration of each compound multiplied by its toxicity equivalent factor relative to benzo(a)pyrene, as presented in CLARC Version 3.1.

* based on April 1, 2011 updated CLARC value

Note: This table is limited to those analytes where the detected concentration exceeded the TEQ.

Table 16, SVOCs - Water Data
Analytical Detections Exceeding PSL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-14	Sample ID: TC-MW-17
				Date: 5/5/2011	Date: 5/5/2011
1-Methylnaphthalene	0.5	0.5*	--	4	1.54
Pentachlorophenol	2.0	2.0*	--	16.8	

-- = No level established

* based on April 1, 2011 updated CLARC value

Table 17, Hydrocarbons - Water Data
Analytical Detections Exceeding PSL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-14
				Date: 5/5/2011
Diesel Range Organics	50	500*	500	8,100

* based on April 1, 2011 updated CLARC value

Table 18, PCBs - Water Data
Analytical Detections Exceeding PSL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-7	Sample ID: TC-MW-12	Sample ID: TC-MW-17
				Date: 5/4/2011	Date: 5/4/2011	Date: 5/4/2011
Aroclor 1254	0.1	0.1*	0.1	0.781[a]	1.23[a]	0.437[a]
Total PCBs	0.1	0.1*	0.1	0.781[a]	1.23[a]	0.437[a]

a = Holding times for preparation or analysis exceeded

* based on April 1, 2011 updated CLARC value

Table 19, Metals - Water Data
Analytical Detections Exceeding PSL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: Rinsate 2	Sample ID: TC-MW-1	Sample ID: TC-MW-3	Sample ID: DUP of TC-MW-3	Sample ID: TC-MW-5	Sample ID: TC-MW-6	Sample ID: TC-MW-7	Sample ID: TC-MW-8	Sample ID: TC-MW-9	Sample ID: TC-MW-10	Sample ID: TC-MW-11	Sample ID: TC-MW-12	Sample ID: TC-MW-13	Sample ID: TC-MW-14	Sample ID: TC-MW-15	Sample ID: TC-MW-16	Sample ID: TC-MW-17
				Date: 4/27/2011	Date: 5/2/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/3/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/3/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011	Date: 5/5/2011
Arsenic - Dissolved	1.0	5[a]*	5						11.1						11.8				65.6	
Arsenic - Total	1.0	5[a]*	5						ns						17.7				99.4	
Copper - Dissolved	0.5	2.40*	--	4.57	3.16	3.34	3.2	6.72	2.64	8.22	16.2	27	20.8	24	6.12	3.46	7.04	6.15	4.49	3.67
Copper - Total	0.5	2.40*	--	1.58	12.2	ns	ns	ns	ns	9.15	66.3	32.5	ns	60.8	12.6	4.62	11.9	10.9	7.89	9.82
Nickel - Dissolved	0.5	8.20*	--														24.2			

-- = No level established

a = Arsenic value is based upon background concentrations of this metal in groundwater per MTCA, WAC 173-340-900; Table 720-1

* based on April 1, 2011 updated CLARC value

Table 20, PAHs - Water Data
Analytical Detections Exceeding PSL

Analyte	Water MRL (µg/L)	Preliminary Screening Level (µg/L)	MTCA Method A (µg/L)	Sample ID: TC-MW-7	Sample ID: TC-MW-14	Sample ID: TC-MW-17
				Date: 5/4/2011	Date: 5/5/2011	Date: 5/5/2011
Benzo [a] anthracene	0.1	0.3*	0.1[a]	1.53		
Phenanthrene	0.5	0.5*	--	1.01	1.71	0.655

-- = No level established

a = The cleanup level for these compounds is the sum of the concentration of each compound multiplied by its toxicity equivalent factor relative to benzo(a)pyrene, as presented in CLARC Version 3.1.

* based on April 1, 2011 updated CLARC value

APPENDIX A

BORING LOGS

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-1

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/26/2011** COMPLETED: **4/26/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7.5** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand (trace gravel and silt), olive gray, moist. (Fill) -Trace wood debris		1140 TC-MW-1@ 1-1.5'			2.3		Bentonite seal
					1145 TC-MW-1@ 2-3'			.2		
		ML	ML; slight organic odor; Soft to medium stiff, fine grained sand, dark brown, moist. (Fill) -Moderate plasticity, areas of gravel locally		1150 TC-MW-1@ 3-4'			0		
5			Loose wood debris and sawdust, moist to wet. (Fill) -Large wood debris (>4") below 5.5 feet -No recovery below 5 feet						5	
					1225 TC-MW-1@ 7-8'			1.8 ▽		2" well with sand pack
10									10	
			Borehole terminated at 14 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-2

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/26/2011** COMPLETED: **4/26/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **8** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand (trace gravel and silt), olive gray, moist. (Fill) -Trace asphalt pieces		1320 TC-MW-2@ 1-1.5'			0		Bentonite seal
		SP	SP; Loose, fine to medium grained sand, olive gray to dark yellowish brown, moist. (Fill)		1325 TC-MW-2@ 2-3'			0		
		SP-SM	-Brick and wood debris SP-SM; Loose, fine to medium grained sand, dark yellowish brown to brown, moist to wet. (Fill)		1330 TC-MW-2@ 3-4'			0		
5			-Decrease in gravels and debris						5	
					1340 TC-MW-2@ 7-8'			0	▽	2" well with sand pack
		OL	OL; Loose sawdust and wood debris, moist to wet. (Fill)		1349 TC-MW-2@ 9-10'			0		
10									10	
			Borehole terminated at 14 feet bgs.							
15									15	

GEO FORM 304_SECOR037_TC SYSTEM BORING LOGS.GPJ_SECOR037.GDT 11/2/11

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-3

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/26/2011** COMPLETED: **4/26/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7.5** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand, grayish brown, moist. (Fill) -Trace wood debris below 1.5 feet		1445 TC-MW-3@ 1-1.5'			2.3		Bentonite seal
					1450 TC-MW-3@ 2-3'			.2		
		ML	ML; slight organic odor; Medium stiff, fine grained sand, moderate plasticity, dark brown, moist. (Fill)		1510 TC-MW-3@ 3-4'			0		
		OL	-Trace gravels OL; Loose wood debris and sawdust, wet. (Fill)							
5									5	
									▽	
										2" well with sand pack
10									10	
			Borehole terminated at 14 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-4

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **8** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; no odor; Medium stiff, fine grained sand, dark brown, moist. (Fill) -Minor gravels, low plasticity, trace wood and concrete debris		750 TC-MW-4@ 1-1.5'			.2		Bentonite seal
					755 TC-MW-4@ 2-3'			1.8		
		OL	OL; Loose wood debris and sawdust, moist to wet. (Fill)		800 TC-MW-4@ 3-4'			.4		
5									5	
		ML	ML; no odor; Medium stiff, fine grained sand, dark brown, moist to wet. (Fill) -Areas of gravel, low plasticity, wood debris							2" well with sand pack
					825 TC-MW-4@ 9-10'			0		
10		SP-SM	SP-SM; no odor; Loose to medium dense, fine to medium grained sand (trace gravel), grayish brown, wet. (Fill) -Trace wood debris, no recovery from 10 to 13 feet						10	
			Borehole terminated at 14 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-5

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; no odor; Soft to medium stiff, fine grained sand, low plasticity, grayish brown, moist. (Fill)		1435 TC-MW-5@ 1-1.5'			0		Bentonite seal
		OL	-Some small gravel and roots OL; Loose wood debris and sawdust, moist to wet. (Fill)		1440 TC-MW-5@ 2-3'			.5		
					1445 TC-MW-5@ 3-4'			1.8		
5									5	
					1448 TC-MW-5@ 6-7'			0	▽	2" well with sand pack
					1450 TC-MW-5@ 9-10'			0		
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-6

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Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; slight organic odor; Soft to medium stiff, fine grained sand, low plasticity, brown, moist. (Fill) -Local gravels, trace wood debris below 2'		1455 TC-MW-6@ 1-1.5'			7		Bentonite seal
					1500 TC-MW-6@ 2-3'			1		
					1505 TC-MW-6@ 3-4'			3		
					1512 TC-MW-6@ 4-5'			0		
5		OL	OL; Loose wood debris, moist to wet. (Fill) -No recovery below 5 feet						5	
									▽	2" well with sand pack
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

GEO FORM 304_SECOR037 TC SYSTEM BORING LOGS.GPJ SECOR037.GDT 11/2/11

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-7

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **6** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Concrete							Flush mount well box with concrete
		ML	ML; slight HC odor; Soft, fine grained sand, low plasticity, brown, moist. (Fill) -Areas of gravel, wood and concrete debris		1000 TC-MW-7@ 2-2.5'			1		Bentonite seal
		SP-SM	SP-SM; moderate petroleum odor; Loose, fine to medium grained sand, yellowish brown, moist. (Fill) -Areas of wood debris		1005 TC-MW-7@ 3-4'			4.4		
5		OL	OL; moderate petroleum odor; Loose wood debris with areas of gravel, moist to wet. (Fill) -Sheen on drill rod, no recovery below 10 feet		1010 TC-MW-7@ 4-5'			8.8	5	2" well with sand pack
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-8

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/28/2011** COMPLETED: **4/28/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **7**
TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA**
WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2**
BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM**
CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Concrete							Flush mount well box with concrete
		SP-SM	SP-SM; no odor; Loose, fine to medium grained sand, grayish brown, moist. (Fill) -Mottled from 0 to 1 feet, gravel below 1 feet		1200 TC-MW-8@ 1-1.5'			0		Bentonite seal
					1205 TC-MW-8@ 2-3'			0		
					1210 TC-MW-8@ 3-4'			0		
5		OL	OL; Loose wood debris, moist to wet. (Fill)						5	
									▽	
										2" well with sand pack
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

GEO FORM 304_SECOR037_TC SYSTEM BORING LOGS.GPJ SECOR037.GDT 11/2/11

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-9

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/28/2011** COMPLETED: **4/28/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **6** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; no odor; Soft, fine to medium grained sand, moderate plasticity, grayish brown, moist. (Fill)		1025 TC-MW-9@ 1-1.5'			1		Bentonite seal
		SP	SP; no odor; Loose, fine to medium grained sand, olive gray, moist to wet. (Fill)		1030 TC-MW-9@ 2-3'			1.6		
					1034 TC-MW-9@ 3-4'			9		
5									5	
					1038 TC-MW-9@ 7-8'			0		2" well with sand pack
					1042 TC-MW-9@ 8.5-9.5'			0		
10		OL	OL; Loose wood debris, wet. (Fill)						10	
			Borehole terminated at 13 feet bgs.							
15									15	

GEO FORM 304_SECOR037 TC SYSTEM BORING LOGS.GPJ SECOR037.GDT 11/2/11

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-10

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/25/2011** COMPLETED: **4/25/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP-SM	SP-SM; no odor; Medium dense, fine to medium grained sand, grayish brown, moist. (Fill)		1430 TC-MW-10@ 1-1.5'			0		Bentonite seal
			-Becomes more silty with depth, increase in gravel and wood debris with depth		1450 TC-MW-10@ 2-3'			0		
5					1510 TC-MW-10@ 3-4'			0	5	
		OL	OL; Loose wood debris, moist to wet. (Fill)							
10									10	2" well with sand pack
			Borehole terminated at 14 feet bgs.							
15									15	

GEO FORM 304_SECOR037 TC SYSTEM BORING LOGS.GPJ SECOR037.GDT 11/2/11

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-11

Stantec

DATE: STARTED: **4/28/2011** COMPLETED: **4/28/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft):
EASTING (ft):
LATITUDE:
LONGITUDE:
GROUND ELEV (ft):
TOC ELEV (ft):
INITIAL DTW (ft): **6**
TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA**
WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2**
BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM**
CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand, grayish brown, moist. (Fill)		910 TC-MW-11@ 1-1.5'			10		Bentonite seal
		SM	SM; Loose, fine to medium grained sand, olive gray, moist to wet. (Fill) -Trace wood debris		915 TC-MW-11@ 2-3'			16		
					920 TC-MW-11@ 3-4'			9		
5									5	
					925 TC-MW-11@ 5.5-6.5'			0	▽	
										2" well with sand pack
		OL	OL; slight organic odor; Loose wood debris and sawdust, wet. (Fill)							
					930 TC-MW-11@ 9-10'			0		
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-12

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/28/2011** COMPLETED: **4/28/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **6** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; no odor; Stiff, fine to medium grained sand, olive gray, moist. (Fill) -Trace gravel and wood debris -Increase in sand content with depth		745 TC-MW-12@ 1.5-2'			.9		Bentonite seal
		SP	SP; no odor; Loose, fine to medium grained sand, grayish brown, moist. (Fill)		750 TC-MW-12@ 2.5-3.5'			2.2		
		ML	ML; no odor; Medium stiff, fine grained sand, olve brown, moist to wet. (Fill) -Areas of mottling and gravels		755 TC-MW-12@ 3.5-4.5'			.5		
5					800 TC-MW-12@ 5.5-6.5'			0	5	
					805 TC-MW-12@ 6.5-7.5'			0		2" well with sand pack
		OL	OL; slight organic odor; Loose wood debris and sawdust, wet. (Fill)							
10					810 TC-MW-12@ 10-11'			0	10	
			Borehole terminated at 13 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-13

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/26/2011** COMPLETED: **4/26/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **9.5** TEST PIT DEPTH (ft): **14.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **14**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand, grayish brown, moist. (Fill)		950 TC-MW-13@ 1-1.5'			1.7		Bentonite seal
		SM	SM; no odor; Medium dense, fine to medium grained sand, dark brown, moist. (Fill) -Trace wood debris and gravel		1000 TC-MW-13@ 2-3'			4.2		
			Metallic slag debris, 1 to 3" sized pieces. (Fill)		1015 TC-MW-13@ 3-4'			5.4		
5					1020 TC-MW-13@ 4-5'			0	5	
					1025 TC-MW-13@ 8-9'			0		2" well with sand pack
		OL	OL; Loose wood debris, sawdust, and slag, very moist to wet. (Fill) -No recovery below 10', sheen on drill rod						▽	
10									10	
			Borehole terminated at 14 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-14

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/29/2011** COMPLETED: **4/29/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **5** TEST PIT DEPTH (ft): **15.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **15**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **AD** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Concrete/Void							Flush mount well box with concrete
		SP	SP; Loose, fine to medium grained sand, olive gray, moist. (Fill)		805 TC-MW-14@ 2-2.5'			1.2		Bentonite seal
		ML	ML; slight petroleum odor; Medium stiff, fine grained sand, olive gray, moist. (FIll) -Pieces of brick, minor gravel, wood debris, slightly mottled		810 TC-MW-14@ 3-4'			2.6		
5					815 TC-MW-14@ 4-5'			.9	5	
			Obstruction at 5 feet.							
10									10	2" well with sand pack
15			Borehole terminated at 15 feet bgs.						15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-15

Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **7** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Concrete/Void							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand, yellowish brown, moist. (Fill)		1135 TC-MW-15@ 2-2.5'			0		Bentonite seal
		SM	SM; strong organic odor; Loose, fine to medium grained sand, olive brown to olive gray, moist. (Fill) -Areas of gravel and debris		1140 TC-MW-15@ 3-4'			.4		
5					1145 TC-MW-15@ 4-5'			1	5	
					1150 TC-MW-15@ 6-7'			0	▽	2" well with sand pack
		OL	OL; strong organic odor; Loose wood debris and sawdust, moist to wet. (Fill) -No recovery below 10'		1155 TC-MW-15@ 9-10'			0		
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-16

Stantec

DATE: STARTED: **4/26/2011** COMPLETED: **4/26/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **12** TEST PIT DEPTH (ft): **15.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **15**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Asphalt/Crushed Rock							Flush mount well box with concrete
		ML	ML; no odor; Stiff, fine grained sand, olive brown, moist. (Fill) -Areas of gravel, brick, and fiberglass debris		810 TC-MW-16@ 1-1.5'			5.9		
					820 TC-MW-16@ 2-3'			2		Bentonite seal
		SM	SM; slight organic odor; Medium dense, fine to medium grained sand, gray with black mottling, moist. (Fill) -Areas of gravel, roots, and wood debris		830 TC-MW-16@ 3-4'			1.5		
5		ML	ML; moderate organic odor; Stiff, fine grained sand, olive brown, moist. (Fill) -Trace gravel, wood debris						5	
		OL	OL; strong organic odor; Loose to medium dense sawdust and wood debris, moist to wet. (Fill)		840 TC-MW-16@ 8-9'			0		
					845 TC-MW-16@ 9-10'			0		2" well with sand pack
10									10	
		SP	SP; slight organic odor; Medium dense, fine grained sand, olive gray, wet. (Fill?) -Trace wood debris		900 TC-MW-16@ 14-15'			0		
15			Borehole terminated at 15 feet bgs.						15	

PROJECT: **TC Systems**
LOCATION: **Everett, Washington**
PROJECT NUMBER: **212302710**

Test Pit

TC-MW-17

PAGE 1 OF 1

Stantec

DATE: STARTED: **4/27/2011** COMPLETED: **4/27/2011**
EXCAVATION COMPANY: **Major Drilling**
EQUIPMENT: **B-54**
OPERATOR: **HSA**
SAMPLING EQUIPMENT: **Core Tube (5')**

NORTHING (ft): EASTING (ft):
LATITUDE: LONGITUDE:
GROUND ELEV (ft): TOC ELEV (ft):
INITIAL DTW (ft): **6** TEST PIT DEPTH (ft): **13.00**
STATIC DTW (ft): **NA** WELL DEPTH (ft): **13**
WELL CASING DIAMETER (in): **2** BOREHOLE DIAMETER (in): **8.25**
LOGGED BY: **RM** CHECKED BY: **PH/JS**

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count/ft	Headspace PID (ppm)	Depth (feet)	Well Construction
			Concrete/Void							Flush mount well box with concrete
		SP	SP; no odor; Loose, fine to medium grained sand, brown, moist. (Fill)		1345 TC-MW-17@ 2-2.5'			1.3		Bentonite seal
		ML	ML; no odor; Stiff, fine grained sand, olive brown, moist. (Fill) -Areas of wood debris		1350 TC-MW-17@ 3-4'			1.8		
					1355 TC-MW-17@ 4-5'			.9		
5			Highly weathered concrete, moist to wet. (Fill)		1400 TC-MW-17@ 5-6'			1.6	5	
		OL	OL; Loose wood debris and sawdust, wet. (Fill)		1410 TC-MW-17@ 7.5-8.5'			0		2" well with sand pack
					1415 TC-MW-17@ 9-10'			0		
10									10	
			Borehole terminated at 13 feet bgs.							
15									15	

GEO FORM 304_SECOR037 TC SYSTEM BORING LOGS.GPJ SECOR037.GDT 11/2/11

APPENDIX B

WELL DEVELOPMENT LOGS

WELL DEVELOPMENT LOG

Project Number 21230271Ø Well MW-1

Project Name NCRTCN R.I. Development Subcontractor MAJOR

Performed/Supervised _____

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other _____

Development Criteria VOLUME & PARAMETERS, REF R.I. WORK PLAN

Equipment Cleaning Method ALCONOX & H_2O

Field Instruments Used HORIBA U22 / WATER LEVEL IND.

Development Water Disposal Method DRUMMED FOR OFF-SITE DISP.

Comments _____

DEVELOPMENT DATA

Depth to Water: Start 4.52 End 4.52 Ref. Point Elev. _____ Height Above Ground Surface _____

Total Depth: Start 13.10 End 13.10

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	~~1134~~ 1143	START	over	0.178	Black	6.60	~~11.53~~ 11.61	
	1145	5 GAL	over	~~0.166~~ 0.173	~~Black~~ gray	~~6.23~~ 6.60	~~11.51~~ 11.58	slight sheen
	1150	20 GAL	970	0.166	Brownish gray	6.23	11.51	slight sheen
	1154	40 GAL	770	0.164	light brown/gray	6.16	11.60	slight sheen
	1159	55 GAL	over	0.157	gray	6.15	11.53	slight sheen

REMARKS: odor + slight sheen observed in drum

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-2

Project Name NORTON RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox & H_2O

Field Instruments Used Horiba 022 / Water Level Ind.

Development Water Disposal Method Drummed for off-site disp.

Comments

DEVELOPMENT DATA

Depth to Water: Start 3.72 End 3.86 Ref. Point Elev. ____ Height Above Ground Surface ____

Total Depth: Start 13.10 End 13.10

~~mS/cm~~

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1216	Start	over	~~.0679~~ ~~0.679~~ AV	Black Gray	6.93	13.18	slight odor
	1218	5gal	over	~~0.0876~~ ~~0.876~~ AV	Black Gray	6.57	12.61	slight odor
	1223	20gal	over	0.118	Brownish Gray	6.33	12.30	Slight odor
	1231	40gal	670	0.139	light brown	6.59	12.01	Slight odor
↓	1239	55gal	620	0.147	light brown	6.48	11.67	slight odor

REMARKS:

WELL DEVELOPMENT LOG

Project Number 21230271.0 Well MW-3

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift Sub. Pump Surge Block Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox & H_2O

Field Instruments Used Horiba 022 / Water level ind.

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.36 End 4.43 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 12.15 End 12.95

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1252	Start	over	.099	Gray	6.66	11.88	Slight odor
	1254	5gal	over	0.148	light Brown	6.33	12.02	Slight odor
	1258	20 gal	700	0.160	light Brown	6.44	12.04	Slight odor
	1308	40 gal	660	0.168	light Brown	6.54	12.70	Slight odor
	1315	55gal	560	0.172	light Brown	6.67	12.50	Slight odor

REMARKS:

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-4

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox H_2O

Field Instruments Used Horiba U22 / Water level ind.

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.89 End 4.89 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 12.95 End ~~12.95~~ 13.05 AV

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1405	Start	over	0.153	very Black	6.45	11.50	Sheen odor
↓	1407	5 gal	over	0.153	Black	6.37	11.38	odor
	1412	20 gal	760	0.152	Gray	6.63	11.48	Slight odor
	1421	40 gal	790	0.153	Gray	6.70	11.44	Slight odor
↓	1429	55 gal	630	0.153	light brown	6.26	11.22	Slight odor

REMARKS: Slight sheen in Drum / odor

WELL DEVELOPMENT LOG

Project Number 212302716 Well MW-5

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters / RFR RI Work Plan

Equipment Cleaning Method Alconox & H_2O

Field Instruments Used Horiba 622 / Water level ind.

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.55 End 4.56 Ref. Point Elev. ____ Height Above Ground Surface ____

Total Depth: Start 13.15 End 13.15

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1329 ~~1329~~ AV	Start	over	0.185	Black	6.71	13.26	Slight odor
	1331	5 gal	760	0.176	Brown	6.43	12.94	Slight odor
	1335	20 gal	650	0.165	light Brown	6.28	12.65	Slight odor
↓	1347	40 gal	730	0.156	Gray	6.13	12.24	" "
	1354	55 gal	600	0.153	light Brown	6.09	12.39	" "

REMARKS:

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-6

Project Name Newton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox H_2O

Field Instruments Used Horiba 022 / Water level ind

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 2.51 End 3.34 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 13.09 End 13.09

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1446	start	over	0.099	Black	6.69	11.68	slight sheen
↓	1449	5 gal	over	0.111	Black	6.56	11.55	odor
	1451	20 gal	over	0.120	Black	6.48	11.39	slight sheen odor
	1500	40 gal	<840	0.116	Gray	6.64	11.31	
	1508	55 gal	730	0.119	light Gray	6.59	11.15	

REMARKS:

WELL DEVELOPMENT LOG

Project Number 21236271.0 Well TC-MW-7

Project Name NORTON R.I. Development Subcontractor MAJOR

Performed/Supervised JDS / ADAM

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria VOLUME & PARAMETERS, PER RI/FS WORK PLAN

Equipment Cleaning Method ALCONOX + H_2O

Field Instruments Used HORIBA U22 & WATER LEVEL INDICATOR

Development Water Disposal Method DRUMMED FOR CHAR.

Comments

DEVELOPMENT DATA

Depth to Water: Start 3.80 End 4.91 Ref. Point Elev. ↓ Height Above Ground Surface FLUSH

Total Depth: Start 13.19 End 13.19 SEE PLAN - NOT YET SURVEYED.

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/26/11	1035	START	OVER	0.212	BLACK	6.62	11.97	ER.2 SULFUR
"	1040	5 GAL	780	0.206	CLEAR TO BLACK	6.44	12.42	"
"	1045	20 GAL	570	0.201	CLEAR	6.22	12.42	ONLY SLIGHT SULFUR ODOR.
"	1055	35 GAL	590	0.199	CLEAR	6.30	12.04	"
"	1100	55	620	0.196	CLEAR	6.28	12.35	"

REMARKS:

WELL DEVELOPMENT LOG

Project Number 21230271Ø Well MW-8

Project Name Norton RI Development Subcontractor Majr

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR Work Plan

Equipment Cleaning Method Alconox H_2O

Field Instruments Used Horiba 022 / water level

Development Water Disposal Method Drummed for disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.30 End 4.30 Ref. Point Elev. ____ Height Above Ground Surface ____

Total Depth: Start 13.21 End 13.21

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/29/11	0853	Start	over	0.364	Black	6.74	11.04	slight odor
↓	0856	5gal	over	0.364	Black/ Org	6.71	11.11	slight odor
	0903	20gal	over	0.348	light Brown	6.92	10.41	Slight odor
	0921	40gal	730	0.322	light Brown	6.94	10.74	Slight odor
	0935	55gal	670	0.322	mostly clear	6.97	10.81	

REMARKS:

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-9

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR Work Plan

Equipment Cleaning Method Alconox H2O

Field Instruments Used Horiba 022 / water level

Development Water Disposal Method Drummed for disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.37 End 4.40 Ref. Point Elev. ____ Height Above Ground Surface ____

Total Depth: Start 13.10 End 13.10

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/29/11	0844	Start	over	0.374	Black	6.90	9.99	
↓	0846	5 gal	over	0.338	Black	6.90	10.04	
	0905	20 gal	over	0.344	Gray	6.55	10.01	
		~~40 gal~~ NM						
		~~55 gal~~ NM						

REMARKS: Well dry @ 0852 stopped pump / approx 15 gal
Restarted 0858 pumped approx 3-4 gal stopped at 0901
Restarted 0905 pumped approx 8 gal

WELL DEVELOPMENT LOG

Project Number 21230270 Well TC-MW-10

Project Name NORTON RI Development Subcontractor MAJOR

Performed/Supervised JDS / ADAM

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria VOLUME & PARAMETERS

Equipment Cleaning Method ALCONOX & WATER

Field Instruments Used HORIBA & IP

Development Water Disposal Method PENDING

Comments

DEVELOPMENT DATA

Depth to Water: Start 5.16 End 5.15 Ref. Point Elev. NORTH SIDE OF CASING Height Above Ground Surface NOT SURVEYED

Total Depth: Start 13.28 End 13.40

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	0950	START	OVER	0.323	BLACK	5.86	12.51 °C	ER, Z
"	0958	5 GAL	820	0.500	CLEAR	6.13	12.37 °C	" SULFUR ODOR
"	1005	25 GAL	560	0.573	CLEAR	6.46	12.93 °C	"
"	1015	48 GAL	570	0.586	CLEAR	6.60	12.72 °C	"

REMARKS:

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-11

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work

Equipment Cleaning Method Alconox / H_2O

Field Instruments Used Horiba OZ2 / Water level

Development Water Disposal Method Drummed for disposal off-site

Comments

DEVELOPMENT DATA

Depth to Water: Start 3.65 End 9.20 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 13.05 End 13.05

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/29/11	0738	start	over	0.425	Gray	6.62	11.43	odor
4/29/11	0739	5 gal	over	0.417	Gray	6.60	11.51	odor
	0755	~~+5 16 gal~~ ~~20 gal~~	over	0.552	Brownish Gray	6.86	10.67	odor
	0810	~~40 gal~~ 20 gal	860	0.690	Light Brown	6.49	11.97	odor
↓		NM ~~55 gal~~						

REMARKS: Well ~~dry~~ ~~stopped recharging~~ at ~ 15 gal stopped pump empty to recharge. Restarted pump 0755 filled to 20 gal stopped pump. Restarted pump @0810 filled to 24 gal

WELL DEVELOPMENT LOG

Project Number 21230271.0 Well MW-12

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work

Equipment Cleaning Method Alconox / H_2O

Field Instruments Used Horiba U22 / water level

Development Water Disposal Method Drummed for disposal off-site

Comments

DEVELOPMENT DATA

Depth to Water: Start 4.40 End 8.40 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 13.05 End 13.05

S/m

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1612	Start	over	0.358	Brown	6.28	11.22	
	1614	5 gal	over	0.384	Brownish Gray	6.32	11.05	
	1644	20 gal	over	0.390	Black	6.36	11.29	
	1708	40 gal	over	0.383	Gray	6.46	11.78	
	1732	55 gal	890	0.389	light Gray	6.64	11.42	

REMARKS: ~~Pump stopped working~~ ~~Changed pumps at 1643~~

AV Groundwater recharge

Slow. Stopped pump repeatedly (15 times) to allow well to recharge

WELL DEVELOPMENT LOG

Project Number 212302710 Well MW-13

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox H_2O

Field Instruments Used Horiba 022 / Water level

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start 5.00 End ~~13.00~~ 5.02 AV Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 13.00 End 13.00

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/28/11	1532	Start	over	0.136	Black	6.55	11.01	~~Slight~~ Sheen
↓	1535	5 gal	over	0.154	Black	6.45	10.92	Sheen
	1541	20 gal	820	0.162	Gray	6.44	10.86	Sheen
	1552	40 gal	930	0.162	Gray	6.13	10.85	Slight Sheen
↓	1558	55 gal	740	0.162	light gray	6.35	10.84	Slight Sheen

REMARKS: Sheen in Drum

WELL DEVELOPMENT LOG

Project Number _____ Well MW-14

Project Name _____ Development Subcontractor _____

Performed/Supervised _____

Development Method Airlift Sub. Pump Surge Block Bailer Other _____

Development Criteria _____

Equipment Cleaning Method _____

Field Instruments Used _____

Development Water Disposal Method _____

Comments _____

DEVELOPMENT DATA

Depth to Water: Start 4.73 End 3.45 Ref. Point Elev. _____ Height Above Ground Surface _____

Total Depth: Start 13.13 End 13.13

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
~~4/29/11~~	~~1025~~	~~Start~~	~~over~~	~~0.236~~	~~Black~~	~~6.55~~	~~11.78~~	
		~~5gal~~	~~over~~	~~0.241~~		~~6.44~~	~~11.85~~	
	~~1028~~	~~20gal~~	~~over~~	~~0.241~~	~~Grey~~	~~6.44~~	~~11.85~~	
		40gal						
		55gal						
4/29/11	1025	Start	over	0.236	Black	6.55	11.78	odor
	1028	5gal	over	0.241	Grey	6.44	11.85	odor
	1032	20gal	over	0.245	Brown with Grey	6.40	11.79	odor
	1038	40gal	750	0.244	Brown	6.37	11.76	odor
	1047	55gal	700	0.244	light Brown	6.41	11.56	

REMARKS:

WELL DEVELOPMENT LOG

Project Number _____ Well MW-15

Project Name _____ Development Subcontractor _____

Performed/Supervised _____

Development Method Airlift Sub. Pump Surge Block Bailer Other _____

Development Criteria _____

Equipment Cleaning Method _____

Field Instruments Used _____

Development Water Disposal Method _____

Comments _____

DEVELOPMENT DATA

Depth to Water: Start 5.27 End 4.05 Ref. Point Elev. _____ Height Above Ground Surface _____

Total Depth: Start 13.20 End 13.20

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/29/11	1014	Start	over	0.116	Black	6.85	11.19	
↓	1016	5gal	over	0.169	Brownish Gray	6.63	11.56	
	1026	20gal	over	0.153	Brown	6.59	11.60	
	1035	40gal	920	0.148	Brown	6.53	11.33	
	1050	55gal	770	0.144	Brown	6.61	11.18	

REMARKS:

WELL DEVELOPMENT LOG

Project Number 212302667 Well TC-MW-16

Project Name TC SYSTEMS - EVERETT Development Subcontractor MAJOR DRILLING

Performed/Supervised ROBERT MCALISTER

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other _____

Development Criteria DEVELOP WELL UNTIL WATER IS < 5 NTU

Equipment Cleaning Method PRESSURE WASHER - DRILLER'S DECON TRAILER

Field Instruments Used SEE COMMENTS

Development Water Disposal Method DRUMS STORED ON-SITE

Comments APPROPRIATE SAMPLING EQUIPMENT NOT AVAILABLE AT TIME OF INITIAL DEVELOPMENT, PARAMETERS WILL BE OBTAINED DURING SUBSEQUENT SAMPLING EVENTS

DEVELOPMENT DATA

Depth to Water: Start _____ End _____ Ref. Point Elev. NORTH SIDE OF WELL CASING Height Above Ground Surface NOT SURVEYED

Total Depth: Start _____ End _____

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/27/11	1345	10	VERY HIGH	NM	DARK GREY	NM	NM	SULFUR ODOR
	1349	20	HIGH		GREY			
	1405	30	MOD. TO LOW		GREY			
	1411	40	TRACE		CLEAR			
	1417	50	TRACE		CLEAR			

REMARKS: SULFUR ODOR, SLIGHT SHEEN THROUGHOUT DEVELOPMENT

PURGED 50 GALS OVER ~30 MINS UNTIL VISUALLY CLEAR

WELL DEVELOPMENT LOG

Project Number 21230271.0 Well ~~MW-15~~ MW-17

Project Name Norton RI Development Subcontractor Major

Performed/Supervised

Development Method Airlift (Sub. Pump) (Surge Block) Bailer Other

Development Criteria Volume of Parameters, RFR RI Work Plan

Equipment Cleaning Method Alconox & H_2O

Field Instruments Used Horiba 022 / Water level Ind.

Development Water Disposal Method Drummed for off-site disposal

Comments

DEVELOPMENT DATA

Depth to Water: Start ~~5.05~~ 5.18 End 5.25 Ref. Point Elev. Height Above Ground Surface

Total Depth: Start 13.15 End 13.15

Date	Time	Cumulative Discharge (gallons)	Turbidity	Conductivity	Color	pH	Temperature	Other
4/21/11	1004	start	over	0.204	Black	6.98	11.05	odor
↓	1005	5gal	over	0.193	Black	6.88	11.60	odor
	1019	20gal	890	0.193	light gray	6.59	11.41	odor
	1040	40gal	710	0.188	light Brown	6.57	11.31	odor
	1101	55gal	730	0.185	light Brown	6.66	11.09 ~~11.58~~	odor

REMARKS:

APPENDIX C

COMPLETE LABORATORY ANALYTICAL DATA SUMMARY

Tables included on the enclosed CD