NW 2216

EXHIBIT C

EVERETT LANDFILL/ TIRE FIRE SITE

WASHINGTON STATE
Department of Ecology
TOXICS CLEANUP PROGRAM
Northwest Regional Office
Bellevue, Washington 98008

CLEANUP ACTION PLAN

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DRAFT FOR PUBLIC COMMENT

drain. The drain has been sealed and currently no landfill gas is detectable within the restroom.

3.2 GROUNDWATER EXPOSURE PATHWAY

3.2.1 Groundwater ARARs

Potential ARARs for the Everett Landfill/Tire Fire Site are described in an attachment CAP-1. ARARs specific to the groundwater exposure pathway are summarized below.

- Water Quality Standards for the Surface Waters of the State of Washington, Section 90.48 RCW; Section 173-201A WAC
- Federally Promulgated Water Standards, 40 CFR 131 and 141
- Group A Public Water Systems, Chapter 246-290-310 WAC

3.2.2 Groundwater Cleanup Standards

Cleanup standards [WAC 173-340-700] consist of selected appropriate levels of cleanup applied at a defined point of compliance. Appropriate levels of cleanup for groundwater are determined by the highest beneficial use of that groundwater. For the Everett Landfill/Tire Fire Site, cleanup standards are slightly different for the shallow (leachate) aquifer and the deep aquifer.

3.2.2.1 Shallow (Leachate) Aquifer

The shallow (leachate) aquifer is not a current or potential drinking water source. Water in this aquifer is collected and conveyed off-site for treatment by the leachate collection system. Shallow aquifer cleanup standards are therefore based on the protection of water quality in the deep aquifer and in the adjacent surface water bodies.

The shallow aquifer point of compliance is located on the strip of land between the leachate collection trench and the East Ditch. Compliance criteria for the shallow aquifer will be based on hydraulic control through operation of the leachate collection system. Demonstration of hydraulic control would occur by monitoring water levels to show that hydraulic gradients are toward the leachate collection system, indicating no shallow aquifer discharge to surface water. If, at some point in the future, shallow (leachate) groundwater quality meets cleanup levels, hydraulic control through operation of the leachate collection system would no longer be necessary.

3.2.2.2 Deep Aquifer

The deep aquifer located under the Landfill/Tire Fire Site is a potential future source of drinking water under MTCA although currently cannot be used directly for drinking water purposes per well installation regulations. The deep aquifer does, however, discharge to the Snohomish River, which is classified as a potential drinking water source. Therefore, deep aquifer cleanup levels are based on:

1. The most stringent of the following standards: MTCA A or MTCA B for groundwater (drinking water standards), drinking water maximum contaminant levels (MCLs), or surface water standards based on consumption of organisms, OR

2. Method PQL, OR
3. Accepted background concentrations if higher than the lowest (most stringent) cleanup level determined via #1, above.

Since the highest beneficial use of Site groundwater is proposed to be the protection of surface water quality, the proposed point of compliance for the deep aquifer is located:

1. Downgradient of the landfill, between the landfill and the point of discharge into the Snohomish River,
2. Outside the boundary of landfilled materials,
3. No further than 100' east of the most easterly existing railroad tracks, and
4. Within property able to be restricted by institutional controls under the Consent Decree (property controlled by the City or BNSF).

Appropriate institutional controls prohibiting the withdrawal of groundwater for domestic water supply are included to ensure that if existing regulations change, the restriction will remain with the Site in perpetuity.

3.2.3 Nature and Extent of Groundwater Contamination

Groundwater samples collected from the Everett Landfill/Tire Fire Site indicate that water quality in the deep aquifer is generally in compliance with cleanup standards. This condition is evident in data from both the earlier and recent site investigations. Evaluation Monitoring as described in the Compliance Monitoring and Contingency Plan (CMCP, attachment CAP-2) will utilize consistent sampling procedures and an improved monitoring well network in order to confirm conditions in the deep aquifer. Shallow aquifer data do not indicate that widespread contamination exists in the leachate. See Tables 3-2 and 3-3 for contaminants detected in the deep and shallow aquifers. Figure 3-2 shows the existing groundwater monitoring well network.

All groundwater data collected to date support the conclusion that there is a low risk of shallow groundwater impacting the deep aquifer above the cleanup levels even at a significant distance upgradient of the compliance point. Reasons for this conclusion are as follows:

- High natural organic content of shallow aquifer material, including significant quantities of peat, enhances degradation of contaminants.
- Horizontal flow in the shallow aquifer is two to four orders of magnitude greater than potential vertical flow through the aquitard.
- Low groundwater flow gradients and low permeability sediments present in both aquifers allow time for chemical breakdown reactions to occur.
- The leachate collection trench, installed as an interim action under an Ecology Enforcement Order, acts as a hydraulic barrier for the shallow aquifer preventing flow of leachate to the east.
- The western one-third of the landfill overlies natural glacial silt and sand soil that are not considered aquitard soils (i.e., the clayey silt or organic soil). Refuse has been placed in this western one-third of the landfill and has generated leachate (based on observed conditions during recent drilling). Monitoring Wells MW-2, -4, -10, and -15 were completed in this part of the landfill where the aquitard is absent. Water quality

5.0 Existing Conditions: Cleanup Action Alternatives and Justification

The following sections summarize the alternative cleanup actions for existing conditions that were considered in the BFS, and describe the justification under MTCA for selecting the proposed cleanup action described in Chapter 4.0.

For the groundwater and direct contact pathways, previously completed interim and independent actions have met requirements for protection of human health and the environment under existing conditions. The Interim Actions were previously approved by Ecology under the 1994 Enforcement Order. The proposed cleanup action, described in Chapter 4.0, consists of maintaining conditions created by the interim and independent actions and instituting long-term monitoring. For the groundwater pathway, continued operation and maintenance of the leachate collection system is required, as well as long-term monitoring. The proposed cleanup action for the direct contact pathway includes maintaining the minimum two-foot cover of clean soil, positive drainage, and access controls to undeveloped portions of the Site. The remedies for groundwater and direct contact under existing conditions are in place and need no evaluation. No alternatives were considered.

Proposed cleanup actions for the gas and surface water pathways were selected from a list of alternatives and evaluated according to MTCA [WAC 173-340-360(2) and (3)].

WAC 173-340-360(2) specifies four threshold criteria that any cleanup action must satisfy. The threshold criteria are: 1) protect human health and the environment, 2) comply with cleanup standards, 3) comply with applicable state and federal laws, and 4) provide for compliance monitoring. All evaluated alternatives for all pathways, whether for existing conditions or for future conditions, meet the threshold criteria.

WAC 173-340-360(3) specifies three other criteria that any alternative meeting the threshold requirements must also achieve. They are 1) use permanent solutions to the maximum extent practicable, 2) provide for a reasonable restoration time frame, and 3) consider public concerns raised during public comment on the draft cleanup action plan.

Ecology also recognizes that permanent solutions may not be practicable for all sites. A determination that a cleanup action satisfies the requirement to use permanent solutions to the maximum extent practicable is based upon consideration of a number of factors. The following criteria are used to determine whether a cleanup action is "permanent to the maximum extent practicable". [WAC 173-340-360(5)(d)].

1. Overall protectiveness of human health and the environment
2. Long-term effectiveness
3. Short-term effectiveness
4. Permanent reduction of toxicity, mobility and volume of the hazardous substance
5. Ability to be implemented
6. Cleanup costs
7. The degree to which community concerns are addressed

Justification for cleanup action selection for each environmental exposure pathway is organized by the three criteria from WAC 173-340-360(3) and presented in the following sections.

5.1 CLEANUP ACTION ALTERNATIVES FOR GAS

In addition to the proposed cleanup action, which includes existing building controls, perimeter compliance monitoring and contingent installation of perimeter landfill gas migration controls, the following alternatives were evaluated:

- Existing building controls, perimeter compliance monitoring and immediate installation of perimeter landfill gas migration controls
- Excavation and removal of landfilled materials

5.2 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR GAS

5.2.1 Permanent Solutions to the Maximum Extent Practicable

The proposed gas cleanup action provides overall protection to human health and the environment. The Animal Shelter and Transfer Station are protected through appropriate mitigation measures, compliance monitoring and contingency plans. Compliance monitoring is implemented for perimeter subsurface migration as soon as possible. A perimeter landfill gas migration control system will be installed if subsurface landfill gas migration past the Site boundary is confirmed by compliance monitoring conducted in accordance with the approved CMCP.

The proposed cleanup action provides long-term effectiveness against subsurface landfill gas migration. Compliance monitoring would be implemented immediately. Perimeter landfill gas migration controls will be installed if compliance monitoring demonstrates it is necessary. The magnitude of residual risk with this alternative is minimal since landfill gas ambient emissions do not exceed MTCA cleanup standards and do not present an explosive risk. This alternative also includes corrective actions, compliance monitoring and contingency plans for the Animal Shelter, Transfer Station, and off-site buildings.

The proposed cleanup action for gas has acceptable short-term risks from construction and implementation. Exposure is limited to construction of the landfill gas probes, the perimeter landfill gas controls if constructed, and implementing corrective actions at the Animal Shelter and Transfer Station. Worker health and safety plans will be implemented to reduce the risk during construction.

The proposed cleanup action for gas achieves a permanent reduction in landfill gas mobility by reducing its ability to migrate into the Animal Shelter, Transfer Station, and off-site buildings. It will demonstrate that landfill gas is not migrating beyond the Site boundary, or it will achieve permanent reduction in subsurface landfill gas migration through the construction of perimeter landfill gas controls, if landfill gas is confirmed above the compliance levels per the CMCP. The contribution from landfill gas toxics to ambient air does not exceed MTCA cleanup standards, and human health and the environment are not affected.

The proposed cleanup action for gas can be implemented. Existing building control measures have been and will continue to be implemented including corrective actions and compliance monitoring. The perimeter landfill gas compliance monitoring probes will be installed as soon as possible pending investigation and necessary approvals.

There are no known or anticipated public concerns that this cleanup action does not address.

The proposed cleanup action for gas thus meets all the criteria to be considered "permanent to the maximum extent practicable".

The alternative "Excavate and Remove Landfilled Materials" was rejected. Because this alternative has been evaluated for multiple pathways, please see Section 7.9 for justification.

The other alternative, which requires immediate installation of perimeter landfill gas migration controls, was rejected because existing landfill gas monitoring data does not allow appropriate evaluation of whether or not landfill gas may be migrating beyond the Site boundary. Installation of new perimeter probes is required for this evaluation. Compliance monitoring of the new perimeter probe network may never show an exceedance of regulatory standards beyond the Site boundary. The preferred alternative allows the City to incur the estimated $0.9-1.9 million for perimeter migration controls only if the necessity of these controls is confirmed.

5.2.2 Provide for Reasonable Restoration Time Frame

The proposed cleanup action for gas may result in some lag between determination of a potential regulatory exceedance at the Site boundary and construction of associated perimeter controls. However, temporary vacuum extraction wells could control landfill gas migration within the vicinity of where migration is occurring in the interim if necessary. Thus, immediate installation of perimeter landfill gas migration control alternative offers no substantial advantage over the proposed cleanup action relative to implementation time frame.

5.2.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

Public concerns are unknown at this time. The public has not had an opportunity to comment on the draft cleanup action plan as of this date. Evaluation of the alternatives against this criterion can be done after such comments are received.

5.3 CLEANUP ACTION ALTERNATIVES FOR SURFACE WATER

The proposed cleanup action for existing conditions includes compliance monitoring and source identification, maintenance of the landfill cover depth and slope, inspection and control of leachate seeps, and preparation of a SWPPP. The only alternative to the proposed cleanup action included all the components listed above except for the preparation of a SWPPP for existing conditions.

5.4 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR SURFACE WATER

5.4.1 Permanent Solutions to the Maximum Extent Practicable

The surface water alternatives are identical except for the addition of a SWPPP under the proposed cleanup action for surface water. Neither alternative proposes a new cleanup action beyond those already completed under previous interim and independent cleanup actions. Both alternatives are intended to maintain the integrity and effectiveness of the earlier corrective actions through monitoring, inspection and maintenance. Both alternatives take actions to determine the source of existing contamination and implement plans to address source control. Both alternatives provide overall protectiveness of human health and the environment.

Both alternatives have long-term effectiveness. They include standard procedures implemented routinely in surface water management and landfill post-closure inspection and maintenance. The proposed cleanup action for surface water would be slightly more effective in the long-term since the inclusion of a SWPPP provides a management tool that would likely lead to more effective implementation and documentation.

Each alternative is effective in the short-term in that they can be implemented immediately, require no new construction and create no new short-term risks. The proposed cleanup action for surface water would take slightly longer to implement completely due to the preparation of a SWPPP.

Permanent reduction in the mobility and release of hazardous substances has been achieved through earlier interim and independent actions. The proposed cleanup action for surface water is slightly more effective since the SWPPP will assist in the reliable and continuous implementation of the cleanup actions.

Both alternatives can be implemented readily. They use routine and accepted practices that are commonly applied in similar situations.

Both alternatives have similar operations and maintenance costs that are appropriate to the incremental degree of protection achieved.

Community concerns are unknown at this time. After public review and comment any concerns will be addressed.

The proposed cleanup action for surface water thus meets all the criteria to be considered "permanent to the maximum extent practicable".

The alternative that includes a SWPPP is selected because it provides an added benefit as a management tool with minimal additional cost.

5.4.2 Provide for a reasonable restoration time frame

Cleanup has already occurred for this pathway under previous interim and independent cleanup actions including preventing leachate intrusion to East Ditch, cleaning up and preventing future leachate seeps, covering and grading the landfill surface, and removing contaminated sediment from the East Ditch. The inspection, maintenance and monitoring requirements of the proposed cleanup action for surface water will be implemented promptly upon approval.

5.4.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

Public concerns are unknown at this time. The public has not had an opportunity to comment on the draft cleanup action plan as of this date. Evaluation of the alternatives against this criterion can be done after such comments are received. It is not anticipated that there will be substantive public comment given the extent of prior cleanup actions to correct surface water exposure pathways and the common application and proven effectiveness of the proposed cleanup action to prevent surface water contamination.

6.0 Future Conditions: Proposed Cleanup Actions

The proposed cleanup actions for potential future developed conditions consists of the following components, organized by pathway:

Landfill Gas Pathway:

- Codes, covenants, and restrictions incorporating the requirements of the preferred alternative for future development.
- Compliance monitoring for buildings, pavement, open space, and undeveloped areas. Buildings would include continuous monitoring systems for all ground floor rooms that would automatically notify qualified landfill gas control system operations and maintenance personnel and activate increased interior HVAC system ventilation if flammable gas was detected at 1,000 ppm within the building. If flammable gas concentration reached 10,000 ppm, or 20% of the lower explosive limit, alarms would be activated that would cause the building to be evacuated. Additionally, buildings and exterior areas will be monitored with hand-held instruments every two weeks after the building and/or exterior area is opened for public access. If results do not show an air quality concern for three months, monitoring will be performed quarterly. Any result exceeding 100 ppm inside buildings or 500 ppm for exterior areas would be subject to corrective contingency measures.
- An active landfill gas control system will be installed with development phases. It will collect landfill gas from beneath buildings, pavement and open spaces associated with developed portions of the Site. See Figures 6-1 and 6-2 for conceptual cross section and plan view of the phased active landfill gas control system. This phased active vacuum extraction system consists of perforated pipes running generally east-west on minimum 100-foot centers buried in gravel above the landfilled materials. The perforated pipes are connected to a header system that directs collected gas to one or more vacuum blowers and discharge points. PSCAA will be consulted for any future discharge of landfill gas. Discharge could be treated (biofilter, carbon filter canister, flare) or untreated. If untreated, and modeling of the discharge demonstrates the discharge would not cause exceedance of ASIL standards, PSCAA permitting would not be necessary. If treatment is proposed, PSCAA permitting and approvals will be required. Modeling of both treated and untreated conditions has demonstrated that various discharge scenarios are able to meet MTCA cleanup levels and ASIL standards.
- Confirmational modeling at landfill gas discharge points would also be completed to confirm that constituents of gas emitted from constructed discharge locations are consistent with the assumptions of landfill gas pollutant concentrations and landfill gas flow used in the modeling to design the gas control systems.
- Buildings will be protected by a geomembrane beneath the foundation slab that will be booted and sealed around piles and utility penetrations as appropriate. A full-time continuous ground floor monitoring system will automatically activate installed HVAC systems and centralized alarms if flammable gas concentration exceeds 1,000 ppm. Temporary enclosures erected over pavement or open space areas will contain continuous monitors that would activate an alarm if triggered.

- To prevent atmospheric intrusion into the extraction pipes, a low permeable barrier is required in open space areas. This is assumed to be the same as the hydraulic barrier required for groundwater protection. In some areas of thick fill placement above collection pipes, the fill thickness may provide the barrier to atmospheric intrusion. Pavement that meets specified low-permeability (less than or equal to 10-5 cm/sec) criteria will operate effectively as a low permeable barrier for gas system purposes.
- Utilities, manholes, and catch basins in the pavement, open space and undeveloped areas will be coated, sealed or booted to reduce the likelihood of landfill gas intrusion. The general public will be restricted from accessing undeveloped areas. There may be enclosures such as utility manholes in undeveloped areas. They will have the same coating and sealing requirements as manholes in the pavement or open space areas. All utility vaults or manholes in undeveloped or developed areas will be accessible only to trained, qualified personnel using confined space entry procedures that include monitoring immediately prior to entering the enclosed space, and will be labeled accordingly.
- Light fixtures, fence posts and similar structures would either be finished above the underlying gas barrier or, if penetrating the gas barrier, be internally sealed and booted to the barrier layer to preclude intrusion of LFG. Piling or foundations that would penetrate the barrier layer would be booted or sealed to the barrier layer. Temporary trailers, tents or similar enclosures that might be set up over pavement or open space areas would include continuous methane monitors set to sound an alarm if the concentration of methane exceeded 1,000 ppm. No overnight camping would be allowed at the site.
- Special consideration will be given to boundary conditions between developed and undeveloped areas to preclude excessive air intrusion into the refuse from the active collection system along this boundary.
- Phased active landfill gas controls will be designed and constructed such that, in the future when landfill gas generation rates have dropped to a level that renders the active system unnecessary, the landfill gas controls may be operated as a passive venting system, without vacuum extraction.
- The Owner/Developer(s) will contract with a single, licensed professional to perform operations, reporting, maintenance and repairs on all landfill gas control system components installed in the developed areas of the Site.

Groundwater Pathway:

- Continued operation and maintenance of the Leachate Collection System will be required until such time that the shallow aquifer may be proven in compliance with chemical cleanup criteria.
- To minimize infiltration of rain and irrigation water to the shallow aquifer, a hydraulic barrier is required to be constructed in developed areas. This hydraulic barrier requirement can be met through the installation of pavement and building structures. In landscaped areas, this hydraulic barrier requirement can be met through installation of a membrane, low permeability soil layer or other material with a permeability similar to asphalt pavement.

- Stormwater will be collected for conveyance off-site for discharge. Where conveyance of subdrainage from landscaped areas to the stormwater system is impracticable, release of subdrainage to the subsurface will be accepted, as long as the gas collection system is not compromised by such drainage.
- Stormwater conveyance piping located on the Site is required to have leak-tight joints in order to minimize infiltration of stormwater into subsurface soils and reduce leachate generation.
- Restrictions against infiltration of collected stormwater into Site subsurface soils are included to minimize leachate generation. Condensate drained from landfill gas collection piping will be discharged to the leachate collection system. Where impracticable to pipe this liquid directly to the leachate collection system, condensate will be allowed to drain into subsurface soils for eventual collection in the leachate collection system.
- A one-time sampling of the shallow aquifer will be performed to determine if there are zones where shallow aquifer quality has the potential to cause an exceedance of cleanup levels at the point of compliance in the deep aquifer if migration from the shallow to deep aquifer were to occur. Based on the results of this study, zones of the Site may have restrictions on the type of piling (deep foundations) that future development may use. Augercast piling will be required where it is shown that penetration of the aquitard could potentially result in deep aquifer cleanup level exceedances.
- Institutional controls are required preventing groundwater withdrawal other than for leachate collection or monitoring.
- Compliance monitoring and contingency plan commitments are required. Initiation of compliance monitoring is required before pile installation can commence.

Direct Contact Pathway:

- Development areas are required to provide cover of subsurface soils. Covers will include a minimum of 2 feet of clean soil, pavements, building slabs or a combination of these.
- Clean backfill, meeting current WSDOT/APWA Specification #9-03.12(3) or equivalent, in utility corridors with geotextile separation from existing materials is required to prevent contact with landfilled materials during maintenance activities.
- Security fencing (locked gates, adequate height, etc.) and signage is required to prevent public access to undeveloped portions of the Site.
- Institutional controls are required to govern maintenance of developed area covers, and compliance with health and safety requirements for penetrations of that cover.
- Institutional controls prohibiting private residential ground-level ownership of landfill property are required.
- Construction methods to contain risk of direct contact to landfilled materials and site groundwater within construction zones are required. They include:
  - Dust and odor controls
  - Erosion and surface water controls

  - * Health and safety requirements for construction crews
  - * Construction dewatering procedures
  - * Construction performance monitoring, inspection and contingency plans.

  The requirements for construction are described in more detail in Table 6-1.
- Controlled on-site relocation and re-capping of excavated refuse during construction activities is allowed. Location and quantities will be approved prior to excavation.

Surface Water Pathway:

- A SWPPP for future conditions will be developed in order to manage storm water run-off quality and quantity for off-site discharge.
- Comprehensive compliance monitoring and maintenance inspection commitments are required.

6.1 PHYSICAL CHARACTERISTICS

The physical characteristics of the recommended cleanup alternative for future conditions include construction and operation requirements for the potential future developed areas of the Site. These remedial actions are listed in detail in Table 6-1.

6.2 COMPLIANCE MONITORING AND CONTINGENCY PLAN OBJECTIVES

Compliance monitoring plans will be implemented for landfill gas, groundwater, direct contact and surface water. Compliance monitoring for developed conditions includes both inspection requirements to ensure that developed conditions remain in compliance with environmental objectives, and compliance monitoring to ensure that the exposure pathway receptors are not affected by development at levels of concern. See the CMCP for more detail.

6.2.1 Landfill Gas Compliance Monitoring and Contingency Plan Objectives

Compliance monitoring will be implemented for buildings, pavement, open space, and undeveloped areas. Buildings will include continuous monitoring systems for all ground floor rooms that will automatically notify appropriate operations and maintenance personnel and activate increased interior HVAC system ventilation if flammable gas was detected at 1,000 ppm within the building. If flammable gas concentration reached 10,000 ppm, alarms will be activated that will cause the building to be evacuated.

Buildings and exterior areas will be monitored with hand-held instruments every two weeks after the building and/or exterior area is opened for public access. If results do not show an air quality concern for three months, monitoring will be performed quarterly. Monitoring will be conducted by a trained, qualified technician using a hand-held flammable gas meter capable of detecting flammable gas at less than 100 ppm. This technician will monitor buildings to locate sources of landfill gas intrusion by measuring cracks, utility penetrations, and the like. The technician will also monitor enclosed spaces such as utility vaults, catch basins, and manholes in pavement, open space and undeveloped areas. Any detections of flammable gas in excess

7.0 Future Conditions: Cleanup Action Alternatives and Justification

The following sections summarize the alternative cleanup actions for future conditions that were considered in the BFS, and describe the justification under MTCA for selecting the proposed cleanup actions described in Chapter 6.0.

Proposed cleanup actions were selected from a list of alternatives and evaluated according to MTCA [WAC 173-340-360(2) and (3)]. Refer to Chapter 5.0 for a detailed description of the criteria. As stated previously, all evaluated alternatives for all pathways meet the threshold criteria of WAC 173-340-360(2). Justification for cleanup action selection for each environmental exposure pathway is organized by the three criteria from WAC 173-340-360(3) and presented in the following sections.

7.1 CLEANUP ACTION ALTERNATIVES FOR GAS

In addition to the proposed cleanup action for gas, which includes institutional controls, compliance monitoring and phased active landfill gas controls, the following alternatives were evaluated:

- Institutional controls, compliance monitoring, contingent active venting for buildings, and passive venting for pavement and open space
- Institutional controls, compliance monitoring, contingent active venting for buildings, pavement and open space
- Institutional controls, compliance monitoring, and area-wide landfill gas collection system

7.2 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR GAS

7.2.1 Permanent Solutions to the Maximum Extent Practicable

All alternatives provide overall protectiveness to human health and the environment. All are effective in reducing the risk of fire and explosion from the accumulation of methane. The proposed cleanup action and the alternative with an area-wide landfill gas collection system provide further protection from the accumulation of toxic pollutants in the interior of buildings by maintaining a continuous vacuum beneath the buildings.

The alternatives are effective in the long term. No development would occur on-site without first implementing the technology options from the selected alternative. The technology options of all alternatives except for the area-wide landfill gas collection system alternative would be designed and constructed as an integral part of each component of development. This coordination of design and construction of the technology options for building landfill gas control with the design and construction of the building itself generally provides higher quality and more reliable system performance. The area-wide landfill gas collection system would be more

difficult to integrate with development, as it requires excavation into the refuse and a continuous geomembrane.

The requirement for the area-wide landfill gas collection system to continuously operate with a vacuum with its perforated pipes buried in refuse increases its risk of causing a subsurface landfill fire. This risk is mitigated through regular monitoring and adjustment in accordance with the operations and maintenance manual. The proposed gas cleanup action with phased active landfill gas controls also operates with a continuous vacuum but its perforated pipes are located above the refuse and are therefore less likely to cause a subsurface landfill fire.

Each alternative is effective in the short-term as their technology options are put in place concurrently with development. Short-term exposure to landfill gas during construction will be controlled through the use of contractor health and safety plans. The area-wide landfill gas collection system creates the greatest short-term exposure because it requires exposure of substantial amounts of refuse.

Each alternative provides permanent reduction in the mobility of landfill gas by restricting its movement into future development buildings and associated infrastructure. The proposed cleanup action and the alternative with an area-wide landfill gas collection system are more effective at this as they maintain a vacuum beneath buildings and around associated infrastructure. If collected landfill gas is treated with a flare, the proposed cleanup action and the alternative with an area-wide landfill gas collection system will permanently reduce the toxicity and volume of landfill gas by combusting organic pollutants and oxidizing hydrogen sulfide. New pollutants that are the by-product of combustion would be created, such as carbon monoxide, sulfur dioxide and nitrogen oxides, but they would have to meet PSCAA emission limits. Hydrogen sulfide removal treatment would remove that pollutant if used.

Each of these alternatives can be implemented. The technology options of the contingent active venting alternatives are integrated and implemented concurrently with phased development and are independent systems not relying on integration with previous development control systems. The proposed cleanup action is also implemented concurrently with phased development and requires only integration with any pre-existing header pipe systems. The area-wide landfill gas collection system would be more difficult to integrate and implement with subsequent development phases because the area-wide landfill gas collection system would be installed prior to development and construction activities would have to avoid disturbing the continuous geomembrane and other landfill gas control elements.

The cost for the contingent active venting alternatives are similar, differing only in the cost of providing contingent active controls for pavement and open space areas. The alternative with contingent active venting only for buildings is estimated to cost $9.6 million. The alternative with contingent active venting for all areas is estimated to cost $11.2 million. The proposed phased active landfill gas control system is estimated to cost $8.4 million, less than either contingent active venting alternatives primarily because less pipe and gravel are required when compared to a passive system. The cost estimate for the area-wide landfill gas collection system is approximately $16.2 million, more than the proposed cleanup action (phased active landfill gas controls) because of substantial earthwork requirements and a continuous geomembrane over the Site.

There are no known or anticipated public concerns that the alternatives under consideration do not address. If flare treatment were used as appropriate, consideration would have to be given to noise and vibration concerns.

The proposed cleanup action for the gas pathway thus meets all the criteria to be considered "permanent to the maximum extent practicable".

The alternatives that rely on contingent active venting are rejected because they maintain a vacuum beneath buildings, pavement and open space and because they were estimated to cost $1.2 to $2.8 million dollars more than the proposed cleanup action. The area-wide landfill gas collection system was rejected because it does not provide added benefit for the additional cost and short-term risks that would be incurred.

7.2.2 Provide for a Reasonable Restoration Time Frame

Each of the four alternatives provides reasonable restoration time frame. They are constructed prior to or concurrently with development.

7.2.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

Public concerns are unknown at this time. The public has not had an opportunity to comment on the draft cleanup action plan as of this date. Evaluation of the alternatives against this criterion can be done after such comments are received.

7.3 CLEANUP ACTION ALTERNATIVES FOR GROUNDWATER

In addition to the proposed cleanup action for groundwater, which includes a hydraulic barrier, stormwater management restrictions and zoned pile installation restrictions, the following alternatives were evaluated:

- Hydraulic barrier and stormwater management restrictions
- Excavate and remove landfilled materials

7.4 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR GROUNDWATER

7.4.1 Permanent Solutions to the Maximum Extent Practicable

A hydraulic barrier under landscaping (except in areas of steep slopes), in conjunction with pavements and buildings, will result in about 90 percent of the surface area having relatively low impervious surfaces. This barrier will reduce leachate generation by reducing potential recharge to the shallow groundwater system through rainfall or irrigation water input. Stormwater management restrictions that minimize the infiltration of collected stormwater will reduce leachate generation. Reduction in leachate head in the shallow aquifer will increase the potential for upward groundwater gradients at the Site, and reduce the potential for downward migration of leachate contaminants to the lower aquifer.

Given site conditions, the alternative with unrestricted pile construction will not likely degrade lower aquifer quality. However, the proposed cleanup action for groundwater increases the certainty of this conclusion by providing for protection of the deep aquifer in those areas where it is hypothetically most vulnerable - where the shallow aquifer has contaminant concentrations that, if connected to the deeper aquifer, could cause exceedances of cleanup levels at the point of compliance. It also allows flexibility for development in those areas where the shallow aquifer is not significantly impacted or the aquitard is absent.

The area of the landfill that is underlain by aquitard will be sampled to obtain a statistically relevant set of characterization data. If data shows that areas of the landfill contain contaminant concentrations in leachate that could, if connected to the lower aquifer, cause an exceedance of cleanup levels at the point of compliance, pile installation within that zone will be restricted to augercast piling. Drilled augercast piles will have no negative impact on the hydraulic properties of the aquitard since concrete is placed under head as the auger is removed maintaining a strong hydraulic seal at the aquitard. Pile installation restrictions will not be necessary in the western portions of the Site where the aquitard is not present.

Comprehensive compliance monitoring will be approved and initiated prior to pile installation. Contingency plan measures are focused on further reducing leachate quantity in the shallow aquifer if lower aquifer quality is determined to be at risk based on compliance monitoring results.

Through these methods, the proposed cleanup action for groundwater under future conditions increases the certainty of groundwater pathway protectiveness. It meets the cleanup standards and is protective of human health and the environment.

The proposed cleanup action for groundwater provides long-term effectiveness through providing measures that increase the certainty of groundwater pathway protectiveness and commitment to compliance monitoring and contingency measures.

The proposed cleanup action for groundwater is effective in the short-term because the groundwater pathway is in compliance with cleanup standards under existing conditions. Effectiveness of the groundwater pathway alternatives for future conditions is relevant only to increasing the certainty of protectiveness in the long-term.

The proposed cleanup action for groundwater is likely to provide a permanent reduction in the volume and mobility of leachate in the groundwater system due to anticipated reduction in leachate quantity and associated leachate head in the shallow aquifer. The proposed cleanup action for groundwater will not reduce the toxicity of leachate. Therefore, continued operation of the leachate collection system is required unless it can be shown that shallow aquifer groundwater has attained compliance with cleanup standards.

The proposed cleanup action can be implemented using common design, permitting, construction and monitoring practices.

Costs associated with the proposed cleanup action for groundwater above the "base case" costs for hydraulic barrier and stormwater management restrictions include the increased cost of using augercast piling in restricted areas. For the purposes of this evaluation, it is assumed buildings will cover about 14 acres of the Site and that one quarter of the building square footage will have the zoned designation requiring augercast piles. The estimated cost was developed using only the differential cost between steel piles (estimated to be the lowest cost

pile foundation at the Site) and augercast piles. The cost of off-site disposal for half of the potential augercast pile spoils is included, although such disposal may not be necessary if an on-site disposal area is available at time of development. The estimated cost of this alternative above the "base case" costs is $2,500,000.

Through continued monitoring and contingency plan commitment, restriction of pile installation based on shallow aquifer conditions, as well as through an understanding of current compliance with cleanup standards, the proposed cleanup action will address anticipated public concerns regarding protection of the groundwater pathway. It therefore meets all of the criteria to be considered "permanent to the maximum extent practicable."

The alternative without zoned pile installation restrictions was rejected because it does not provide increased certainty of groundwater pathway protectiveness during potential future developed conditions.

The alternative "Excavate and Remove Landfilled Materials" is also rejected. Because this alternative was evaluated for multiple pathways, please see Section 7.9 for justification.

7.4.2 Provide for a Reasonable Restoration Time Frame

The proposed cleanup action provides a reasonable restoration time frame. The groundwater pathway at the Everett Landfill/Tire Fire Site is in compliance with cleanup standards under existing conditions. The proposed cleanup action defines requirements that will be imposed on development to increase the certainty of groundwater pathway protectiveness during and following potential future development actions.

7.4.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

Public concerns are unknown at this time. The public has not had an opportunity to comment on a draft cleanup action plan as of this date. Evaluation of the alternatives against this criterion will be done after such comments are received.

7.5 CLEANUP ACTION ALTERNATIVES FOR DIRECT CONTACT

In addition to the proposed cleanup action for direct contact, which includes developed area cover, construction requirements, on-site disposal of excavated refuse and access controls for undeveloped areas, the following alternatives were evaluated:

- Developed area cover, construction requirements, off-site disposal of excavated refuse and access controls for undeveloped areas
- Excavate and remove landfilled materials

7.6 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR DIRECT CONTACT

7.6.1 Permanent Solutions to the Maximum Extent Practicable

Developed area covers, construction requirements and access controls isolate Site users, the surrounding community, and environmental receptors from direct contact with refuse materials. These measures ensure that construction workers coming in contact with exposed refuse will be appropriately health and safety trained. In this manner, the proposed cleanup action for direct contact meets the cleanup standards and is protective of human health and the environment.

This cleanup action provides long-term effectiveness through reliance on institutional controls, compliance monitoring and maintenance of landfill cover. In a landfill setting, reliance on institutional controls for long-term effectiveness is an acceptable and proven alternative.

The proposed cleanup action for direct contact includes construction requirements and institutional controls to control short-term risks from construction and maintenance activities. Construction requirements include construction performance monitoring in addition to physical requirements to ensure that performance standards are met.

The proposed cleanup action for direct contact does not provide a permanent reduction in the toxicity, mobility or volume of the landfilled refuse. Isolation of landfilled refuse from environmental exposure pathways is a proven and acceptable alternative for municipal landfill facilities. Through developed area cover requirements and institutional controls, the proposed cleanup action for direct contact will increase the certainty of isolation of the refuse from uncontrolled direct contact.

The proposed cleanup action for direct contact can be easily implemented during Site development activities.

On-site disposal of refuse excavated during development is expected to be minimal. The same cover and grading requirements will apply to relocated refuse, thus isolating relocated refuse from environmental exposure pathways.

The costs to implement this alternative will be contained within the development costs for the Site. These costs are not expected to make development of the Site impracticable.

Costs for on-site disposal of excavated refuse are estimated to be $35/ton less expensive than for the other alternative that prohibits on-site relocation of excavated refuse. However, it is not possible at this time to estimate whether refuse will be excavated for development or what potential volume of excavated refuse may be included in development plans.

Through institutional controls, construction requirements, construction performance monitoring and public access controls, the proposed cleanup action will address most anticipated public concerns regarding direct contact with, or exposure to landfilled materials. Because the proposed cleanup action for direct contact is not expected to cause the traffic and transportation impacts, nor create the potential risk of off-site contamination, that off-site disposal of excavated refuse would cause, the public may have fewer concerns with on-site relocation of excavated refuse.

The proposed cleanup action for the direct contact pathway thus meets all the criteria to be considered "permanent to the maximum extent practicable".

The alternative requiring off-site disposal of excavated refuse was rejected because off-site disposal of excavated refuse would not significantly reduce the volume of contained refuse at the Everett Landfill/Tire Fire Site, as the volume of refuse excavated during development is expected to be minimal. The toxicity or volume of the refuse excavated for development would not be reduced through off-site disposal, it would simply be transferred to another landfill setting. Additionally, off-site disposal of excavated refuse would cause traffic and transportation impacts, as well as potential risk of off-site contamination. Public concerns may be raised about the environmental effectiveness of transporting waste from one landfill setting to another at increased cost and increased community impact, without achieving increased environmental protection at the Everett Landfill/Tire Fire Site.

The alternative "Excavate and Remove Landfilled Materials" was rejected. Because this alternative was evaluated for multiple pathways, please see Section 7.9 for justification.

7.6.2 Provide for a reasonable restoration time frame

The proposed cleanup action for direct contact pathway protection would be implemented as development occurs, associated with a reasonable restoration time frame.

7.6.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

While the public has not yet had an opportunity to comment on a draft cleanup action plan, anticipated public concerns regarding the alternatives include traffic and transportation impacts, potential risk of contamination of areas off-site, and potential risks to nearby water ways. The proposed cleanup action avoids these risks by allowing excavated refuse to be relocated within the Everett Landfill/Tire Fire Site. The other direct contact alternatives would likely raise some public concerns; however, public concerns are unknown at this time and evaluation of the alternatives against this criterion can be done after such comments are received during the comment period for the CAP.

7.7 CLEANUP ACTION ALTERNATIVES FOR SURFACE WATER

In addition to the proposed cleanup action for surface water, which includes construction practices and stormwater management requirements, an additional alternative, excavate and remove landfilled materials, was evaluated.

7.8 JUSTIFICATION OF PROPOSED CLEANUP ACTION FOR SURFACE WATER

7.8.1 Permanent Solutions to the Maximum Extent Practicable

The proposed cleanup action for surface water ensures continued overall protectiveness of human health and the environment under developed conditions. Construction practices isolate surface water from refuse. Any surface water contacting temporarily exposed landfilled

materials during construction is contained on-site or directed to the leachate collection system. Development surfaces, such as pavement and landscaping, will meet or exceed the performance of the existing two-foot minimum soil cover in preventing surface water contact with refuse. The stormwater management requirements ensure future development does not create new conditions that could cause exceedance of cleanup standards.

The proposed cleanup action for surface water is effective long-term. Its requirements are practical and employ standard practices for controlling environmental impacts to surface water from development. It provides extra precautions suitable to development on a landfill. The inspection, maintenance, and compliance monitoring requirements ensure long-term reliability. Contingency plans are available if monitoring indicates cleanup levels are being exceeded.

Short-term effectiveness is also achieved by the proposed cleanup action for surface water. Cleanup standards have already been met by sources from on-site. Potential off-site sources contributing to cleanup level exceedances would be identified and appropriate responses initiated. Construction practices ensure surface water cleanup levels are not exceeded as a result of future development construction.

The proposed cleanup action for surface water does not permanently remove the source of potential contamination (landfilled materials). But it does permanently isolate landfilled materials from contact with surface water through the use of existing and future development covers and lined or piped stormwater drainage ways. It also provides for inspection, maintenance, compliance monitoring, and contingency plans to ensure the controls remain effective over time.

The proposed cleanup action for surface water is readily implemented. It applies standard surface water management practices that are well understood and included routinely with development. Additionally, the surface water controls typically associated with landfills and commonly practiced are applied.

The proposed cleanup action for surface water is not substantial and disproportionate to the incremental increase in protection provided.

There are no known community concerns the proposed cleanup action does not meet.

The alternative "Excavate and Remove Landfilled Materials" was rejected. Because this alternative was evaluated for multiple pathways, please see Section 7.9 for justification.

7.8.2 Provide for a reasonable restoration time frame

The proposed cleanup action for surface water can be implemented immediately upon approval and thus meets the reasonable restoration time frame criteria.

7.8.3 Consider Public Concerns Raised during Public Comment on the Draft Cleanup Action Plan

Public concerns are unknown at this time. The public has not had an opportunity to comment on the draft cleanup action plan as of this date. Evaluation of the alternatives against this criterion can be done after such comments are received.

7.9 EXCAVATE AND REMOVE LANDFILLED MATERIALS ALTERNATIVE

This alternative was evaluated in each of the four pathways. For the gas pathway, it was an alternative to remedy existing conditions. For the remaining pathways, the alternative was considered for future conditions. In all evaluations, the "Excavate and Remove Landfilled Materials" alternative was rejected for the following reasons:

- The toxicity or volume of the excavated refuse would not be reduced through removal; it would simply be transferred to another landfill setting. Isolation of landfilled refuse from environmental exposure pathways is a proven and acceptable alternative for municipal landfill facilities.
- Costs are substantial and disproportionate to any reduction in risk. The alternative is estimated to cost $165 million. Even when costs for remedial alternatives for all exposure pathways are considered in aggregate, this aggregate cost is far less expensive than excavating and removing all landfilled materials.
- The "Excavate and Remove Landfilled Materials" alternative would also present substantial short-term risks from exposure to solid waste and its constituents during excavation and hauling, by increasing resuspension of groundwater contaminants, by removing barriers to surface water infiltration, and through impacts to stormwater runoff. Additional impacts to traffic and transportation would be incurred.
- For groundwater, it is not found to be a permanent solution to the maximum extent practicable because continued operation of the leachate collection system through construction, and downgradient monitoring after excavation would be required.
- The "Excavate and Remove Landfilled Materials" alternative is no more protective than either of the other direct contact alternatives, and would result in greater direct contact risks over the short-term.
- Public concerns may be raised about the environmental effectiveness of transporting waste from one landfill setting to another at increased cost and increased community impact, without achieving increased environmental protection at the Everett Landfill/Tire Fire Site.

GTS Drywall
Everett
LUST 592389
VCP NW2216

GEOENGINEERS

MEMORANDUM

PLAZA 600 BUILDING, 600 STEWART STREET, SUITE 1700, SEATTLE, WA 98101, TELEPHONE: (206) 728-2674, FAX: (206) 728-2732 www.geoengineers.com

TO:	City of Everett Engineering Department; Attention: Mark Sadler
CC:	Ken Weiner, K&L Gates
FROM:	GeoEngineers – Dana Carlisle, PE & Sean Trimble, LG
DATE:	August 20, 2007
FILE:	0661-065-00
SUBJECT:	Summary of Environmental Characterization – Former GTS Drywall Facility

This memorandum summarizes the results of the Phase II Environmental Site Assessment (ESA) conducted at the property located at 2731 36th Street in Everett, Washington. This memorandum includes all known existing sampling on the property.

The property is an approximate 1.38-acre tract, which was formerly developed with the GTS Drywall warehouse and office facility. The GTS Drywall facility has been demolished and the property, which had recently been used as a materials staging area by WSDOT contractors for the Interstate 5 expansion project, is currently vacant. A portion of the former GTS Drywall property has recently been conveyed to Burlington Northern Santa Fe (BNSF) Railway (the approximate property boundary dividing the BNSF and City portions is shown on the attached figures). It is our understanding that the City of Everett may sell the remaining City property for redevelopment by others. The site layout and surrounding properties are shown in Figure 2.

The scope of work was conducted at your request and was based on the information obtained from previous environmental characterization studies conducted on and adjacent to the property, including an April 2001 study completed by HWA Geosciences, Inc. as part of the Everett Tire Fire Landfill remedial studies, and an October 2004 study completed by Shannon & Wilson, Inc. for the Washington State Department of Transportation (WSDOT) for potential acquisition of this property and the adjacent Port property for storm water facilities.

SCOPE OF WORK

The purpose of the 2006/2007 Phase II ESA was to evaluate the nature and extent of petroleum hydrocarbon-related and other constituents previously identified in soil and groundwater at the site resulting from historical on-site activities (possibly associated with the underground storage tank (UST) located at the site) or other unidentified sources. The scope of work was conducted as a multi-phase effort as described below:

- The initial phase consisted of advancing eight (8) soil borings using a direct-push drilling rig.
- A second phase consisted of advancing three (3) additional soil borings using a direct-push drilling rig, at locations selected based on the initial soil results.
- The third phase consisted of completion and sampling of three (3) groundwater monitoring wells, at locations selected based on the soil results.
- The fourth phase consisted of completion and sampling of four (4) additional groundwater monitoring wells, at locations selected based on the previous soil and groundwater results.

The scope was developed to: (1) fill data needs resulting from the previous studies conducted at the site, (2) characterize the contamination, (3) evaluate if future cleanup action is warranted, and (4) provide data for developing a cleanup action plan, if needed.

Sampling Locations

GeoEngineers monitored the completion of six direct-push explorations (SB-1, SB-5, SB-6, SB-7, SB-8, and SB-9) on November 6, 2006, an additional five direct-push explorations (SB-3, SB-4, SB-10, SB-11, and SB-12) and three groundwater monitoring wells (MW-1, MW-2, and MW-3) on January 18, and January 19, 2007, and four groundwater monitoring wells (MW-4 through MW-7) on June 6 and June 7, 2007. The soil borings/monitoring wells were advanced to depths ranging between 16 and 25 feet below ground surface (bgs). The approximate boring locations are shown on Figure 2, along with the previous sampling locations from the HWA and Shannon and Wilson work. Boring logs for soil boring explorations are in Attachment A (Geo-Engineers) and Attachment B (Shannon and Wilson).

Screening Levels

The Model Toxics Control Act (MTCA) Method A cleanup levels for unrestricted land use were used to evaluate the sampling results, or, where available [as for carcinogenic polycyclic aromatic hydrocarbons (cPAHS)], MTCA Method B cleanup levels (Ecology, Cleanup Levels and Risk Calculations [CLARC Version 3.1], November 2001) were used. These levels are typically employed for screening level analysis and are evaluated as a whole and in the context of past, current, and future site uses. A sample result that is higher than these levels does not necessarily trigger cleanup or establish the appropriate cleanup standard.

MTCA Method A levels are "intended to provide conservative levels," typically employed for voluntary cleanups without active government oversight and routine cleanup actions; MTCA Method B cleanup levels are the universal cleanup levels that typically employ risk-based cleanup levels (WAC 173-340-700 and 900). The MTCA Method A cleanup level tables contain an explicit cautionary note "on misusing this table." The cautionary note explains that "the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedences of the values in this table do not necessarily mean the soil/water must be restored to these levels at a site" (WAC 173-340-900). A determination of appropriate cleanup standards for remedial actions, if needed, will be made in connection with any cleanup actions that may be warranted.

FINDINGS

PETROLEUM HYDROCARBONS

Based on results of samples collected to date, an area impacted with gasoline-range petroleum hydrocarbons (TPH-Gx) and benzene, ethylbenzene, toluene, and xylenes (BETX) at concentrations greater than MTCA Method A screening levels (petroleum contaminated soil or "PCS" in this memorandum) extends from the vicinity of the former GTS Drywall building footprint southeast toward 36th Street.

The extent of the petroleum-impacted soil is an oval-shaped area approximately 250 x 125 feet, mostly on the portion of the former GTS Drywall property currently owned by the City. The PCS extends approximately 50 feet into both the BNSF property to the northwest and the 36th Street right-of-way to the south. The extent of petroleum-impacted groundwater is somewhat larger than this area on the northwest and apparently extends further than the impacted soil area on the southeast; it has not been fully delineated to east-southeast. The data indicate that impacts to soil do not extend across 36th Street or onto the Everett Tire Fire Landfill Site. (See Figures 3 and 5 and discussion of results below.)

Soil Results

The TPH soil results and the estimated extent of the PCS are shown on Figure 3. A former gasoline UST was removed from the property (Ecology UST data sheet, Attachment C). Based on reported soil results, the source area for the gasoline appears to be near test pits TP-4A and TP-4B and soil borings SB-7 and SB-8, on the south-central portion of the property.

The westerly/northerly extent of PCS is bounded by sample locations SB-10, MW-4, P-GTS5, MW-5, and SB-5, all of which were non-detect for TPH including gasoline and benzene. TPH-Gx was not reported above the laboratory sample quantitation limit for soil samples collected from borings MW-3 and SB-6, indicating that gasoline-range TPH in soil does not appear to extend across 36th Street to the south.

The easterly extent of gasoline-range petroleum hydrocarbons in soil appears to be just east of MW-6, which had a TPH-Gx concentration of 70 milligrams per kilogram (mg/kg), exceeding the Method A screening level of 30 mg/kg for TPH-Gx (if benzene is present). The concentration reported for MW-6 is up to two orders of magnitude less than the more westerly sampling locations, which range from around 2,000-7,000 mg/kg for TPH-Gx. Although MW-6 does not appear to be in the source area, this location had the highest groundwater sampling result as noted below.

Groundwater Results

The TPH-Gx concentrations reported in 2007 groundwater samples ranges from 2,600 micrograms per liter (µg/L) in monitoring well MW-1 to 13,000 µg/L at P-GTS1 to 37,000 µg/L in monitoring well MW-6 (as compared to the MTCA Method A screening level of 800 µg/L). Based on these results, the gasoline-range petroleum hydrocarbon plume is at least 200 feet in length, and is characterized by increasing concentrations downgradient of the assumed source area. TPH-Gx was not reported above the laboratory sample quantitation limit for samples collected from groundwater monitoring well MW-3, indicating that the plume appears to be moving southeast rather than south.

To date, TPH-Gx samples have not been collected in soil or groundwater east of location MW-6 (i.e., no TPH-Gx analysis of samples collected from locations MW-7, SB-1, SB-11, or SB-12); therefore, the easterly extent of the gasoline-impacted groundwater is not known.

METALS

Soil Results

Arsenic, cadmium, and/or lead were identified at concentrations greater than MTCA Method A screening levels at five sampling locations in the southeast portion of the property and along the adjacent street and neighboring property (MW-3, MW-7, SB-1, SB-11, and SB-12). The reported arsenic and cadmium concentrations were slightly elevated (e.g., arsenic concentrations of 22 and 27 mg/kg at 19 and 23.5 feet bgs, respectively, compared with MTCA Method A unrestricted soil screening level of 20 mg/kg).

In the very southeast corner of the property, the reported lead concentrations, ranged from 910 to 2,400 mg/kg, exceed the MTCA Method A unrestricted screening level of 250 mg/kg and exceed the MTCA Method A screening level for industrial sites of 1,000 mg/kg at four of the five locations. The metals impacts at two of these locations (MW-7 and SB-11) are within the MTCA soil direct contact point of compliance interval (from ground surface to 15 feet bgs). None of the other soil or groundwater samples collected from the former GTS Drywall property showed lead concentrations above MTCA Method A unrestricted screening levels, including sampling locations MW-6 and P-GTS2, which are within approximately 75 feet of MW-7

and SB-1. These results suggest that the metals and cPAH impacts in this area do not extend a distance into the property.

Similar lead concentrations in soil were reported at similar depths on the adjacent Port property to the east (a lead concentration of 2,600 mg/kg at 15.5 feet bgs located at station P1, approximately 25 feet northeast of SB-12). This concentration is considerably lower northward on the Port property (a concentration of 470 mg/kg at 7-8 feet bgs located at station P2, approximately 100 feet North of P2 and SB-1). (Shannon and Wilson, 2004). The maximum reported lead concentrations are located at SB-1 in the corner of the GTS Drywall property (2,400 mg/kg at 19 feet bgs) and P2 on the Port property (2,600 mg/kg at 15.5 feet bgs), both deeper than the 15 feet bgs direct point of compliance interval. The groundwater sampling results for this area (MW-6, MW-7, P1 and P2) did not indicate elevated lead concentrations, as noted below.

The chemical analytical results for lead, other metals and cPAHs (as discussed below) indicate that the property is not a source area and that these results are related to or part of an area of contamination located principally off site. The limits of the elevated metals impact in soil have not been defined to the east, northeast or southeast, which are off site.

Groundwater Results

Based on the results for dissolved metals in groundwater, only the arsenic concentration in the sample collected from monitoring well MW-2 exceeded the MTCA Method A screening level. The groundwater impacted by metals has not been defined to the north, east, or south.

It should be noted that during groundwater sampling activities, the measured turbidity of groundwater samples collected from the seven monitoring wells ranged from 19 to 110 nephelometric turbidity units (NTUs). Groundwater samples from monitoring wells MW-1, MW-2, and MW-3 were submitted for analysis of both total and dissolved metals. However, due to the elevated turbidity of the groundwater samples, the total metals results are not considered representative of groundwater at the site. Therefore, the dissolved metals groundwater results were used for evaluation of groundwater quality at the site.

CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS

Soil Results

There appear to be two distinct and apparently unrelated areas where elevated cPAHs have been detected in soil. Results collected for soil samples indicate an area impacted at concentrations exceeding screening levels for benzo(a)pyrene, and the toxicity equivalent value (TEQ) for total cPAHs in the metals area discussed above in the southeast corner of the property. There are low level concentrations of cPAHs at depth at two locations underneath the steep downhill slope in the eastern portion of the property.

The principal area of cPAH impacted soils is located in the southeastern corner of the parcel and adjacent areas on the Port property and in the 36th Street right-of-way (characterized by soil borings SB-1, SB-11, SB-12, and MW-7). These sample results have concentrations of individual cPAHs in soil between the MTCA Method B unrestricted value (0.137 mg/kg) and the MTCA Method A industrial value (2 mg/kg), with the exception of SB-11 where a concentration of 5.19 mg/kg was reported at 8 feet below ground surface (bgs). This area appears to be co-extensive with the metals-impacted area described above.

Of the 11 locations sampled for cPAHs across the property (not including the two stations in the southeast corner just discussed), only two exceed the Method B screening level of 0.137 mg/kg. The first is beneath the eastern slope of the former GTS property in the vicinity of soil borings P-GTS2 and P-GTS3, where reported cPAH TEQ results (0.29 mg/kg at 13 feet bgs and 0.5 mg/kg at 22 feet bgs, respectively) exceed the MTCA Method B screening level for unrestricted land use of 0.137 mg/kg. Shallower samples in the area (e.g., SB-3 at 5 feet bgs, SB-4 at 11 feet bgs, MW-2 at 10 feet bgs) did not exceed Method A or B soil screening levels for cPAHs, suggesting that any elevated concentrations of cPAH are at depth on the eastern slope of the property.

Because of the steep slope, fill is also likely to be placed on the property in this area for any redevelopment or future use, as it has on the adjacent City properties. The presence of these relatively low cPAH levels at considerable depth in these locations is therefore unlikely to present a risk or pathway for direct contact. These reported values do not exceed the MTCA Method A industrial screening level of 2.0 mg/kg for soil, which is based on protection of groundwater at site meeting the criteria for industrial land use. CPAHs were not detected in the groundwater sample collected from monitoring well MW-2, downgradient from these locations, indicating the cPAH impacts in soil are not impacting groundwater in this area.

Groundwater Results

The groundwater samples collected from monitoring wells MW-2, MW-6, and MW-7 did not exhibit cPAH concentrations exceeding the individual MTCA Method A screening level for benzo(a)pyrene or the toxicity equivalent value for total cPAHs (with the exception of naphthalenes from MW-6, which are likely associated with gasoline-range petroleum hydrocarbons). As noted above, the TPH- and cPAH-impacted groundwater has not been fully delineated to the southeast.

DATA NEEDS

To better assess the Phase II ESA objectives for the site, additional soil and groundwater characterization would be beneficial to address the following identified data needs for developing a cleanup action plan:

- To complete delineation of the petroleum-impacted soil and groundwater to the east-southeast; and
- To confirm the metals impacts in soil are limited to a localized and limited area in the southeast corner of the property.

LIMITATIONS

This letter has been prepared for the exclusive use of the City of Everett and their authorized agents. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance. Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood. No study can wholly eliminate uncertainty regarding environmental conditions at a site. There is always a potential that areas of contamination exist that were not identified during past studies.

Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to Attachment D titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

TABLE 1
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA (2001 -- 2004)
Former GTS Drywall Facility
Everett, Washington

Sample Identification[1]	Sample Date	Sample Depth (feet bgs)	BETX[2] (mg/kg)				Petroleum Hydrocarbons (mg/kg)		
			B	E	T	X	Gasoline-Range[3]	Diesel-Range	Oil-Range
TP-4A	3/6/2001	8-10	<7	**100**	**105**	**477**	**6870**	176	31.6
TP-4B	3/6/2001	8-10	<2.5	**42**	**10.8**	**186**	**4120**	106	<25
TP-4C	3/6/2001	8-10	<2.5	**23**	6.98	**99.3**	**2030**	104	39.9
P-GTS1-S4	9/23/2004	15.5	**0.59**	1.7	0.16	3.07	**35**	ND	79
P-GTS2-S4	9/23/2004	13	ND	ND	ND	ND	ND	ND	460
P-GTS3-S6	9/23/2004	22	ND	ND	ND	ND	ND	ND	130
P-GTS4-S1	9/23/2004	0.3	ND	ND	ND	ND	ND	ND	140
P-GTS5-S1	9/23/2004	0.3	ND	ND	ND	ND	ND	ND	180
P-GTS5-S2	9/23/2004	7.5	ND	ND	ND	ND	ND	ND	ND
MTCA Method A Screening Level - Unrestricted Land Use			0.03	6	7	9	30/100[5]	2,000	2,000

Notes:

[1]The approximate exploration locations are shown on Figure 2.

[2]B = benzene, E = ethylbenzene, T = toluene and X = xylenes. BETX analyzed by EPA 8260.

[3]Analyzed by Ecology Method NWTPH-Gx

[4] RCRA Metals analyzed by EPA 6000/7000 Series.

[6]The MTCA Method A screening level for gasoline-range hydrocarbons is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

bgs = below ground surface

ppm = parts per million; mg/kg = milligrams per kilogram

Shading = Detected concentration exceeds MTCA Method A or B Screening Level. -- = Not analyzed

MTCA = Model Toxics Control Act

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TABLE 2

SUMMARY OF SOIL FIELD SCREENING AND CHEMICAL ANALYTICAL DATA (2006 – 2007)

Former GTS Drywall Facility

Everett, Washington

Sample Identification[1]	Sample Date	Sample Depth (feet bgs)	Field Screening Results[2]		BETX[3] (mg/kg)				Petroleum Hydrocarbons (mg/kg)	RCRA Metals[5] (mg/kg)							
			Sheen	Headspace Vapors (ppm)	B	E	T	X	Gasoline-Range[4]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
MW-1-14	1/19/2007	14	HS	>2,000	1.0	4.6	3.9	9.5	860	--	--	--	--	--	--	--	--
MW-1-16	1/19/2007	16	NS	<1	<0.03	<0.05	<0.05	<0.2	4.0	--	--	--	--	--	--	--	--
MW-2-10	1/18/2007	10	NS	<1	--	--	--	--	--	19	73	<1	32	25	0.04	<5.0	<5.0
MW-3-23.5	1/18/2007	23.5	NS	<1	--	--	--	--	--	22	150	<1	88	8.7	0.1	<5.0	<5.0
MW-4-14	6/6/2007	14	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
MW-5-14	6/6/2007	14	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
MW-6-10	6/7/2007	10	NS	4	3.6	7.0	0.2	1.2	70	<5	54	<1	27	<5	0.06	<5	<5
MW-7-5	6/7/2007	5	NS	<1	--	--	--	--	--	<5	510	7.3	27	1100	0.46	<5	<5
MW-7-10	6/7/2007	10	NS	<1	--	--	--	--	--	6.7	470	4.7	41	910	0.39	<5	<5
SB-1-19	11/6/2006	19	NS	<1	--	--	--	--	--	27	630	11	68	2400	1.0	11	150
SB-3-5	1/19/2007	5	NS	<1	--	--	--	--	--	<5	32	<1	27	<5	<0.02	<5.0	<5.0
SB-4-11	1/19/2007	11	NS	<1	--	--	--	--	--	<5	55	<1	35	<5	0.03	<5.0	<5.0
SB-5-15	11/6/2006	15	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
SB-6-8.5	11/6/2006	8.5	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
SB-7-14	11/6/2006	14	HS	225	14	57	100	310	3200	<2.4	38	<0.29	29	<2.4	0.03	<2.4	6.1
SB-7-17	11/6/2006	17	NS	1.5	<0.03	0.06	0.11	<0.2	4	<2.4	64	<0.30	42	<2.4	0.02	<2.4	7.6
SB-8-7	11/6/2006	7	MS	206	20	80	44	410	4200	--	--	--	--	--	--	--	--
SB-8-11	11/6/2006	11	NS	1.2	0.07	0.10	0.07	0.5	8	--	--	--	--	--	--	--	--
SB-9-9	11/6/2006	9	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
SB-10-12	1/16/2007	12	NS	<1	<0.03	<0.05	<0.05	<0.2	<3	--	--	--	--	--	--	--	--
SB-11-8	1/19/2007	8	NS	<1	--	--	--	--	--	13	210	<1	42	1100	0.14	<5.0	<5.0
SB-12-15	1/19/2007	15	NS	<1	--	--	--	--	--	23	500	<1	92	1100	0.23	<5.0	<5.0
MTCA Method A Screening Level - Unrestricted Land Use					0.03	6	7	9	30/100[6]	20	5600[7]	2	2000	250	2[7]	400[7]	400[7]

Notes:

[1] The approximate exploration locations are shown on Figure 2.

[2] Field screening using a photoionization detector (PID) and water sheen test. NS=no sheen; SS=slight sheen, MS=moderate sheen; HS=heavy sheen.

[3] B = benzene, E = ethylbenzene, T = toluene and X = xylenes. BETX analyzed by EPA 8260.

[4] Analyzed by Ecology Method NWTPH-Gx

[5] RCRA Metals analyzed by EPA 6000/7000 Series.

[6] The MTCA Method A screening level for gasoline-range hydrocarbons is 30 mg/kg if benzene is present and 100 mg/kg if benzene is not present.

[7] MTCA Method B Screening Levels are referenced because no Method A value exists.

bgs = below ground surface

ppm = parts per million; mg/kg = milligrams per kilogram

Shading = Detected concentration exceeds MTCA Method A or B Screening Level. -- = Not analyzed

MTCA = Model Toxics Control Act

Chemical analyses performed by CCI Anayltical Laboratories, Inc in Everett, Washington.

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TABLE 3
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA (2004)
POLYCYCLIC AROMATIC HYDROCARBONS
Former GTS Drywall Facility
Everett, Washington

Polycyclic Aromatic Hydrocarbons (PAHs) [1]	Soil Sample Identification [2] (mg/kg)						MTCA Method A Screening Level [3]
	P-GTS1-S4 (15.5 feet bgs)	P-GTS2-S4 (13 feet bgs)	P-GTS3-S6 (22 feet bgs)	P-GTS4-S1 (0.3 geet bgs)	P-GTS5-S1 (0.3 feet bgs)	P-GTS5-S2 (7.5 feet bgs)	
Non-carcinogenic PAHs							
Naphthalenes	0.052	0.025	0.0469	ND	ND	0.01	5
Acenaphthylene	0.013	0.052	0.038	ND	ND	ND	NE
Acenaphthene	ND	ND	ND	ND	ND	ND	4800 [4]
Fluorene	ND	0.014	ND	ND	ND	ND	3200 [4]
Phenanthrene	0.054	0.23	0.27	0.011	ND	0.16	NE
Anthracene	ND	0.032	0.053	ND	ND	ND	24,000 [4]
Fluoranthene	0.09	0.34	0.57	0.021	ND	0.024	3200 [4]
Pyrene	0.087	0.36	0.51	0.024	ND	0.021	2400 [4]
Benzo(ghi)perylene	0.068	0.21	0.25	0.011	ND	0.013	NE
Carcinogenic PAHs							
Benzo(a)anthracene	0.035	0.12	0.32	0.01	ND	0.0091	
Chrysene	0.064	0.22	0.4	0.018	ND	0.015	
Benzo(b)fluoranthene	0.055	0.26	0.47	0.011	ND	0.012	
Benzo(k)fluoranthene	0.056	0.091	0.15	0.012	ND	0.011	
Benzo(a)pyrene	0.061	0.21	0.35	0.013	ND	0.0087	
Indeno(1,2,3-cd)pyrene	0.051	0.15	0.21	0.0084	ND	0.0092	
Dibenz(a,h)anthracene	0.015	0.042	0.078	ND	ND	ND	
Total cPAHs (TEQ) [5]	0.09	0.29	0.5	0.02	ND	0.013	0.137 [5]

Notes:
[1] Analyzed by EPA Method 8270 SIM.
[2] Sample date provided on Table 1. The approximate exploration locations are shown on Figure 2 .
[3] For unrestricted land use. MTCA Method B screening levels are referenced when Method A screening levels are not available.
[4] MTCA Method B Screening Level for individual cPAH based on direct contact exposure.
[5] MTCA Method B Screening level for total carcinogenic PAHs calculated using toxicity equivalent (TEQ) relative to benzo(a)pyrene per WAC 173-340-780(8).
mg/kg=milligrams per kilogram
NE=Not Established NA=Not Analyzed
MTCA = Model Toxics Control Act
Shading = Detected concentration exceeds MTCA Method A or B Screening Level.

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TABLE 4
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA (2006 -- 2007)
POLYCYCLIC AROMATIC HYDROCARBONS
Former GTS Drywall Facility
Everett, Washington

Polycyclic Aromatic Hydrocarbons (PAHs) [1]	Soil Sample Identification [2] (mg/kg)										MTCA Method A Screening Level [3]
	MW-2-10	MW-3-23.5	MW-7-5	MW-7-10	SB-1-19	SB-3-5	SB-4-11	SB-5-15	SB-11-8	SB-12-15	
Non-carcinogenic PAHs											
Naphthalenes	<0.08	<0.02	NA	NA	<0.02	<0.02	<0.02	<0.02	0.09	0.09	5
Acenaphthylene	<0.02	<0.02	NA	NA	0.03	<0.02	<0.02	<0.02	0.74	0.03	NE
Acenaphthene	<0.02	<0.02	NA	NA	<0.02	<0.02	<0.02	<0.02	0.02	0.1	4800 [4]
Fluorene	<0.02	<0.02	NA	NA	<0.02	<0.02	<0.02	<0.02	0.08	0.17	3200 [4]
Phenanthrene	<0.02	<0.02	NA	NA	0.09	<0.02	<0.02	<0.02	2.4	2.0	NE
Anthracene	<0.02	<0.02	NA	NA	0.02	<0.02	<0.02	<0.02	0.47	0.18	24,000 [4]
Fluoranthene	<0.02	<0.02	NA	NA	0.33	<0.02	<0.02	<0.02	7.6	2.0	3200 [4]
Pyrene	<0.02	<0.02	NA	NA	0.38	<0.02	<0.02	<0.02	8.6	1.3	2400 [4]
Benzo(ghi)perylene	<0.02	<0.02	NA	NA	0.2	<0.02	<0.02	<0.02	3.4	0.27	NE
Carcinogenic PAHs											
Benzo(a)anthracene	<0.02	<0.02	0.19	0.33	0.15	<0.02	<0.02	<0.02	2.7	0.28	
Chrysene	<0.02	<0.02	0.25	0.48	0.23	<0.02	<0.02	<0.02	4.3	0.4	
Benzo(b)fluoranthene	<0.02	<0.02	0.17	0.41	0.15	<0.02	<0.02	<0.02	2.9	0.26	
Benzo(k)fluoranthene	<0.02	<0.02	0.17	0.27	0.18	<0.02	<0.02	<0.02	2.7	0.23	
Benzo(a)pyrene	<0.02	<0.02	0.23	0.38	0.19	<0.02	<0.02	<0.02	3.7	0.2	
Indeno(1,2,3-cd)pyrene	<0.02	<0.02	0.16	0.34	0.15	<0.02	<0.02	<0.02	2.7	0.19	
Dibenz(a,h)anthracene	<0.02	<0.02	0.05	0.13	0.05	<0.02	<0.02	<0.02	0.87	0.07	
Total cPAHs (TEQ) [5]	ND	ND	0.32	0.572	0.28	ND	ND	ND	5.19	0.328	0.137 [5]

Notes:

[1] Analyzed by EPA Method 8270 SIM.

[2] Sample date provided on Table 1. The approximate exploration locations are shown on Figure 2 .

[3] For unrestricted land use. MTCA Method B screening levels are referenced when Method A screening levels are not available.

[4] MTCA Method B Screening Level for individual cPAH based on direct contact exposure.

[5] MTCA Method B Screening level for total carcinogenic PAHs calculated using toxicity equivalent (TEQ) relative to benzo(a)pyrene per WAC 173-340-780(8).

mg/kg=milligrams per kilogram

NE=Not Established NA=Not Analyzed ND=Not Detected

MTCA = Model Toxics Control Act

Shading = Detected concentration exceeds MTCA Method A or B Screening Level.

Chemical analyses performed by CCI Analytical Laboratories in Everett, Washington.

TABLE 5
SUMMARY OF GROUNDWATER CHEMICAL ANALYTICAL DATA (2004)
Former GTS Drywall Facility
Everett, Washington

Sample Identification[1]	Sample Date	BETX [2] (µg/L)				Petroleum Hydrocarbons (µg/L)	Metals [4] (µg/L)			
		B	E	T	X	Gasoline-Range[3]	Arsenic	Lead	Nickel	Zinc
P-GTS1-GW	9/23/2004	**750**	540	63	459.1	**13,000**	**5.3**	3.6	42	28
P-GTS2-GW	9/23/2004	ND	ND	ND	ND	ND	ND	3.1	ND	460
P-GTS3-GW	9/23/2004	ND	ND	ND	ND	ND	4.4	ND	27	29
P-GTS4-GW	9/23/2004	ND	ND	ND	ND	ND	4.8	3.4	ND	31
P-GTS5-GW	9/23/2004	ND	ND	ND	ND	ND	4.8	3.2	ND	ND
MTCA Method A Screening Level		5	700	1000	1000	800/1000 [5]	5	15	320 [6]	4800 [6]

Notes:

[1]The approximate exploration locations are shown on Figure 2.

[2]B = benzene, E = ethylbenzene, T = toluene and X = xylenes. BETX analyzed by EPA 8260.

[3]Analyzed by Ecology Method NWTPH-Gx.

[4] Metals analyzed by EPA 6000/7000 Series.

[5]The MTCA Method A screening level for gasoline-range hydrocarbons is 800 µg/L if benzene is present and 1000 µg/L if benzene is not present.

[6] MTCA Method B Screening Levels are referenced.

µg/L= micrograms per liter

Shading = Detected concentration exceeds MTCA Method A or B Cleanup Level.

MTCA = Model Toxics Control Act

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TABLE 6
SUMMARY OF GROUNDWATER CHEMICAL ANALYTICAL DATA (2007)
Former GTS Drywall Facility
Everett, Washington

Sample Identification[1]	Sample Date	BETX [2] (µg/L)				Petroleum Hydrocarbons (µg/L)	Dissolved RCRA Metals [4] (µg/L)							
		B	E	T	X	Gasoline-Range[3]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
MW-1	2/14/2007	29	31	33	83	2600	<5	61	<5	<7	6	<0.2	<40	<30
MW-2	2/14/2007	<1	<1	<1	<3	<50	47	<20	<5	8	3	<0.2	<40	<30
MW-3	2/14/2007	<1	<1	<1	<3	<50	<5	36	<5	12	<3	<0.2	<40	<30
MW-4	6/14/2007	4	2	6	7	78.0	--	--	--	--	--	--	--	--
MW-5	6/14/2007	2	1	4	<3	53.0	--	--	--	--	--	--	--	--
MW-6	6/14/2007	2,400	1,300	3,400	5,500	37,000	5.0	280	<5	<7	5.0	<0.2	<40	<30
MW-7	6/14/2007	--	--	--	--	--	5.0	690	<5	<7	<3	1.9	<40	<30
MTCA Method A Screening Level		5	700	1000	1000	800/1000 [5]	5	3200 [6]	5	50	15	2	80 [6]	80 [6]

Notes:

[1] Samples were obtained on February 14, 2007. The approximate exploration locations are shown on Figure 2.

[2] B = benzene, E = ethylbenzene, T = toluene and X = xylenes. BETX analyzed by EPA 8260.

[3] Analyzed by Ecology Method NWTPH-Gx.

[4] RCRA Metals analyzed by EPA 6000/7000 Series. In addition to dissolved metals, groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3 on 2/14/2007were also analyzed for total metals. Due to the elevated turbidity of the groundwater samples, the total metals results are not appropriate for evaluation of groundwater quality at the site.

[5] The MTCA Method A screening level for gasoline-range hydrocarbons is 800 µg/L if benzene is present and 1000 µg/L if benzene is not present.

[6] MTCA Method B Screening Levels are referenced.

µg/L= micrograms per liter -- = Not analyzed

Shading = Detected concentration exceeds MTCA Method A or B Screening Level.

MTCA = Model Toxics Control Act

Chemical analyses performed by CCI Anayltical Laboratories, Inc in Everett, Washington.

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TABLE 7
SUMMARY OF GROUNDWATER CHEMICAL ANALYTICAL DATA (2007)
POLYCYCLIC AROMATIC HYDROCARBONS
Former GTS Drywall Facility
Everett, Washington

Polycyclic Aromatic Hydrocarbons (PAHs) [1]	Sample Identification [2] (µg/L)				MTCA Method A Screening Level [3]
	MW-1	MW-2	MW-6	MW-7	
Non-carcinogenic PAHs					
Naphthalenes	2.8	<0.02	444	0.24	160
Acenaphthylene	0.04	<0.02	<0.04	<0.02	NE
Acenaphthene	0.02	<0.02	0.12	0.05	9600 [4]
Fluorene	0.07	<0.02	0.08	0.03	640 [4]
Phenanthrene	0.26	<0.02	0.1	0.05	NE
Anthracene	0.11	<0.02	<0.04	<0.02	4800 [4]
Fluoranthene	0.18	<0.02	<0.04	0.05	640 [4]
Pyrene	0.26	<0.02	<0.04	0.06	480 [4]
Benzo(ghi)perylene	0.06	<0.02	<0.04	0.06	NE
Carcinogenic PAHs					
Benzo(a)anthracene	0.1	<0.02	<0.04	0.03	
Chrysene	0.07	<0.02	<0.04	0.03	
Benzo(b)fluoranthene	<0.02	<0.02	<0.04	0.03	
Benzo(k)fluoranthene	<0.02	<0.02	<0.04	0.03	
Benzo(a)pyrene	0.02	<0.02	<0.04	0.03	
Indeno(1,2,3-cd)pyrene	0.05	<0.02	<0.04	0.03	
Dibenz(a,h)anthracene	0.05	<0.02	<0.04	<0.02	
Total cPAHs (TEQ) [5]	0.058	ND	ND	0.046	0.137 [5]

Notes:

[1] Analyzed by EPA Method 8270 SIM.

[2] Samples were obtained on February 14,2007. The approximate exploration locations are shown on Figure 2 .

[3] MTCA Method B screening levels are referenced when Method A screening levels are not available.

[4] MTCA Method B Screening Level

[5] MTCA Method B screening level for total carcinogenic PAHs calculated using toxicicity equivalent (TEQ) relative to benzo(a)pyrene per WAC 173-340-780(8).

µg/L= micrograms per liter

NE=Not Established ND=Not Detected

MTCA = Model Toxics Control Act

Shading =Detected concentration exceeds MTCA Method A or B Screening Level

Chemical analyses performed by CCI Analytical Laboratories in Everett, Washington.

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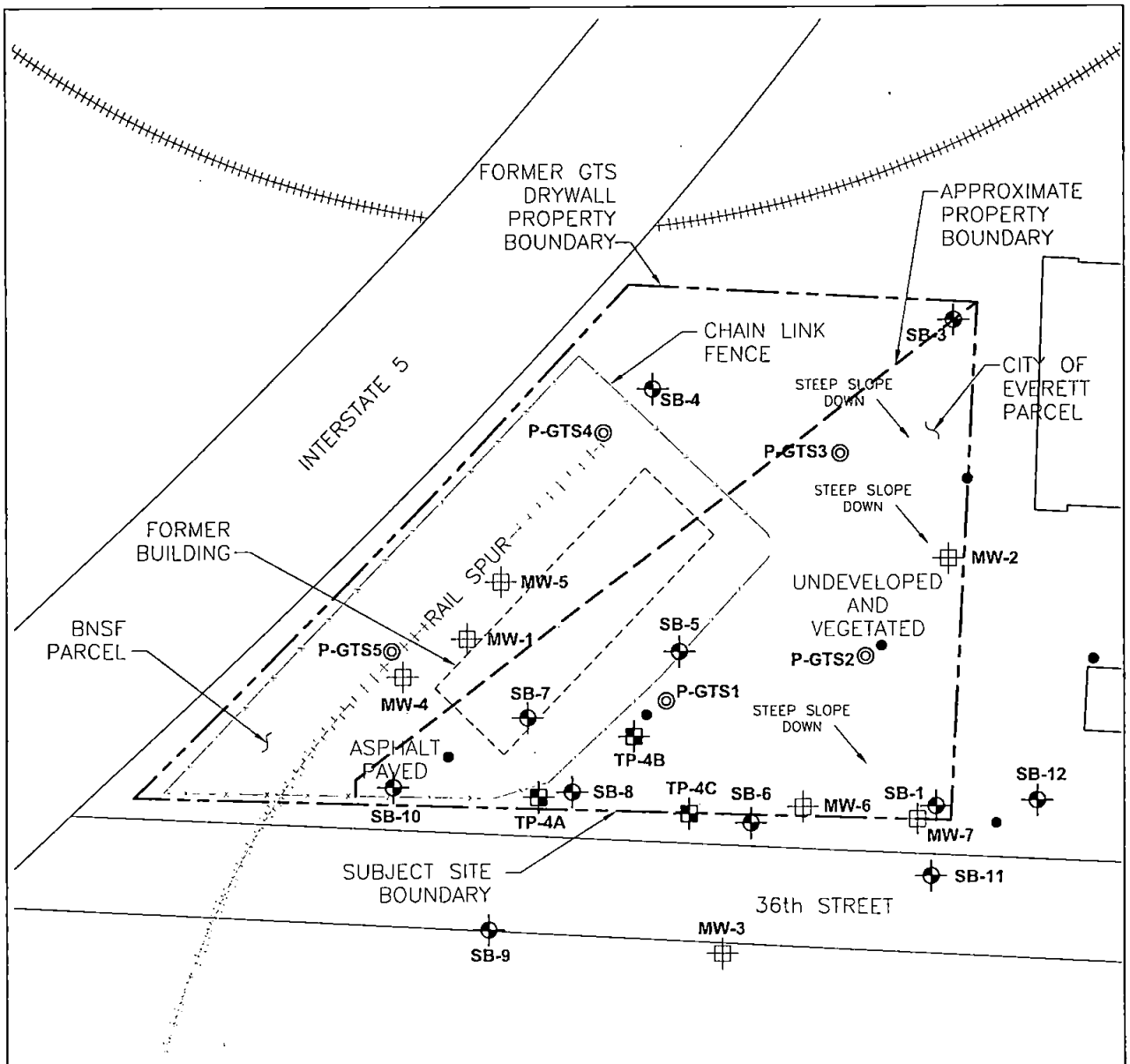

Legend

- SB-3 — Approximate Location of Soil Borings Completed by GeoEngineers
- MW-1 — Approximate Location of Groundwater Monitoring Wells Completed by GeoEngineers
- Approximate Location of Borings Completed by Shannon and Wilson
- TP-4A — Test Pit Location
- Existing Piezometer

N W E S

100 0 100
Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Drawing base from Shannon and Wilson, entitled Exploration Plan Water Quality Site #2 West Parcel, Figure 5, dated 10-06-2004, AutoCAD File 21-1-09375-009- Fig 5 (10-04).dwg.

Site Plan

Former GTS Drywall Site
Everett, Washington

GeoEngineers

Figure 2

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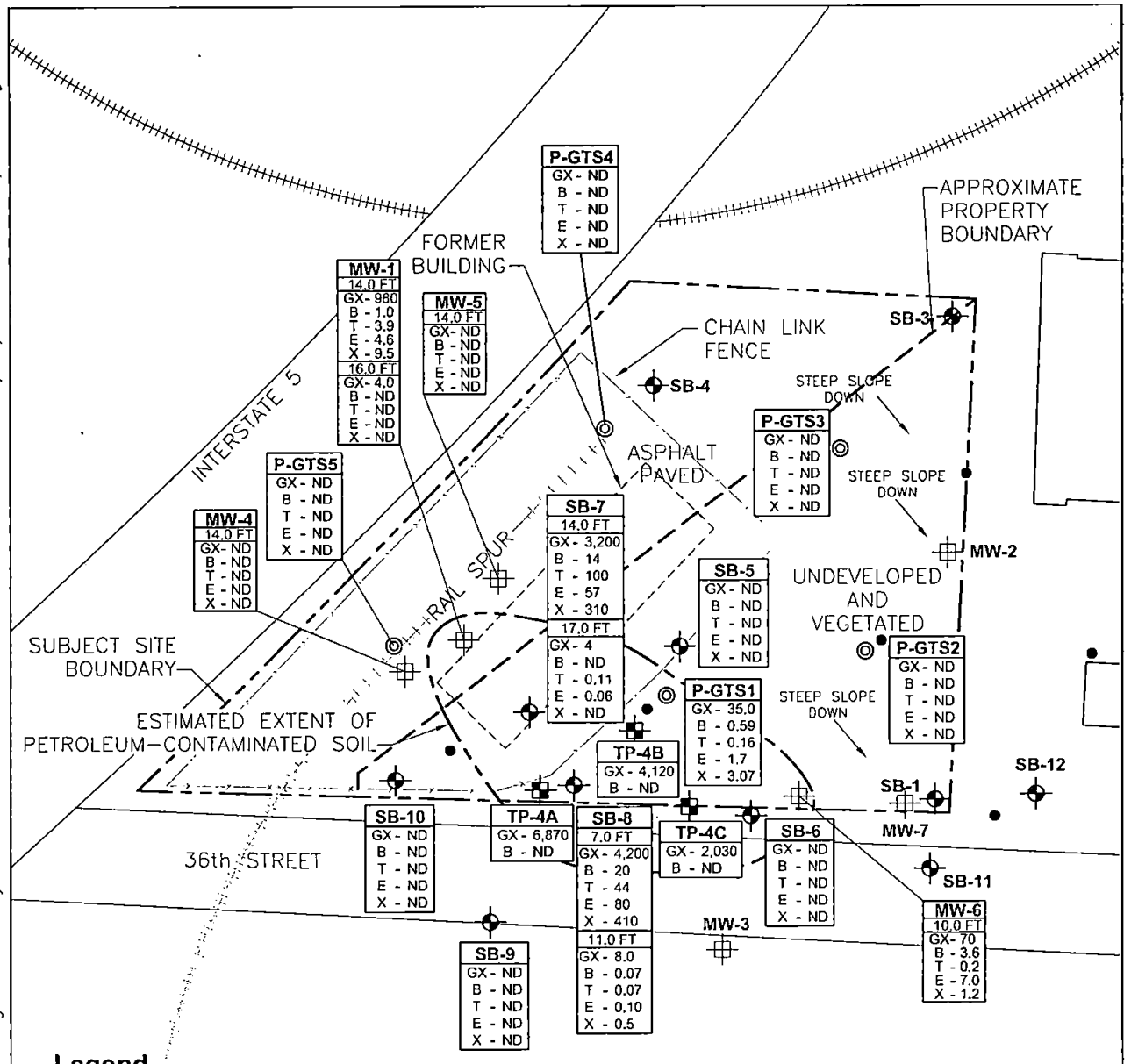

Legend

- SB-3 — Approximate Location of Soil Borings Completed by GeoEngineers
- MW-1 — Approximate Location of Groundwater Monitoring Wells Completed by GeoEngineers
- ◎ Approximate Location of Borings Completed by Shannon and Wilson
- TP-4A — Test Pit Location
- ● Existing Piezometer
- ND — Not Detected Above Laboratory Sample Quantitation Limit

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Drawing base from Shannon and Wilson, entitled Exploration Plan Water Quality Site #2 West Parcel, Figure 5, dated 10-06-2004, AutoCAD File 21-1-09375-009- Fig 5 (10-04).dwg.

Summary of Petroleum Hydrocarbon Data for Soil (mg/Kg)

Former GTS Drywall Site
Everett, Washington

GeoEngineers

Figure 3

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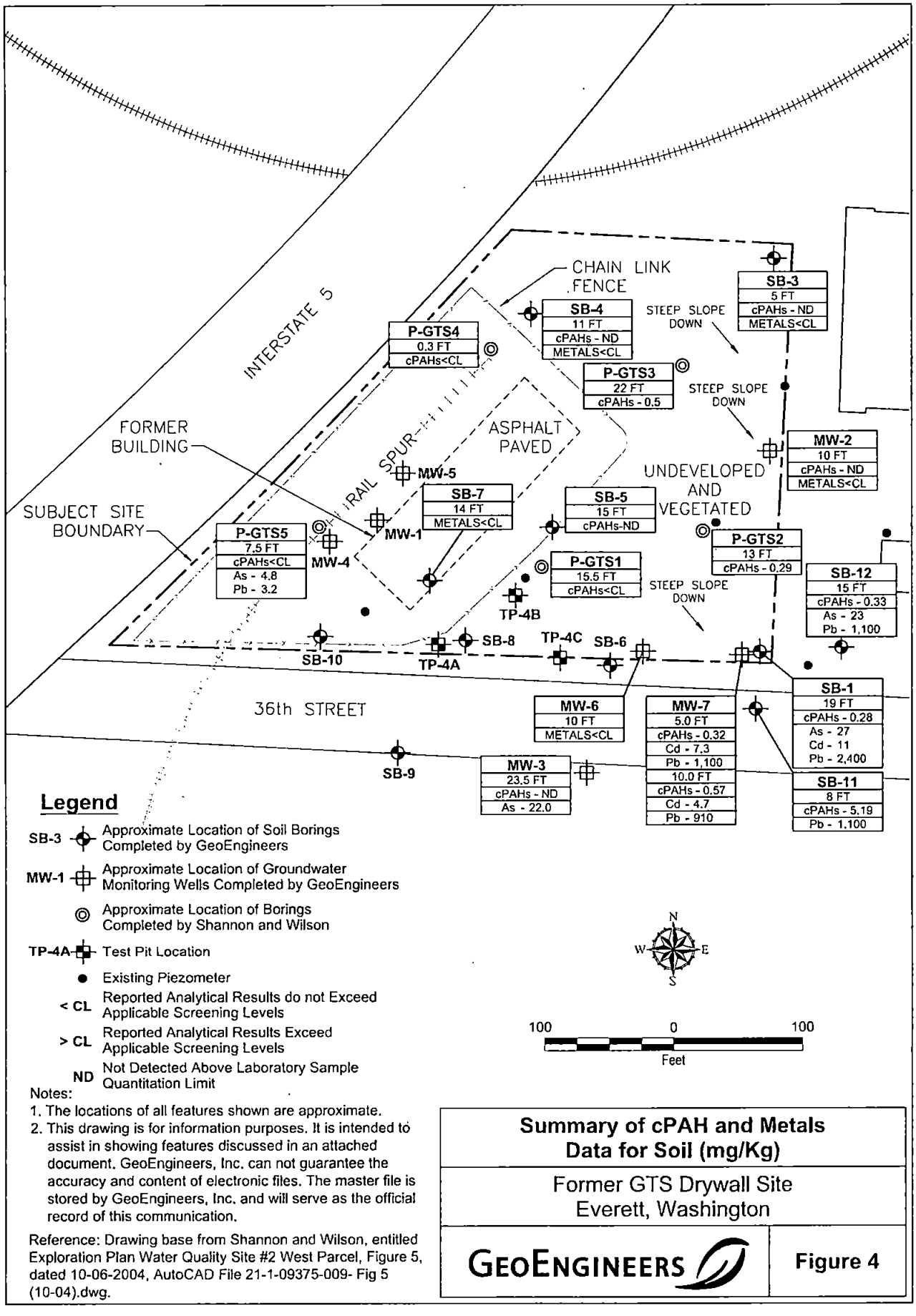

Legend

- SB-3 — Approximate Location of Soil Borings Completed by GeoEngineers
- MW-1 — Approximate Location of Groundwater Monitoring Wells Completed by GeoEngineers
- ◎ — Approximate Location of Borings Completed by Shannon and Wilson
- TP-4A — Test Pit Location
- ● — Existing Piezometer
- < CL — Reported Analytical Results do not Exceed Applicable Screening Levels
- > CL — Reported Analytical Results Exceed Applicable Screening Levels
- ND — Not Detected Above Laboratory Sample Quantitation Limit

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Drawing base from Shannon and Wilson, entitled Exploration Plan Water Quality Site #2 West Parcel, Figure 5, dated 10-06-2004, AutoCAD File 21-1-09375-009- Fig 5 (10-04).dwg.

Summary of cPAH and Metals Data for Soil (mg/Kg)

Former GTS Drywall Site
Everett, Washington

GeoEngineers

Figure 4

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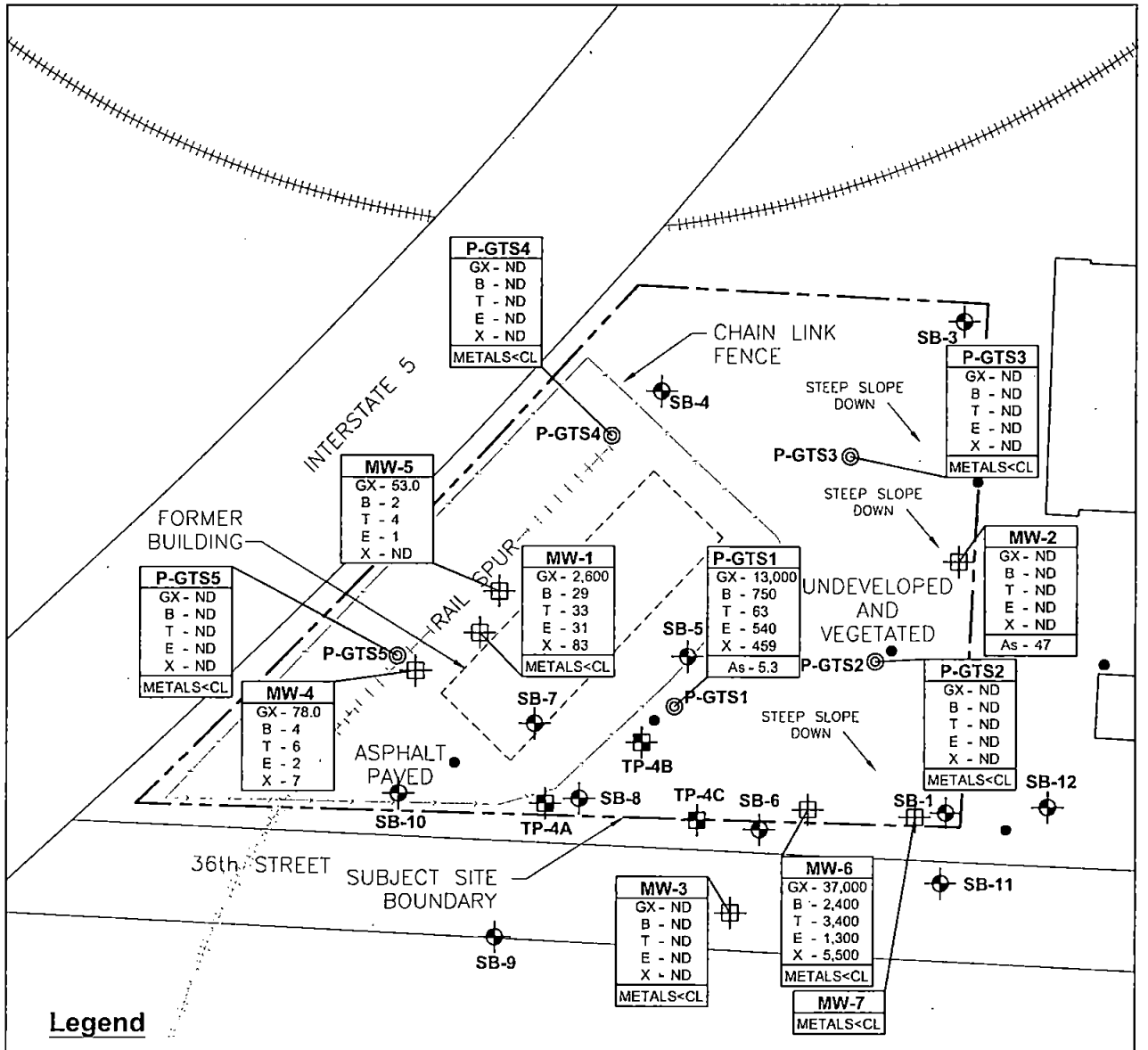


Legend

- SB-3 — Approximate Location of Soil Borings Completed by GeoEngineers
- MW-1 — Approximate Location of Groundwater Monitoring Wells Completed by GeoEngineers
- ◎ — Approximate Location of Borings Completed by Shannon and Wilson
- TP-4A — Test Pit Location
- ● — Existing Piezometer
- < CL — Reported Analytical Results do not Exceed Applicable Screening Levels
- ND — Not Detected Above Laboratory Sample Quantitation Limit

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Drawing base from Shannon and Wilson, entitled Exploration Plan Water Quality Site #2 West Parcel, Figure 5, dated 10-06-2004, AutoCAD File 21-1-09375-009- Fig 5 (10-04).dwg.

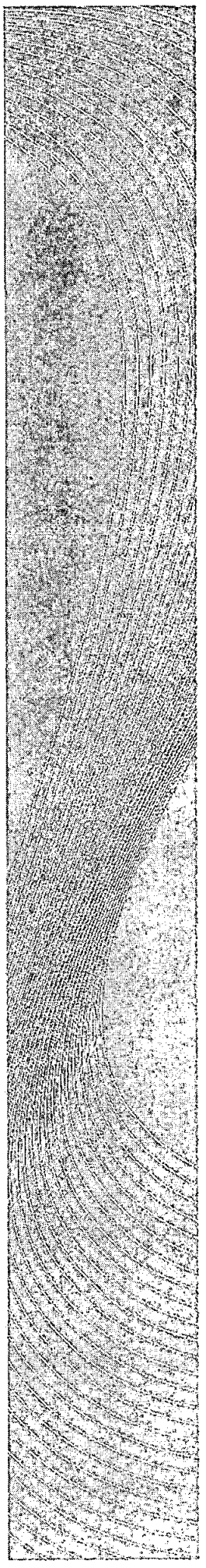
Summary of Groundwater Analytical Results (µg/L)

Former GTS Drywall Site
Everett, Washington

GeoEngineers

Figure 5

GeoEngineers



ATTACHMENT A
GEOENGINEERS FIELD EXPLORATION LOGS

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	CC	Cement Concrete
	AC	Asphalt Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

- Measured groundwater level in exploration, well, or piezometer
- Groundwater observed at time of exploration
- Perched water observed at time of exploration
- Measured free product in well or piezometer

Stratigraphic Contact

- Distinct contact between soil strata or geologic units
- Gradual change between soil strata or geologic units
- Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

- 2.4-inch I.D. split barrel
- Standard Penetration Test (SPT)
- Shelby tube
- Piston
- Direct-Push
- Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

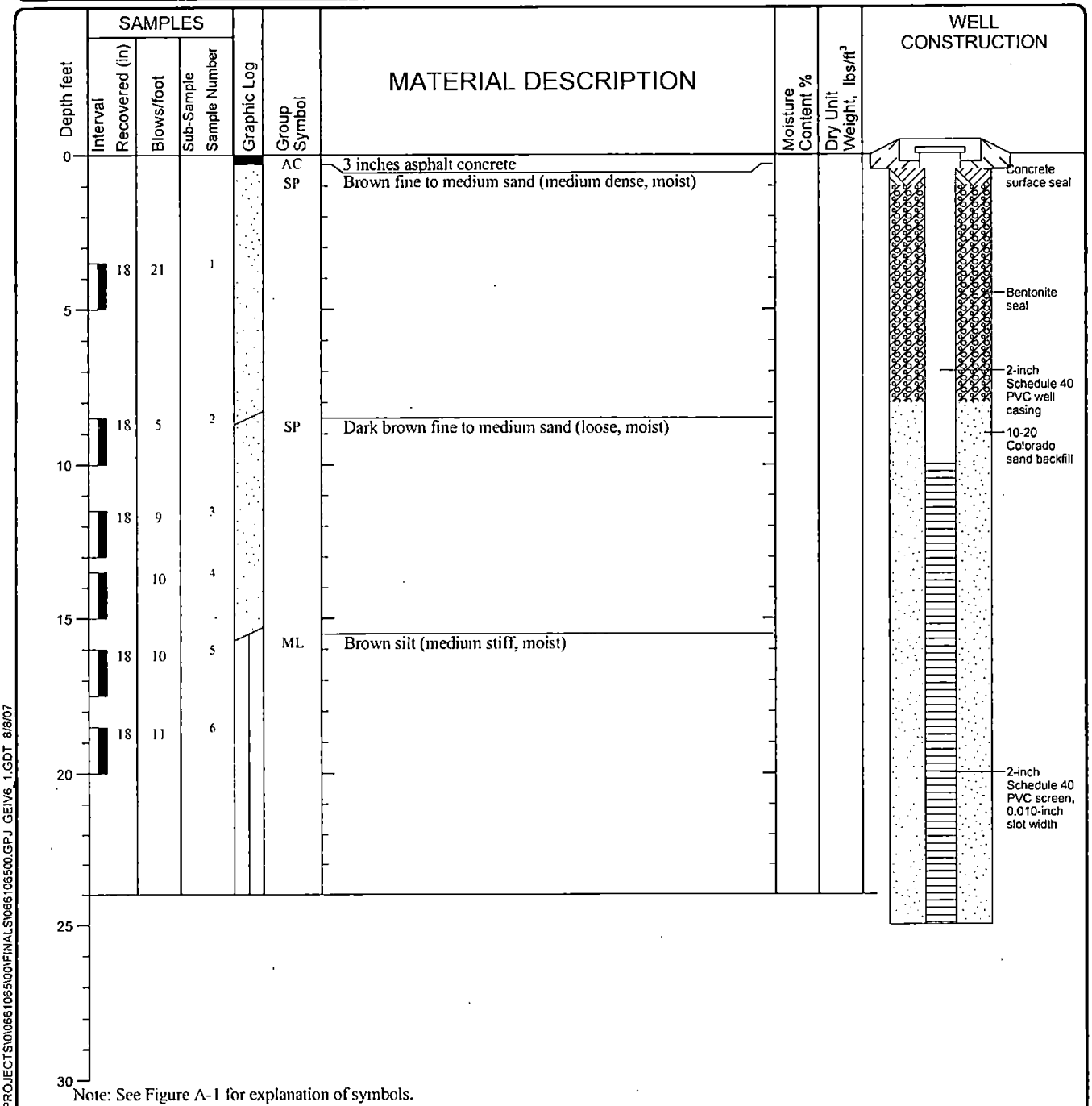
NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow-stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	24	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

LOG OF MONITORING WELL MW-1

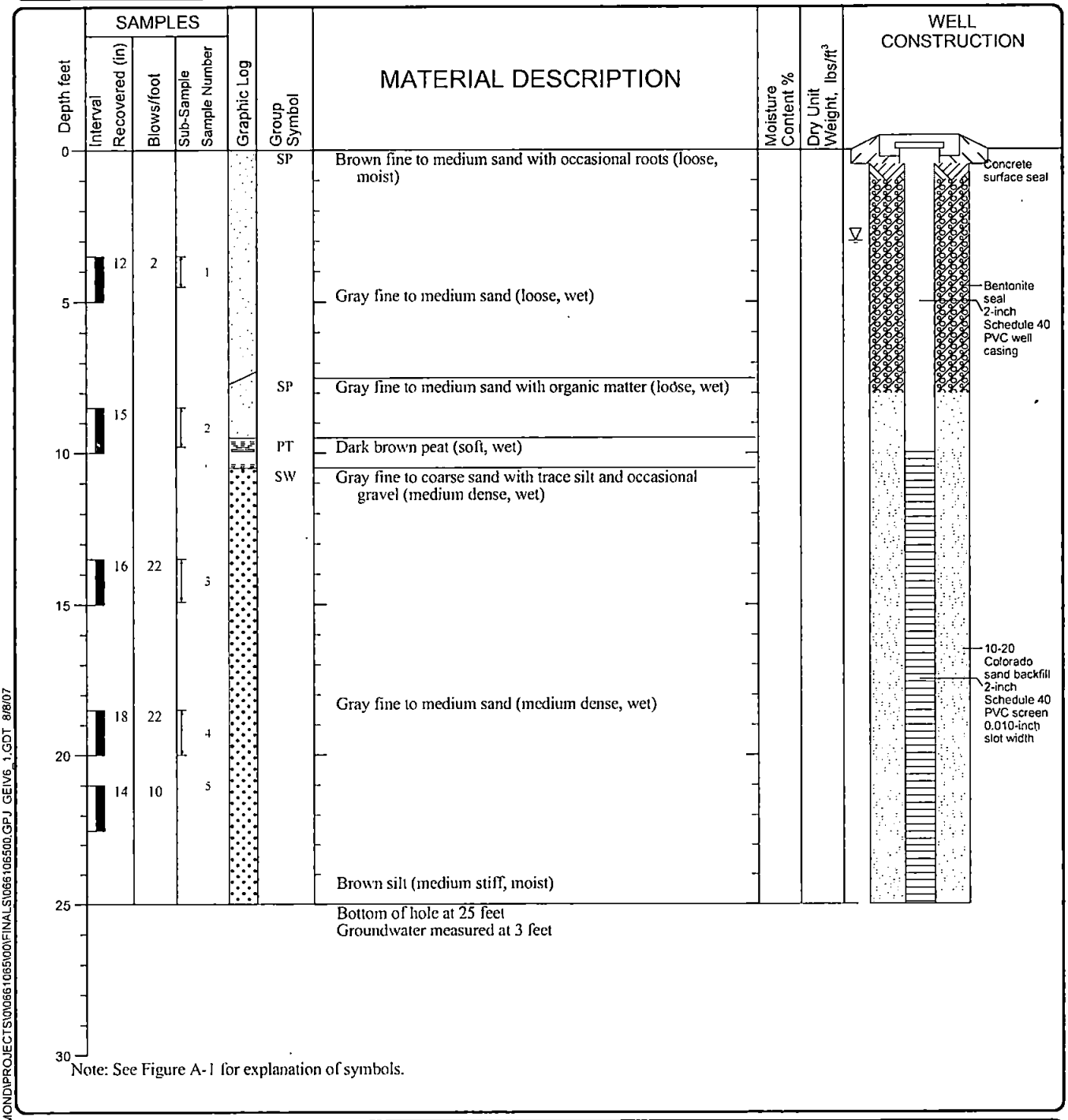
GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-2
Sheet 1 of 1

V6_GTWELL W:\REDMOND\PROJECTS\0066106500\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

Date(s) Drilled	01/18/06	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow-stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	3
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

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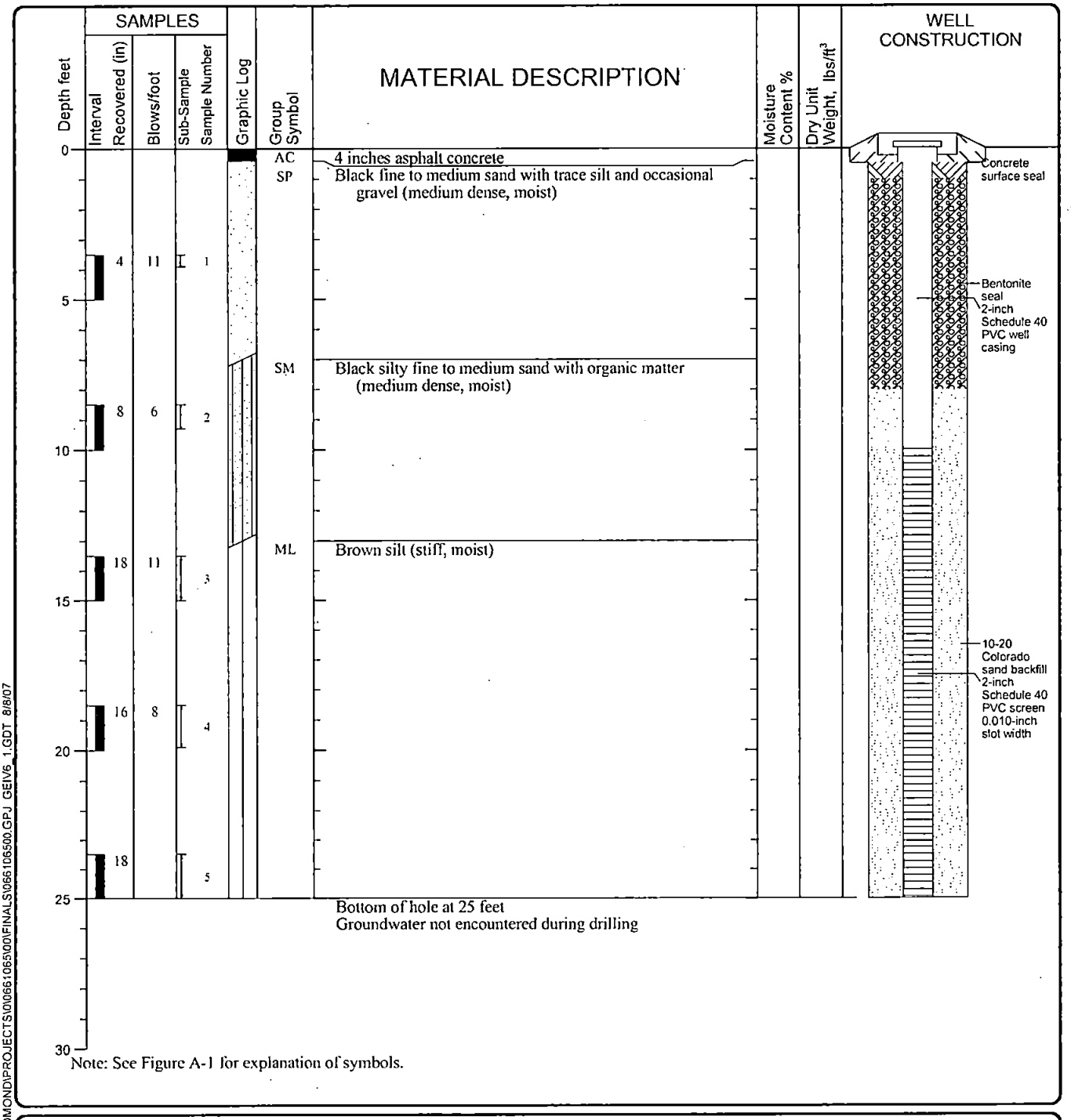
LOG OF MONITORING WELL MW-2

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

FIGURE A-3
Sheet 1 of 1

Date(s) Drilled	01/18/06	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow-stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Bottom of hole at 25 feet
Groundwater not encountered during drilling

Note: See Figure A-1 for explanation of symbols.

V6_GTWELL W:\REDMOND\PROJECTS\0100661065\00\FINALS\0066106500.GPJ GEIV6_1.GDT 8/8/07

LOG OF MONITORING WELL MW-3

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

FIGURE A-4
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft, bgs)	20
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval	SAMPLES: Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0							SP	Brown fine to medium sand with occasional gravel (loose, moist)			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
5							SP	Brown fine to medium sand with occasional gravel (loose, moist)			
											White powdery
10											Substance (dry wall)
15							SP	Reddish brown fine to medium sand with trace silt (loose, moist)			
							SP	Brown fine to medium sand with occasional gravel (loose, moist)			Glass pieces
20					▼		PT	Dark brown peat (soft, moist)			
25											
30											

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065100\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

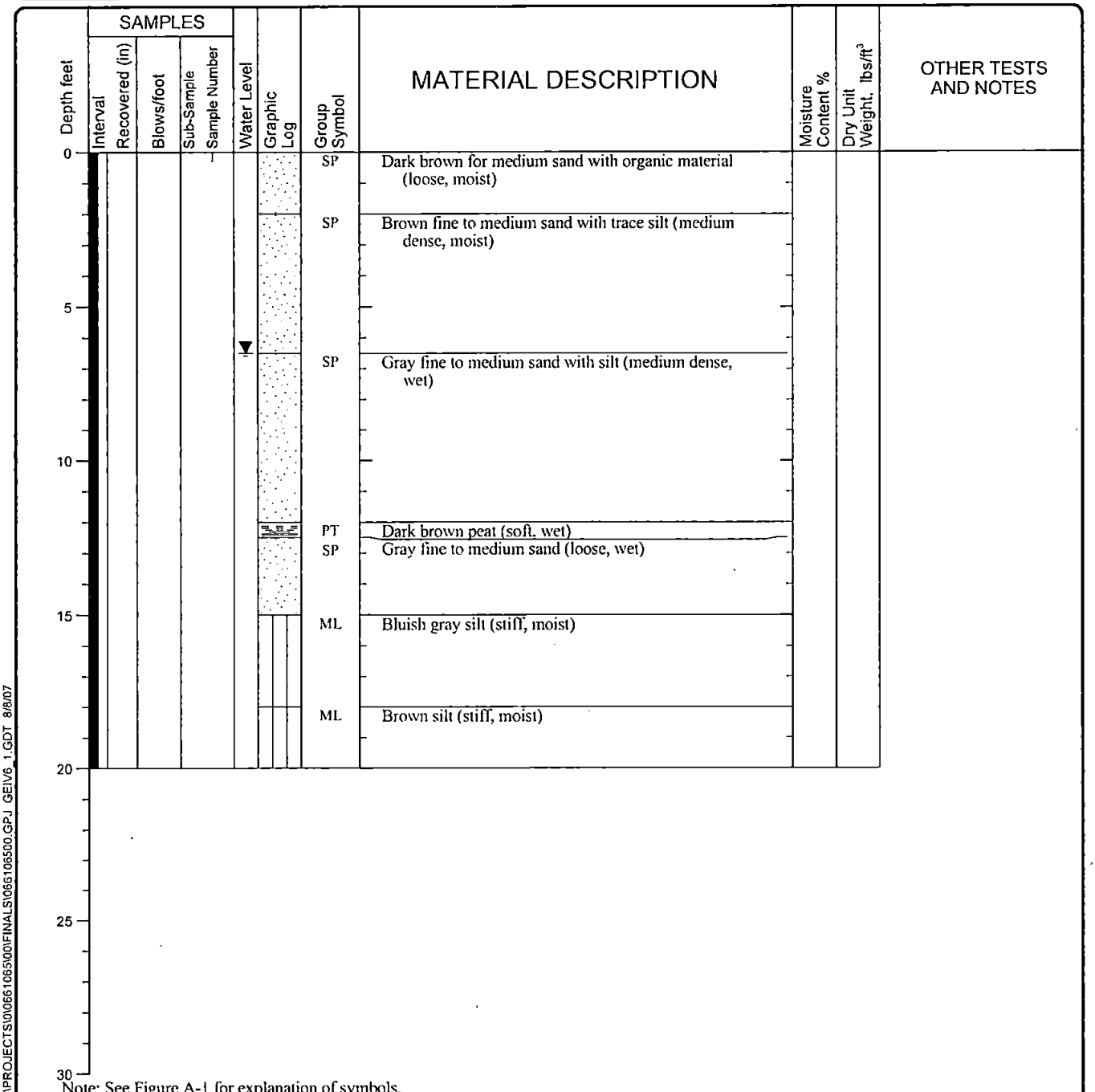
LOG OF BORING SB-1

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-5
Sheet 1 of 1

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	6.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

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LOG OF BORING SB-3

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-6
Sheet 1 of 1

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	12
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft^3	OTHER TESTS AND NOTES
0						SP	Brown fine to coarse sand with occasional gravel (loose, moist)			
						SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
						SP	Drywall powder Brown file to medium sand with occasional gravel (medium dense, moist)			
5										
10				▼						
15						ML	Blush gray silt (stiff, moist)			
						ML	Brown silt (stiff, moist)			
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

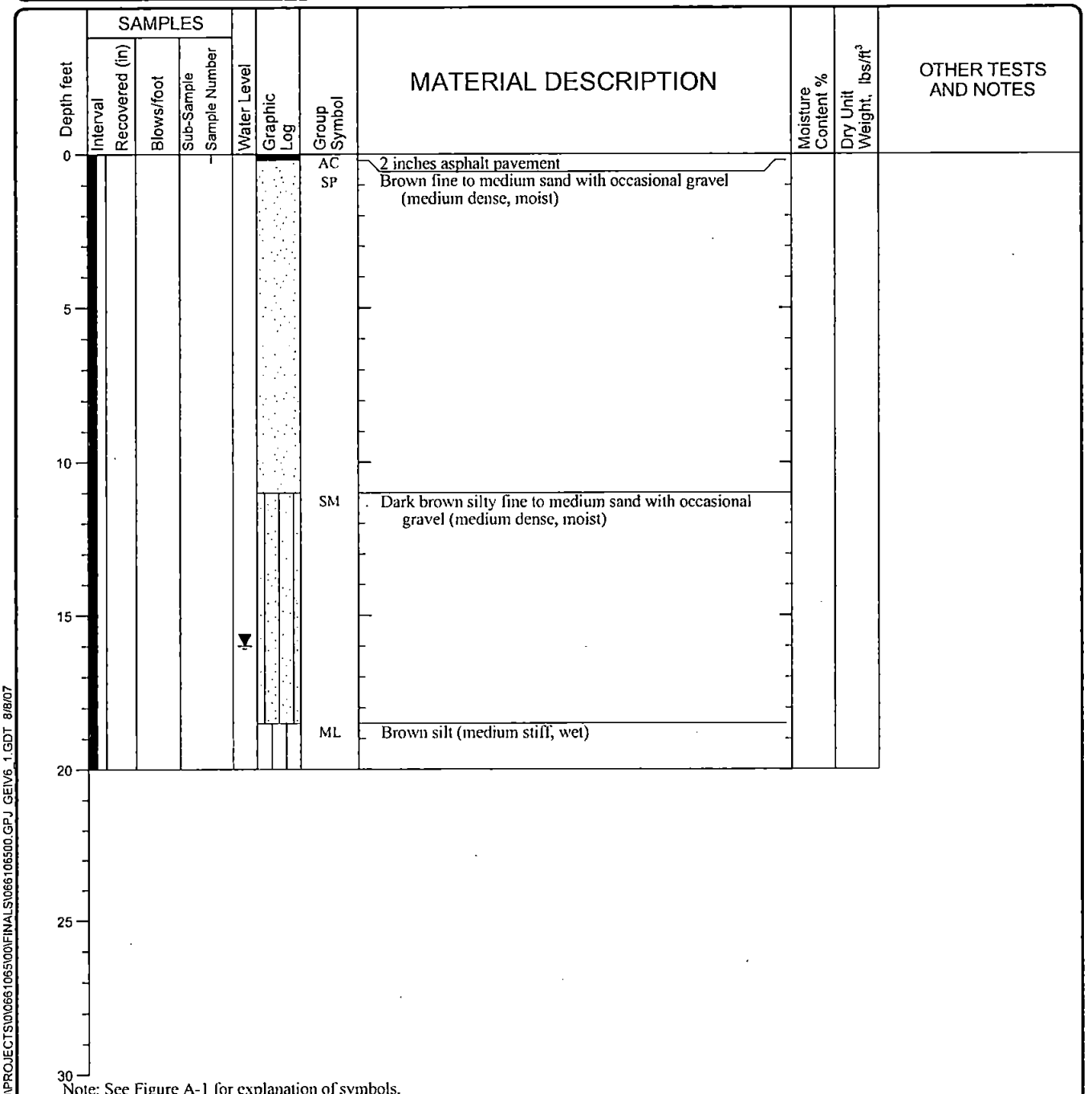
LOG OF BORING SB-4

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-7
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	16
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

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LOG OF BORING SB-5

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-8
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	16	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft^3	OTHER TESTS AND NOTES
0						SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
5						SP	Brown fine to coarse sand with occasional gravel (medium dense, wet)			
						SM	Brown silty fine to medium sand (medium dense, moist)			
						SP	Brown and reddish brown fine to coarse sand (medium dense, wet)			Drywall powder at 8 feet
10						ML	Bluish gray silt (medium stiff, wet)			
							Grades to brown			
15										
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

LOG OF BORING SB-6

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-9
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0						CC	Concrete			
						SP	Brown fine to medium sand with trace silt (medium dense, moist)			
5										
10										
						SM	Dark brown silty fine to medium sand with occasional gravel (medium dense, moist)			
15							Grades to gray			
						ML	Brown silt (medium stiff, moist)			
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065\00.GPJ GEIV6_1.GDT 8/8/07

LOG OF BORING SB-7

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-10
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0						SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
						SP	Brown fine to coarse sand with occasional gravel (medium dense, moist)			
5						SM	Brown silty fine to medium sand (medium dense, moist)			
						SP	Brown fine to coarse sand (medium dense, wet)			
10						ML	Brown silt (medium stiff, moist)			
							Grades to gray			
15										
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065100\FINALS\0661065100.GPJ GEIV6_1.GDT 8/8/07

LOG OF BORING SB-8

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-11
Sheet 1 of 1

Date(s) Drilled	11/06/06	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	16	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0						SP	Brown fine to medium sand with occasional roots and gravel (loose, moist)			
						GW	Gray fine to coarse gravel with trace sand (medium dense, moist)			
5						SP	Reddish brown fine to coarse sand with occasional gravel (medium dense, moist)			Glass debris
							Brown fine to medium sand (medium dense, moist)			
10							Grades to gray			
						ML	Brown silt (medium stiff, moist)			
15										
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

LOG OF BORING SB-9

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-12
Sheet 1 of 1

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	12.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0			1			AC	2 inches asphalt concrete pavement			
						SP	Dark brown fine to medium sand with organic matter (loose, moist)			
						SP	Brown fine to medium sand with trace silt (loose, moist)			
5						SP	Brown fine to medium sand with trace silt and occasional gravel (medium dense, moist)			
						ML	Gray silt (soft, moist)			
10						PT	Dark brown peat (soft, moist)			
						SP	Brown fine to medium sand (medium dense, wet)			
				▼		SP	Gray fine to medium sand (medium dense, wet)			
15						ML	Brown silt (stiff, moist)			
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-10

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-13
Sheet 1 of 1

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0			1			AC	2 inches asphalt concrete			
						SP	Brown fine to medium sand (loose, moist)			
						SM	Gray silty fine to medium sand (medium dense, moist)			
						GW	Gray fine to coarse gravel with trace sand (medium dense, moist)			
						SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
5							Grades to reddish brown			
						SM	Brown silty fine to medium sand (medium dense, moist)			
10						SP	Brown fine to medium sand with occasional gravel (loose, moist)			
						SP	Brown fine to medium sand (loose, moist)			
15										
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

LOG OF BORING SB-11

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-14
Sheet 1 of 1

V6_GTBORING W:\REDMOND\PROJECTS\0661065\00\FINALS\066106500.GPJ GEIV6_1.GDT 8/8/07

Date(s) Drilled	01/19/07	Logged By	HS	Checked By	SPT
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe Macrocore sampler with acetate liner
Auger Data		Hammer Data	Pneumatic Hammer	Drilling Equipment	Truck Mounted Drill Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	16.5
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Sample Number	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Moisture Content %	Dry Unit Weight, lbs/ft³	OTHER TESTS AND NOTES
0			1	▼		AC	2 inches asphalt concrete			
						GW	Gray fine to coarse gravel (medium dense, moist)			
						SP	Brown fine to medium sand (medium dense, moist)			
						SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
5						SP	Brown, reddish brown and black fine to medium sand with occasional gravel, glass debris (medium dense, moist)			
						SM	Brown fine to medium sand with occasional gravel (loose, moist)			
10						SP	Brown fine to medium sand with occasional gravel (loose, moist)			
						SP	Reddish brown fine to medium sand with occasional gravel (loose, moist)			
15						SP	Brown fine to medium sand (loose, moist)			
20										
25										
30										

Note: See Figure A-1 for explanation of symbols.

V6_GTBORING W:\REDMOND\PROJECTS\0066106500\FINALS\0066106500.GPJ GEIV6_1.GDT 8/8/07

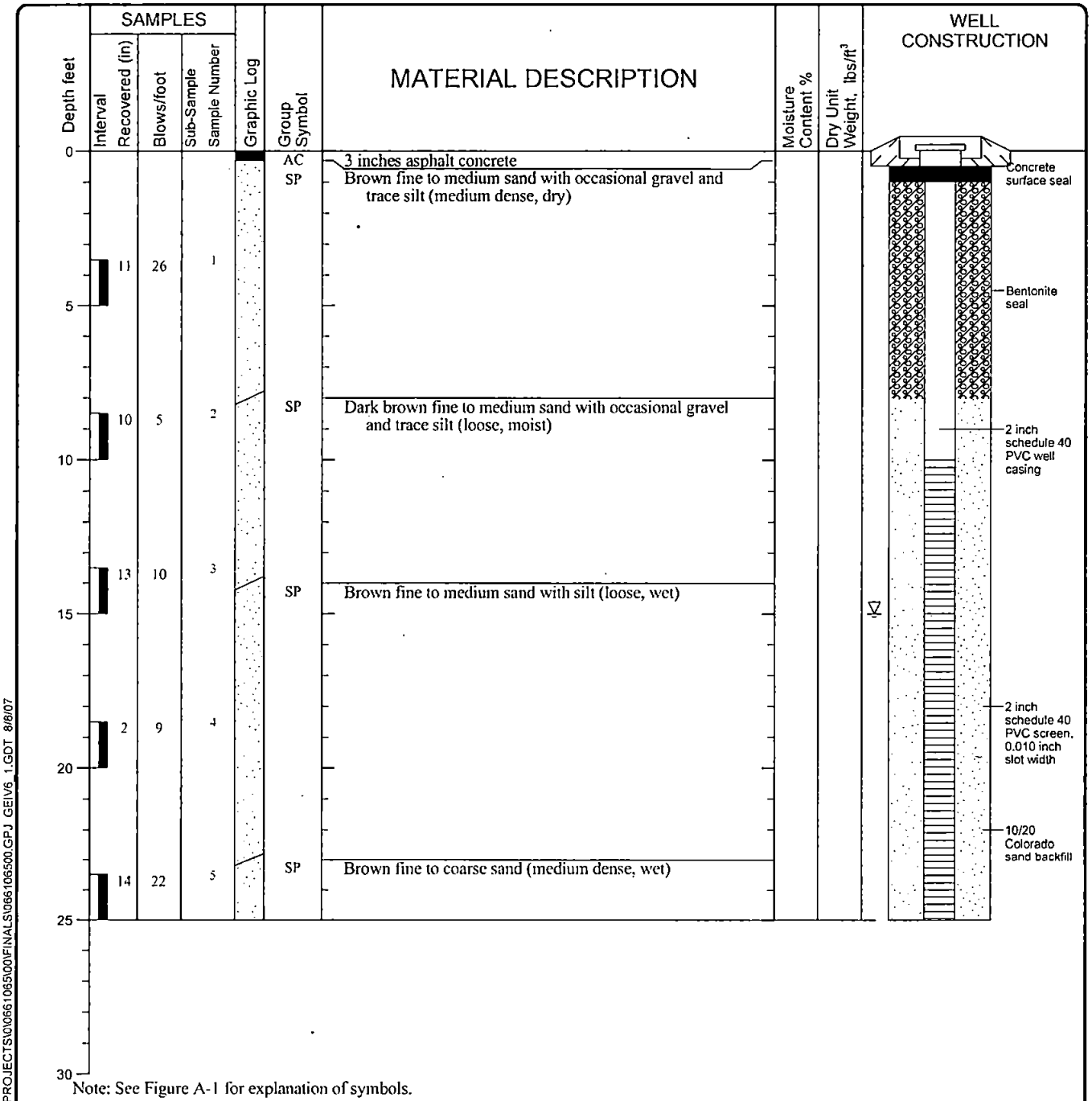
LOG OF BORING SB-12

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-15
Sheet 1 of 1

Date(s) Drilled	06/06/07	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow Stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	15
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

V6_GTWELL W:\REDMOND\PROJECTS\0\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

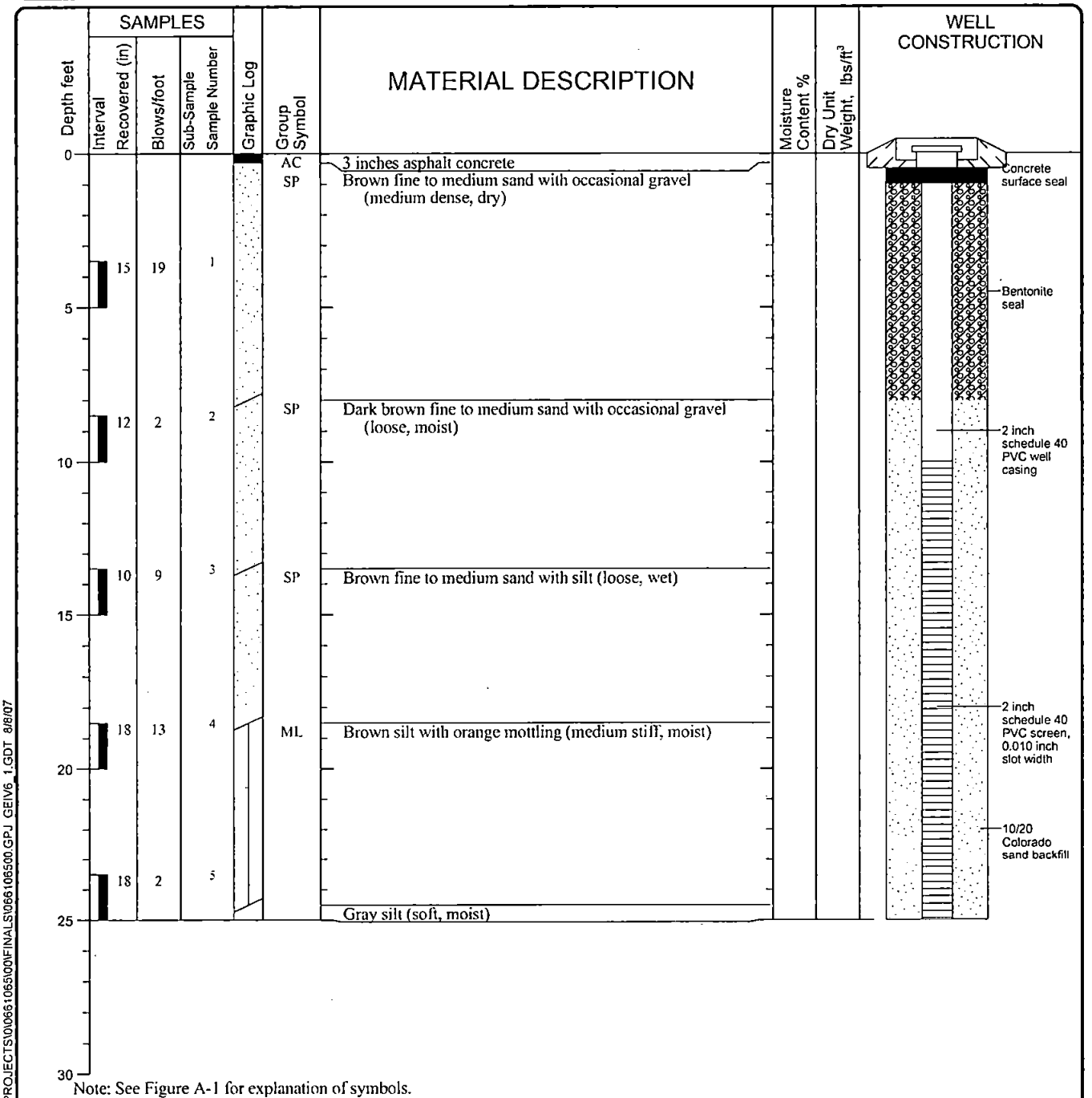
LOG OF MONITORING WELL MW-4

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-16
Sheet 1 of 1

Date(s) Drilled	06/06/07	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow Stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

LOG OF MONITORING WELL MW-5

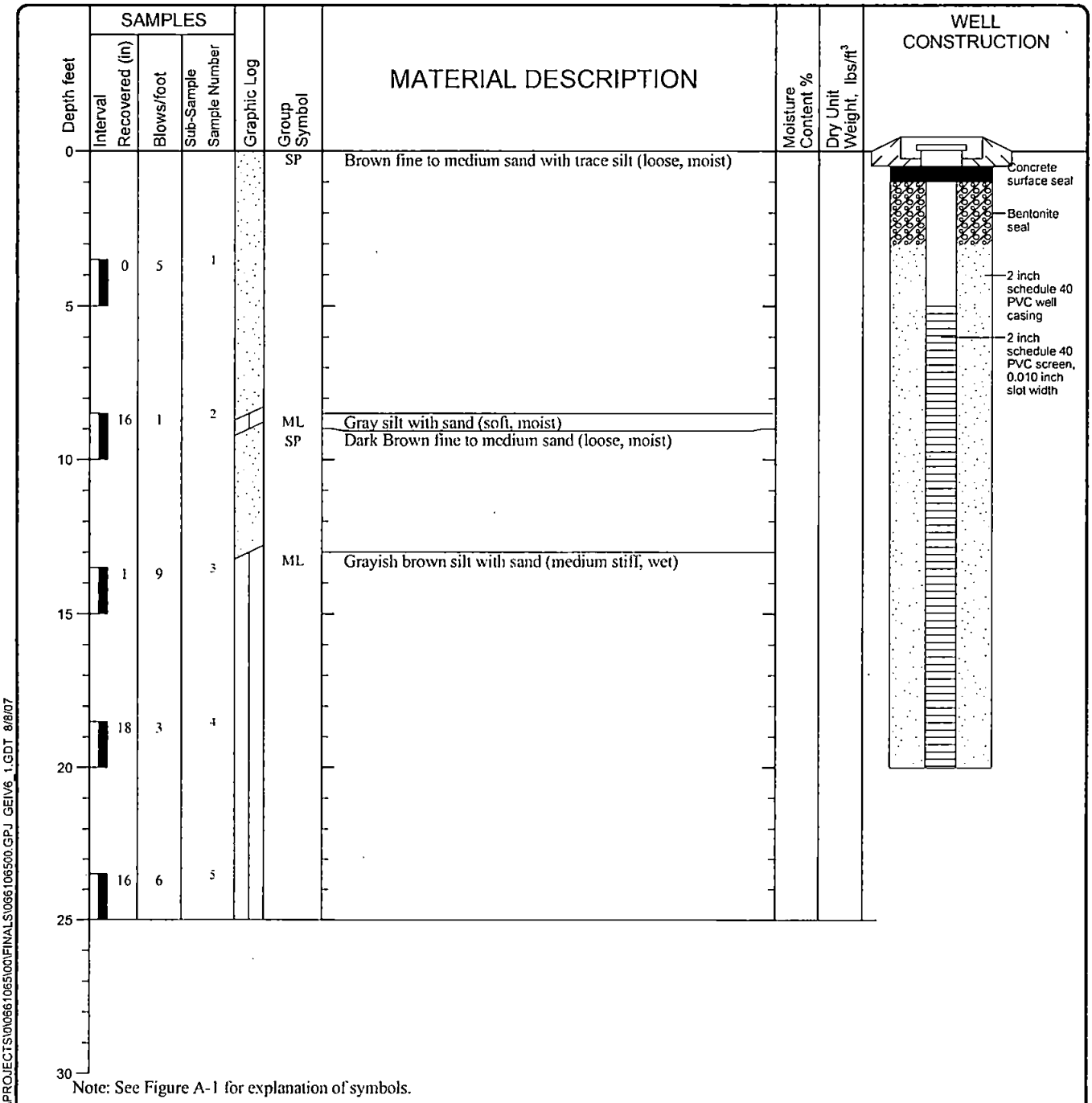
GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-17
Sheet 1 of 1

V6_GTWELL W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

Date(s) Drilled	06/07/07	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow Stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

V6_GTWELL W:\REDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

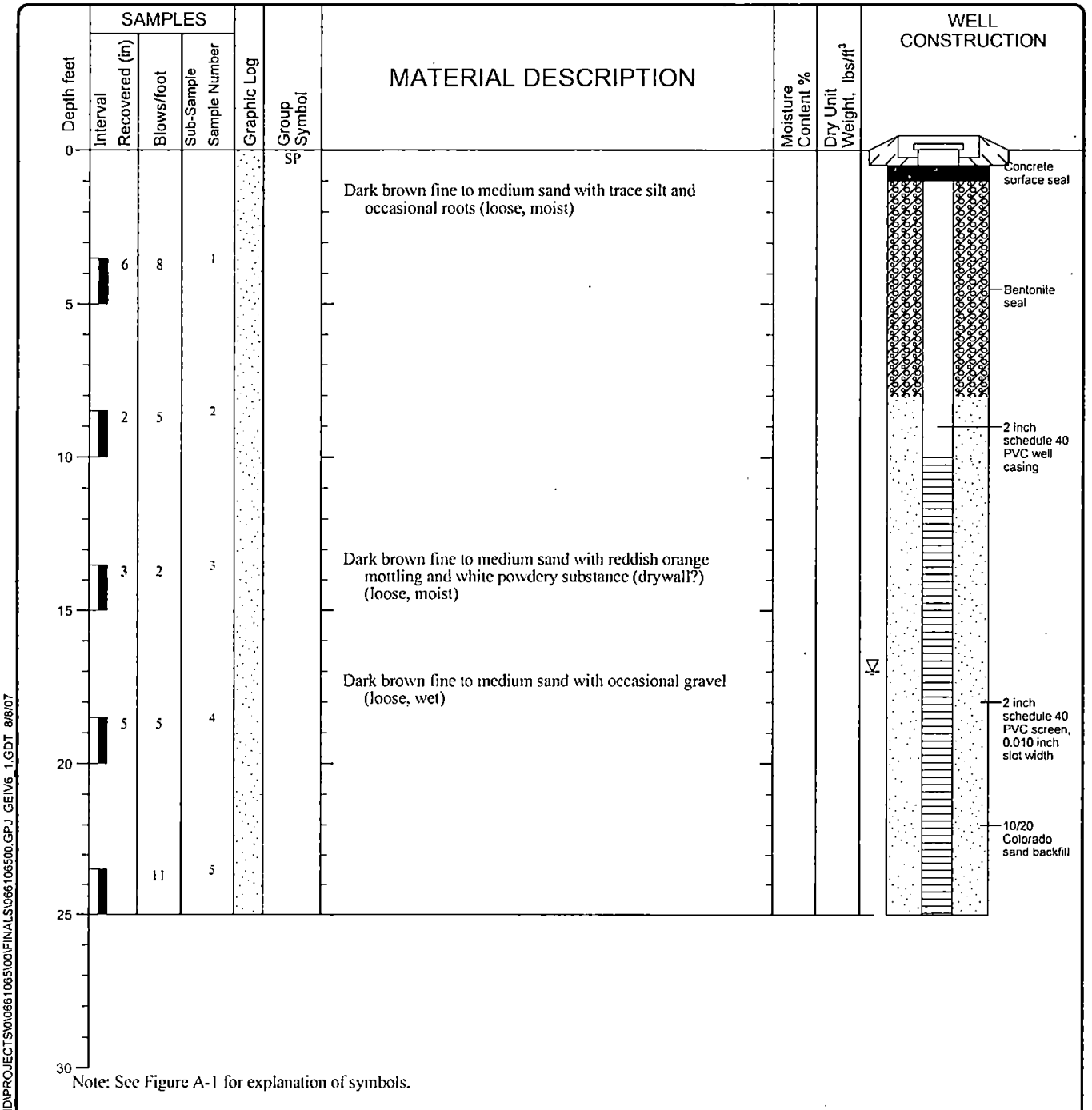
LOG OF MONITORING WELL MW-6

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-18
Sheet 1 of 1

Date(s) Drilled	06/07/07	Logged By	HS	Checked By	SPT
Drilling Contractor	Boart Longyear	Drilling Method	Hollow Stem Auger	Sampling Methods	SPT
Auger Data	4¼" ID	Hammer Data	140 lb hammer/30 in drop Automatic	Drilling Equipment	CME-75
Total Exploration Depth (ft)	25	Ground Surface Elevation (ft)		Groundwater Level (ft. bgs)	17
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure A-1 for explanation of symbols.

V6_GTWELL_WAREDMOND\PROJECTS\0661065\00\FINALS\0661065500.GPJ GEIV6_1.GDT 8/8/07

LOG OF MONITORING WELL MW-7

GeoEngineers

Project: Former GTS Drywall
Project Location: Everett, Washington
Project Number: 0661-065-00

Figure A-19
Sheet 1 of 1

GeoEngineers

ATTACHMENT B
SHANNON & WILSON FIELD EXPLORATION LOGS

Shannon & Wilson, Inc. (S&W), uses a soil classification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following page. Soil descriptions are based on visual-manual procedures (ASTM D 2488-93) unless otherwise noted.

S&W CLASSIFICATION OF SOIL CONSTITUENTS

- MAJOR constituents compose more than 50 percent, by weight, of the soil. Major consituents are capitalized (i.e., SAND).
- Minor constituents compose 12 to 50 percent of the soil and precede the major constituents (i.e., silty SAND). Minor constituents preceded by "slightly" compose 5 to 12 percent of the soil (i.e., slightly silty SAND).
- Trace constituents compose 0 to 5 percent of the soil (i.e., slightly silty SAND, trace of gravel).

MOISTURE CONTENT DEFINITIONS

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

ABBREVIATIONS

ATD	At Time of Drilling
Elev.	Elevation
ft	feet
FeO	Iron Oxide
MgO	Magnesium Oxide
HSA	Hollow Stem Auger
ID	Inside Diameter
in	inches
lbs	pounds
Mon.	Monument cover
N	Blows for last two 6-inch increments
NA	Not applicable or not available
NP	Non plastic
OD	Outside diameter
OVA	Organic vapor analyzer
PID	Photo-ionization detector
ppm	parts per million
PVC	Polyvinyl Chloride
SS	Split spoon sampler
SPT	Standard penetration test
USC	Unified soil classification
WLI	Water level indicator

GRAIN SIZE DEFINITION

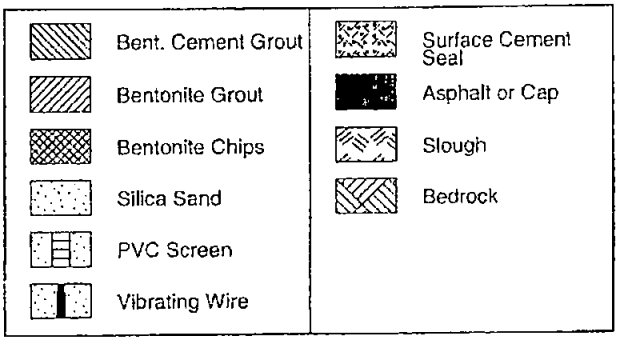
DESCRIPTION	SIEVE NUMBER AND/OR SIZE
FINES	< #200 (0.08 mm)
SAND* - Fine - Medium - Coarse	 #200 to #40 (0.08 to 0.4 mm) #40 to #10 (0.4 to 2 mm) #10 to #4 (2 to 5 mm)
GRAVEL* - Fine - Coarse	 #4 to 3/4 inch (5 to 19 mm) 3/4 to 3 inches (19 to 76 mm)
COBBLES	3 to 12 inches (76 to 305 mm)
BOULDERS	> 12 inches (305 mm)

* Unless otherwise noted, sand and gravel, when present, range from fine to coarse in grain size.

RELATIVE DENSITY / CONSISTENCY

COARSE-GRAINED SOILS		FINE-GRAINED SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
0 - 4	Very loose	Under 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
Over 50	Very dense	15 - 30	Very stiff
		Over 30	Hard

WELL AND OTHER SYMBOLS



Everett HOV Project
Proposed Water Quality Sites #1 and #2
Everett, Washington

SOIL CLASSIFICATION AND LOG KEY

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-1
Sheet 1 of 2

BORING_CLASS1 21-09375.GPJ SWNEW.GDT 9/30/04

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
(From ASTM D 2487-98 & 2488-93)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL		TYPICAL DESCRIPTION
COARSE-GRAINED SOILS *(more than 50% retained on No. 200 sieve)*	Gravels *(more than 50% of coarse fraction retained on No. 4 sieve)*	Clean Gravels *(less than 5% fines)*	GW		Well-graded gravels, gravels, gravel/sand mixtures, little or no fines
			GP		Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with Fines *(more than 12% fines)*	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	Sands *(50% or more of coarse fraction passes the No. 4 sieve)*	Clean Sands *(less than 5% fines)*	SW		Well-graded sands, gravelly sands, little or no fines
			SP		Poorly graded sand, gravelly sands, little or no fines
		Sands with Fines *(more than 12% fines)*	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS *(50% or more passes the No. 200 sieve)*	Silts and Clays *(liquid limit less than 50)*	Inorganic	ML		Inorganic silts of low to medium plasticity, rock flour, sandy silts, gravelly silts, or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Organic	OL		Organic silts and organic silty clays of low plasticity
	Silts and Clays *(liquid limit 50 or more)*	Inorganic	MH		Inorganic silts, micaceous or diatomaceous fine sands or silty soils, elastic silt
			CH		Inorganic clays or medium to high plasticity, sandy fat clay, or gravelly fat clay
		Organic	OH		Organic clays of medium to high plasticity, organic silts
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT		Peat, humus, swamp soils with high organic content (see ASTM D 4427)

NOTES

1. Dual symbols *(symbols separated by a hyphen, i.e., SP-SM, slightly silty fine SAND)* are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart.

2. Borderline symbols *(symbols separated by a slash, i.e., CL/ML, silty CLAY/clayey SILT; GW/SW, sandy GRAVEL/gravelly SAND)* indicate that the soil may fall into one of two possible basic groups.

Everett HOV Project
Proposed Water Quality Sites #1 and #2
Everett, Washington

SOIL CLASSIFICATION AND LOG KEY

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-1
Sheet 2 of 2

BORING_CLASS2 21-09375.GPJ SWNEW.GDT 9/30/04

ENVIRONMENTAL PROBE HOLE LOG

Date Started 9/24/04	Location E of Bldg. on West Parcel	Ground Elev. (ft) NA	
Date Completed 9/24/04	Drilling Company ESN NW	Drilling Method Geoprobe	
Total Depth (ft) 18.0	Sampling Method 4' MacroCore Sampler	Borehole Diam. (in) 2.5	

Depth (ft)	Environmental Soil Sample: Sample Number	Interval	PID (ppm)	Time	Env. Water Sample: Sample Number	Interval	Time	Depth (ft)	Lithologic Description	Soil Log	Ground Water	Depth (ft)
								0.2	Ground Surface Grass at surface.			
								0.4	Dark brown, gravelly, sandy SILT and silty SAND; moist; (Fill) ML/SM.			
			0	0912					Tan, gravelly, sandy SILT and silty SAND; moist; occasional wood fragments; (Fill) ML/SM.			
5								5.0	Tan grading to gray, slightly gravelly, sandy, clayey SILT; moist; scattered wood fragments; (Fill) ML. - 2-inch layer of asphalt at 7.5 feet below ground surface			5
			0	0918								
10			0	0922				11.0	Brown, slightly gravelly, fine to medium SAND; moist; scattered iron oxide staining; (Fill) SP. - 1-inch layer of white powder (drywall?) at approximately 11.8 feet below ground surface		▽	10
15	S-4		82	0930	P-GTS1-GW		1400	15.0				15
								16.0	Dark brown, silty SAND; moist; petroleum odor; (Fill) SM.			
			36	0936				17.0	Brown, gravelly, silty, well-graded SAND; wet; scattered seams of dark brown, silty sand with a petroleum odor; (Fill) SM.			
20								18.0	Gray, slightly fine sandy SILT; moist; scattered, mottled iron oxide staining; ML. - 3-inch, gray, silty fine sand layer at 17 feet below ground surface			20
									BOTTOM OF GEOPROBE COMPLETED 9/24/2004			
25												25

Typ: EET
Rev: JEH
Log: JEH
ENV_PROBE 21-09375.GPJ SHAN_WIL.GDT 10/6/04

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified or ATD (at the time of drilling) and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.

LEGEND

I Split Spoon

▽ Ground Water Level Measured

Everett HOV Project
Proposed Water Quality Site #2
Everett, Washington

LOG OF GEOPROBE P-GTS1

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-21

ENVIRONMENTAL PROBE HOLE LOG

Date Started 9/23/04	Location East Side of West Parcel	Ground Elev. (ft) NA	
Date Completed 9/23/04	Drilling Company ESN NW	Drilling Method Geoprobe	
Total Depth (ft) 27.0	Sampling Method 4' MacroCore Sampler	Borehole Diam. (in) 2.5	

Depth (ft)	Environmental Soil Sample: Sample Number	Interval	PID (ppm)	Time	Env. Water Sample: Sample Number	Interval	Time	Depth (ft)	Lithologic Description	Soil Log	Ground Water	Depth (ft)
									Ground Surface			
			0	1045					Brown, gravelly, sandy SILT and silty SAND; moist; scattered iron oxide staining, wood fragments, roots, plastic, glass, drywall pieces, and brick; (Fill) ML.			
								3.5	White, powdery substance (drywall?); moist; scattered wood lenses and orange staining; (Fill).			
5			0	1050								5
								8.0	Brown and orange, fine gravelly sandy SILT and silty SAND; moist to wet; scattered porcelain, glass, and wood fragments, and brick pieces (landfill debris); (Fill) ML/SM.			
10			0	1053					- 3-inch green sand layer at 10 feet below ground surface			10
	S-4		0	1106					- wood chunk in shoe at 12 feet - possible chemical odor at 13 feet			
15									- petroleum odor at 14 to 16 feet			15
			0	1110								
20								21.0	Black, organic SILT; moist; numerous wood fragments; (Fill) OL.		▽	20
				1118	P-GTS2-GW		1230	22.0	Tan, clayey SILT; moist; occasional burnt wood fragments; ML.			
								24.0	Tan, slightly gravelly, slightly fine sandy SILT; scattered burnt wood fragments, mottled iron oxide staining; ML.			
25				1125								25
								27.0	BOTTOM OF GEOPROBE COMPLETED 9/23/2004			

Typ: EET
Rev: JEH
Log: JEH
ENV_PROBE 21-09375.GPJ SHAN_WIL.GDT 10/6/04

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified or ATD (at the time of drilling) and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.

LEGEND

I Split Spoon

▽ Ground Water Level Measured

Everett HOV Project
Proposed Water Quality Site #2
Everett, Washington

LOG OF GEOPROBE P-GTS2

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-22

ENVIRONMENTAL PROBE HOLE LOG

Date Started 9/23/04	Location NE corner of West Parcel	Ground Elev. (ft) NA	
Date Completed 9/23/04	Drilling Company ESN NW	Drilling Method Geoprobe	
Total Depth (ft) 23.0	Sampling Method 4' MacroCore Sampler	Borehole Diam. (in) 2.5	

Depth (ft)	Environmental Soil Sample: Sample Number	Interval	PID (ppm)	Time	Env. Water Sample: Sample Number	Interval	Time	Depth (ft)	Lithologic Description	Soil Log	Ground Water	Depth (ft)
								0.1	TOPSOIL.			
			0	1402					Brown grading to tan, gravelly, sandy SILT and silty SAND; dry to moist; occasional roots; (Fill) ML/SM.			
								3.5	- 2-inch wood chunk at 0.5 foot below ground surface			
5			0	1404					Brown to gray, gravelly, fine sandy SILT; moist; numerous wood chunks, plastic sheeting and white powder, scattered iron oxide staining at 5 to 7 feet; (Fill) ML.			5
								8.0	- 1-foot layer of white powder (drywall) at 7 feet below ground surface			
10			0	1411					Tan to brown, gravelly, sandy SILT and silty SAND; moist; scattered roots and wood fragments; (Fill) ML/SM.			10
			0	1420					- White powdery substance (drywall?) with orange staining and occasional plastic sheeting pieces at 10 to 11.5 feet.			
15			0	1431					- 2-inch asphalt layer at 11.5 feet below ground surface. - 0.5-inch gray-brown sandy silt layer at 11.7 feet.			15
								19.0	- 1-foot white powder layer at 15 feet. - 1-foot white powder layer at 18 feet.			
20	S-6		0	1440	P-GTS3-GW		1630	20.0	- 3-inch wood chunk with petroleum order at 19 feet.		▽	20
								22.0	Dark brown, slightly clayey, sandy SILT; moist; scattered wood fragments; (Fill) ML.			
25								23.0	Brown grading to dark brown, gravelly, sandy SILT and silty SAND; moist to wet; scattered wood fragments, plastic sheeting pieces, metal and glass fragments; (Fill) ML/SM.			25
									Gray, clayey SILT; moist; scattered mottled iron oxide staining (Native?); ML.			
									BOTTOM OF GEOPROBE COMPLETED 9/23/2004			

Typ: EET
Rev: JEH
Log: JEH
ENV_PROBE 21-09375.GPJ SHAN_WIL.GDT 10/6/04

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified or ATD (at the time of drilling) and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.

LEGEND

I Split Spoon

▽ Ground Water Level Measured

Everett HOV Project
Proposed Water Quality Site #2
Everett, Washington

LOG OF GEOPROBE P-GTS3

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-23

ENVIRONMENTAL PROBE HOLE LOG

Date Started 9/24/04	Location NW corner of West Parcel	Ground Elev. (ft) NA	
Date Completed 9/24/04	Drilling Company ESN NW	Drilling Method Geoprobe	
Total Depth (ft) 23.0	Sampling Method 4' MacroCore Sampler	Borehole Diam. (in) 2.5	

Depth (ft)	Environmental Soil Sample: Sample Number	Interval	PID (ppm)	Time	Env. Water Sample: Sample Number	Interval	Time	Depth (ft)	Lithologic Description	Soil Log	Ground Water	Depth (ft)
									Ground Surface			
								0.3	ASPHALT at surface.			
	S-1		0	1149					Brown, gravelly, slightly silty, fine to medium SAND grading to slightly gravelly, fine to medium SAND, trace of silt; (Fill) SM/SP.			
5			0	1153					- occasional iron oxide staining at 5.5 to 8 feet below ground surface			5
								8.0	Dark brown and gray, slightly clayey, slightly fine sandy SILT; moist; scattered			
			0	1159				9.5	roots and burnt wood fragments; (Fill) ML.			
10									Gray grading to tan, slightly fine sandy SILT; moist to wet; scattered, mottled, iron oxide staining; (Fill) ML.			10
			0	1205								
15			0	1215							▽	15
			0	1226	P-GTS4-GW		1317		- 5-inch silty sand layer with white powder at 17.5 feet below ground surface			
20			0	1244					- 5-inch silty sand layer at 19.5 feet			20
								21.0	- 8-inch gravel layer at 20.8 feet			
			0	1250					Brown, slightly gravelly, silty, fine to medium SAND; wet; SM.			
25								23.0	- 3-inch silt lens at 22 feet			25
									BOTTOM OF GEOPROBE COMPLETED 9/24/2004			

NOTES

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2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified or ATD (at the time of drilling) and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.

LEGEND

I Split Spoon

▽ Ground Water Level Measured

Everett HOV Project
Proposed Water Quality Site #2
Everett, Washington

LOG OF GEOPROBE P-GTS4

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-24

ENV_PROBE 21-09375.GPJ SHAN_WIL.GDT 10/6/04 Log: JEH Rev: JEH Typ: EET

ENVIRONMENTAL PROBE HOLE LOG

Date Started 9/24/04	Location SW corner of West Parcel	Ground Elev. (ft) NA	
Date Completed 9/24/04	Drilling Company ESN NW	Drilling Method Geoprobe	
Total Depth (ft) 16.0	Sampling Method 4' MacroCore Sampler	Borehole Diam. (in) 2.5	

Depth (ft)	Environmental Soil Sample: Sample Number	Interval	PID (ppm)	Time	Env. Water Sample: Sample Number	Interval	Time	Depth (ft)	Lithologic Description (Ground Surface)	Soil Log	Ground Water	Depth (ft)
								0.3	ASPHALT.			
	S-1		0	1016					Brown, slightly gravelly, fine to medium SAND, trace of silt; moist; scattered iron oxide staining; (Fill) SP.			
5	S-2		0	1019				7.5				5
								8.0	Dark brown, slightly fine gravelly, silty, fine to medium SAND; moist; scattered burnt wood fragments, chemical odor; (Fill) SM.			
10			0	1025					Brown, slightly fine gravelly, silty, fine to medium SAND; moist to wet; occasional roots, slight petroleum odor at 9 feet; (Fill) SM.		▽	10
			0	1030	P-GTS5-GW		1114					
15								15.0	Brown, slightly fine sandy SILT; moist;			15
								16.0	scattered, mottled, iron oxide staining and organic fragments; ML.			
20									BOTTOM OF GEOPROBE COMPLETED 7/24/2004			20
25												25

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of the subsurface materials.
3. Groundwater level, if indicated above, is for the date specified or ATD (at the time of drilling) and may vary.
4. Refer to KEY for explanation of "Symbols" and definitions.

LEGEND

I Split Spoon

▽ Ground Water Level Measured

Everett HOV Project
Proposed Water Quality Site #2
Everett, Washington

LOG OF GEOPROBE P-GTS5

October 2004 21-1-09375-009

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. A-25

ENV_PROBE 21-09375.GPJ SHAN_WIL.GDT 10/6/04 Log: JEH Rev: JEH Typ: EET

GeoEngineers

ATTACHMENT C
WASHINGTON UST DATA SHEET

Washington UST Data

Washington Registered Underground Storage Tank Data

Map ID#: 4 | Distance (mi): 0.09079 | Direction: WSW

Agency ID: 11222 | Name: GTS DRYWALL | Address: 2731 36TH ST | City, State Zip: EVERETT, WA 98201

County: SNOHOMISH

Tank ID	Tank Status	Composition	Substance	Capacity (gal)	Installation Date
2	REMOVED	Steel-Unprotected	LEADED GASOLINE	111 to 1,100 Gallons	12/31/1964 0:00

Map ID#: 6 | Distance (mi): 0.13308 | Direction: NW

Agency ID: 2459 | Name: WASHINGTON TRUCKING INC | Address: 2810 34TH ST | City, State Zip: EVERETT, WA 98201

County: SNOHOMISH

Tank ID	Tank Status	Composition	Substance	Capacity (gal)	Installation Date
2	REMOVED	Not Reported	Not Reported	Not Reported	12/31/1964 0:00
3	REMOVED	Not Reported	Not Reported	Not Reported	12/31/1964 0:00
4	REMOVED	Not Reported	Not Reported	Not Reported	12/31/1964 0:00
1	REMOVED	COATED STEEL	DIESEL	10,000 TO 19,999 GALLONS	8/10/1986 0:00

Map ID#: 9C | Distance (mi): 0.21424 | Direction: W

Agency ID: 4059 | Name: TIME OIL CO. 178 | Address: 3532 SMITH AVE | City, State Zip: EVERETT, WA 98201

County: SNOHOMISH

Tank ID	Tank Status	Composition	Substance	Capacity (gal)	Installation Date
424	REMOVED	Not Reported	Not Reported	Not Reported	12/31/1964 0:00
101	REMOVED	Steel-Unprotected	HEATING FUEL	Not Reported	12/31/1964 0:00
109	REMOVED	Steel-Unprotected	HEATING FUEL	Not Reported	12/31/1964 0:00

Map ID#: 10 | Distance (mi): 0.23118 | Direction: NW

Agency ID: 2145 | Name: NEWLAND CONST. CO INC | Address: 3302 HILL AVE | City, State Zip: EVERETT, WA 98201

County: SNOHOMISH

Tank ID	Tank Status	Composition	Substance	Capacity (gal)	Installation Date
1	CLOSED IN PLACE	Steel-Unprotected	USED OIL/WASTE OIL	Not Reported	12/31/1964 0:00

Map ID#: 12 | Distance (mi): 0.27191 | Direction: WSW

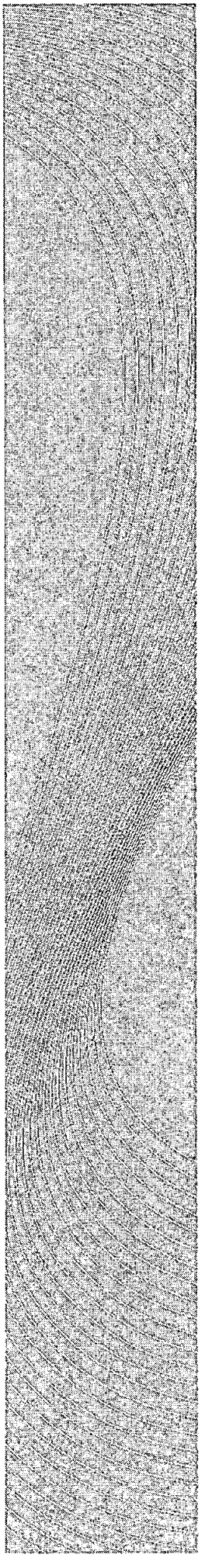
Agency ID: 81 | Name: O'DAY HEATING COMPANY INC. | Address: 3729 SMITH AVE | City, State Zip: EVERETT, WA 98201

County: SNOHOMISH

Tank ID	Tank Status	Composition	Substance	Capacity (gal)	Installation Date
3	OPERATIONAL	COATED STEEL	DIESEL	20,000 TO 29,999 GALLONS	1/1/1963 0:00
2	OPERATIONAL	COATED STEEL	LEADED GASOLINE	5,000 TO 9,999 GALLONS	1/1/1983 0:00
1	OPERATIONAL	COATED STEEL	UNLEADED GASOLINE	20,000 TO 29,999 GALLONS	1/1/1968 0:00

GeoEngineers

ATTACHMENT D
REPORT LIMITATIONS AND GUIDELINES FOR USE



ATTACHMENT D
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This Attachment provides information to help you manage your risks with respect to the use of this report.

ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for the exclusive use of the City of Everett, their authorized agents and regulatory agencies. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except the City of Everett should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for the City of Everett. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

RELIANCE CONDITIONS FOR THIRD PARTIES

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE II ESA IS COMPLETED

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

SUBSURFACE CONDITIONS CAN CHANGE

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

SOIL AND GROUNDWATER END USE

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

DO NOT REDRAW THE EXPLORATION LOGS

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

BIOLOGICAL POLLUTANTS

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

HWA GeoSciences Inc.

21312 30th Drive SE, Suite 110
Bothell, WA 98021-7010
Tel 425-774-0106
Fax 425-774-2714
www.hwageo.com

TRANSMITTAL

TO: Toxics Cleanup Program, Northwest Regional Office
Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, Washington 98008

DATE: July 08, 2010

HWA PROJECT NO: 2008-094-22

ATTN: Ms. Jing Liu

RE: GTS Drywall RI/FS/CAP (Final Report Dated 4-1-10)

WE ARE SENDING YOU THE FOLLOWING ITEMS:

DATE	COPIES	DESCRIPTION
4-1-10	1	Replacement pages 63-68 (punched for your convenience)
4-1-10	1	Corrected Report on CD

THESE ARE TRANSMITTED: ☐ *FOR YOUR INFO INFORMATION* ☒ *FOR YOUR ACTION SPECIFIED BELOW* ☐ *FOR REVIEW AND COMMENT* ☐ *AS REQUESTED*

REMARKS

Per Ecology's request, please find the attached replacement pages for the GTS Drywall RI/FS/CAP (final Report dated 4-1-10). These pages have Ecology's requested corrections per Ken Weiner's email of 5-19-10, which were made and accepted prior to the Ecology 6-10-10 opinion letter; this is just to complete your files. Please replace and discard pages 63 to 68 of the 4-1-10 report. The attached CD replaces the CD attached to the 4-1-10 report. Please feel free to call me if you have any questions or require additional information.

BY: Chrissi Fisk for Arnie Sugar, LG, LHG

TITLE: Senior Environmental Geologist, President

COPIES TO: Russ Olsen - TCP, NWRO, Dept of Ecology
Mark Sadler - City of Everett
Ken Weiner - K&L Gates