Development Services Department
Environmental Coordinator
450 110th Avenue NE
Bellevue, WA 98009-9012

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

PROPOSAL NAME:	Airfield Park Master Plan
LOCATION:	2997 160th Ave SE
FILE NUMBERS:	23-117223-LM
PROPONENT:	Pam Fehrman, Project Manager, City of Bellevue, Parks Department

DESCRIPTION OF PROPOSAL:

Non-project SEPA Review in connection with a proposed update to the Bellevue Airfield Park Master Plan, which was previously adopted by the City Council in 2012. The proposed update includes the revised or new facilities, trails, a new aquatic center of up to 160,000 square feet, parking, sport courts, and associated improvements. If the updated Airfield Park Master Plan is adopted by the City Council, then the Plan will guide long-term phased development of the park.

The Environmental Coordinator of the City of Bellevue determined that this proposal, as conditioned, does not have a probable significant adverse impact upon the environment. The Environmental Coordinator determined that mitigation measures were needed to ensure impacts not addressed by the Land Use Code are mitigated as part of the proposal and requires mitigation measures using the City's SEPA substantive authority per BCC 22.02.140. Required mitigation measures are attached and found in the staff report associated with this determination. This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This information is available to the public on request.

This MDNS is followed by a 14-day comment period.

DATE ISSUED: 8/1/2024

END COMMENT PERIOD DATE: 8/15/2024

The City Council has not taken final action on the proposed update to the Airfield Park Master Plan; and under SEPA, the MDNS may be appealed only after the City of Bellevue has taken a specific governmental action, in accordance with RCW 43.21C.075 and WAC 197-11-680. Notice of the action associated with any City Council adoption of the updated Airfield Park Master Plan and specific appeal information will be provided at the time of future City action on the proposal. Any appeal of this SEPA threshold determination will be considered along with an appeal of the City Council's action. Following Council action, this SEPA threshold determination may be appealed by filing a petition with the Growth Management Hearings Board pursuant to RCW 43.21C.075, BCC 22.02.075.C, and LUC 20.35.440.C. Appeals must be filed within 60-days of the Council action pursuant to WAC 242-03-200.

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This MDNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating a proposal's probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project) or if the MDNS was procured by misrepresentation or lack of material disclosure.

Issued By: Reilly Pittman **Date:** August 1, 2024
Reilly Pittman, Environmental Coordinator
Development Services Department

REQUIRED MITIGATION MEASURES

Any proposal may be conditioned using the City's SEPA substantive authority granted per RCW 43.21C.060 and BCC 22.02.140. The City's Comprehensive Plan polices, including but not limited to the following, provide a basis for the exercise of authority under SEPA to apply the listed conditions of approval to this proposal.

1. **Landfill Development**
   Redevelopment shall comply with MTCA regulations (ch. 173-340 WAC), Water Quality Standards (ch 173-200 WAC), and the 2008 recorded Environmental Covenant. As part of the site redevelopment, MTCA regulations require additional investigation, assessment of feasibility options, and engineering design reports for the site. Ch. 173-340-320, 350, 400 WAC. Such additional investigation and design and engineering reports documenting modifications to the existing remedy will be submitted to Ecology pursuant to either the site's re-entry into the Voluntary Cleanup Program, or under an Agreed Order or Consent Decree with Ecology. Ch. 173-340-510 WAC

   Authority:

   Amended Land Use Covenant
   Recording #: 20081202001138

   Model Toxics Control Act
   Ch. 70.105D RCW, ch 173-340 WAC

   City of Bellevue Comprehensive Plan:
   - Environment Element
     Policies: EN-3, EN-14

2. **Engineering Measures for Mitigation of Landfill Development**
   Where landfill waste in encountered, the site development designs shall consider engineered measures to address the life safety, environmental and construction risks:

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a. Use piles or other means to support the structures and avoid excavating into the soil cap.
b. Perform ground improvement to address compressible soils
c. Construct water and gas barriers to prevent landfill gas intrusion.
d. Install monitoring systems to verify performance of the protection systems installed; upgrade/update existing systems where necessary.
e. Preload the site to provide a stable base and minimize differential settlement.
f. Isolate and block landfill gas pathways to structures
g. Structures with floor slabs should include a high-quality vapor barriers
h. Interior rooms on the ground floors should be equipped with methane and CO2 monitors.
i. Limit leachate production by installing a geomembrane cover over the landfill
j. Structure design should include increased resistance to seismic forces
k. Upgrades or replacement of existing LFG system (including groundwater monitoring network) as needed

l. Contaminated soil handling and disposal shall be managed in accordance with the Model Toxics Control Act (MTCA)
m. Placement of disturbances shall prioritize the minimization of impacts to designated critical areas.

Authority:

City of Bellevue Comprehensive Plan:

- Environment Element
  Policies: EN-3, EN-21

3. Annual Testing and Monitoring

Testing and monitoring of both the Groundwater and Landfill Gas System shall take place on an annual basis. Reporting shall be submitted to Ecology upon completion of such testing and monitoring in the form of reporting.

Authority:

City of Bellevue Comprehensive Plan:

- Environment Element
  Policies: EN-21, EN-25, EN-50

City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	Bellevue Airfield Park Master Plan Update
Proposal Address:	2997 160th Avenue SE
Proposal Description:	Non-project environmental review under the State Environmental Policy Act of a proposed update to the Airfield Park Master Plan on the 27.5-acre community park site that comprises Airfield Park in the Eastgate subarea of Bellevue.
File Number:	23-117223-LM
Applicant:	Pam Fehrman, City of Bellevue Parks Department
SEPA Planner:	Leticia Wallgren, Senior Land Use Planner
State Environmental Policy Act Threshold Determination:	**Mitigated Determination of Non-Significance (MDNS)**

By: Reilly Pittman

Reilly Pittman, Environmental Coordinator
Development Services Department

Application Date:	August 7, 2023
Notice of Application Date:	November 2, 2023
Date of Threshold Determination:	August 1, 2024
Comment Period End Date:	14 days (ends August 15, 2024)
Appeal:	60-Days following Council Action (see note below)

This MDNS is issued per the SEPA process in WAC 197-11-340 and 197-11-350. There is a minimum 14-day comment period on this MDNS. Under SEPA, the MDNS may be appealed only after the City of Bellevue has taken a specific governmental action, in accordance with RCW 43.21C.075 and WAC 197-11-680. Notice of City action and specific appeal information will be provided at the time of future City action on the proposal. Any appeal of this SEPA threshold determination will be considered along with an appeal of the specific City action. Following City action, this SEPA threshold determination may be appealed by filing a petition with the Growth Management Hearings Board pursuant to RCW 43.21C.075, BCC 22.02.075.C, and LUC 20.35.440.C. Appeals must be filed within 60-days of the City action pursuant to WAC 242-03-200.

Contents

Documents Referenced, Attached

1. SEPA Checklist
2. Modified Conceptual Master Plan Update, attached.
3. Draft Project Startup Summary Report, Prepared by Landau Associates, October 19, 2015, attached.
4. Boundary & Topographic Survey, Prepared by S. Bratz, attached
5. Dreft Geotechnical Engineering Report, Prepared by Landau Associates, June 2, 2016, attached
6. Habitat and Wildlife Assessment, Prepared by The Watershed Company, August 25, 2016, attached
7. Landfill Technical Memorandum, Prepared by URS Corporation, June 7, 2011, attached
8. Assessment of Existing Landfill Control System, Prepared by SCS Engineers, November 17, 2015, attached
9. Arborist Report, Prepared by Tree Solutions Inc. October 28, 2015, attached
10. Environmental Covenant, recording # 20081202001138, attached
11. Bellevue Aquatics-Airfield Park Site: Structural Foundation Preliminary Concepts- SEPA, Prepared by Magnusson Klemencic Associates, March 23, 2023, attached.
12. Parking Lot Easement Agreement, recording # 20140505001225, attached
13. Eastgate Landfill: 2023 Annual Summary Report for Operations and Maintenace of the LFG Migration Control Facilities, Prepared by SCS Field Services, March 11, 2024, attached.
14. Final Annual Groundwater Monitoring Report, Prepared by Landau Associates, September 25, 2023, attached
15. Bellevue Airfield Park-Aquatic Center Programmatic Assessment, Prepared by Transpo Group, May 28, 2024, attached.

I. Introduction

A. Objective and Proposal

The City of Bellevue Parks & Community Services Department proposes to update the Bellevue Airfield Park Master Plan (BAPMP) that was previously adopted in 2012. Upon adoption by City Council, the updated plan will replace the existing BAPMP and guide long-term phased development of the park. Site-specific park design and permitting, including all necessary project level SEPA review, will occur in the future after this non-project SEPA review is complete and the proposed update is adopted by Council. BAPMP (see section I.C of this report for details about the proposed update).

Figure 1. Existing Park Master Plan

Recommended Bellevue Airfield Park Master Plan

Figure 2. Proposed Park Master Plan Update

B. Background and Site Conditions

In 2023, The City of Bellevue Parks & Community Services Department applied for review under the State Environmental Policy Act (SEPA) to evaluate the impacts of updates to the currently adopted BAPMP. The current plan, (**figure 1**), includes a picnic area with shelters, woodland/trails, open space, multi-use sports fields, play areas, a public services building, a stormwater pond, and parking. The amenities provided in the existing plan are proposed to remain within the modified concept (see **figure 2** and **attachment 2)**, while several new amenities are proposed, most notably a new aquatic center (see section I.C of this report for proposed site conditions upon plan implementation; see **figure 7** for a comparison of plans).

The site is located within the Eastgate subarea of Bellevue and is surrounded by commercial office uses to the south & east while the uses to the north & west are single-family residential. The Bellevue Airfield Park, which is used informally for passive recreation, currently contains no structures; improvements are limited to utilities systems, a landfill gas system and footrails. The site is comprised of three parcels totaling 27.5 acres. The site is accessed by vehicles from the south, just off I-90, pedestrian access points are identified from the north, south and west. Elements significant to development considerations are the historical operations of the Bellevue Airfield (until 1983) and operation of a municipal landfill from 1951 to 1964.

The landfill, which occupies approximately 9 acres of the 27.5-acre site, collected both Construction/Demolition waste (C&D) and Municipal Solid Waste (MSW). When the landfill was closed in 1964, it was covered with soil, known commonly as a cap. Additional soil and construction debris was placed in 1974. See additional discussion about the landfill in section III.B.i of this report.

Figure 3. Project site parcels

The site contains utility system easements (abandoned and operational), a landfill gas migration system, ground water monitoring wells, stormwater systems, and a major King County Metro sewer line. The site has landfill contamination; previously, the site was being cleaned up under the Voluntary Cleanup Program (VCP) under the Model Toxics Control Act (MTCA) managed by the Washington State Department of Ecology (Ecology). Cleanup activities at the site have included capping, groundwater monitoring, stormwater infiltration control, leachate collections, and landfill gas migration control. The VCP Agreement was terminated in 2019 by Ecology. Since then, the site is no longer participating in the VCP, but the City does continue to submit annual reporting. Institutional controls in place include an Amended Environmental Covenant which imposes restrictions and requirements for development subject to Ecology approval.

Currently, the park site is vacant and is being used as an informal park. The site is characterized by two different environments. The lower (southern) section includes the southern portion of parcel C (see **figure 3**). This area contains much of the landfill acreage and the open field over the soil cap; it is characterized by the open field (meadow) sparsely covered with wild grasses. The landfill boundaries are largely contained within parcel C with minor encroachments into parcel A, parcel C and to the south beneath the Advanta Business Park parking lot (see **figure 4**).

The upper (northern) half of the site includes parcel A, parcel B, and the northern portion of parcel C (see **figure 3**). This area contains lowland forest vegetation (parcel A & C) and the three stormwater ponds (parcel B). Trails and benches are located throughout the existing property. The woods are densely populated with mature trees that form an effective buffer between the park site and the adjacent single-family homes to the west and the north of the site. The wooded areas east and west of the pond slope down to the stormwater ponds; two category IV wetlands are delineated on the north facing slope south of the stormwater ponds. The wetlands appear to be beneath the regulatory thresholds set forth in LUC 20.25H.095 for the minimum size of 2,500 square-feet. In addition, pursuant to LUC 20.25H.035, there is no prescriptive buffer or structure setback associated with category IV wetlands under 2,500 square-feet (see section 2.3.1 of *Draft Project Startup Summary* Prepared by Landau Associates, attachment #3).

The site is located within Bellevue's Phantom Creek Watershed, within the West Lake Sammamish drainage basin. The wetlands are located immediately upslope of the existing leachate french drain which is anticipated to be the point where wetland discharge is collected and ultimately discharged to the King County sanitary sewer. Drainage from the on-site wetlands are likely intercepted by the French drain. Project level review will require a wetland delineation with identification of any jurisdictional waters. (see section 2.4 of *Draft Project Startup Summary* Prepared by Landau Associates, attachment #3).

Steep slope critical areas are present on site based on the topographic survey provided by the applicant. North, east, and western facing slopes surrounding the pond range from moderate to steep and slope toward the pond which is situated in a valley. The pond is situated at the toe of the slopes and located at an elevation of approximately 300-feet; the surrounding slopes appear to contain top-of-slopes at approximately between 330-340 feet (see sheet 4, *Boundary & Topographic Survey*, **attachment #4**; see section 2.3 of *Draft Geotechnical Engineering Report* Prepared by Landau Associates, **attachment #5**).

The site contains isolated patches of animal habitat including coniferous forest, deciduous forest, scrub-shrub, meadow, and stormwater ponds. At the time of study, several wildlife species were observed to be on site through both direct and indirect surveillance. A variety of birds, amphibians, insects, and mammals were documented; in addition, common urban wildlife species such as mice and racoons were noted as being expected to regularly use the site. No designated species of local importance were observed to be on site nor are they documented as being present on or near the site. However, the forested areas of the property may provide opportunities for foraging, hunting, nesting, and/or perching for Merlin, red-tailed hawk, pileated woodpecker, and Vaux's swift. In addition, blue and/or green heron could reasonably be expected to forage in the stormwater ponds. Site development is not precluded by the presence of habitat associated with species of local importance or habitat. Pursuant to LUC 20.25H.155, uses allowed in the underlying land use district are allowed within habitats associated with species of local importance as long as the development complies with performance standards set forth in LUC 20.25H.160 and any applicable performance standards administered by the Washington State Department of Fish and Wildlife. (See section 5.2 of *Habitat Assessment*, Prepared by The Watershed Company, **attachment #6**).

On site trees and vegetation are largely characterized by two categories: late-successional and early-successional. The northwestern corner of the site (Parcel A) is a relatively undisturbed native forest densely populated with dominant, mature trees. Characteristics of a

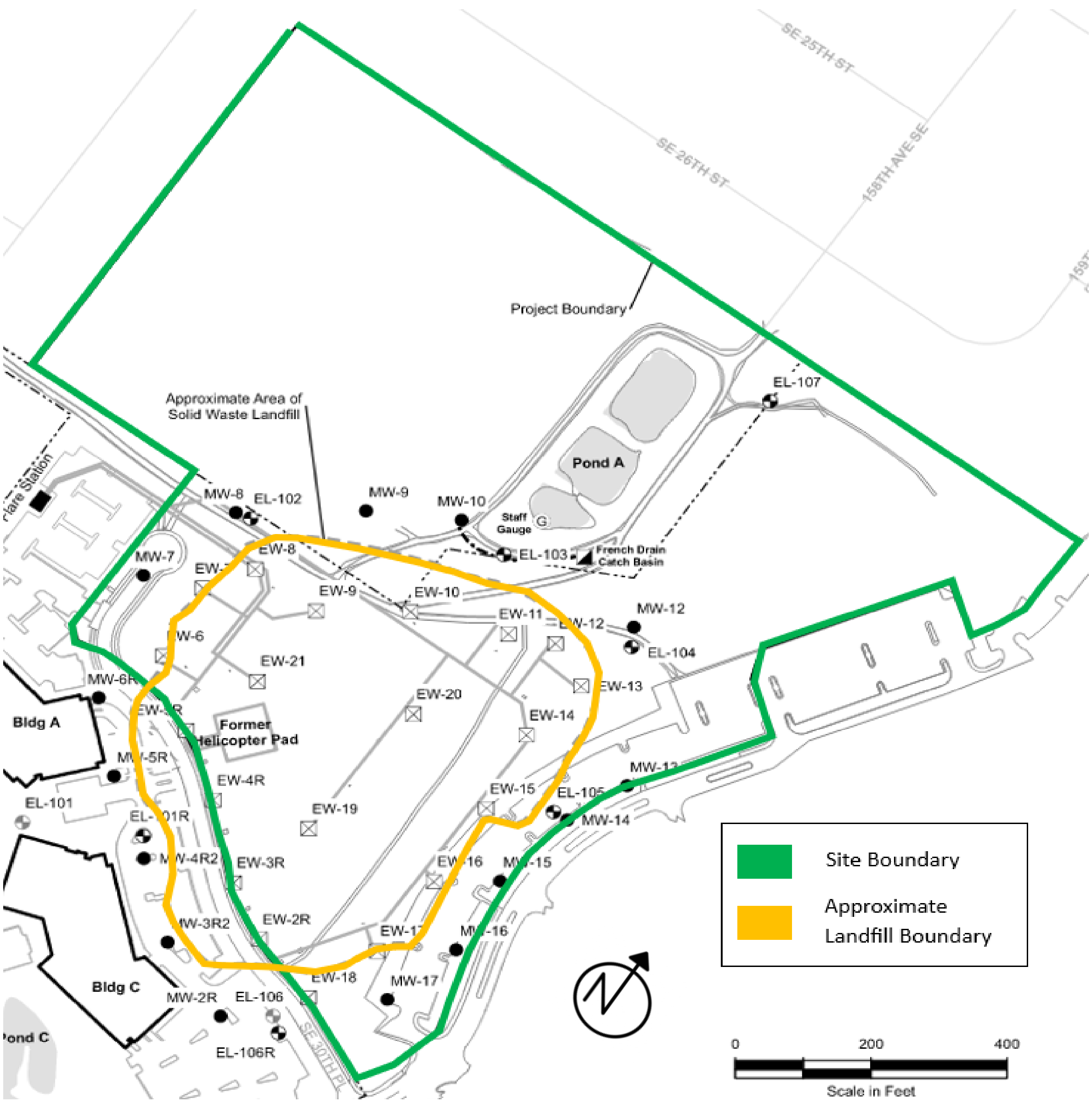

Figure 4. Approximate Landfill Boundary

late-successional forest include large diameter trees, large diameter snags, late-successional understory, and large-diameter fallen debris. Early successional forests are present elsewhere on site and contain trees and understory that tend to colonize quickly including shorter lived trees such as black cottonwoods and red alders; these areas are concentrated with fast growing invasive species such as Himalayan blackberry and invasive ivy. Ivy was also noted to be heavily present in the mature coniferous forest. The landfill is situated over a large swath of flat meadow; cover soils are fine to medium silty sand with occasional fine gravel and are thus susceptible to disturbance resulting in differential, uneven settlement when loaded. This is further compounded by the landfill layer which contains solid waste material below the soil and generally consists of a mixture of soil, brick, timber, asphalt, plastic, glass, and concrete. The solid waste material was originally landfilled between 1951 and 1964 so any remaining waste would be either in an advanced state of decay or not present. Further studies of the landfill material concluded the landfill material as “inhomogeneous comparing to native soil” with a thickness varying between 0-60 feet and containing isolated areas of leachate saturated soil. See Appendix D of Draft *Geotechnical Engineering Report* Prepared by Landau Associates, attachment 5).

C. Zoning and Land Use Context

i. Zoning

The site contains three different zoning designations (see **figure 5a** below).

Parcel A: Parcel A is designated R-7.5, a single-family residential zoning designation. Single-Family Residential Districts provide for residential areas of low to moderate densities and permit compatible, related activities.

Recreational uses are permitted in R-7.5 subject to a Conditional Use Permit pursuant to LUC 20.10.440

Parcel B: Office and Limited Business (OLB)- Office and Limited Business Districts provide areas for the location of integrated complexes made up of offices, hotels or motels, eating establishments and retail sales accessory to permitted uses. Such districts are located in areas that abut and have convenient access to freeways and major highways.
Recreational uses are permitted in OLB subject to a Conditional Use Permit pursuant to LUC 20.10.440

Parcel C: Office and Limited Business-Open Space (OLB-OS)- Office and Limited Business-Open Space Districts provide for significant amounts of open space and for offices, hotels, or motels, and other uses permitted in the Office and Limited Business District, except for residential uses. The OLB-OS properties are developed as a cohesive site with unified building design. The open space area is reserved for public use and access and may include active and passive recreational uses. OLB-OS properties are at least 25 acres in size with at least 40 percent of the total site area reserved as a contiguous open space area.

Recreational uses are permitted in OLB-OS subject to a Conditional Use Permit pursuant to LUC 20.25L.020.

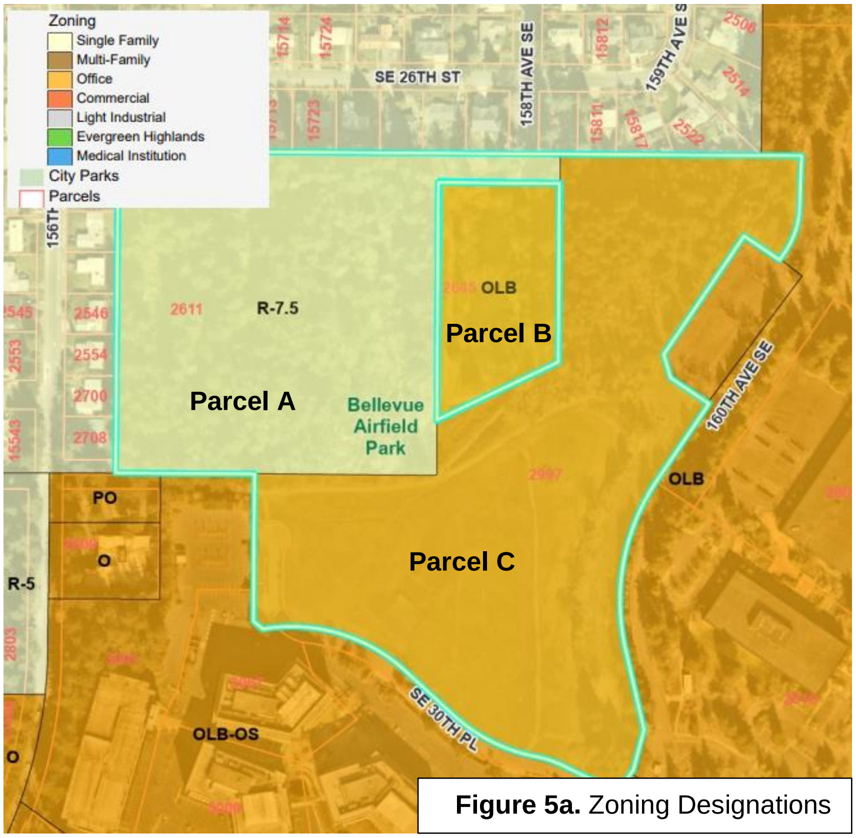

Figure 5a. Zoning Designations

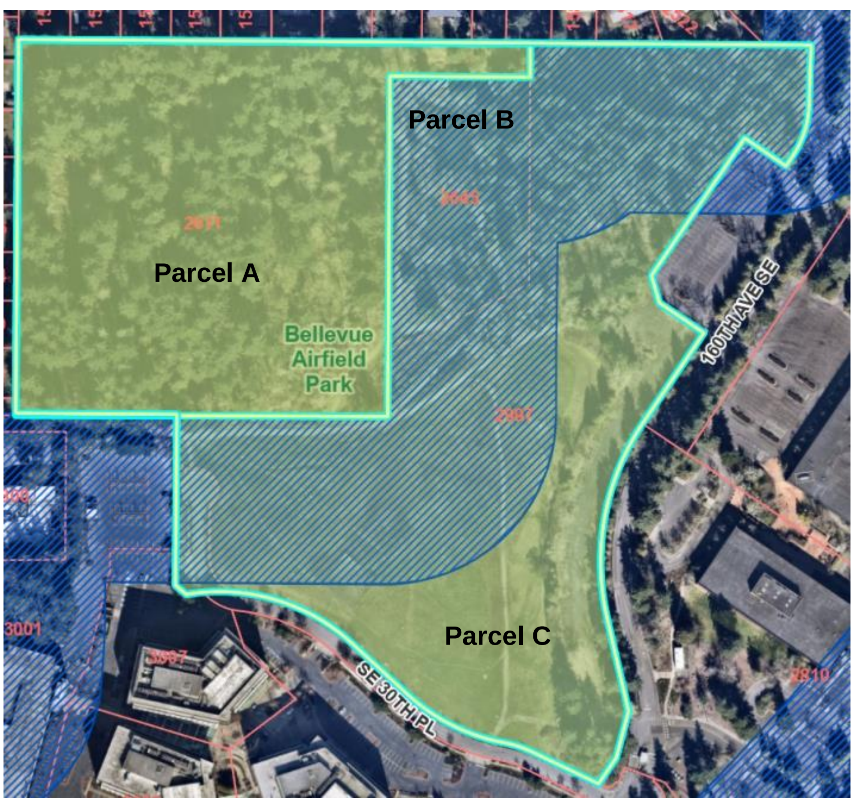

Figure 5b. Single-Family Transition Overlay District

ii. Overlay District

As depicted in **figure 5b**, a portion of Parcel C, and the entirety of Parcel B are situated within the Single-Family Transition Overlay District. The Transition Area Design District provides a buffer between residential uses in a residential land use district and a land use district which permits development of higher intensity.

Based on the concept, a portion of the proposed aquatic center appears to be within the transition overlay boundaries. Design Review is required for applicable development within overlay boundaries and subject to the requirements set forth in LUC 20.25B.

iii. Other Zoning Considerations for Development

The site contains two Concomitant Zoning Agreements CZA) under Bellevue City Ordinances 4971 and 5418. Future development will be required to comply with any applicable restrictions or conditions contained within the CZAs.

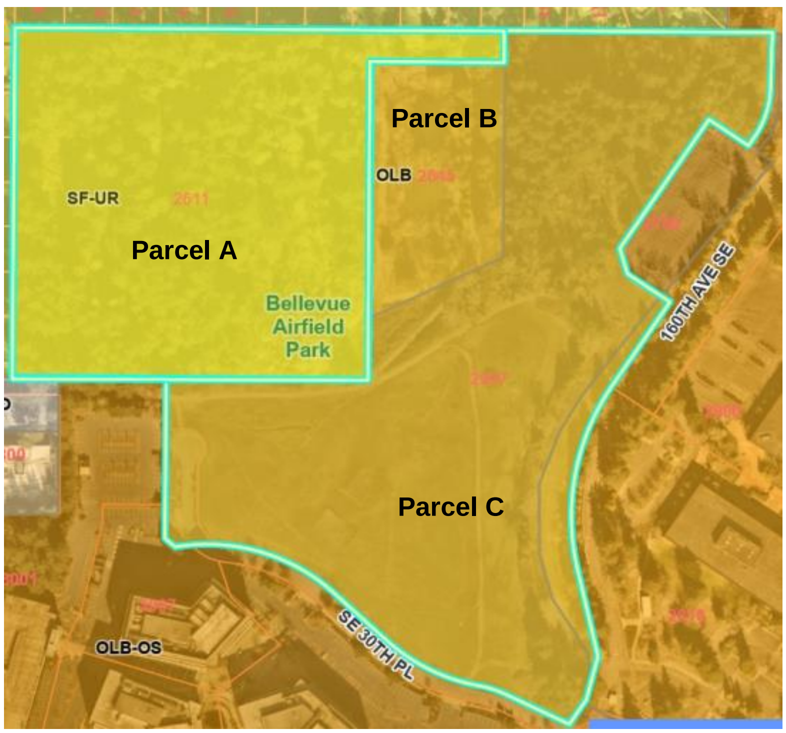

Figure 5c. Comprehensive Plan Designations

iv. Land Use Context

The site contains two different comprehensive plan designations (see **figure 5c).**

SF-UR: Single-Family Urban Residential- A residential land use designation allowing up to 7.5 dwelling units per acre

OLB: Office and Limited Business- A land use designation that provides areas for office, hotels, or motels. Uses such as eating establishments, retail sales, and services are permitted to provide the amenity of shopping and services within easy walking distance to support nearby businesses and employees.

D. Proposed Master Plan Implementation

In addition to the amenities in the existing plan (**figure 1**), the modified concept includes additional on-site parking, picnic facilities/shelter, a basketball court, covered pickleball courts, a splash pad/children's playground, an amphitheater, and an aquatic center. Construction level plans do not exist for this non-project action and are not required at this stage. Specific details about the size of the aquatic center and other improvements are not included. The plan does provide location and footprints for proposed improvements; the aquatic center is envisioned to be a maximum of 160,000 square-feet. The reports, plans, and information provided in support of the SEPA review of this master plan proposal are sufficient to consider impacts resulting from implementation of the master plan (see **figure 2 and attachment 2** for modified concept).

The proposed location of the aquatic center is directly over the landfill area. The aquatic center is one element of the plan. The bulk of the improvements include a proposed play area, basketball/pickleball courts, children's playground/splash pad; listed improvements appear to be wholly located in the south portion of Parcel C and replace the multi-purpose turf fields proposed under the prior master plan. The amphitheater is proposed adjacent to the southern portion of the stormwater ponds and appears to be proposed partially on Parcel C and partially on Parcel B. Lastly, additional parking is proposed to be added on-site where, currently, parking is shared with adjacent landowners via a shared parking agreement. The Parks Department intends to continue to share parking under the existing agreement; based on needs and parking demand analysis at the project level, parking agreement(s) with neighbors could be re-negotiated. See **figure 6** for existing parking easement on the adjacent Advanta site.

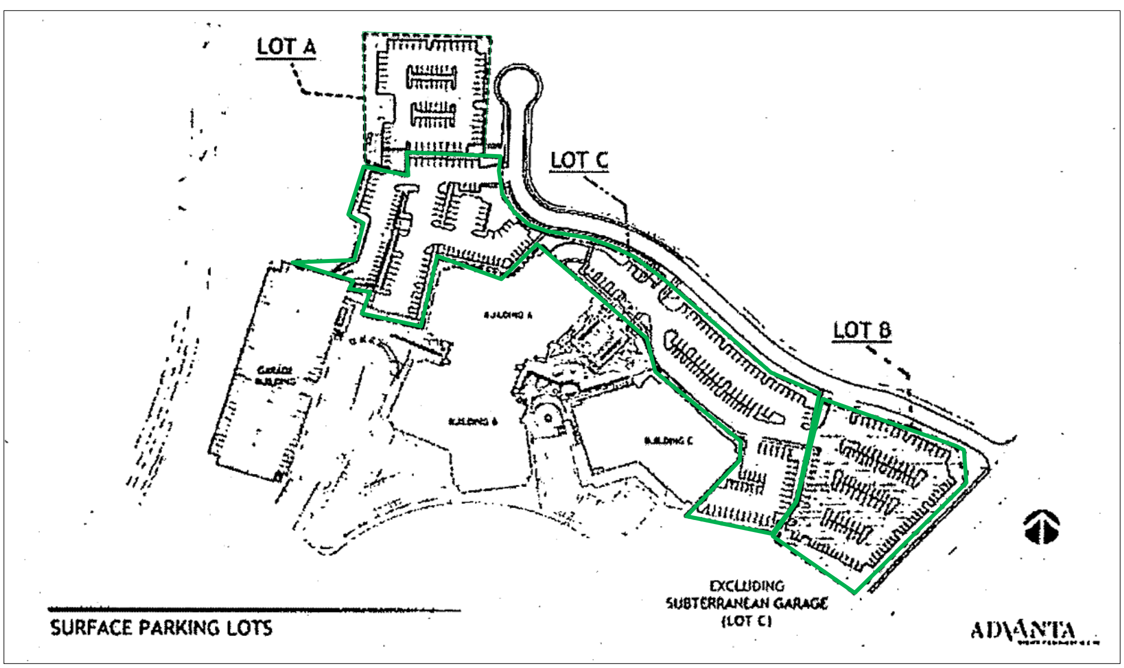

Figure 6. Shared Parking

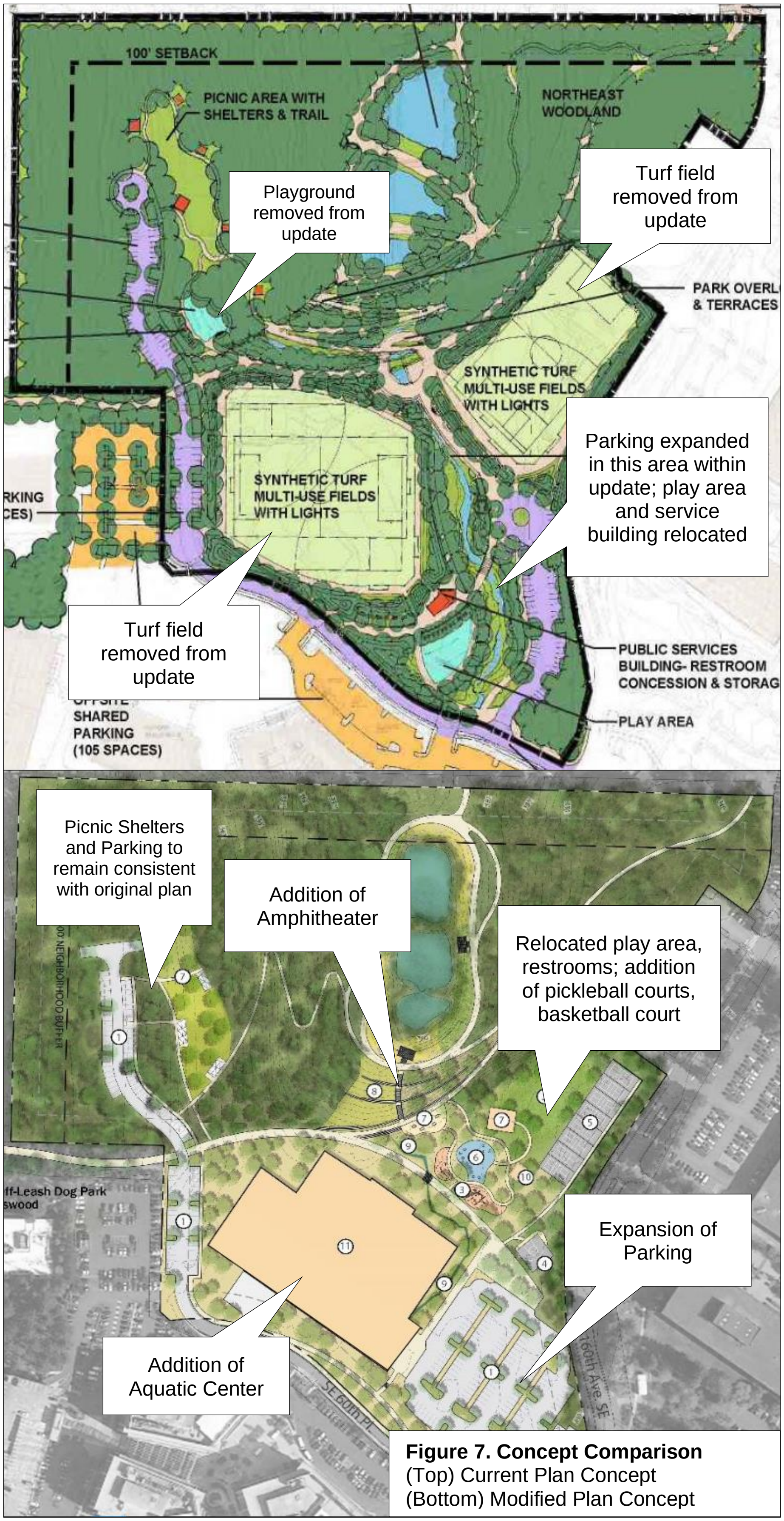

Figure 7. Concept Comparison
(Top) Current Plan Concept
(Bottom) Modified Plan Concept

The parking easement contains provisions for the use of up to 400 parking stalls on the Advanta Site as detailed in **Figure 8** below. See attachment #12, *Parking Lot Easement Agreement*, attached.

Time Period of City Park Patron Easement Area Usage	Maximum City Stall Usage	Stall Location (as depicted on Exhibit C)
Between Midnight and 2:30 PM Weekdays	0 Stalls	Not Applicable
Between 2:30 PM and 5:00 PM Weekdays	50 Stalls	Signed stalls located in Lot A
Between 5:00 PM and 6:00 PM Weekdays	114 Stalls	Signed stalls located in Lot A and Lot B
Between 6:00 PM and Midnight Weekdays	200 Stalls	Signed stalls located in Lot A and Lot B
Weekends & Holidays Between 7:00 AM and Midnight	400 Stalls	Signed stalls located in Lot A, Lot B and Lot C

Figure 8. Shared Parking Easement Details

While no specific stall count is proposed for the existing plan or proposed update, the on-site parking appears to be largely the same between the two plans. In both the existing plan and the proposed update plan, parking is proposed in the western portion of the site in the same location. On the eastern portion of the site, parking is reconfigured and consolidated into the lower southeast corner of the site where, previously, it expanded vertically to the north.

See section II.B for anticipated environmental impacts.

II. State Environmental Policy Act (SEPA)

A. SEPA Process

Environmental review is required for the proposal under the State Environmental Policy Act (SEPA), Chapter 43.21C RCW and Washington Administrative Code (WAC) 197-11, and the City's Environmental Procedures Code, Chapter 22.02 of the Bellevue City Code (BCC). The Environmental Checklist includes reports and information provided below (and in the official file) that are part of the SEPA record and have been considered in this SEPA Determination. The checklist and associated technical reports and studies adequately disclose environmental impacts that can be anticipated at this non-project level of review associated with the proposed Bellevue Airfield Park Master Plan Update. Pursuant to WAC 197-11-060(5), Lead agencies shall determine the appropriate scope and level of detail of environmental review to coincide with meaningful points in their planning and decision-making processes; this provision could result in a phased review of the environmental documents and anticipated impacts. Phased review is appropriate when the sequence is from a non-project document to a document of narrower scope such as a site-specific analysis (see WAC 197-11-060(5)(c)(i)). In the case of this threshold determination, the non-project review is intended to anticipate the impacts of the adopted plan implementation at a high level given the broad scope of work and the lack of detailed, engineered plans. The project level SEPA review will analyze a site/project specific set of plans and evaluate the project impacts based on the narrowed down scope of work.

SEPA Rules require, first, considering whether local, state, or federal requirements and enforcement would adequately mitigate any identified significant adverse impacts (WAC 197-11-158). The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate the potential adverse environmental impacts disclosed in the submitted reports and analysis with one exception. Additional SEPA mitigation measures contained in this mitigated determination of non-significance (MDNS) address the potential adverse environmental impacts that are not clearly mitigated by local code and have no requirement for demonstrating compliance with state or federal requirements.

The environmental checklist with associated technical reports and studies adequately disclose the potential environmental impacts of the proposal and do not identify significant adverse environmental impacts. As conditioned, the impacts that result from the envisioned master plan will be mitigated by both existing City codes and through mitigation required by SEPA substantive authority. The City does not have codes or standards to address landfill cleanup, monitoring, or standards for development over a landfill. Using SEPA substantive authority, any future activity on the site related to plan implantation is conditioned to be in direct coordination with Ecology, to comply with the MTCA and any other requirements of Ecology, and to follow engineering recommendations for development. Without code or standards related to landfill cleanup, remediation, and/or development on such sites, a mitigated determination of non-significance (MDNS) is appropriate to ensure that the identified impacts remain non-significant and do not have potential to increase in significance through compliance with other requirements outside the City's code. Therefore, the City's Environmental Coordinator has determined that the proposal, as conditioned herein, will not result in any significant adverse environmental impacts.

The site has been surveyed and investigated through a number of technical reports and investigations of geotechnical information on wetlands, soil conditions, and environmental issues associated with prior use of the site as a landfill. The following documents were reviewed with the SEPA checklist and are attached and incorporated by reference into this SEPA review.

- Draft Project Startup Summary Report, Prepared by Landau Associates, October 19, 2015
- Boundary & Topographic Survey, Prepared by S. Bratz, November 16, 2011
- Draft Geotechnical Engineering Report, Prepared by Landau Associates, June 2, 2016
- Habitat and Wildlife Assessment, Prepared by The Watershed Company, August 25, 2016
- Landfill Technical Memorandum, Prepared by URS Corporation, June 7, 2011

- Assessment of Existing Landfill Control System, Prepared by SCS Engineers, November 17, 2015
- Arborist Report, Prepared by Tree Solutions Inc. October 28, 2015
- Environmental Covenant, recording no. 20081202001138
- Bellevue Aquatics-Airfield Park Site: Structural Foundation Preliminary Concepts-SEPA, Prepared by Magnusson Klemencic Associates, March 23, 2023
- Storm Drainage-Bellevue Airfield Park, Prepared by Magnusson Klemencic Associates, January 25, 2016
- Parking Lot Easement Agreement, recording no. 20140505001225
- Bellevue Airfield Park – Aquatics Center Programmatic Assessment, Prepared by Transpo Group, May 28, 2024
- Eastgate Landfill: 2023 Annual Summary Report for Operations and Maintenace of the LFG Migration Control Facilities, Prepared by SCS Field Services, March 11, 2024, attached.
- Final Annual Groundwater Monitoring Report, Prepared by Landau Associates, September 25, 2023, attached

B. Environmental Elements

i. Earth, Air, Water

<u>Soil Conditions</u>

The soil fill covering the landfill generally consists of silty, fine to medium sand with fine gravel. The topography of the area over the landfill is generally hummocky with depressions and ridges promoting drainage toward the existing stormwater management facilities. Subsurface conditions present soil fill, landfill solid waste, alluvium/recessional outwash, glacial till, and advance outwash, and lacustrine deposits.

<u>General Soil Conditions and Implications</u>

Loose fill and compressible municipal solid waste (MSW) under much of the subject site has contributed to the uneven settlement of the soils. Settlement is anticipated to continue as the waste in the landfill layer continues to decompose. Settlement is anticipated to continue even after site grades are raised. Considering the expense of excavation and refuse removal, an option in the development of the site over the landfill could take place through engineering measures that would allow development to be placed over the existing landfill with a pile supported foundation. The second option would be to excavate and dispose of on-site material. This option would require approximately 24,700 cubic yards (cy) of cut and approximately 54,600 cy of fill. Non contaminated fill soil would be re-used and the remainder would be imported clean fill. Any development is subject to approval by the Department of Ecology as required by the environmental covenant on the site. (See section 3.8 of *Draft Project Startup Summary* Prepared by Landau Associates, attachment #3)

Gas & Leachate

Landfill leachate is collected by a french drain that was installed in 1983 between the northern portion of the landfill boundary and the southernmost stormwater pond. The water intercepted at the french drain catch basin is connected to and, ultimately treated, via the King County Sanitary Sewer System. At the time of reporting (see section 4.3 of *Draft Project Startup Summary* Prepared by Landau Associates, attachment #3), there was no evidence of landfill contaminants entering Phantom Lake. Site conditions are not anticipated to have changed significantly from the date of this study. In addition, regular groundwater monitoring and Landfill Gas System reporting has been submitted to Ecology. Future proposals for development shall require continued coordination with Ecology as described below under impacts and mitigation. **See section VI for condition of approval related to landfill development.**

While site grading and drainage systems are in place for surface water, precipitation has been allowed to infiltrate the soil cover and penetrate the waste leading to decomposition. This decomposition can lead to the generation of landfill gas and leachate. As stated in section I.B of this report, most of the decomposition has taken place. However, the site continues to generate small amounts of landfill gas.

Gas created due to decomposition of organics in the landfill is a mixture of mostly methane and carbon dioxide, with lesser amounts of water vapor and other non-methane organic compounds (see pg.1 of *Assessment of Existing Landfill Control System,* Prepared by SCS Engineers). The landfill gas system in place requires augmentation with propane to maintain combustion in the flare to burn the methane. While release of gas continues to pose an environmental threat to anyone engaged in activities on the landfill surface, reporting in 2015 measured the methane content to be below the regulatory threshold of 5% by volume which would not be expected to increase given decomposition (see pg.4 of *Assessment of Existing Landfill Control System,* Prepared by SCS Engineers, attachment #8). Despite reasonably low levels of gas continuing to be generated, the landfill gas system shall continue to be monitored to prevent-off site migration as described below under impacts and mitigation. **See section VI for condition of approval related to annual monitoring.**

Annual monitoring of the Landfill Gas System includes an assessment and summary of operations and maintenance (O&M) per year. The most recent report was submitted to The Department of Ecology in 2024 and includes O&M summaries and results for the following in 2023:

- Gas Testing
- LFG Monitoring Wells
- LFG Extraction Wells
- LFG Collection System

- LFG Blower System
- Site Surface Observation

In addition, the report contains operation and running time data for the blower vent stations. This system runs for 12 hours daily (see *Eastgate Landfill: 2023 Annual Summary Report for Operations and Maintenance of the LFG Migration Control Facilities*, Prepared by SCS Field Services, attachment #13). Consistent with earlier reporting, the 2024 O&M report findings indicated the methane to be below 5% by volume. Depending on the test location, some locations detected no methane gas. The report also noted that elevated levels of gas could be anticipated seasonally (fall, winter, and spring months) but levels were maintained at less than 5% in these instances.

Groundwater
Dissolved metals (arsenic, iron, and manganese) have routinely been detected at various testing wells within the groundwater monitoring system. Groundwater reporting is produced on an annual basis and shall continue. During the design phase of the project, it should be determined if any modifications need to be made to the existing groundwater monitoring system. The Environmental Covenant in place requires that Ecology be consulted about site development plans that could potentially affect the landfill management systems in general including the groundwater monitoring network (See section 4.0 of *Draft Project Startup Summary* Prepared by Landau Associates, attachment #3)

Annual Groundwater Reporting describes annual groundwater monitoring events and includes the results of monitoring activities. The most recent report was submitted to the Department of Ecology in 2023 (*Final Annual Groundwater Monitoring Report,* Prepared by Landau Associates, attachment 14). The results of this report were consistent with earlier findings with the chemical analysis yielding results for dissolved metals such as arsenic, manganese, and iron. Groundwater testing and monitoring shall continue to take place on an annual basis; reports shall be submitted to Ecology upon completion as described further below under impacts and mitigation. **See section VI for condition of approval related to annual monitoring.**

Steep Slope Critical Areas
As discussed in section I.B of this report, steep slope critical areas appear to surround the stormwater ponds. At the project level, the slopes will be further studied to understand site conditions that could potentially trigger review under the City's Critical Areas Ordinance. If steep slope critical areas are identified, impacts to regulated steep slope critical areas, the top-of-slope buffer, and/or the toe-of-slope structure setback will be addressed and, if necessary, mitigated by LUC 20.25H.

Mitigating Considerations

Where landfill waste in encountered, the site development designs shall consider engineered measures to address the life safety, environmental and construction risks, including (but are not necessarily limited to) the following:

a. Use piles or other means to support the structures and avoid excavating into the soil cap.
b. Perform ground improvement to address compressible soils
c. Construct water and gas barriers to prevent landfill gas intrusion.
d. Install monitoring systems to verify performance of the protection systems installed; upgrade/update existing systems where necessary.
e. Preload the site to provide a stable base and minimize differential settlement.
f. Isolate and block landfill gas pathways to structures
g. Structures with floor slabs should include a high-quality vapor barriers
h. Interior rooms on the ground floors should be equipped with methane and CO2 monitors.
i. Limit leachate production by installing a geomembrane cover over the landfill
j. Structure design shall include increased resistance to seismic forces
k. Upgrades or replacement of existing LFG system (including groundwater monitoring network) as needed
l. Contaminated soil handling and disposal shall be managed in accordance with the Model Toxics Control Act (MTCA)
m. Placement of disturbances shall prioritize the minimization of impacts to designated critical areas.

See conditions of approval in section VI of this report for conditions related to engineering measures for mitigation of landfill development.

Impacts anticipated under this section are mitigated by the following:

- Landfill Mitigation through Department of Ecology - this master plan and future redevelopment is conditioned under SEPA substantive authority per RCW 43.21C.060 and BCC 22.02.140. The City's Comprehensive Plan policies, including but not limited to the following, provide a basis for the exercise of authority under SEPA to apply the conditions of approval found in section XI and on the issued MDNS to comply with MTCA regulations (ch. WAC 173-340), Water Quality Standards (ch WAC 173-200), and the 2008 recorded environmental covenant. As part of the site redevelopment, MTCA regulations require additional investigation, assessment of feasibility options, and engineering design reports for the site. WAC 173-340-320, 350, 400. Such additional investigation and design and engineering reports documenting modifications to the existing remedy will be submitted to Ecology pursuant to either the site's re-entry into the Voluntary

Cleanup Program, or under an Agreed Order or Consent Decree with Ecology. WAC 173-340-510. **See conditions of this approval in section VI of this report for conditions related to development regulated under MTCA.**

- Clear and Grade Code BCC 23.76 - Clear and Grade permit is required for land disturbances anticipated at the project level for plan implementation.
- Bellevue Environmental Code BCC 22.02 - Subsequent SEPA review to take place at the project level for non-exempt activity.
- Bellevue Building Code (structures) BCC 23.10
- Critical Areas Overlay district (where applicable) LUC 20.25H
- City of Bellevue Comprehensive Plan, Environment Element, Policies: EN-3, EN-21

ii. Animals and Plants

The site conditions related to vegetation and animal habitat fall into five general categories:

- Meadow: This is the second largest section of the proposed park, the location of the capped landfill, and proposed location of the aquatic center. The area is characterized primarily by grasses, compacted soils, footpaths and walking trails. No adverse impacts to habitats associated with species of local importance are anticipated within this area upon plan implementation.
- Scrub-Shrub: Located primarily around the existing pathways, these areas are dominated by Himalayan blackberry. These areas provide cover but very little plant diversity necessary for a healthy habitat. No adverse impacts to habitats associated with species of local importance are anticipated within this area upon plan implementation.
- Mature Coniferous Forest: The largest habitat patch on-site consists of upland second-growth coniferous forest (see parcel A of **Figure 3**) located in the upper northwest portion of the site and totaling approximately 12 acres. This part of the park property is characterized by forested conditions containing mature trees and low to medium understory. There is little access to these areas and thus they are relatively undisturbed which is beneficial to the area as habitat; existing conifer forest stands will be largely retained (see pg. 12 of *Habitat and Wildlife Assessment*, Prepared by The Watershed Company, attachment #6). These areas provide ecological value with important nesting and breeding habitat for birds, small mammals, and amphibians. This area is proposed to maintain the same level of disturbance as the existing adopted plan which places the parking and picnic facilities in the same area, even without the plan update. Retention of trees is mitigated by LUC 20.20.900 and 20.25C, where applicable. Habitats associated with Species of Local Importance are mitigated by LUC 20.25H.
- Deciduous Forest: Patches of deciduous forest are characterized by black cottonwood, red alder, and pacific madrone. The average tree size of 15–19-

inch DBH. The understory is dominated mainly by native shrubs and very little groundcover. The trees could be used by birds for nesting and breeding, but the lack of groundcover doesn't provide ideal cover for small mammals. No adverse impacts to habitats associated with species of local importance are anticipated within this area upon plan implementation.

- Stormwater Ponds: These ponds make up the 3-cell stormwater ponds and are lined with dense wetland plant species. While no species of local importance were documented on site, it is possible that heron use the stormwater ponds to forage. Project level review will require study of the site to identify potential impacts to habitats associated with species of local importance. No adverse impacts to habitats associated with species of local importance are anticipated within this area upon plan implementation.

The Master Plan has considered the potential for habitat areas across the site. The open, landfill area (meadow), will be used for the most intensive recreational activities including the aquatic center, parking, and play area. In this location, these features will have minimum impact on overall habitat. Further, the location of the easternmost synthetic turf field in the existing concept is replaced by a play area and pickleball courts that are consolidated and leave more undisturbed area than with the existing concept.

Subsequent project-level SEPA review, and compliance with the City's Critical Areas Overlay District performance standards (LUC 20.25H), will address site-specific impacts related to preservation of habitat associated with species of local importance. The project level SEPA review may result in the project being subject to the performance standards of the Washington State Department of Fish and Wildlife. With such performance standards, uses and improvements are allowed with protective measures for nests. Through application of the City's development standards, required best management practices, sensitive site planning, and application of mitigation strategies outlined below, environmental impacts will be mitigated, and an improved habitat can be created.

Impacts anticipated under this section are mitigated by the following:

- Bellevue Land Use Code LUC 20.20.900 - Tree Retention and Replacement
- Bellevue Environmental Code BCC 22.02 - Subsequent SEPA review to take place at the project level for non-exempt activity.
- Critical Areas Overlay district LUC.20.25H (where applicable)
- Clear and Grade Code BCC 23.76 (tree protection during construction)

iii. Noise

The potential for noise impacts in the Airfield Park would come from construction of the elements of the Park and from the use of the facilities. Construction hours are regulated per the Bellevue City Code (BCC) 9.18. The sports fields are proposed in the southern part of the site, well away from surrounding single-family neighborhood, though, the site is adjacent to sites that permit residential development. At the moment, the single-family residential neighborhoods are buffered along the north lot lines on Parcel A and Parcel C and the west lot line on Parcel A by substantial native woodland vegetation which is anticipated to remain undisturbed. As indicated on the existing master plan and proposed concept master plans, (see **figure 1** and **figure 2**) the undisturbed area will provide a buffer to these neighborhoods of approximately 100-feet as measured from the property lines. BCC 9.18.20 exempts sounds originating from public parks, playgrounds, and recreation areas during hours of operation. Based on the master plan, any project level development will maintain an extensive area of existing vegetation. Also, City Parks are permitted in all residential zones but any lighted sports and play fields, areas with amplified sound, and any community recreation centers in City parks within single-family zones requires a conditional use permit approval (CUP). The CUP also provides opportunity to condition future permit level proposals if necessary.

Impacts anticipated under this section are mitigated by the following:

- Bellevue Noise Code BCC 9.18
- Bellevue Environmental Code BCC 22.02 - Subsequent SEPA review to take place at the project level for non-exempt activity.

iv. Light/Glare

Light impacts could come primarily from the sports field lighting due to its height, number of fixtures, and potential for light and glare. However, due to location of the field, light fixture design, orientation of the lights, site topography, mature and dense vegetation in the northern part of the site and proposed new park planting, the light levels and potential direct light spill onto the residential areas and streets will be mitigated to not likely impact these areas given distance from park uses, vegetation and light shielding

Potential for glare or light reflection(s) from surfaces that can likely be seen or viewed from various critical points within and around the site is likely. Glare is assessed using sightlines and analysis of proposed lighting. There may be some limited glare impacts generated by the sports field lighting on business and parking areas bordering the Park to the south, southwest and southeast. It is important to note that in the parking areas and office building have little to no nighttime user activity. Single family residential are unlikely to be affected by lighting on buildings as they are located far away from the fields and are screened with significant wooded buffers along the park's perimeter. The parking lots in the southern part of the site will be required to install full cut-off fixtures. Any lighting of parking areas adjacent to forested areas will require special fixtures and use policies beyond the use of simple cut-off fixtures to avoid light spillage into these potential habitat locations pursuant to LUC 20.20.522, Light and Glare Code.

Impacts anticipated under this section are mitigated by the following:

- Bellevue Land Use Code LUC 20.20.522 General Development Requirements
- Bellevue Land Use Code LUC 20.25H Critical Areas Overlay (where applicable)
- Bellevue Environmental Code BCC 22.02 - Subsequent SEPA review to take place at the project level for non-exempt activity.

v. Utilities

Water, Sewer and Storm Utilities

The proposed Master Plan development for the Bellevue Airfield Park has been evaluated on a conceptual basis for the purposes of this application. The size and scope of utility work will require engineering review and approval by City of Bellevue Utilities Department. Water and sewer infrastructure will be extended onto the site through existing property easements or public rights of way to support the park.

Storm water for the site currently drains to the north from on-site stormwater ponds through city stormwater infrastructure before discharging into Phantom Creek and then Phantom Lake. Current stormwater concerns of flooding can be adequately addressed by the stormwater design codes and utility review process.

A preliminary drainage report will be required with future design review applications. Small changes to the site layout may be required to accommodate the utilities after utility engineering is approved. The water, sewer, and storm drainage systems shall be designed per the current City of Bellevue Utility Codes and Utility Engineering Standards in place at the time of a complete application. Utilities Department design review, plan approval, and field inspection is performed under the Utility Developer Extension Agreement (DEA) and Utilities Permit Processes. A water, sewer and storm Developer Extension Agreement will be required for the project, and the Utility Developer Extension Agreement shall be approved, constructed and accepted by the Utility Department prior to granting Temporary Certificate of Occupancy for the new building. Public and private easements for water, sewer and storm water facilities will be required prior to final acceptance of the UE improvements.

The Bellevue Airfield Park development will be required to comply with all current studies, environmental monitoring and agreements in place prior to this development proposal. Impacts anticipated under this section are mitigated by the following:

- Bellevue City Code BCC 24.02 Water Utility Code
- Bellevue City Code BCC 24.04 Sewer Utility Code

- Bellevue City Code BCC 24.06 Storm and Surface Water Utility Code

vi. Transportation

From the South, Airfield Park is accessed from SE Eastgate Way via 160th Avenue SE and SE 30th Place. Sidewalks provide pedestrian access along both sides of these streets. There is a delineated bicycle lane on SE Eastgate Way, and bicycles share the vehicle lanes on 160th Avenue SE and SE 30th Place. The nearest transit stop is approximately three-quarters of a mile away at SE Eastgate Way and 158th Avenue SE.

From the North, Airfield Park is accessed by way of 158th Ave SE, through the residential neighborhood where they pick up a Parks Trail. This access route is only available to pedestrians on foot. The transit stops are located north of the site on SE 24th Street and are approximately ¼ mile from the site.

The Eastgate Transit Center is located approximately one and a half miles to the west.

Planned improvements are set forth within the city's 2029 Transportation Improvement Plan (TIP) which identifies three TIP projects which will provide speed and reliability improvements along frequent transit network corridors. The plan includes improvements between Downtown and Eastgate, and Eastgate and Overlake (see page 3 of *Bellevue Airfield Park-Aquatic Center Programmatic Assessment*, Prepared by Transpo Group, attached # 15). Additionally, as noted in the SEPA Checklist, the city parks department will work with Metro Transit to increase transit service when park use demands additional transit options.

The redevelopment of the park to add tennis courts and an Aquatics Center would be expected to increase the demand for all modes of travel, and the approval of those facilities will require a Transportation Impact Assessment to determine if this would result in operational impacts that would require mitigation measures.

Vehicle trips from those facilities would be expected to increase ranging between 720-910 in the pm peak hour of travel. This would not be expected to result in a need for additional vehicle lane capacity but could require improvements to intersection signage, channelization or signalization. The increased pedestrian and bicycle demand would require an assessment of the current facilities and could result in improvements for pedestrians such as sidewalk widening or street crossing improvements. Bicycle access could be improved by adding separate bicycle facilities to 160th Avenue SE and SE 30th Place. The Transportation Impact Assessment required at the project level will provide the necessary information to determine what level of transportation improvements will be required at that stage.

Additional parking is proposed to be added on-site where, currently, parking is shared with adjacent landowners via a shared parking agreement. The Parks Department intends to continue to share parking under the existing agreement; based on needs and parking demand analysis at the project level, parking agreement(s) with neighbors could be re-negotiated. See **figure 6** for existing parking easement on the adjacent Advanta site.

While no specific stall count is proposed for the existing plan or proposed update, the on-site parking appears to be largely the same between the two plans. In both the existing plan and the proposed update plan, parking is proposed in the western portion of the site in the same location. On the eastern portion of the site, parking is reconfigured and consolidated into the lower southeast corner of the site where, previously, it expanded vertically to the north.

Impacts anticipated under this section are mitigated by the following:

- Bellevue City Code 14.60 Transportation Development Code
- Land Use Code 20.20.590 Parking, circulation, and walkway requirements

vii. Permits Required for Future Development

Following the issuance of this SEPA threshold determination for the Airfield Park Master Plan and after any required subsequent approvals by the City Parks Board and the City Council, the City Parks Department may choose to submit development applications to redevelop the site in accordance with the BAMP in place at the time of development proposal. The following is a general list of permits and approval required should the Parks Department choose to pursue redevelopment of the Airfield Park site:

a. Conditional Use Permit (CUP) LUC 20.30B
b. Design Review LUC 20.25L.040.C
c. Critical Areas Land Use Permit (CALUP) LUC 20.25H
d. Project-Level SEPA Review BCC 22.02
e. Clearing and Grading Permit BCC 23.76
f. Utility Extension BCC 24
g. Building Permit BCC 23.10

III. Summary of Technical Reviews

i. Clearing and Grading

The Clearing and Grading Division of the Development Services Department reviewed the proposal for compliance with Clearing and Grading codes and standards and has approved the application.

ii. Utilities

The Utilities Review section of Development Services Department reviewed the proposal for compliance with Utility codes and standards and has approved the application.

iii. Transportation

The Transportation Review section of Development Services Department reviewed the proposal for compliance with Transportation codes and standards and has approved the application.

iv. Fire

The Fire Department review section of Development Services Department reviewed the proposal for compliance with Fire codes and standards and has approved the application.

IV. Public Notice and Comment

Application Date:	August 2, 2023
Public Notice (500 feet):	November 2, 2023
Minimum Comment Period:	November 16, 2023
Public Meeting:	March 6, 2024

The Notice of Non-Project Action for this project was published in the City of Bellevue Weekly Permit Bulletin and Seattle Times on November 2, 2023. It was mailed to property owners within 500 feet of the project site. The City received a total of 106 public comments from 82 commenters. Comments and concerns were analyzed for issues related to the SEPA review while comments related to the master plan were forwarded to the Parks Department for consideration.

Due to the level of public interest in the Master Plan Update, Development Services hosted a public meeting which took place on March 6, 2024. Notification of the Public Meeting was published and mailed to property owners within 500-feet on February 15, 2024. Aside from staff, approximately 10 members of the public attended the meeting. The public meeting included two minutes of speaking time per attendee. The applicant, The City of Bellevue Parks Department representative, was also in attendance.

Public comments are addressed using the information submitted with the application for the Non-Project Review of the SEPA Application. The purpose of a non-project SEPA Review is to anticipate the impacts of plan implementation at a conceptual level. This review does not involve or require the review of detailed engineering plans, civil plans, architectural plans, structural plans, site plans or other project specific items normally reviewed under a development proposal; the review of such plans would take place under a project level action (development proposal) which would require a project level SEPA Review for non-exempt activity.

SEPA comments were analyzed thematically and could generally be broken down into one of five categories: environmental, utilities, traffic, general and economic. The five categories were placed under two umbrellas: SEPA comments and non-SEPA comments. Non-SEPA comments are not reviewed below but have been forwarded to the Parks Department for consideration. SEPA related comments include comments determined to fit under the following categories: environment, utilities, and traffic. From the SEPA comments, common themes and concerns were extrapolated and summarized below. Following each comment is a City response:

i. **Tree Protection/Tree Preservation**

Concerns about the protection and preservation of on-site trees were voiced by public commenters. Issues noted were primarily related to the impact on the natural character of the site (physically and aesthetically), the removal of the ecological function of the trees, and the loss of their contribution to the biodiversity of the site.

Response:

Section II.B.ii above discusses probable impacts of tree removal and how proposed tree removal is mitigated. At the project level, the Parks Department will be required to submit various plans and reports such as a tree inventory, tree removal plan, arborist reporting, and tree retention calculations. At the time of this non-project SEPA review, the number of trees proposed to be removed is unknown, however, the conceptual plan locates the bulk of the proposed development on the portion of the site that contains few trees. Tree removal would be anticipated to be minimal relative to the number of trees on site. All tree removal would be required to meet any retention/replacement requirements in place at the time of project level review.

ii. **Animal Habitat, Wildlife Protection and Open/Green spaces**

Concerns about potential impacts to animal habitat due to disturbances to the natural environment were voiced by commenters. Specifically noted were potential impacts to migratory birds, and animals observed or anticipated to use the site for foraging, breeding, roosting, or shelter. Comments under this general topic also include the loss of the meadow, open space, and green space and their ecological value/function.

Response:

Section II.B.ii discusses probable impacts to animal habitat and the ecological function of green spaces/open spaces. As stated above in section II.B.ii, the bulk of the development is proposed within the most significantly degraded area of the site. The proposed development of the site avoids vegetated areas of the site and maintains their function without being disturbed while also allowing development of the site within the degraded area.

Large portions of the site would maintain their function while other portions of the site would be enhanced by the removal of invasive species and the planting of native species (specifically in designated [and suspected] critical areas) which require more study at the project level.

Based on the habitat assessment, if future, project-level, studies identify habitats associated with species of local importance, the project will be required to comply with requirements set forth by the Washington State Department of Fish and Wildlife in addition to the City's Critical Areas Ordinance. The presence of such habitat would not preclude development of the site but factors for avoidance and minimization would be considered.

iii. Impacts to Biodiversity and Ecological Function contributing to Climate Change

Concerns about tree removal and site development contributing to an increased carbon footprint and an increased impact on climate change.

Response: There is no impact from this proposal that indicates significant adverse environmental impact related to climate change due to implementation of the concept proposed master plan update. Review of the existing plan anticipates no adverse impacts and additional improvements are not anticipated to make a meaningful difference impact-wise than the currently adopted plan. The aquatic center and other improvements are located primarily in the meadow, tree removal is anticipated to be minimal relative to the trees on site, and improvements/upgrades to the landfill gas system are anticipated to improve conditions related to the release of gases that contribute to climate change. The checklist does not indicate increased energy use or traffic to the site, but these items will be studied further at the project level. Specific impacts of project-level plans are not addressed within this non-project SEPA review.

iv. Noise Pollution

Concerns about general noise pollution with the increased use of the site; specific concerns are primarily related to the pickleball courts.

Response:
Section II.B.iii above addresses probable noise pollution impacts. Sounds originating from public parks, playgrounds, and recreation areas are exempt from the provisions of BCC 9.18 during the hours the parks, playgrounds or recreation areas are open for public use. Further, noise from the proposed park improvements is not anticipated to be a significant environmental impact.

The City of Bellevue Parks Department has received the comments and concerns of the public related to noise. While the exemption in place allows exceptions for park uses, Parks is aware of the concern and will address potential noise through design and attenuation measures, where possible, at the project level.

v. Light Pollution

Concerns about light pollution are related to light pollution spilling onto neighboring residential neighborhoods and the impacts of light pollution to the animals living on site.

Response:
Section II.B.iv addresses probable light pollution and glare. At the project level,

development proposals will be required to submit a detailed lighting plan. The lighting plan will show the location of proposed illumination along with fixture type. Additionally, the applicant will be required to demonstrate compliance with code requirements related to light and glare.

Areas of the site to remain largely undisturbed include much of the mature coniferous forest in the northwest corner. Single family residential uses are located north and west of the site. These areas are buffered by tall, mature trees and separated by dense vegetation. Adverse impacts to the neighboring single-family uses are mitigated by the Light/Glare Land Use Code and the Critical Areas Code, where applicable.

At the project level design phase, the applicant may consider taking proactive steps to further mitigate impacts to future residential development where such uses are allowed. This would include possible residential development to the east at the former Boeing Campus.

vi. Critical Areas (Wetlands, Slopes, Seismic Hazard Areas)

Concerns related to disturbances to any designated critical areas on the site associated with site development.

Response:

Future improvements under the updated plan will require project level permits and compliance with the City's critical areas ordinance. There are no significant adverse environmental impacts that can reasonably be anticipated based on the implementation of the BAPMP as the City's current codes regulate impacts that can be anticipated. Disturbances of critical areas will be required to be mitigated if they can't be minimized or avoided altogether.

vii. Differential Settling/Unstable Soils

Concerns about the soil settling that has taken place on site and continued soil settling with development/disturbances.

Response:

Settling is discussed above in section III.B. Settling takes place as the landfill layer decomposes resulting in the compression of the waste layer. Settling of the site is expected and cannot be avoided or prevented but it can be mitigated.

General ground improvements to the site such as preloading will take place over long periods of time to provide a stable base for development. Further, engineering practices will be employed to design a building which will sit atop a pile supported foundation as opposed to excavating and removing contaminated soils.

It is anticipated that development along with mitigating factors, such as pre-loading, will improve the site conditions with respect to settling.

All land disturbances require express written permission from the Department of Ecology pursuant to the Amended Environmental Covenant.

viii. Risks Associated with Development over the Landfill

Concerns about exposure to toxins that could be released into the air, water, or soil due to land disturbances in the vicinity of the landfill.

Response:

Section II.B.i addresses probable impacts and mitigation recommendations for development over the landfill.

At the project level, Ecology will be engaged to ensure compliance under MTCA regulations. The Parks Department will work with Ecology to ensure compliance with MTCA requirements for cleanup and/or management of the former landfill area before, during, and after site development (ch. 173-340 WAC).

ix. Land Use Covenant

Concerns about violation of the Amended Environmental Covenant.

Response:

The provisions set forth in the Amended Environmental Covenant are a roadmap to what would be required for future development of the site. Public comments reference Section 1 of the recorded Environmental Covenant (see section 1, *Environmental Covenant,* attachment #10) which states "*Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil or refuse that was contained as a part of the Remedial Action, or create a new exposure pathway, is prohibited.*

Sub-section 10 of Section 1 states the following: "*Nothing in this Covenant is intended to preclude Ecology from authorizing, as appropriate, specific uses and activities under section 3 and 6 below."*

Section 3 of the covenant states the following: "*Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology."*

Section 6 of the covenant states the following: "*Owners must notify and obtain approval from Ecology prior to any use of the Property inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and* *comment*."

This Environmental Covenant is in place to require that any improvements on the site are subject to Ecology approval. A plan for use of land subject to a covenant is not a violation of the covenant but rather an opportunity for Ecology to require site clean-up or to ensure that any development does not pose a hazard to the landfill or that the landfill does not impact the surrounding community adversely.

The City has engaged with Ecology in early conversations to understand requirements of developing the site but the limited information available at this conceptual level constrains these conversations. As a next step in the process, Ecology will receive this threshold determination and will have the opportunity to comment on the plan update and view materials that have been submitted under the non-project SEPA Review.

Currently, Ecology's site-specific requirements have yet to be determined. Written approval from Ecology could include future development with proper mitigation, remediation, engineering, and reporting, however, these provisions would not come into play until project level review in tandem with the project level SEPA review.

Ecology will work with the City Parks Department to determine how best to manage the former landfill area before, during, and after site development, in accordance with MTCA regulations (ch. 173-340 WAC).

x. Increase in Traffic Congestion/Traffic Impact

Concerns about the increase of traffic to the site on the surrounding neighborhoods.

<u>Response</u>**:**

There will be an increase in vehicle trips to the site with the implementation of the master plan, which will be evaluated with the project level proposals**.** Any additional congestion caused by the addition of new facilities to the site would require mitigation at that time as required by BCC 14.60 Transportation Development Code. A Transportation Impact Assessment will prepared to analyze traffic operations and determine if improvements are needed.

xi. Poor Access and Transit Availability to the site

Concerns about the lack of publicly available transit options near the site, specifically, bus stops.

<u>Response</u>**:**

Transit stops are discussed in section II.B.VI of this report. From the North, Airfield Park is accessed by way of 158th Ave SE, through the residential neighborhood where they pick up a Parks Trail. This access route is only available to pedestrians on foot. The transit stops are located north of the site on SE 24th Street and are approximately ¼ mile from the site.

The Eastgate Transit Center is located approximately one and a half miles to the west.

The demand for increased available public transit will continue to be monitored and reviewed in more detail at the project level.

xii. Parking issues/new parking unnecessary

Concerns about the addition of parking on-site are related to the amount of space paved (impervious) surface parking areas would create.

Response**:**

Impervious surface for the site would be evaluated at the project level, but generally, allowances for impervious surface are between 45%-60% depending on the zoning designation. The project level proposal would need to demonstrate compliance to maximum impervious surface thresholds in place at the time of permitting.

The addition of impervious surface will also undergo utilities review. Future construction application(s) will require a drainage report; additionally, the project will be required to comply with applicable storm and surface water codes/standards.

Currently, parking for the site is created via shared parking agreement and located on the Advanta site to the south. There is no requirement for future uses to continue using off-site parking and there is no requirement to preclude the addition of on-site parking. On-site parking is permitted assuming the impervious surface thresholds are not exceeded. The shared parking agreement will stay in place beyond development and the need for off-site parking will be re-evaluated based on necessity.

The parking stall quantity is also a consideration. At the project level, the proposed use will undergo a parking demand analysis to understand how much parking is necessary for the uses on site. There is no prescriptive parking requirement for the proposed uses so the project-level proposal would be reviewed as an “unspecified” use. In this instance, the Land Use Director establishes the minimum required parking after review of supporting documents including a parking demand analysis prepared by a qualified professional.

xiii. Stormwater impacts/Flooding

Concerns about isolated flooding due to the settling taking place over the landfill. Also, concerns about stormwater runoff and the potential for contaminated runoff to impact the Phantom Creek Drainage basin.

Response**:**

Isolated areas of flooding due to settling are discussed above in sub-section vii of this section. Settling is due to the decomposition of the landfill waste layer and will cannot be avoided, however, this condition can be mitigated and improved by preloading the site, as conditioned.

Anticipated stormwater impacts are discussed in section II.B.v of this report.

Technical reporting submitted by the applicant indicated no evidence of landfill contaminants entering the Phantom Lake Drainage Basin. See “Gas and Leachate” discussion in section II.B.i of this report.

At the project level, detailed engineering plans and a drainage report will be required.

xiv. General Comments about SEPA Materials

Concerns about the SEPA materials were related to age of reporting, accuracy, thoroughness, and scope of work relative to the plan update.

Specific concerns about materials/reports were as follows:

- Materials and Reporting are too old to understand environmental impacts
- The reporting submitted was for the existing BAPMP concept plan and did not thoroughly address environmental concerns related to the aquatic center
- The reporting submitted does not adequately address anticipated impacts

Response:

Extensive study of the existing site conditions has taken place over the last 15-20 years in addition to required monitoring and reporting with respect to the Landfill Gas System. The complete environmental record is listed above in section II.A of this report and also available to the public by making a public records request.

In reviewing a conceptual proposal for a non-project action, the ability to anticipate possible adverse impacts is largely dependent on the site conditions and conceptual development plans. SEPA review of a non-project action generally does not include the review of detailed engineering plans, site plans, and project-specific reporting. Instead, the site must be evaluated comprehensively while anticipating impacts that could be expected and are probable due to plan implantation.

In this case, the age of the materials would not have a major impact on the evaluation of probable impacts because the natural condition of the site, especially in areas of little disturbance, are not anticipated to change significantly over long periods of time without major development activity taking place. For instance, the area of mature forest in the northwest portion of the site is assumed to be virtually untouched by human activity; it would be reasonable to conclude that the conditions remain largely the same as they did in 2015 when the Arborist Report was prepared. In addition, the mitigation for the landfill was built to control and mitigate impacts from the landfill over time. No development has occurred and the landfill continues to be monitored which means that the reports prepared are still relevant. Further, the most recent groundwater monitoring and LFG reports indicate results consistent with earlier reporting.

This report has noted that further study will occur at the project level when a more detailed site design is created; this would be the appropriate time to determine site/project specific requirements that contain more information about specific site conditions, impacts, mitigation measures, and code compliance.

While materials submitted for the 2011 BAPMP SEPA Review did not anticipate the placement of the Aquatic Center, subsequent reporting such as *Draft Project Startup Summary Report*, Prepared by Landau Associates, attachment #3 and *Bellevue Aquatics-Airfield Park Site: Structural Foundation Preliminary Concepts- SEPA*, Prepared by Magnusson Klemencic Associates, attachment #11 contemplate structure placement generally (within the former) and provide a baseline for considerations for the structural integrity of an aquatic center (within the latter). The information contained in these reports is sufficient to surmise the potential adverse impacts for this current non-project SEPA review.

V. Conclusion and Determination

For the proposed non-project action, environmental review indicates no probability of significant adverse environmental impacts, as mitigated and conditioned below, therefore, issuance of a Mitigated Determination of Non-Significance (MDNS) pursuant to WAC 197-11-340, WAC 197-11-350 and Bellevue City Code 22.02.034 is appropriate. The SEPA Environmental Coordinator does hereby approve a Mitigated Determination of Non-Significance.

Other adverse impacts that are less than significant may be mitigated pursuant Bellevue City Code 22.02.140, RCW 43.21C.060, and WAC 197-11-660.

VI. Conditions of Approval

The conditions of approval below are issued under the provisions of RCW 43.21C.060, WAC 197-11-660, and BCC 22.02.140. Exercise of substantive authority under SEPA allows any proposal to be conditioned on the basis of policies and plans in place as adopted by the Bellevue City Council. Each condition is followed by the listed policy and/or plan authority.

1. **Landfill Development**
   Redevelopment shall comply with MTCA regulations (ch. 173-340 WAC), Water Quality Standards (ch 173-200 WAC), and the 2008 recorded Environmental Covenant. As part of the site redevelopment, MTCA regulations require additional investigation, assessment of feasibility options, and engineering design reports for the site. Ch. 173-340-320, 350, 400 WAC. Such additional investigation and design and engineering reports documenting modifications to the existing remedy will be submitted to Ecology pursuant to either the site's re-entry into the Voluntary Cleanup Program, or under an Agreed Order or Consent Decree with Ecology. Ch. 173-340-510 WAC

   Authority:

   <u>Amended Land Use Covenant</u>
   Recording #: 20081202001138

   <u>Model Toxics Control Act</u>
   Ch. 70.105D RCW, ch 173-340 WAC

   <u>City of Bellevue Comprehensive Plan:</u>
   - Environment Element
     Policies: EN-3, EN-14

2. **Engineering Measures for Mitigation of Landfill Development**
   Where landfill waste in encountered, the site development designs shall consider engineered measures to address the life safety, environmental and construction risks:

   a. Use piles or other means to support the structures and avoid excavating into the soil cap.
   b. Perform ground improvement to address compressible soils
   c. Construct water and gas barriers to prevent landfill gas intrusion.
   d. Install monitoring systems to verify performance of the protection systems installed; upgrade/update existing systems where necessary.
   e. Preload the site to provide a stable base and minimize differential settlement.
   f. Isolate and block landfill gas pathways to structures
   g. Structures with floor slabs should include a high-quality vapor barriers
   h. Interior rooms on the ground floors should be equipped with methane and CO2 monitors.
   i. Limit leachate production by installing a geomembrane cover over the landfill
   j. Structure design should include increased resistance to seismic forces

k. Upgrades or replacement of existing LFG system (including groundwater monitoring network) as needed
l. Contaminated soil handling and disposal shall be managed in accordance with the Model Toxics Control Act (MTCA)
m. Placement of disturbances shall prioritize the minimization of impacts to designated critical areas.

Authority:

City of Bellevue Comprehensive Plan:

- Environment Element
  Policies: EN-3, EN-21

3. Annual Testing and Monitoring

Testing and monitoring of both the Groundwater and Landfill Gas System shall take place on an annual basis. Reporting shall be submitted to Ecology upon completion of such testing and monitoring in the form of reporting.

Authority:

City of Bellevue Comprehensive Plan:

- Environment Element
  Policies: EN-21, EN-25, EN-50

Reviewed by Leticia Wallgren
Senior Land Use Planner

LWallgren

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal,** even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for non-project proposals

For non-project proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

LW reviewed between
February 6, 2024 and
February 23, 2024

A. Background [Find help answering background questions]

1. Name of proposed project, if applicable:

Bellevue Airfield Park Master Plan

2. Name of applicant:

City of Bellevue Parks and Community Services Department

3. Address and phone number of applicant and contact person:

Pam Fehrman
City of Bellevue Parks & Community Services
450 110th Avenue NE
Bellevue, WA 98009
(425) 452-4326
PFehrman@bellevuewa.gov

4. Date checklist prepared:

08/1/2023 Checklist originally prepared on 08/01/23; revised in October 2023; revised checklist submitted October 26, 2023

5. Agency requesting checklist:

City of Bellevue – Development Services Department

6. Proposed timing or schedule (including phasing, if applicable):

Adoption of the updated Bellevue Airfield Park Master Plan (Master Plan) by City Council is planned for Winter 2023, pending SEPA approval.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

This proposal is for a non-project action that establishes a conceptual plan for future phased park design and permitting (including project-level SEPA). This checklist focuses on the potential environmental impacts of adopting the Master Plan. The Master Plan is a conceptual, program document, It does not contain detailed survey, construction, engineering, architectural, or environmental information. This checklist assesses the probable broader environmental impacts of implementing the Master Plan.

This conceptual park master plan will guide the long-term phased design, permitting and development of the Park. After a master plan is adopted by City council and when park development funding, phasing, design, and engineering has occurred to support construction, project-level SEPA environmental analyses and review will be conducted for each phase of development.

Additional environmental analysis will be needed and will be required under SEPA review for future project actions; specific environmental impacts will be considered along with the specific impacts that will be anticipated once the park design is in place.

Pursuant to WAC 197.11.220(2)(b), in making a threshold determination, the responsible official should determine whether environmental analysis would be more useful or appropriate in the future in which case, the agency shall commit to timely, subsequent environmental review; subsequent SEPA reviews for project action(s) generally take place on the same timeline as the underlying permit.

LW reviewed between February 6, 2024 and February 23, 2024

8. **List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.**

- *Landfill Technical Memorandum (URS 2011)*
- *Project Startup Summary Report (Draft) – Bellevue Airfield Park Development (Landau Associates 2015)* wetland delineation in this report
- *Geotechnical Engineering Report (Draft) – Bellevue Airfield Park Development (Landau Associates 2016)*
- *Assessment of Existing Landfill Gas Control System – Bellevue Airfield Park (SCS Engineers 2015)*
- *Storm Drainage – Bellevue Airfield Park (Magnusson Klemencic Associates 2016)*
- *Structural Foundation Narrative (Magnusson Klemencic Associates 2023)*
- *Habitat Assessment – Bellevue Airfield Park (The Watershed Company 2016)*
- *Arborist Report – Bellevue Airfield Park (Tree Solutions, Inc. 2015)*
- *Trip Generation Parking Demand Summary (Transpo Group 2022)*
- *Parking Lot Easement Agreement (City of Bellevue/Advanta Office Holdings, LLC 2014)*
- *Environmental Covenant (Washington State Department of Ecology 2008)*

9. **Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.**

No applications are currently pending approval**.**

10. **List any government approvals or permits that will be needed for your proposal, if known.**

A park master plan will be adopted by the Bellevue City Council (Council). Applications for permits and approvals required for implementation of the master plan will be submitted as the design of the park elements are developed. The property is subject to a 2008 Environmental Covenant requiring Department of Ecology (Ecology) review of development activities at the site. Development overview, permit and construction inspection will involve many agencies including Washington State Department of Ecology - Waste and Toxics Division, King County Clean Air and Public Health, and the City of Bellevue

This non-project action does not require government approvals or permits. Future project actions will require applicable state/federal agency permits. Future development permits will include, at minimum, CUP, ADR, CALUP, Project SEPA Review, C&G, Building Permit(s), Utility Extension.

11. **Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)**

The Bellevue Airfield Park Master Plan is a programmatic, conceptual proposal that sketches the design and operational components of a new community park (see Attachment A: Bellevue Airfield Park Proposed Site Plan). A master plan for this project has previously undergone SEPA review 11-115376-LM and was adopted by the Council in 2012, but has since been updated with several changes to facilities and location elements.

LW reviewed between February 6, 2024 and February 23, 2024

The proposed park site is comprised of three City-owned parcels totaling 27.5 acres. The City previously purchased these properties from The Boeing Company (Boeing) and the Bellevue School District with the intent of developing an active-use community park. The following list of programmatic elements and/or physical improvements are proposed for this Park Master Plan:

- Accessible picnic facilities, including shelters and parking, in the wooded northwest area;
- Improved trail connections to nearby neighborhoods, and new pathways and trails throughout the park;
- An aquatic facility of unknown size, potentially up to 130,000-square-foot aquatic center in the southwest part of the open meadow/former landfill area;
- Large parking area in the southeast corner of the property;

Parking currently under shared parking agreement

- Eight covered and lit pickleball courts along the eastern edge of the property;
- Restrooms, children's playgrounds/splash pad, multi-use flex field, and additional picnic shelters adjacent to proposed pickleball courts;
- Outdoor full-length basketball court south of the proposed pickleball courts;
- A terraced lawn on the sloped area south of the stormwater ponds;
- Additional stormwater conveyance area south of proposed terraced lawn;
- Vehicle access is limited to Southeast 30th Place via 160th Avenue Southeast, and 100-foot-wide buffers are maintained from the nearby residential property;
- Best practices for sustainable building and land management including low impact development techniques will be incorporated.

New amenities to the plan include on-site parking, basketball court, pickelball courts, splash pad, amphitheater, and aquatic center; all other amenities are proposed within the existing plan

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The proposal site is located within the Eastgate subarea of Bellevue adjacent to the I-90 Business Park, at 2997 160th Avenue Southeast and in Section 11 of Township 24N, Range 05E of the Public Land Survey System (PLSS). Parcel numbers 112405 -9123, -9105, and -9060.

The site is adjacent to the former Boeing Campus and located just south of Phantom Lake. The site has three different zoning designations: OLB, OLB-OS, and R-7.5; in addition a portion of the site lies within the single family transition zone.

LW reviewed between February 6, 2024 and February 23, 2024

The phantom creek watershed contains elements that are within or connected to a floodplain and shoreline jurisdiction. Further project actions shall anticipate impacts to waters of the state and any federally recognized jurisdictional waters. See pg 2-1 of Startup Summary

B. Environmental Elements

1. Earth [Find help answering earth questions]

a. General description of the site:

The Bellevue Airfield Park site is situated in Bellevue's Phantom Creek watershed; this subbasin is located within the West Lake Sammamish drainage basin of the Cedar-Sammamish Watershed (Water Resource Inventory Area [WRIA] 8).

The landscape surrounding the study site is typical of an urban setting. Office parks are present immediately adjacent to the Bellevue Airfield Park site; office facilities are located to the east and the south. Single family residences are also present to the northwest. Parks and natural open spaces are present in the vicinity as well. Phantom Lake is located approximately 1,200 feet north of the study area; Lake Sammamish is located about 4,100 feet to the east. Robinswood Park, Spiritridge Park, Lake Hills Greenbelt Park, and Weowna Beach Park are all within 0.5 mile of the site (The Watershed Company 2016, Section 3.1). Possible future residential development to the east in northern portion of former Boeing Campus

Circle or highlight one: Flat, rolling, hilly, steep slopes, mountainous, other:

The southern portion of the site, which includes the former landfill area, is relatively flat, with gradual slopes for proper drainage. The northern portion of the property is forested with a well-developed canopy of trees and dense understory with some areas of steep slopes. The central north parcel contains a three-celled stormwater quality/quantity management system.

Further exploration of Critical Areas (steep slopes) is needed for future project actions depending on location of structures or disturbances. Further analysis should identify steep slope critical areas, their associated buffers/structure setbacks.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the property is approximately 45 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The undeveloped, natural areas in the northern portion of the site are underlain with the following soils: Arents, Everett material (An); Arents, Alderwood material 6 to 15 percent slopes (Amc); Kitsap silt loam, 2 to 8 percent slopes (KpB); Everett gravelly sandy loam, 5 to 15 percent slopes (EvC). No prime farmland is located within the project site. soil analysis available in section 2 of Geotech Report and Section 3 of Project Startup Summary

LW reviewed between February 6, 2024 and February 23, 2024

The former Eastgate Landfill was operated by King County as a municipal solid waste landfill from 1951 until it was closed and capped with a soil cover in 1964 (Landau Associates 2015, Section 1.1). The landfill cover soils are described as silty sand with gravel and cobbles. These soils are susceptible to disturbance, erosion, and are difficult to work with when wet. The waste in the landfilled area is a very poor material for use in construction. It was placed in layers and likely has multiple zones of perched water. It is composed of heterogenous materials including large chunks of concrete, logs, stumps, tires, and other non-decomposable garbage. It is compressible and subject to differential, uneven settlement from loading (Landau Associates 2015, Section 3.0; URS 2011, Section 2.2). Construction of the aquatic center above the former landfill would require that the existing soil cap and landfill materials be removed, disposed of, and the cap repaired in kind (Magnusson Klemencic Associates 2023, page 2).

Technical reporting submitted contains analysis of existing soil conditions and an analysis of soil conditions in the landfill area. While many of the technical reports are 8-10 years old, conditions such as soils aren't anticipated to change meaningfully within such a period of time enough to warrant a new analysis. Specific impacts of specific uses will require further study and recommendation at the project level. Recommendations and further soil analysis within landfill area are located in many of the materials provided including the Landfill Technical Memorandum, The Geotechnical Report, the Project Startup Summary, and the Structural Foundation narrative.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

The composition of landfill material and cover soils contribute to unstable soil conditions at the site. Design of the proposed improvements will need to consider the presence of compressible landfill deposits which may require: 1) preloading/surcharging the proposed improvement area to pre-consolidate foundation soils prior to construction, and/or 2) using ground improvement techniques (e.g., drilled shafts, piles, stone columns, Geopiers, etc.) to reduce the settlement potential of the onsite soils. (Landau Associates 2016, Section 3.0). Settlement due to loose fill and waste under the surface appear to be the primary source of instability see section 3-7 of the Geotechnical Report

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Construction of various elements within the Master Plan will require both the excavation and disposal of onsite material, including waste material from the landfill, and the import of clean fill. It is estimated that construction will require approximately 24,700 cubic yards (cy) of cut and approximately 54,600 cy of fill. It is anticipated that cut of non-contaminated soils will be reused on site for fill, and the remaining required fill will be imported. Cut/fill quantities will be further refined in the design phase of the project. General site preparation would include clearing and grubbing, soil amendments for new planting areas, grading, and pre-loading the landfill area with clean fill to provide the subgrade and structural stability needed for planned park facilities. Project-level SEPA

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Implementation of the proposed Master Plan is anticipated to generate minimal erosion from construction activities. Prior to any construction, a temporary erosion and sediment control (TESC) plan, created as part of the Best Management Practices (BMP/Drainage Plan) for the project would be submitted to the City of Bellevue Development Services for approval prior to any construction activities. The type of BMPs that may be used for erosion control include the use of geotextile barriers (silt barriers), straw barriers, controlled surface grading, and storm drain inlet protection. Disturbed areas will be re-vegetated as soon as possible following construction. See note below about wet weather earthwork

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 27 percent of the site would be covered with impervious surfaces with implementation of the proposed Master Plan Impervious coverage allowed at 55%-60% in the zones identified on page 4 of this checklist

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

Upon implementation of any phase of Master Plan construction, contractors would be required to use Best Management Practices (BMPs) and implement a temporary erosion and sediment control (TESC) plan to control potential erosion caused by earth disturbances. Turbidity monitoring and reporting to the City of Bellevue and Ecology will be required. The types of BMPs that may be used include the use of geotextile barriers, straw barriers, controlled surface grading, and storm drain inlet protection. Disturbed areas would be re-vegetated as soon as possible following construction.

Wet weather earthwork could increase the incidence of erosion; TESC, BMPs, storm plan and any other mechanism to analyze erosion will be required under the Clear and Grade Permit at the project level.

LW reviewed between February 6, 2024 and February 23, 2024

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

This non-project action would not result in any changes in emission. There may be a small increase in exhaust emissions from construction vehicles and equipment and a temporary increase in dust due to earthwork during construction of the Master Plan elements. Although the Eastgate landfill was closed in 1964, it still produces small amounts of landfill gas (LFG), including methane (SCS Engineers 2015, page 1). Measures to manage and improve LFG will be required during construction and operation of the project.

No direct impacts anticipated under the non-project action; future development will likely require upgrade/replacement of the existing LFG control system to mitigate potential adverse impacts. No impacts are anticipated above and beyond current levels of landfill gas migration.

An increase in vehicular emissions associated with the increased visits to the new community park is anticipated but not likely significant.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no offsite sources of emissions or odors that would affect the adoption or implementation of the Bellevue Airfield Park Master Plan.

Aquatic complex should identify how the use of chemicals used for pool maintenance may impact the surrounding area for odor and how it should be mitigated. This would take place at the project level

c. Proposed measures to reduce or control emissions or other impacts to air, if any.

Currently LFG is managed by an onsite LFG control system (SCS Engineers 2015, page 2). The LFG system consists of collection points (wells) located throughout the landfill. The gas extraction wells are installed in the refuse mass and connected to a conveyance pipe system, which is connected to blowers. The blowers induce a vacuum on the pipeline, which pulls LFG from the extraction wells through the pipeline to the blowers. The blowers push the LFG through activated carbon vessels for treatment before discharging the LFG to the atmosphere. The activated carbon vessels absorb harmful trace compounds from the LFG.

LFG Control System is anticipated to be upgraded; continued monitoring is required

Future development of the site under the Master Plan would include a similar system for managing LFG. Measures to mitigate for vehicular emissions, if any, would be developed under a separate, project-specific SEPA review.

Emissions or impacts to air due to chemicals used in pools and stored on site should be addressed in the project level SEPA review

3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There is a constructed stormwater pond system located in the north section of the site that receives stormwater runoff from both offsite and onsite areas. The system is owned and maintained by the City of Bellevue – Utilities. Stormwater from the system is conveyed in a 24-inch pipe/vault, which then discharges to a 36-inch pipe for approximately 0.25 mile north, discharges into an open channel, and then flows into Phantom Lake.

LW reviewed between February 6, 2024 and February 23, 2024

The description of the wetland(s) in this checklists appear to be consistent with the information provided in the 2015 Startup Report which contains the wetland delineation. Wetland A/A1 is category IV; and appears to be two wetland areas. The wetland in exhibit 2-1 of the project startup summary do not appear to require regulation due to their size. A thorough wetland delineation will be required at the project level.

There are two areas onsite that were observed to have wetland conditions during a May 2023 site visit. A small palustrine emergent wetland occurs along the slope south of the stormwater ponds. This is potentially a marginal wetland area that appears to receive water from a seep. This area was identified as a wetland in a 2015 site investigation (Landau Associates 2015, Section 2.3.1). The other area is also a palustrine emergent zone across the walking path to the west of the stormwater ponds, in a small depressional area along the path and at the toe of the slope that leads up to the forested zone.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Implementation of the Master Plan would include work within 200 feet of stormwater ponds and potential wetlands, pending delineation. The work in this area would include improvements to existing trails, and native plantings.

Wetland Delineation would be required at the project level. Mitigation required for any disturbances or modifications necessary for development. CALUP required if regulated wetlands are present

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

the intent is to avoid impacts to any existing surface waters or wetlands with implementation of the Master Plan. Design of pathways may be changed to avoid surface water or wetland impacts.

4) Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

No surface water withdrawals or diversions would be performed.

Will the implementation of the Master Plan require storm re-design or upgrade?

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The site is not located within a 100-year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The public facilities proposed for future construction under the Master Plan would be served by public sanitary sewer facilities. Stormwater runoff from parking lot areas would be collected on site and treated according to regulatory requirements prior to discharge from site.

No dredging is anticipated although, the storm pond is dredged every 5-10 years and likely requires its own permit process. This may be further assessed further under a project level stormwater report

Surface water would be collected and directed away from the landfill area to minimize infiltration of surface water over and around the perimeter of the old waste. Availability of water and mixing of nutrients in the waste mass contribute to decomposition. Decomposition leads to settlement and generation of LFG and leachate. Development that includes capping the landfill and improved stormwater systems would lessen both generation of LFG and leachate.

Storm reporting and storm water site plan reviewed at project level

LW reviewed between February 6, 2024 and February 23, 2024

b. Ground Water: **[Find help answering ground water questions]**

1) **Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.**

   No groundwater will be withdrawn from a well for drinking purposes. Ground water may be withdrawn if stormwater/perched groundwater is found to be prohibiting Landfll Gas system extraction and the system's ability to mitigate gas migration. Washington State Ecology procedures, testing and disposal will be observed. No water will be discharged to groundwater.

2) **Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals…; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.**

   No waste materials would be discharged to the ground as a result of future implementation of the Master Plan. Future park development may include removal of existing landfill material as part of site preparation and grading (see Section B.1.e, above). The remainder of the landfill material would remain in situ, but it would be capped with an impermeable layer to reduce infiltration to the landfill layer. This, in turn, would reduce gas and leachate production.

c. Water Runoff (including stormwater):

1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

   Future implementation of the Master Plan will result in stormwater runoff from parking lots, picnic shelter and aquatic facility rooves, ball courts, paths, and landscaped areas. Each source would be evaluated for collection, treatment, and flow control. Natural dispersion and low impact development practices would be used to the extent practical to meet City of Bellevue Surface Water Engineering Code requirements. Stormwater that does not infiltrate, evaporate, or get absorbed by plant materials would be collected in swales and pipes, treated for water quality if necessary, and conveyed to the storm drainpipes located at the north portion of the site. Treated stormwater would then flow to Phantom Lake.

   Storm reporting and storm water site plan reviewed at project level

2) **Could waste materials enter ground or surface waters? If so, generally describe.**

   No waste materials would enter ground or surface waters as a result of future implementation of the Master Plan. Capping the landfill would reduce infiltration to the landfill layer and in turn, reduce gas and leachate production.

3) **Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.**

   Implementation of the Master Plan is not anticipated to alter drainage patterns in the vicinity.

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4) **Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any.**

Stormwater runoff flow control and treatment would be designed to meet the City of Bellevue current Surface Water Engineering Code requirements upon implementation of the Master Plan. At that time, surface water would be collected and directed away from the landfill area, and infiltration of surface water over and around the perimeter of the landfill would be minimized.

4. Plants [Find help answering plants questions]

Large areas such as the northwest corner of the site contain high-value, mature trees which have grown into a forested condition. It is possible to destabilize the forested condition which could adversely impact the trees/habitat in the area if disturbed. The removal of lower-value early successional species should be considered first and the preservation and retention of high value trees in the forested condition should be prioritized.

a. Check the types of vegetation found on the site:

- ☒ **deciduous tree: alder, maple, aspen, other**
- ☒ **evergreen tree: fir, cedar, pine, other**
- ☒ **shrubs**
- ☒ **grass**
- ☒ **pasture**
- ☐ **crop or grain**
- ☐ **orchards, vineyards, or other permanent crops.**
- ☒ **wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other**
- ☒ **water plants: water lily, eelgrass, milfoil, other**
- ☒ **other types of vegetation**

b. What kind and amount of vegetation will be removed or altered?

Future site design will attempt to protect as much of the existing tree stand in the forested area as possible. Vegetation removal as a result of future implementation of the Master Plan estimates are:

- 2.4 acres of second-growth coniferous forest may be impacted on the 27.5-acre site due to construction of a picnic area with shelters, a trail, and the associated parking lot.
- Approximately 11.55 acres of grass and herbaceous plants (on the covered landfill area) would be disturbed for construction of the aquatic center, associated parking, restrooms, picnic shelters, children's play areas, and a basketball court.
- Future design of paths around existing stormwater ponds will be adjusted slightly to accommodate a new overall trail network. No impacts to the stormwater ponds are anticipated.

Enhancement should include removal of invasive species

- Small portions of the deciduous forested strip on the east boundary of the property would be disturbed and possibly removed for construction of the pickleball courts, basketball court, or flexible playing field.

c. List threatened and endangered species known to be on or near the site.

No threatened or endangered plant species are known to be on or near the site. The Washington Department of Fish and Wildlife Priority Habitat and Species database does not indicate any threatened or endangered plant species in the vicinity.

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d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

As part of future implementation of the Master Plan, a landscape planting and maintenance plan will be developed that will include planting of over 150,000 square feet of shrubs and groundcover and in-kind replacement of all native trees removed as part of project work. Future site design will attempt to protect as much of the existing tree stand in the forested area as possible as a benefit to the community and habitat. It is likely some individual trees will need to be removed to establish safe and accessible pathways throughout a future park and connect to adjacent neighborhoods.

Impacts to coniferous forest should be analyzed further at the project level. The arborist report and habitat assessment have assigned high functional value to these areas.

e. List all noxious weeds and invasive species known to be on or near the site.

According to the King County iMap noxious weeds layer updated with data from 2023 surveys, the following Class B noxious weeds are present in the area associated with the stormwater ponds:

- Tansy ragwort (*Senecio jacobaeia*)
- Purple loosestrife (*Lythrum salicaria*)

5. Animals [Find help answering animal questions]

a. List any birds and other animals that have been observed on or near the site or are known to be on or near the site.

- **Birds:** Species observed during a May 2023 site visit include Anna's hummingbird, pileated woodpecker, northern flicker, black-capped chickadee, song sparrow, American robin, red-breasted nuthatch, Wilson's warbler, dark-eyed junco, spotted towhee, red-tailed hawk.
- **Mammals:** deer, beaver, bobcat.

b. List any threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on or near the site. The Washington Department of Fish & Wildlife Priority Habitat and Species database does not show any threatened or endangered animal species on the site. Three areas designated as Priority Habitat are within 0.25 mile of the project site. Urban Natural Open Space and Riparian Areas are mapped 0.25 mile to the north and west (Kelsey Creek and Lake Hills Park). Sockeye and coho salmon are reported to be in Vasa Creek, located 0.25 mile to the south.

A detailed wildlife study should further analyze impacts to wildlife and how those impacts can be mitigated

c. Is the site part of a migration route? If so, explain.

The site is located within the Pacific Flyway, one of the four principal north-south migration routes for birds in North America. The Pacific Flyway encompasses the entire Puget Sound basin.

d. Proposed measures to preserve or enhance wildlife, if any.

Upon implementation of the Master Plan, approximately 11 acres of coniferous forest with dense shrub understory would be retained on the site and would continue to provide wildlife habitat.

Impacts to the coniferous forest should be minimized further if possible

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e. List any invasive animal species known to be on or near the site.

No invasive animal species are known to be on or near the site or were observed during the site visit. However, invasive species such as Eastern gray squirrel, European starling and house sparrow are widespread throughout the region and may occur onsite.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Upon future implementation of the Master Plan, some elements such as the aquatic center, restrooms, maintenance buildings will require more energy than is currently being consumed at the site. The potential impact is not expected to deplete available energy resources.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Construction associated with future implementation of the Master Plan would not include any structures or facilities that would affect the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

Specific construction projects associated with implementation of the Mater Plan would include sustainability measures to minimize potential impacts on energy and natural resources required to operate the park.

Many sustainable measures have been embedded directly into park elements and system design. Developing a park at the site of an existing landfill allows reuse of an impacted urban landscape. Increasing the impervious surface by siting the aquatic center over the landfill area reduces water intrusion and landfill degradation into ground waters. Other initiatives may include drought-tolerant plant selection, water-conserving irrigation systems, green roofs, photo-voltaic collection (solar panels), and stormwater capture for reuse on site. Trees and other structures would be used to shade heat producing park surfaces (e.g., parking lots). Low-impact, development construction techniques would also be used, such as the selection and use of regionally sourced green materials.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

Future implementation of the Master Plan will require special design considerations for construction and operation of an aquatic center on a former landfill site and potential impacts will be included in the project-level SEPA analysis. Landfills and other areas containing solid waste, refuse, or artificial fill soils can be challenging to develop due to poor or unpredictable soil characteristics. The construction potential of artificial fill areas depends on construction

At the project level, the SEPA checklist should also identify any chemicals stored on site; type, quantity, hazards, etc.

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techniques and material type of the fill. Fill material unsuitable for construction may need to be removed or remediated to prevent problems such as settlement or expansion. Landfills may be unable to support the weight of buildings or structures, and methane mitigation and monitoring may be required. The Title 10 King County Board of Health Solid Waste Regulation governs construction standards and methane controls on abandoned landfills. Authority is established under RCW Chapter 70.05 and Washington State Administrative Code WAC 173-304, Minimal Functional Standards for Solid Waste Handling, and WAC 173-351, Criteria for Municipal Solid Waste Landfills.

1) **Describe any known or possible contamination at the site from present or past uses.**

   The proposed Bellevue Airfield Park is located partially on a former landfill site that was capped in 1964. Over the years, a significant amount of soil fill has been placed above the old landfill. In 1974, additional soil mixed with construction debris was placed over the southern portion of the site. Subsequently, the site has been graded to encourage runoff to a storm drainage system first south of the park property and eventually emptying into a three-cell detention pond/water quality treatment system north of the landfill.

   Landfill leachate is collected by a French drain that was installed in 1983 between the north edge of the landfill and detention ponds. The French drain discharges to the King County sanitary sewer system, and annual surface water sampling indicates the existing leachate collection system is adequately fulfilling its intended function, with water that has been impacted by the landfill waste being captured and discharged to the sanitary sewer. No exceedances of State surface water standards have been observed downstream of the detention ponds (Landau Associates 2015, Section 4.3.2).

2) **Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.**

   A LFG control system was installed in 1986 to extract LFG from the refuse mass to minimize emissions to the atmosphere and migration into the soils surrounding the landfill. The LFG control system has been modified since initial installation and currently includes gas extraction wells, collection and conveyance piping, a condensate disposal system, an LFG extraction plant (blower station), and LFG disposal equipment consisting of activated carbon vessels to treat the LFG prior to discharging to the atmosphere (SCS Engineers 2015, page 2).

   Reporting has indicated that LFGs peaked relatively close to the time of inception and have gradually tapered off over time. The reporting also indicates that upgraded systems will meet or exceed the current condition. For a no net impact at minimum.

3) **Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.**

   Chemicals to support an aquatic facility such as Chlorine will be stored, used, and reported per State and City building codes, and Department of Health standards.

   To be evaluated further at the project level

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4) **Describe special emergency services that might be required.**

No special emergency service needs are anticipated.

5) **Proposed measures to reduce or control environmental health hazards, if any.**

Future development of the Master Plan would require upgrades of subsurface gas and water barriers to protect park users and surface features from exposure.

Design considerations for the construction and operation of an aquatic center on top of an existing landfill include the following (Magnusson Klemencic Associates 2023, pages 1-2):

- Structural gravity load resistance: Deep foundations consisting of steel piles will most likely be required to support building loads (structural frame loads from roof, floors, pools, and slab).
- Increased seismic lateral forces: The nature of landfill materials results in greater seismic forces that the building structural systems will need to resist.
- Need for methane mitigation: methane and potentially other vapors can escape the soils and will need to be captured, diverted, and disposed of through an appropriate mitigation system.
- Special construction considerations: The new construction may result in excavation of portions of the existing landfill cap and excavation into the landfill materials. This may require special handling and disposal of the materials and a repair of the existing cap.

Park phased design, permitting and construction will require project-level SEPA. Development overview, permit and construction inspection will involve many agencies including Washington State Department of Ecology - Waste and Toxics Division, King County Clean Air and Public Health, and the City of Bellevue, including the Bellevue fire and police departments. A Health and Safety Construction Plan will be required.

LFG control system anticipated to be upgraded

b. Noise

1) **What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?**

The predominant source of noise in the area is from traffic on nearby roads.

2) **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?**

Upon future implementation of the Master Plan, there would be a short-term increase in noise during construction of park elements. Operation of Bellevue Airfield Park is not expected to create any significant long-term sources of noise. Sport courts, including pickleball courts, are to be located on the opposite side of the site from residential areas and are buffered by the existing forested area to the north and west. Commercial properties to the east of the site and closest to the courts are less sensitive to noise disturbance.

Residential development likely in the northern portion of the former Boeing site; the pickleball courts are proposed adjacent to the southern portion of the site; further analysis may be required at the project level

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3) **Proposed measures to reduce or control noise impacts, if any.**

Future development of the Master Plan will not likely require additional noise reduction measures, as locations of sport courts are at the furthest distance from residential areas that are additionally well buffered by existing forested areas. Noise disturbances regulated pursuant to BCC 9.18

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The northern portion of the site is primarily covered with forested habitat, with some trails and a stormwater detention facility. The southern portion of the site is a former landfill that has been closed and covered. This portion of the site contains a LFG collection and conveyance system, leachate collection system, access roads and utilities for the commercial development to the south. The site is currently vacant, and undeveloped open space is covered with shrubs and grasses and is used for informal recreation such as walking, jogging, and dog walking.

Surrounding land uses include office campuses to the west, south and east, and single family residences to the north and west. This proposal would not affect current land uses on nearby or adjacent properties.

Uses could generate higher traffic impact in the vicinity. Possible stormwater impacts. Flooding identified as a consistent problem on site

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The site has not been used as working farmlands or working forest lands.

1) **Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?**

This non-project action will not result in any impacts to surrounding working farm or forest land.

c. Describe any structures on the site.

Existing site structures include fencing, parking lot and street pavement and curbing, utility lines (including the LFG and leachate system), informal and formal trails, benches, and three stormwater ponds. There are currently no buildings on the site.

d. Will any structures be demolished? If so, what?

Implementation of the Master Plan would require demolition of some of the existing structures listed above, such as fences, portions of the parking areas and trails. Most of the items described would not be defined as structures.

e. What is the current zoning classification of the site?

The project site contains the zoning classifications Office, Limited Business – Open Space (OLB-OS), Limited Business (OLB), and Residential – 7.5 dwelling units per acre (R-7.5).

A portion of this site lies in the Single Family Transition Zone

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f. What is the current comprehensive plan designation of the site?

The project site contains the comprehensive plan designations of Office, Limited Business – Open Space (OLD-OS), Office, Limited Business (OLB), Single-family – Urban Residential (SF-UR).

g. If applicable, what is the current shoreline master program designation of the site?

The project site does not lie within any shoreline jurisdiction.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The site does not contain any areas classified as critical areas by King County. The 27.5-acre site may contain critical areas under the City's Critical Area Ordinance including wetlands, steep slopes, and habitat. Potential wetlands were identified during a May 2023 site visit, and these areas would require delineation, rating, and further investigation to determine if they meet City of Bellevue municipal code stipulations to qualify as critical areas. Upon implementation of the Master Plan, the intent is to avoid impacts to any existing steep slopes, surface waters or wetlands onsite. CALUP will be required prior to issuance of any construction or building permits

i. Approximately how many people would reside or work in the completed project?

No people will reside on the site as a result of future implementation of the Master Plan. Staffing numbers upon implementation of the Master Plan are not known at this time, but would include grounds, structural operations and maintenance, and pool recreation and life guarding staff.

j. Approximately how many people would the completed project displace?

No people would be displaced as a result of this non-project action, or as a result of future implementation of the Master Plan. Portions of the site may be temporarily closed to the public during construction of park elements.

k. Proposed measures to avoid or reduce displacement impacts, if any.

No displacements will occur; therefore, no mitigation measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The proposal is compatible with existing and projected land use plans under the following City of Bellevue Comprehensive Plan policies: Policy PA-18 to develop a variety of active and passive facilities in a coordinated system of neighborhood community parks; Policy PA-19 to develop parks and facilities in a quality manner to ensure attractiveness, full utilization, and long-term efficiency; and PA-20 to offer programs that utilize the unique resources and variety of indoor and outdoor facilities within the park system.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any.

This non-project action will not have any impacts to agricultural or forest lands, so no measures to control impacts are required.

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9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

No people will reside on the site as a result of future implementation of the Master Plan.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

There are no existing housing units on the project site – no elimination .

c. Proposed measures to reduce or control housing impacts, if any.

Not applicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Upon adoption of the Master Plan, design and SEPA/permit review of park facilities will begin. The tallest proposed structure in the Master Plan is the aquatic center, which is anticipated to be two stories. Picnic shelters will likely be simple pavilion structures. Details will be developed in future design phases. Height limits for R-7.5, OLB, OLB-OS, and the Single Family Transition Zone will apply

b. What views in the immediate vicinity would be altered or obstructed?

Implementation of the Master Plan will cause park views from the edge of the forested area, south to the Advanta Office complex to be obscured by a new aquatic center. Views of the site from adjacent businesses will be changed from a vacant undeveloped open area to landscaped park with a parking lot and the aquatic center. New views from the forest will be provided from new picnic areas.

c. Proposed measures to reduce or control aesthetic impacts, if any.

Future construction of park facilities would likely create beneficial impacts on aesthetics through redevelopment of the landfill site, clearing of invasive vegetation, landscaping, and creating community spaces. No mitigation would be required.

Design Review Required for Transition Area

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Implementation of the Master Plan park projects would create new sources of light. Approximately 35 standard, 20-foot light poles and low light bollards would provide security and pedestrian lighting for picnic and play areas, parking lots, and trails and pathways during nighttime hours. Operational hours of the park would likely be the same as most other city

Lighting requirements will be guided by the Transition district requirements, OLB district requirements, and Critical Areas performance standards, where applicable.

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parks – from dawn to dusk. Special events taking place at the aquatic center, playfields, or ball courts may occur after dusk during some seasons.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

New lighting installed for future park elements could potentially be seen by neighboring parking and commercial areas to the south, southwest, and southeast; however, the location and design of the lighting facilities would minimize light and glare spillover onto adjacent property. Park activities with associated lighting is largely located to the south of the property, distanced away from and with significant forested buffers to residential areas. Light and glare is not expected to be a safety hazard or interfere with views upon construction of the park.

Light pollution may not spill into any regulated wetlands

c. What existing off-site sources of light or glare may affect your proposal?

No offsite sources of light or glare would affect implementation of the Master Plan or new park.

d. Proposed measures to reduce or control light and glare impacts, if any.

Upon future implementation of the Master Plan, all lighting facilities would be designed and operated to avoid or minimize light and glare impacts. In addition, the retention of existing mature vegetation and the planting of additional landscaping would aid in shielding new light sources (residents to the north and west) from surrounding areas. Project level design for Bellevue Airfield Park elements will undergo a separate environmental review under SEPA, including the identification of additional mitigation measures for potential lighting impacts, if any.

Should the possibility of residential be considered on the Boeing site? This is information that is just internally known at the moment but I don't have confirmation of anything

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

The Spiritridge Loop Trail crosses the project site from the northeast corner to the west. The landfill site is currently used as an informal recreation area for walking, jogging, and off-leash dog walking along the trails and in the open areas. Robinswood Park is located approximately 0.25 mile west of the project site, and Lake Hills Greenbelt Park is located 0.12 mile to the north.

Additionally, there is Spiritridge Park to the southeast (which can be accessed via the trail system

b. Would the proposed project displace any existing recreational uses? If so, describe.

This non-project action would not result in displacing any recreational uses. Because the landfill site has been vacant and informally used for walking, jogging, and off-leash dog activities, these activities on the landfill site will be supplemented with future implementation of the Master Plan. Build-out of the park would enhance and expand the existing informal recreational uses with new pathways and trails, in addition to new recreational activities available through the aquatic center. Future implementation of the Master Plan will provide both passive and active recreational opportunities in the long-term. Some areas within the site may not be accessible during construction. These closures would be temporary and short-term.

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c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

No measures are required for this non-project action. The intent of the Master Plan project is to enhance recreational opportunities. Temporary impacts during construction are anticipated.

13. Historic and Cultural Preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

According to the National Register of Historic Places, the Washington State Heritage Register, and the Register of King County Landmarks, no registered places or objects are on or adjacent to the project site. No places or objects eligible for any of the above registers are known to be on or next to the site.

DAHP's WISAARD indicated low to no potential historical or cultural significance

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No professional studies have been conducted to identify material evidence, artifacts or areas of cultural importance within the area outlined in the Master Plan. However, individual projects resulting from implementation of the Master Plan will be reviewed on a project-by-project basis.

DAHP's WISAARD indicated no potential tribal significance

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Individual projects resulting from implementation of the Master Plan will be reviewed on a project-to-project basis. Public notices of land use actions will be sent to area tribes and the Washington State Office of Archaeology and Historic Preservation.

DAHP WISAARD mapping application

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

No impacts to cultural or historic resources will result from this non-project action. However, in the event that any archaeological material is discovered during the future construction of projects resulting from implementation of the Master Plan, all construction will be stopped, and a qualified archaeologist will be consulted.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

156th Avenue Southeast: The site is bordered on the west by 156th Avenue Southeast. 156th Avenue Southeast is classified as a collector arterial and is oriented north-to-south. The

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road includes one travel lane in each direction extending north from Southeast Eastgate Way to north Bellevue. There is a median south of Southeast 27th Street with left-turn pockets and merge lanes for driveways along the roadway. Street parking is available on both sides of 156th Avenue Southeast north of Southeast 27th Street.

Access to/from 156th Avenue Southeast and the project site is via pedestrian and bike access only.

158th Avenue Southeast: 158th Avenue Southeast, which is not a through street, is south and north of the project site. 158th Avenue Southeast is classified as a local access street and is oriented north-to-south. The road is used primarily by businesses with one travel lane in each direction and a planted median nearest the site. The street extends north from Southeast Eastgate Way and then curves eastward to 160th Avenue Southeast and dead ends from the north into the park site. Access from the north to/from 158th Avenue Southeast and the project sites is via a pedestrian and bike access only.

160th Avenue Southeast: The site is bordered on the east by 160th Avenue Southeast. 160th Avenue Southeast is classified as a local access street and is oriented north-to-south. The street is used primarily by businesses with one travel lane in each direction, with a two-way-turn-lane and bike lanes on either side. This street provides primary local access to the site. The street extends north from Southeast Eastgate Way but is not a through street and ends at the gated access to Boeing facilities just north of Southeast 30th Place.

Southeast 30th Place: The site is bordered on the south by Southeast 30th Place. Southeast 30th Place is classified as a local access street and is oriented east-to-west. Construction of the road was required by the City of Bellevue to be built to support future park development. This public street is used primarily by the Advanta office campus located to the south. The proposed park entrance would be directly off Southeast 30th Place, which intersects with 160th Avenue Southeast from the west at a T-intersection. Southeast 30th Place provides direct vehicle access to the site.

Southeast Eastgate Way: The site is located to the north of Southeast Eastgate Way. Eastgate Way is classified as a minor arterial, in the City of Bellevue, and connects with Southeast 34th Street to the east and 148th Avenue Southeast to the west. The street width varies from three to five lanes in width with center turn lanes.

Interstate 90: The site is located north of Interstate 90 (I-90), which connects the project vicinity to Seattle to the west and to cities such as Issaquah and North Bend to the east. There is a westbound on/off-ramp on I-90, which connects at the intersection of Southeast Eastgate Way with 161st Avenue Southeast. The nearest eastbound off-ramp is on 147th/150th Avenue Southeast, which intersects with Southeast Eastgate Way. There are two nearby eastbound on-ramps; one on 148th Avenue Southeast and one also on Southeast 37th Street, which travels under I-90 and connects with Southeast Eastgate Way.

Transit stops are available to the south and north; there does not appear to be anything immediately accessible to the east or west. Convenient access from the south would be using 160th Ave SE; from the north, pedestrians would have to cut through the residential neighborhood using 158th Ave SE and connect to the park using the trail network.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

The project site is served by King County Metro bus routes 221, 217, and 271. The nearest bus stops are to the north and east, about 0.25-mile walking distance in either direction. Metro bus routes 217 and 221 run along Southeast Eastgate Way, with stops about 0.5-mile walking distance south of the site. City Staff will work with Metro to increase service when park use supports additional public transit.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Implementation of the Master Plan would require adding drive connections to park parking and picnic areas off of Southeast 30th Place. Public improvements to pedestrian and bicycle connections to the park from 156th Ave would occur. SE 30th Place was constructed to serve future park development, no additional public roadwork is anticipated.

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Neither adoption or future implementation of the Master Plan would use or occur in the immediate vicinity of water, air, or rail transportation.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

A traffic analysis conducted by Transpo Group in 2022 estimated that full implementation of the Master Plan would generate up to 424 peak hour non-commercial/truck trips (AM peak hour plus PM peak hour) on weekdays and 1,031 peak hour trips on weekends during the school year. During the summer, which corresponds to peak operating time for the park, the project is forecast to generate up to 1,045 peak hour trips on weekdays and 967 peak hour trips on weekends (Transpo Group 2022, page 5).

Future implementation is forecast to generate a peak parking demand of 402 spaces (Transpo Group 2022, page 6). The project would provide the park with 250 onsite parking spaces, and additional shared parking for park use has been negotiated with the existing Advanta/Microsoft office campus to the south and west of the site. Shared parking varies to accommodate the complimentary demands of the office complex and park use. Park use of the shared parking areas ranges from zero additional stalls between midnight and 2:30 p.m. on weekdays to 400 additional stalls on weekends and holidays between 7:00 a.m. and midnight (Parking Lot Easement Agreement 2014, Exhibit D). Additional mitigation for parking impacts will be included in project-level SEPA documentation.

f. **Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.**

Implementation of this non-project action will not affect or be affected by the movement of agricultural and forest products on roads or streets in the area.

g. **Proposed measures to reduce or control transportation impacts, if any.**

Construction of SE 30th Pl was constructed in 2007 as a requirement to support the City of Bellevue's future public park. It is anticipated that no significant transportation impacts and mitigation is anticipated however when Aquatic facility size and programing is established the addition of turn lanes or other engineering measures may be needed to ensure parking demands do not spill onto the street or to other parcels, not part of the shared parking agreement. Additional analysis of traffic, parking, and public transit will be required prior to implementation of the Master Plan and at each phase of park development.

15. Public Services

a. **Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.**

Future construction associated with implementation of the Master Plan would require project permit review including approval of Bellevue Fire and Police Departments to ensure adequate services can be provided. Construction and operation of the park would not impact health care, schools, or any other public services.

b. **Proposed measures to reduce or control direct impacts on public services, if any.**

No impacts are anticipated; thus, no mitigation is necessary. Subsequent environmental analysis after adoption of the Master Plan may require specific conditions to reduce impacts on services, if any.

16. Utilities

a. **Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:**

b. **Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.**

No utilities are proposed as part of this non-project action. The utilities that would be included as part of future implementation of the Master Plan are described below:

- Electricity: Puget Sound Energy (PSE) would provide electrical service to the property. Service connections may be made to underground service feeders located to the north of the access road serving the Advanta buildings.

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- Natural Gas: PSE would provide the natural gas service. Natural gas is located within 160th Avenue Southeast.
- Water: The City of Bellevue would provide water service directly to the property. Service connections may be made to a 12-inch-diameter water main located within 160th Avenue Southeast.
- Sanitary Sewer: The City of Bellevue would provide sanitary sewer service to the property. This sewer service would connect to a 24-inch-diameter sewer main located within the site and is operated by King County Wastewater Treatment Division (KCWTD).

LW reviewed between February 6, 2024 and February 23, 2024

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

____

Type name of signee: Pam Fehrman

Position and agency/organization: Planning & Development Mgr., City of Bellevue - PCS

Date submitted: 8.2.23 /10.24.20

LW reviewed between
February 6, 2024 and
February 23, 2024

D. Supplemental sheet for non-project actions

IT IS NOT REQUIRED to use this section for project actions.

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Future implementation of the Master Plan could result in stormwater runoff from parking lots, pickleball and basketball courts, paths, and landscaped areas. Each source would be evaluated for collection, treatment, and flow control. Natural dispersion and low impact development practices would be used to the extent practical to meet City of Bellevue Surface Water Engineering Code requirements. To be evaluated at project level under utilities and clear & grade permit.

Upon future implementation of the Master Plan, there would be short-term increase in noise during construction of park elements. Except for noise from sporting events, operation of Bellevue Airfield Park is not expected to create any significant long-term sources of noise. Noise from sporting events is exempt from the city noise restrictions per BMC 9.18.020(A)(13) and 3.43.260.

Proposed measures to avoid or reduce such increases are:

Stormwater runoff flood control and treatment would be designed to meet the City of Bellevue current Surface Water Engineering Code requirements upon design and permitting prior to implementation of the Master Plan. At that time, surface water would be collected and directed away from the landfill, and infiltration of surface water over and around the perimeter of the landfill would be minimized.

Future development of the site under the Master Plan would not likely require additional noise reduction measures, but will be evaluated under a separate, project-specific SEPA review.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

No vegetation removal or direct wildlife impacts would result from adoption of the Master Plan. No threatened or endangered plant or animal species are known to be on or near the site. Under future implementation of the Master Plan, the following estimated vegetation removal is proposed:

- Approximately 2.40 acres of second-growth coniferous forest would be removed for construction of a picnic area with shelters, a trail, and associated parking spaces. Site design

See annotations in section 4 of the project level checklist. Wildlife in the area and considerations for the coniferous habitat should be explored further

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will attempt to protect as much of the existing tree stand in the forested area as possible.

- Approximately 11.55 acres of grass and herbaceous plants (on capped landfill area) will be disturbed for construction of the aquatic center, associated parking and roads, restrooms, play area, and maintenance building.
- Paths around existing stormwater ponds will be adjusted slightly to accommodate a new overall trail network. No impacts to the stormwater ponds are anticipated.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Upon future implementation of the Master Plan, a landscape planting and maintenance plan will be developed that will include plantings of approximately 192 native trees and over 150,000 square feet of shrubs and groundcover to enhance the park, reduce ongoing maintenance, and provide a buffer to surrounding developments as well as to mitigate for the loss of vegetation during development. Future site design will attempt to protect as much of the existing tree stand in the forested area as possible as a benefit to the community and habitat. It is likely some individual trees will need to be removed to establish safe and accessible pathways throughout a future park and connect to adjacent neighborhoods.

3. How would the proposal be likely to deplete energy or natural resources?

The adoption of the Master Plan would not result in depletion of energy or natural resources. Some Master Plan elements, such as the aquatic center, ball courts and restrooms will require more energy than is currently being consumed at the site. The potential impact is not expected to deplete available energy resources.

Proposed measures to protect or conserve energy and natural resources are:

Many sustainable measures have been embedded directly into park elements and system design. Incorporation of the landfill into a park affords reuse of an impacted urban landscape and placing an aquatic center over the fill area reduces the potential for generating subsurface contamination. Other initiatives may include drought-tolerant plant selection, water-conserving irrigation systems, green roofs, photovoltaic collection (solar panels) and stormwater capture for reuse on site. Low-impact development construction techniques might also be used, such as the selection and use of regionally sourced, green materials.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

There are no wilderness areas, wild and scenic rivers, threatened or endangered species habitat, floodplains, or prime farmlands located at the project site. Upon implementation of the Master Plan, the intent is to avoid impacts to any existing surface waters or wetlands onsite.

Proposed measures to protect such resources or to avoid or reduce impacts are:

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Project design objectives are to minimize sensitive environmental area impacts. Project level development documents including surveys and engineering will identify environmentally sensitive areas so that design changes are made to avoid or mitigate impacts.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

The proposal is compatible with existing and projected land use plans under the following City of Bellevue Comprehensive Plan policies: Policy PA-18 to develop a variety of active and passive facilities in a coordinated system of neighborhood community parks; and Policy PA-19 to develop parks and facilities in a quality manner to ensure attractiveness, full utilization, and long-term efficiency and PA-20 to offer programs that utilize the unique resources and variety of indoor and outdoor facilities within the park system. The project site is not within the designated shoreline area.

Proposed measures to avoid or reduce shoreline and land use impacts are:

The proposal, when designed, will provide a park, open space, and recreational amenities, as well as improve existing LFG systems, groundwater, and stormwater systems.

Any impacts to the phantom lake watershed? Ultimately, this is discharged to Lake Sammamish.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

It is estimated that full build-out of all phases will generate up to 424 peak hour trips (AM peak hour plus PM peak hour) on weekdays and 1,031 peak hour trips on weekends during the school year. During the summer, which corresponds to peak operating time for the park, the project is forecast to generate up to 1,045 peak hour trips on weekdays and 967 peak hour trips on weekends (Transpo Group 2022, page 5).

Future implementation is forecast to generate up to a peak parking demand of 402 spaces (Transpo Group 2022, page 6). The project would provide the park with 250 onsite parking spaces, and additional shared parking for park use has been negotiated with the existing Advanta/Microsoft office campus to the south and west of the site. Shared parking varies to accommodate the complimentary demands of the office complex and park use. Park use of the shared parking areas ranges from zero additional stalls between midnight and 2:30 p.m. on weekdays to 400 additional stalls on weekends and holidays between 7:00 a.m. and midnight (Parking Lot Easement Agreement 2014).

Proposed measures to reduce or respond to such demand(s) are:

No significant transportation impacts are anticipated with implementation of the Master Plan assuming that park programming would be reduced and/or additional parking would be secured as part of the shared parking agreement. This would ensure parking demands do not spill onto the street or to other parcels, not part of the shared parking agreement. Additional analysis of traffic, public service, and utility impacts will be required prior to implementation of the Master Plan and at each phase of park development.

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7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The Bellevue Airfield Park Master Plan is consistent with city, state, and federal programs to protect the environmental health and safety of the City residents.

LW reviewed between February 6, 2024 and February 23, 2024

Attachment A: Bellevue Airfield Park Proposed Site Plan

Recommended Bellevue Airfield Park Master Plan

LEGEND:

1. Parking Area
2. Flexible Field
3. Playgrounds
4. Basketball Court
5. Pickleball Courts
6. Splash Pad
7. Picnic Area
8. Amphitheatre
9. Stormwater Area
10. Restrooms
11. Aquatic Center

Concept #2

Draft
Project Startup Summary Report
Bellevue Airfield Park Development
(Former Eastgate Landfill)
Bellevue, Washington

October 19, 2015

Prepared for

Walker Macy
Portland, Oregon

Landau Associates

130 2nd Avenue South
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FIGURES

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APPENDIX

LIST OF ABBREVIATIONS AND ACRONYMS

AO .... Agreed Order
BMC .... Bellevue Municipal Code
Boeing .... The Boeing Company
City .... City of Bellevue
COC .... chain-of-custody
COD .... chemical oxygen demand
DNS .... Determination of Nonsignificance
Ecology .... Washington State Department of Ecology
EPA .... U.S. Environmental Protection Agency
HPA .... hydraulic project approval
IP .... induced polarization
LTCA .... Local Toxic Controls Account
LUC .... City Land Use Code
mg/L .... milligrams per liter
µg/L .... micrograms per liter
MTCA .... Model Toxics Control Act
NFA .... no further action
PLPs .... potentially liable persons
Ppb .... parts per billion
PVC .... polyvinylchloride
RCW .... Revised Code of Washington
SEPA .... State Environmental Policy Act
TOC .... total organic carbon
USACE .... U.S. Army Corps of Engineers
VCP .... Voluntary Cleanup Program
VOC .... volatile organic compound
WAC .... Washington Administrative Code
WDFW .... Washington State Department of Fish and Wildlife

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1.0 INTRODUCTION

This report summarizes Landau Associates' project startup (Task 1) evaluations and recommendations related to the proposed Bellevue Airfield Park (Park) development at the site of the former Eastgate Landfill in Bellevue, Washington (Figure 1-1). The proposed Park will include two synthetic turf athletic fields, concessions and restroom facilities, play and picnic areas, pedestrian trails, a spray deck, expansion and improvements to existing stormwater management facilities, and lighting and parking improvements.

A portion of the Park site overlies the closed Eastgate Landfill, which has environmental restrictions and ongoing monitoring requirements under the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) voluntary cleanup program (VCP) and an environmental covenant for the site dated November 12, 2008.

Landau Associates, under subcontract to Walker Macy, is assisting the design team and the City of Bellevue (City) by providing environmental engineering, permitting support, geotechnical engineering, and landfill cover design services for Phase 1 of the Park development. Evaluations and recommendations related to stormwater management, utilities, civil engineering design, landfill gas management, and air quality monitoring will be provided separately by other members of the Walker Macy design team.

Improvements associated with Phase 1 of the Park development include the Park entry, southern athletic field, concessions and restroom building, stormwater facilities and detention pond expansion, trails, and certain modifications to the groundwater monitoring and landfill gas control systems.

1.1 Site Description

The proposed Bellevue Airfield Park is located adjacent to the I-90 Business Park in Bellevue, Washington (Figure 1-1). A master plan for the Park, entitled "Bellevue Airfield Park, Eastgate Area Properties Master Plan," was prepared in 2012 for the City of Bellevue Parks & Community Services Department by The Portico Group (The Portico Group 2012). The Eastgate Area Properties are comprised of three parcels totaling 27.9 acres within the Phantom Lake watershed. The City previously purchased portions of these properties from The Boeing Company (Boeing) and the Bellevue School District with the intent of developing an active-use community park. An access road (SE 30th PL, also referred to as the "Shared Entrance Road") has already been constructed along the southern side of the proposed Park as part of the Advanta Office Commons development.

The proposed Park site includes the former Eastgate Landfill, which was operated by King County as a municipal solid waste landfill and accepted household and demolition wastes from 1951 until it was closed and covered in 1964. The Bellevue Airfield runway was subsequently extended over the former landfill, and operated until 1983. After landfill closure, Cabot, Cabot & Forbes purchased property, including most of the landfill, and developed the I-90 Business Park. Boeing acquired portions of the former Eastgate Landfill property and adjacent properties in 1980 and 1983. The Boeing-owned property was partially developed by Boeing in the mid to late 1980s; however, no buildings have been constructed directly over the former landfill to date. Closure activities performed at the landfill by King County; Cabot, Cabot & Forbes; the City of Bellevue; or Boeing include landfill capping with a soil cover, groundwater monitoring, stormwater management, leachate collection, and landfill gas migration control (Landau Associates 2000). Leachate is collected on the north side of the landfill in a French drain that discharges to the King County sanitary sewer. Groundwater monitoring wells and landfill gas extraction and monitoring wells are located around the perimeter of the landfill. Monitoring well locations, the gas extraction system, the leachate collection system, and the approximate landfill area are shown on Figure 1-2.

In 2007 to 2008, the Advanta Office Commons development (including three buildings designated buildings A, B, and C, a parking garage, and a shared entrance road) was constructed by Schnitzer Northwest LLC (Schnitzer) adjacent to the southern end of the landfill. This resulted in construction of relatively low-permeability hardscape surfaces (asphalt roadways and parking areas) over a portion of the southern extent of the landfill.

1.2 Report Organization

This report summarizes the project startup (Task 1) activities conducted by Landau Associates. It is divided into sections relating to specific subtasks. Section 2 presents the Wetland/Waterway Delineation and Classification; Section 3 presents the Geotechnical Analysis; Section 4 presents the Groundwater Monitoring and Leachate Collection Systems Assessment; Section 5 presents the Model Toxics Cleanup Act (MTCA) Compliance Analysis; and Section 6 presents a summary table of our recommended Task 2 action items.

2.0 WETLAND/WATERWAY DELINEATION AND CLASSIFICATION

Landau Associates conducted a wetland/waterway investigation to assist the City in determining potential impacts to wetlands and other “waters of the U.S.,” and other critical areas regulated by the City. The results of Landau Associates’ wetland delineation are presented in Appendix A and summarized below.

2.1 Regulatory Background

The Clean Water Act requires authorization for the discharge of dredged or fill material into the “waters of the U.S.” under Section 404. The City Land Use Code (LUC) contains requirements for establishing wetland and stream buffer widths and building setbacks, and for any alteration, including fill, of wetlands, streams, and their buffers. Ecology requires compliance with the State Water Pollution Control Act [Revised Code of Washington (RCW) 90.48], and it has administrative oversight of Section 401 of the Clean Water Act for water quality certification in the case of impacts to U.S. Army Corps of Engineers (USACE) jurisdictional “waters of the U.S.” Any work that will use, divert, obstruct, or change the bed or flow of state waters, including streams and rivers, must do so under the terms of Hydraulic Project Approval (HPA) issued by the Washington Department of Fish and Wildlife (WDFW). WDFW HPA is administered under RCW 77.55 and rules set forth in Washington Administrative Code (WAC) 220-110. Wetlands and certain waterways are regulated by federal, state, and local governmental agencies, and compliance with one agency does not necessarily fulfill permitting requirements of any other agencies.

All wetlands and waterways described in this report are subject to verification by the USACE. The USACE determines the jurisdiction of a wetland based on the connection, more commonly referred to as adjacency, to other “waters of the U.S.” Those wetlands determined to be “isolated” do not fall under the jurisdiction of the USACE. If identified “waters of the U.S.” are determined to be adjacent rather than isolated; any filling or dredging of onsite wetlands/streams would require compliance with Section 404 and 401 of the Clean Water Act and the Endangered Species Act. Only the USACE can make the determination if a “waters of the U.S.” is adjacent or isolated. If wetlands are determined to be isolated, they may still be subject to regulation by Ecology under the State Water Pollution Control Act (RCW 90.48).

2.2 Methodology

Landau Associates conducted this wetland delineation in accordance with the USACE Wetland Delineation Manual (USACE 1987) and USACE Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010). The investigation of waterways was based on the methodology provided by Ecology’s Determining the Ordinary High Water Mark on Streams in Washington State (Olson 2010) and City of Bellevue Critical Areas code (Part 20.25H) of the LUC.

“Difficult wetland situations” may occur in which one or more of the required criteria have been disturbed by human or natural events (atypical situations) or are absent due to natural variability (problem areas). In cases of difficult wetland situations, a wetland determination can be based on the best available information of the site, knowledge of the ecology of wetlands in the region, and/or other undisturbed or present criteria at the time of the evaluation. At the time of the field investigation, a statewide drought emergency had been declared due to low snowpack (Ecology 2015), and methodology for "difficult wetland situations" may apply.

2.3 Field Investigation

Detailed information on soils, vegetation, and hydrology was recorded at three sampling points, and the boundaries of one wetland was delineated. No regulated waterways were identified in the study area.

2.3.1 Wetland A/A1

Wetland A/A1 is approximately 600 square feet (subject to survey verification), and is located on the north facing slope south of stormwater Pond A (Figure 2-1). This wetland is in the vicinity of wetland identified in the 2002 *Wetland, Stream, and Wildlife Habitat Study, Bellevue Airport Site* (The Watershed Company 2002). The wetland consists of two relatively small areas on the slope separated by a narrow rise in elevation parallel to the slope.

The dominant plant species and their indicator status in the wetland include reed canarygrass (*Phalaris arundinacea*, FACW) and Himalayan blackberry (*Rubus armeniacus*, FACU). Additional species found in Wetland A/A1 include but are not limited to soft rush (*Juncus effusus*, FACW) and evergreen blackberry (*Rubus lacineiatus*, FACU). Following the prevalence index for determining dominance of hydrophytic vegetation, the wetland includes areas containing both reed canary grass and soft rush.

The soil in Wetland A/A1 is characterized as sandy redox, which satisfies USACE hydric soils parameter. No primary indicator of wetland hydrology was observed at the time of the field investigation. However, previous investigation of the site reference observation of saturation and ground seeps from the adjacent landfill. Drought conditions and years with unusually low winter snowpack are identified as a "difficult wetland situation" in the USACE Regional Supplement. In these instances, if wetland hydrology indicators appear to be absent on a site that has hydrophytic vegetation and hydric soils, no significant hydrologic manipulation (e.g., no dams, levees, water diversions, land grading, etc., and the site is not within the zone of influence of any drainage ditches or subsurface drains), the area should be identified as a wetland. The site may be re-visited and checked again for wetland hydrology indicators during normal periods.

Using the Ecology wetland rating form, Wetland A is rated as a Category 4 wetland, In accordance with Chapter 20.25H.095 Bellevue Municipal Code (BMC), Category 4 wetlands under 2,500 square feet are not designated critical areas, and no buffer is assigned.

2.3.2 Stormwater Pond A

A three-cell stormwater detention pond (Pond A) was observed within the north central portion of the project area. Pond A is designed as a wet pond, and contained standing water in each cell at the time of the field investigation. Pond A was initially constructed in the early 1980s and was modified to a three-cell configuration in 1983 to improve its water quality treatment capability. Pond A is reportedly dredged every 5 to 10 years (City of Bellevue Staff, 2015, personal communication). Pond A is bordered by walking trails and drains via underground piping to Phantom Lake. The Pond A stormwater detention cells appear to be excavations and are presumed to have been constructed in uplands.

2.4 Regulatory Assessment

As indicated in the City of Bellevue Municipal Code, and in accordance with the Growth Management Act, wetlands are "…areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands." As mentioned above, Category 4 wetlands less than 2,500 square feet are not designated critical areas in accordance with the BMC. As a result, Wetland A/A1 and the stormwater detention ponds are not considered critical area features regulated by the City.

Based on guidance developed by the U.S. Environmental Protection Agency (EPA) and USACE (EPA; USACE 2007), the agencies assert jurisdiction based on adjacency and significant nexus to traditional navigable waters. In accordance with current definition of "waters of the United States" (effective August 28, 2015), stormwater control features created in dry land are not waters of the U.S. As a result, the stormwater detention ponds are not jurisdictional waters of the U.S. Wetland A/A1 may be a jurisdictional "waters of the U.S." due to possible connectivity to Phantom Lake, which drains to Lake Sammamish. However, the wetland is located immediately upslope of the existing landfill leachate French drain, which discharges to the King County sanitary sewer. The purpose of the French drain is to intercept landfill leachate and protect water quality in the downgradient stormwater pond. Drainage from Wetland A/A1 is likely intercepted by the French drain.

3.0 GEOTECHNICAL ANALYSIS

This section summarizes our initial evaluation of subsurface conditions at the site as documented in previous studies, and our initial recommendations for Task 2 geotechnical investigations for the Phase 1 improvements for the proposed Park development.

3.1 General Geologic Conditions

General geologic information for the project site was obtained from the Geologic Map of King County, Washington (Booth, Troost, and Wisher 2006), published by the University of Washington. According to this geologic map, near-surface deposits in the vicinity of the project site consist of alluvial soils, recessional outwash, glacial till, and advance outwash. Soil defined as alluvium is characterized as a loose to medium dense, moderately sorted mixture of gravel and sand with varying amount of silt and clay and silty fine sand with clayey silt interbeds. Recessional outwash soils are typically described as loose to medium dense, stratified sand and gravel deposits and/or well bedded silty sand and silty clay. Soil defined as glacial till typically consists of a dense to very dense, unsorted mixture of subrounded boulders, cobbles, gravel, and sand in a matrix of silt and clay. Advance outwash deposits typically include dense to very dense well bedded sand and gravel.

3.2 Surface Conditions

The surface of the existing soil cap layer over the former Eastgate Landfill exhibits a generally hummocky topography with depressions and ridges that appear to promote surface drainage toward the north. Elevations across the upper portions of the soil cap over the landfill range from 350 to about 335 ft (NAVD 1988). Vegetation across the former landfill typically consists of maintained grass and gravel pathways, with asphalt paved surfaces over the southern portion of the landfill associated with the shared entrance road, parking areas, and the former helicopter pad that is currently used as a basketball court. Along the northern face of the landfill, the site slopes moderately down to the north toward Pond A (the existing three cell stormwater detention pond), with elevations ranging from 340 to about 300 ft. A gravel path circles Pond A, which is located near the bottom of a generally flat north-south trending valley. Moderate to steep slopes covered with heavy vegetation bound the east and west side of the valley where Pond A is located. Existing site topography is illustrated on Figure 3-1.

3.3 Subsurface Soil Conditions

To evaluate the subsurface conditions, we reviewed the following reports and exploration logs:

- Groundwater Investigation, Former Eastgate Landfill, Bellevue, Washington, dated September 26, 2000, prepared by Landau Associates.
- Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, dated May 23, 2008, prepared by Landau Associates.
- Groundwater Monitoring Well Logs, dated 2007, prepared by SCS Engineers.
- Gas Probe Monitoring Well Logs, dated 2007, prepared by SCS Engineers.

- Closing Report, Geotechnical Services during Construction, Eastgate Landfill, Landfill Gas Collection System, Bellevue, Washington, dated October 29, 1986, prepared by GeoEngineers.
- Geotechnical and Environmental Studies, Bellevue Airport Site, Bellevue, Washington, dated May 28, 2002, prepared by AMEC Earth & Environmental.
- Report on Site Characterization Study, Portion of Boeing Eastgate Property, Bellevue, Washington, dated December 21, 2004, prepared by Golder Associates.
- Report, Geotechnical Engineering Services, Duct Bank Relocation, Boeing Eastgate Landfill, Bellevue, Washington, dated June 28, 2004, prepared by GeoEngineers.
- Eastgate Landfill Interim Status Report, dated April 22, 1986, prepared by Sweet, Edwards, & Associates.
- Eastgate Landfill Phase II Report, dated June 30, 1986, prepared by Sweet, Edwards, & Associates.
- Eastgate Landfill Summary Report, dated January 17, 1986, prepared by Sweet, Edwards, & Associates.
- Geotechnical Report, Parking Lot Subsidence Investigation, Boeing Computer Center, Bellevue, Washington, dated November 4, 1994, prepared by Converse Consultants NW.

Five geologic units have been identified at the site, in addition to the landfill solid waste materials. Previous reports have included borings for a variety of project and site features and have also included figures that show the relative position of the identified units. Approximate locations of selected borings from past studies and site work are shown on Figure 3-1. The geologic units and landfill solid waste are summarized below in order of increasing depth from the ground surface.

- Soil Fill - soil fill overlies most of the developed areas of the site and also is present as the soil cap layer over the underlying landfill area. The soil fill generally consists of silty, fine to medium sand with occasional fine gravel. The thickness of the soil fill over the landfill solid waste was typically reported to vary from about 2 to 19 ft across the site.
- Landfill Solid Waste - the solid waste fill material below the surficial soil fill generally consists of a mixture of soil and municipal solid waste including brick, timber, asphalt, wood, paper, metal, plastic, glass and concrete. The solid waste was landfilled between 1951 and 1964 (Landau Associates 2000), so the putrescible portions of the waste would likely be in an advanced state of decay or not present. The solid waste material varies in thickness and was generally encountered to depths of about 2 to 42 ft below ground surface (BGS) across the site.
- Alluvium – alluvium underlies the fill materials, and is typically an unconsolidated silty fine sand with clayey silt interbeds that underlies the northern area and forms the upper side slopes of the former landfill. The maximum identified thickness of alluvium was 12 ft. The top of the alluvium is interpreted to be the pre-development ground surface.
- Glacial till – the glacial till is typically a very dense, silty sand containing variable amounts of fine to medium gravel and scattered cobbles. Glacial till was observed to be discontinuous at the site, generally below the southern bottom and side slopes of the landfill and, where

encountered in borings, ranged from about 9 to 42 ft thick. It was not interpreted to be present in the vicinity of detention Pond A.

- Advance Outwash – advance outwash encountered below the glacial till and alluvium is typically a dense, slightly silty to silty, fine to medium sand with minor amounts of gravel. Silt lenses were commonly encountered within the advance outwash deposits. The maximum encountered thickness of advance outwash was greater than 37 ft.
- Lacustrine deposits – lacustrine deposits underlie the advance outwash unit and apparently becomes finer-grained with depth. The upper portion consists of interbedded sand and silt and the lower portion consists of silt interbedded with thinly laminated sand and silty sand. The lower limit of this unit is below the depth of exploratory borings advanced at the site to date.

3.4 Other subsurface information

Golder Associates (Golder) carried out a geophysical study in 2004 on the southern boundary of the landfill area along the shared entrance road for the Advanta Office Commons development located to the south of the project site (Golder 2004). Golder Associates conducted six induced polarization (IP) surveys and 10 electromagnetic (EM-31) surveys to define the limits of the landfill in this area. The approximate locations of the surveys are shown on Figures 3-1 and 3.2. Based on the results of their geophysical surveys, Golder reported that the landfill cap in the study area varied in thickness from 2 ft to 15 ft with a typical thickness of about 10 ft. Golder also reported that the landfill deposits extended to depths of up to 40 ft BGS and provided their interpretation of the landfill boundary along the southern portion of the site. Golder's finding generally confirmed the subsurface soil conditions described in previous reports along the southern portion of the site.

Figures 3-3 through 3-6 present a site plan and three geologic cross sections presented in the 2007 Annual Groundwater Monitoring Report (Landau Associates 2008). These figures indicate the locations where glacial till is known to be present and where glacial till is known not to be present in the site vicinity, based on prior investigations and subsurface information obtained during installation of piezometer EL-107 and installation of replacement monitoring wells EL-101R and EL-106R. Figures 3-4 through 3-6 also show interpretations of the location and depth of the landfill solid waste and the soil units at the three cross section locations. These interpretations will be revised and updated as part of the Task 2 geotechnical investigation.

Groundwater conditions at the site have been studied as part of environmental compliance monitoring for the landfill. A summary of the groundwater conditions in the vicinity of the landfill is provided in Section 4.0.

3.5 Recommendations

Figures 3-1 and 3-2 were developed to show the locations of selected subsurface explorations and geophysical surveys conducted at the site. These figures, along with our preliminary evaluation of subsurface conditions near the landfill area, were used to help identify certain data gaps and determine the need and extent for additional exploratory borings, test pits and geophysical surveys.

Based on our review of available data, we recommend a slightly modified approach to complete the geotechnical investigation under Task 2.3 for the Phase 1 improvements, as described below.

- Perform an additional geophysical investigation including IP and EM-31 surveys at the locations shown on Figure 3-2. It is our opinion that, with the data from the proposed geophysical survey lines and the existing exploration information, we will likely have adequate information to refine the limits and depths of the underlying landfill solid waste materials.
- After specific locations and preliminary details of the proposed Phase 1 Park development features and structures are established, Landau Associates will develop and conduct the exploratory program that includes additional borings and test pits, and develop geotechnical recommendations for the Phase 1 improvements.

4.0 GROUNDWATER MONITORING AND LEACHATE COLLECTION SYSTEMS

This section summarizes our evaluation and recommendations related to the existing groundwater monitoring and leachate collection systems at the former Eastgate Landfill.

4.1 Background

The landfill is located within a glacially carved valley that trends north-south, and a glacial till layer underlies most of the former landfill. Two groundwater aquifers have been identifies below the Site: a shallow perched aquifer in the solid waste and alluvial materials, and a deeper intermediate aquifer encountered in the advance outwash (advance outwash aquifer). Where the glacial till is present, it forms a confining layer above the advance outwash aquifer. The base of the advance outwash aquifer is likely confined by the lacustrine deposits. Groundwater in the advance outwash aquifer has a generally easterly flow in the vicinity of the landfill area. Groundwater in the perched aquifer generally follows the slope of the glacial till below the landfill along the base of the valley, which slopes to the north. Because the glacial till is not very permeable, perched groundwater likely flows north along the upper surface of the glacial till. The absence of the glacial till in some areas (i.e., at the northern portion and the southeast corner of the former landfill) may allow the groundwater in the shallow perched aquifer to migrate downward to the advance outwash aquifer (Landau Associates 2006, 2007).

Water that infiltrates into the landfill waste becomes leachate, which generally follows the northerly flow direction of the perched aquifer as described above. This flow is intercepted by a French drain, which serves as the leachate collection system for the landfill. The French drain was installed along the base of the northern side slope of the landfill in 1983, and currently discharges to the King County sanitary sewer system.

Annual groundwater monitoring has been conducted within the deeper advance outwash aquifer since 2001. This monitoring includes measurement of groundwater levels and interpretation of flow direction. Leachate quality (representing the shallow perched aquifer) is also monitored annually, although water levels and flow direction are not able to be measured. Section 4.2 describes the current groundwater monitoring system, and Section 4.3 describes the leachate collection system.

4.2 Groundwater Monitoring System

In April 2003, the City purchased approximately 16 acres of the undeveloped portion of the I-90 Business Park property from Boeing, including a majority of the 9.6-acre landfill. Under the purchase and sale agreement for the property between Boeing and the City, Boeing agreed to retain responsibility for continued groundwater monitoring activities at the site. Although some of the groundwater monitoring wells are located on a parcel currently owned by a third party (Advanta), Boeing continues to be responsible for groundwater monitoring at the site.

In preparation for the property sale, Boeing requested that Ecology make a no further action (NFA) determination for the Boeing-owned portion of the landfill. Prior to making that determination, Ecology requested that Boeing conduct additional groundwater monitoring. In July 2000, six monitoring wells (EL-101 through EL-106) were installed around the perimeter of the landfill. Based on the results of the first four quarterly groundwater monitoring events conducted in 2000-2001, Ecology agreed to an interim groundwater monitoring program that included semiannual monitoring during the year 2002 and annual groundwater monitoring thereafter. Ecology also agreed that the number of wells and lists of constituents could be reduced for the interim groundwater monitoring if a constituent or group of constituents was not detected or was detected at concentrations less than or equal to the groundwater screening levels for four consecutive sampling events at a particular well. A work plan for the interim groundwater monitoring was prepared and submitted to Ecology in March 2002. In 2003, Ecology issued a NFA determination for soil and groundwater, and included requirements for continued monitoring. Continued monitoring includes interim groundwater monitoring and confirmational groundwater compliance monitoring. Annual groundwater monitoring activities and results are documented in reports submitted to Ecology.

In 2006, when the Schnitzer development was proposed near the southern portion of the site, Ecology determined that further action was required to refine the conceptual model of groundwater flow beneath the site and to monitor the impacts on groundwater, if any, due to the new development. A further action work plan was prepared, which included installation of a piezometer north of the landfill (EL-107) and modification to the frequency and locations of groundwater elevation monitoring. Also, due to construction activities related to the Schnitzer development, wells EL-101 and EL-106 were abandoned and replaced with wells EL-101R and EL-106R in 2007. The current groundwater monitoring locations are shown on Figures 1-2 and 4-1.

4.2.1 Groundwater Monitoring Activities and Analysis

Since 2001, Landau Associates has prepared annual reports for Boeing summarizing the results of the interim groundwater monitoring performed each year at the landfill. Each monitoring report includes an evaluation of the data and recommendations for continued interim groundwater monitoring. This section summarizes the site background and groundwater monitoring program based on the most recent annual report (Landau Associates 2015).

Groundwater monitoring is generally conducted in accordance with the Further Action Groundwater Monitoring Work Plan (Landau Associates 2006), subsequent scope reductions described in the 2009 and 2010 Annual Groundwater Monitoring reports, and the Confirmational Groundwater Monitoring Work Plan (Landau Associates 2002). Any exceptions to the procedures in the approved work plans are noted in each annual report.

Each annual monitoring event includes measurements of static water levels at each of the six wells (EL-101R, EL-102, EL-103, EL-104, EL-105, and EL-106R); at piezometer EL-107; and a staff gauge installed in Pond A. The calculated groundwater and surface water elevations are used to prepare elevation contours of the groundwater surface.

Groundwater samples are currently collected from wells EL-103, EL-105, and EL-106R, and a surface water sample is collected from the French drain (as described in Section 4.3). In accordance with the current approved scope of interim groundwater monitoring and the scope reductions described in the 2010 Annual Groundwater Monitoring Report, chemical analysis of the groundwater samples collected at the three monitoring wells currently consists of the following:

- Volatile Organic Compounds (VOCs) by EPA Method 8260C at well EL-103.
- Dissolved metals (iron and manganese) by EPA Method 6010B at wells EL-103, EL-105, and EL-106R.
- Dissolved metals (arsenic) by EPA Method 200.8 at wells EL-103 and EL-105.

4.2.2 Groundwater Levels

As described above, previous investigations at the site identified two aquifers below the site: a shallow perched aquifer and a deeper advance outwash aquifer. The shallow perched aquifer is encountered in the solid waste and alluvial materials and, in some locations, the glacial till underlying the fill and alluvial materials. The advance outwash aquifer is encountered below the glacial till layer that underlies most of the landfill area. The site monitoring wells and piezometer are screened in the advance outwash. Groundwater elevations calculated using water level measurements collected from each monitoring well and piezometer and a surface water level measurement at the staff gauge in Pond A are used to evaluate groundwater flow direction in the advance outwash aquifer. Groundwater elevation contours are plotted for each monitoring event using the measured groundwater elevations. The 2015 groundwater contours are shown on Figure 4-1. The contours indicate the groundwater within the advance outwash aquifer has a generally easterly flow, which is consistent with flow direction that has been observed at the landfill since Landau Associates began monitoring activities in 2001. This differs from the flow within the perched aquifer in the landfill, which generally flows to the north.

4.2.3 Groundwater Quality

A certified analytical laboratory conducts the analyses of the groundwater samples. Following receipt of the analytical results, the data are validated as described in Section 4.2 of the Confirmational Groundwater Monitoring Work Plan (Landau Associates 2002). A summary of the analytical results (with data qualifiers added as appropriate) for each annual sampling event and historical events at each well are provided in tabular format. Each annual monitoring report also includes laboratory data reports and a data quality evaluation.

The groundwater analytical results for the 2015 annual sampling event indicated the presence of dissolved arsenic, dissolved iron, and dissolved manganese at concentrations above screening levels [0.004 milligrams per liter (mg/L), 0.3 mg/L, and 0.05 mg/L, respectively] at downgradient wells

EL-103 and EL-105. The concentration of 1,4-dichlorobenzene [2.2 micrograms per liter (µg/L)] at well EL-103 was also above the screening level (1.8 µg/L). These results are consistent with previous results at these locations. At crossgradient/downgradient well EL-106R, dissolved iron and dissolved manganese concentrations were above the screening levels.

4.2.4 Continued Interim Groundwater Monitoring

Dissolved metals (arsenic, iron, and manganese) have routinely been detected above the screening level at wells EL-103, EL-105, and EL-106R). At well EL-103, 1,4-dichlorobenzene has also routinely been detected above the screening level. As of 2015, these results suggest that achieving confirmational groundwater screening levels is unlikely in the near future. As a result, groundwater monitoring at the landfill will continue as an interim program for 2016, and no change to the analyte list is planned for 2016.

Prior to initiating the final eight confirmational groundwater sampling events at some future date (which include analysis for a larger list of constituents), interim groundwater monitoring will need to be conducted on an annual schedule. Analytical results from interim monitoring will be used to evaluate the likelihood of achieving the confirmational groundwater screening levels, and to adjust the scope of continued interim monitoring, as needed. The scope of groundwater monitoring will be re-evaluated following each annual sampling event.

4.2.5 Recommendations

Interim groundwater monitoring should continue to be conducted on an annual schedule during the design phase for the Phase 1 Park development. Ecology needs to be consulted regarding site redevelopment plans that affect the existing landfill management systems, including the groundwater monitoring well network.

During the design phase of the Park project, a determination will need to be made regarding any necessary modifications to the existing groundwater monitoring wells and piezometers to accommodate planned construction and avoid accidental damage/destruction during construction. This may involve decommissioning and replacement of one or more of the existing groundwater monitoring wells and piezometers in the vicinity of the landfill.

Ecology should also be consulted regarding the scope of interim groundwater monitoring to be conducted directly before and after Park construction activities to help determine the changes, if any, in groundwater quality as a result of modifications/improvements to the existing landfill management systems.

4.3 Leachate Collection System

The former Eastgate Landfill was not originally constructed with a leachate collection system. As noted above, the existing leachate collection system consists of a French drain, which was installed in 1983 between the north edge of the landfill and the south edge of Pond A. The French drain was originally installed to capture seeps that were breaking out on the northern slope of the closed landfill. The purpose of the French drain is to intercept water in the shallow perched aquifer that is impacted by landfill leachate and protect water quality in Pond A. The French drain originally discharged to a surface stream or drainage ditch. However, chlordane, an insecticide used during the 1960s, was detected at a concentration of 6.3 parts per billion (ppb) in a sample collected during a 1985 leachate study, and the French drain was subsequently connected to the King County sanitary sewer system in 1987 or 1988 (Landau Associates 2000).

Based on the results of an investigation conducted in July 2001, the French drain is about 196 ft long (as measured from the French drain catch basin at the southeast end of Pond A), and extends about 4 to 5 ft below the existing ground surface. For at least the eastern 105 ft, the French drain is constructed with 8-inch diameter perforated PVC pipe. It is likely that the remainder of the French drain is constructed of similar material; however a break in the pipe about 105 ft west of the catch basin access point prevented a video camera survey of the pipe beyond the break point. The remainder of the French drain was surveyed with a 33 kHz sonde, which indicated that the drain pipe extends south of a manhole for the 36-inch storm sewer pipe and extends to a point just south of landfill gas monitoring well MW-10, as general indicated on Figure 1-2.

As previously noted, the French drain primarily intercepts groundwater from a perched aquifer within the landfill, which generally flows to the north (Landau Associates 2006). Recent flow data in the French drain are not available.

Surface water samples are collected from the French drain catch basin during the annual groundwater sampling events. Dissolved metals and VOCs in water samples collected from the French drain indicate that the system is capturing a portion of the leachate generated within the landfill.

A 2011 evaluation of water quality data in the vicinity of Pond A conducted for the City by Associated Earth Sciences, Inc. (Associated Earth Sciences) concluded that based on water quality samples collected at the landfill monitoring wells, French drain, a surface seep, and at the Pond A inlet and outlet, there was no evidence of landfill contaminants entering Phantom Lake via the surface water collection system, and it was unlikely that contaminants could reach the lake via groundwater flow. Water quality data at the Pond A inlet showed detectable levels of some VOCs and dissolved metals, but samples at the pond outlet did not show any of these constituents above State water quality standards. Therefore, Associated Earth Sciences concluded that Pond A was performing its water quality treatment function (Associated Earth Sciences 2011).

4.3.1 Leachate Collection System Sampling and Analysis

Surface water samples are collected on an annual schedule from the French drain catch basin prior to entering the discharge pipe to the King County sanitary sewer.

The surface water sample collected from the French drain is analyzed at a certified analytical laboratory for the following compounds:

- VOCs by EPA Method 8260C
- Dissolved metals (iron, manganese) by EPA Method 6010B
- Chloride by EPA Method 300.0
- N-Ammonia by Standard Method SM20 4500D
- N-Nitrate calculated
- N-Nitrite by EPA Method 353.2
- Nitrate + Nitrite by EPA Method 353.2
- Sulfate by EPA Method 300.0
- Total Organic Carbon (TOC) by Standard Method SM20 5310C
- Chemical Oxygen Demand (COD) by EPA Method 410.4.

4.3.2 Leachate Collection System Water Quality

In 2015, water samples collected from the French drain had dissolved iron, dissolved manganese, and 1,4-dichlorobenzene concentrations above screening levels. These results are consistent with previous results for water samples obtained from the leachate collection system.

The existing leachate collection system appears to be adequately fulfilling its intended function. Water in the shallow perched aquifer that has been impacted by the landfill waste is being captured and discharged to the sanitary sewer. The leachate collection system, along with Pond A, is functioning to protect downstream water quality. No exceedances of State surface water standards have been observed downstream of Pond A.

4.3.3 Recommendations

Sampling and analysis of surface water from the leachate collection system should continue to be conducted on an annual schedule during the design phase for the Phase 1 Park development. Ecology needs to be consulted regarding site redevelopment plans that affect the existing landfill management systems, including the landfill cap and leachate collection systems.

The 2012 Park Master Plan anticipates preloading and placement of structural fill, installation of a synthetic cap over the landfill, and creation of walking paths on the side slope where the French drain is currently located. It is anticipated that installing an impervious cap over the landfill will reduce precipitation infiltrating into the landfill waste and thus reduce leachate generation. During the design phase of the Park project, a determination will need to be made regarding modifications to the existing leachate collection system to accommodate planned construction. This may involve demolition of the existing French drain system and replacement with a geosynthetic drainage layer or a side slope trench drain to capture any subsurface flows that intercept the side slope beneath the landfill cap and discharging the water to the King County sanitary sewer line.

Ecology should also be consulted regarding the scope of surface water quality monitoring to be conducted before and after Park construction activities to help determine the changes, if any, in surface water quality as a result of modifications/improvements to the existing landfill management systems.

5.0 MTCA COMPLIANCE ANALYSIS

5.1 Introduction

This section provides a summary of select regulatory administrative options for cleanup activities at the former Eastgate Landfill. Landau Associates understands that the City proposes to develop the Site into Bellevue Airfield Park and is considering regulatory options for additional remedial actions that may be conducted at the Site. The Site was enrolled in the Ecology Voluntary Cleanup Program (VCP) in 2000, and is identified as VCP NO. NW0471.

The following subsections present an overview of the current regulatory status of the Site; a brief description of administrative options; a comparison of three administrative options for the site, the VCP and an Agreed Order (AO) or Consent Decree (CD); and our recommendation.

5.2 Regulatory Status

A general description of the Site is provided in Section 1.1. As noted above, the Site is currently enrolled in the VCP. Cleanup activities were initiated at the Site in the 1980s, and groundwater monitoring and landfill gas monitoring are currently being conducted. Cleanup activities at the Site included capping, groundwater monitoring, stormwater infiltration control, leachate collection, landfill gas migration control, and an environmental covenant. Interim groundwater monitoring activities are currently conducted by Landau Associates and landfill gas monitoring is performed by SCS Engineers. Details regarding the groundwater monitoring program and leachate collection system are presented in Section 4.0.

In accordance with the MTCA Regulation (Chapter 173-340 WAC), Ecology provides four administrative options for completing the cleanup process at contaminated sites. Under each option, a potentially liable person (PLP) is required to meet MTCA requirements. Each option, including some of the advantages and disadvantages, is described below.

1) Independent – Under this option, cleanup is performed independently without any Ecology involvement, either formal supervision or informal consultations. A report is submitted to Ecology after completion of cleanup activities other than long-term monitoring; however, Ecology does not provide an opinion on the sufficiency of the cleanup. There is no Ecology involvement in the cleanup; therefore, this option provides the PLPs the most flexibility in scope and schedule. No MTCA grant funding is available.
2) VCP – Under this option, cleanup is performed independently with technical assistance and opinions available from Ecology and a decision on the sufficiency of the cleanup provided by Ecology after completion of the cleanup. If Ecology determines that a completed cleanup is sufficient, their No Further Action determination can be used to demonstrate to the public and other interested parties that the cleanup was adequate. As under the independent option, the PLPs have control over the scope and schedule of remedial activities although Ecology review of plans may result in increases in scope over that initially planned. MTCA grant funding may be available to local governments for up to 50 percent of eligible costs; grant funds are capped at $200,000.

3) AO – Under this option, remedial activities are supervised by Ecology under an AO, an enforceable agreement between Ecology and the PLPs that includes a schedule for completing required activities. No settlement of liability with the state or protection from third-party contribution claims is provided. Documents must be approved by Ecology and are also subject to public review. This option provides PLPs with less flexibility in scope and schedule because activities must be conducted in accordance with AO requirements and all documents, including work plans and reports, must be approved by Ecology. The cost for cleanup under an AO is typically greater than for an independent or VCP cleanup. AOs are often used for remedial actions leading up to a decision on the appropriate cleanup for a site (i.e., site investigation and evaluation of cleanup alternatives). MTCA grant funding may be available to local governments for up to 50 percent of eligible costs; grant funds are not capped.
4) CD – Under this option, cleanup is supervised by Ecology under a CD, an enforceable agreement between Ecology and the PLPs filed in court that includes settlement of liability to the state and provides protection from third-party contribution claims. As with an AO, a schedule for completing required activities is included and documents are subject to public review and must be approved by Ecology. The cost for cleanup under a CD is typically greater than for an independent or VCP cleanup and similar to the cost for cleanup under an AO. CDs are often used for implementation of final cleanup activities. MTCA grant funding may be available to local governments for up to 50 percent of eligible costs; grant funds are not capped.

Table 5-1 provides a summary of what each option provides and how they differ.

The following subsections present four key considerations for comparing the feasible administrative options for the Site (i.e., VCP and an AO or CD). Conducting activities independently outside of the VCP does not present any advantages for this site over conducting activities in the VCP and does not provide an opportunity for pursuing MTCA grant funding later if desired. Table 5-2 presents a summary of these considerations.

5.3 Legal Agreements

Legal agreements are a key consideration because they influence the scope, schedule, and overall cost of the cleanup activities. The VCP does not include a legal agreement. A Site can be withdrawn from the VCP at any time. In contrast, an AO or a CD are legal documents which formalize an agreement between Ecology and the PLPs for the actions needed at a site.

5.4 MTCA Process and Technical Requirements

The technical requirements of the MTCA process are the same under each of the options. The MTCA process includes the following phases/steps; as indicated below, some of these steps have already been completed at the site:

- Site Discovery – this step is already complete.
- Initial Investigation –this step is already complete.
- Site Hazard Assessment – this step is already complete.
- Hazard Ranking/Hazardous Sites List – this step is already complete.

- Remedial Investigation and Feasibility Study (RI/FS) – although a RI/FS has already been completed for the site, additional information will be developed as part of site redevelopment. Additional investigation over what is necessary to support redevelopment is likely to be required under an AO or CD. Under the VCP, information describing the City's planned activities at the site, including the results of any investigation and any changes to the existing landfill management systems (i.e., soil cap layer and hardscape areas; stormwater infiltration control; leachate collection; landfill gas migration control; and groundwater monitoring well network) would be submitted to Ecology.
- Cleanup Action Selection – a cleanup action (capping, groundwater monitoring, stormwater infiltration control, leachate collection, landfill gas migration control, and an environmental covenant) has already been selected and implemented at the site. An Environmental Engineering Design Report (EEDR) and other documents will be prepared and submitted to Ecology as part of Park development to document planned changes to the current remedy, including proposed modifications to the existing landfill management systems.
- Cleanup - a cleanup action (capping, groundwater monitoring, stormwater infiltration control, leachate collection, landfill gas migration control, and an environmental covenant) is being implemented at the site; landfill gas monitoring and venting and groundwater monitoring are continuing. It is anticipated that the Park development construction documents and record drawings/as-built documents will be prepared and submitted to Ecology to document changes to the existing remedy, including modifications to the existing landfill management systems.
- Delisting – delisting will be proposed after MTCA cleanup levels are met.

All cleanups must meet the substantive requirements of MTCA; however, the AO and CD options often require additional effort (and cost) to meet the requirements of the legal agreement.

5.5 Schedule

Schedule is a key consideration because it impacts the cost of cleanup and redevelopment. Schedules are set independently under the VCP option allowing for more PLP control over actions, as well as the pace of steps along the MTCA process. No permit exemptions are provided by the VCP option.

In contrast, schedules for each step of the MTCA process are set in an AO or CD. Additional considerations for the AO and CD options include Ecology review and approval of all documents and public comment periods at various steps of the MTCA process. The AO or CD are also subject to a public comment period. It is likely that additional investigation would be required under an AO or CD, increasing the time required for completion of the redevelopment. Exemptions from the administrative requirements of some permits are provided under the AO and CD options.

5.6 Funding Options for Cleanup

Funding sources are a key consideration because the proposed Bellevue Airfield Park development will be funded by the City, and Ecology has MTCA grant funding programs for local governments aimed to encourage and expedite remedial actions and to lessen the impact of the cost of such actions on tax payers.

Grant and loan funding from Ecology for cleanup is funded by a tax on hazardous substances (e.g., petroleum). MTCA directs about 44 percent of that tax revenue into the Local Toxics Control Account (LTCA). Each biennium, the Legislature appropriates a portion of the funds in the LTCA for remedial action grants and loans. Grant and loan appropriations are then prioritized for certain types of large, multi-biennial projects, extended grant agreements, and sites with a high hazard ranking.

For the 2013-2015 fiscal biennium, the Washington State Legislature appropriated $62,537,000 for the Remedial Action Grants and Loans Program. Of this amount, Ecology allocated $3 million total for Integrated Planning Grants and Independent Remedial Action Grants. Additionally, Ecology allocated $56,043,426 for Oversight Remedial Action Grants and Loans.

Independent Remedial Action Grants and Loans can be provided to local governments that investigate and clean up hazardous waste sites independently under the VCP; the maximum grant amount is 50 percent of eligible cleanup costs, up to $200,000. In contrast, Oversight Remedial Action Grants and Loans can be provided to local governments that investigate and clean up hazardous waste sites under the supervision of Ecology under an AO or CD; there is no maximum grant amount. Under an AO or CD, grants are limited to 50 percent of eligible costs except in special circumstances that would not be applicable to the Site.

It is uncertain what amount of grant funding will be available for the 2015-2017 fiscal biennium and subsequent years; therefore, it is also uncertain what grant funding might be appropriated by Ecology for either of the grant programs applicable to the VCP and AO or CD options. Based on Landau Associates' understanding of the funding landscape, it seems unlikely that in the face of reduced tax revenues on hazardous substances and the ongoing cleanup projects throughout the state, the City's proposed Park development at the Site would be a high enough priority candidate project to receive Ecology grant funding under either program.

5.7 Recommendation

We recommend that the Site remain in the VCP based on the following considerations:

- Legally – The VCP provides more flexibility with regard to the schedule of activities and may avoid added costs associated with adhering to the legal requirements of an AO or CD. In order to demonstrate to Ecology and the Attorney General's office that negotiation of an AO or CD is worth their time, it is likely that further investigation or cleanup would be required in addition to that which has already been completed.
- Technical Requirements – The technical requirements of the MTCA process are the same under the VCP and AO or CD options. The process has already been initiated under the VCP, and the technical elements associated with changes to the existing landfill management systems (i.e., soil cap layer and hardscape areas; stormwater infiltration control; leachate collection; landfill gas migration control; and groundwater monitoring well network) due to the proposed Park development can be adequately addressed by the redevelopment planning effort currently underway.

- Schedule – As previously noted, the VCP provides more flexibility with regard to the schedule of activities than does the AO or CD option. Public comment periods under an AO or CD may add to the schedule complexities and overall costs. Although exemptions from the administrative requirements of some permits are provided under the AO and CD option, we expect that the City's support for the project will assist in expediting permit review and approval when necessary.
- Funding – Based on the current status of the Site and the uncertainty regarding availability of grant funding during the 2015-2017 fiscal biennium and subsequent years, it is unlikely that the City's proposed Park development would be a high enough priority candidate project to receive Ecology grant funding.

6.0 SUMMARY OF RECOMMENDED TASK 2 ACTIONS

The following table briefly summarizes our current understanding of each item/system described in this Task 1 summary report, and lists the recommended Task 2 actions.

Item/System	Current Understanding	Recommended Task 2 Action
Wetland Delineation	• Delineation completed in September 2015; small wetland areas on northern slope above Pond A • Wetland size falls below City regulatory threshold • Permits may be required from USACE for filling/grading of wetland areas	• Assess proposed cut/fill plan for northern slope, and proposed limit of landfill cap modification, to determine if wetland filling will occur • Contact USACE if impacts to wetland areas will occur
Geotechnical Analysis	• Previous investigations and studies provide a good basis for characterizing subsurface conditions at the site • General extent of the landfill solid waste and the five geologic units at the site have been identified	• Conduct the geophysical investigation and review additional data prior to advancing exploratory borings/test pits • After locations/details of Phase 1 Park features are better established, develop and conduct the geotechnical investigation that includes exploratory borings and test pits
Groundwater Monitoring	• Site has two aquifers, shallow (perched in landfill) and deeper intermediate (in advance outwash below landfill) • Water seeps from shallow perched aquifer are managed by the French Drain leachate collection system • Groundwater quality in deep aquifer has been monitored annually since 2001. Certain dissolved metals and VOCs are detected above screening levels • Annual monitoring is likely to be required into the future	• Assess current monitoring well locations compared to proposed site grading/features to determine whether any groundwater monitoring wells need to be modified/replaced/relocated • Coordinate with Ecology to discuss the proposed Park development plans and potential modifications to the existing landfill management systems
Leachate Collection	• French drain captures leachate from perched aquifer within landfill, and discharges to King County sanitary sewer • Water quality is monitored annually. Dissolved metals and VOCs are typically detected. • Installation of impervious cap expected to reduce leachate generation, but need to	• Evaluate proposed cut/fill plan for northern slope to determine options for maintaining the existing leachate collection function • Develop preliminary cap design and determine how leachate collection can be integrated into the cap • Coordinate with Ecology to discuss the proposed Park development plans and potential

Item/System	Current Understanding	Recommended Task 2 Action
	maintain leachate collection function	modifications to the existing landfill management systems
MTCA Compliance Analysis	• Site is currently under Ecology's Voluntary Cleanup Program. • Currently considered unlikely that project would be a priority candidate to receive any significant grant funding from Ecology • Recommend maintaining site under Voluntary Cleanup Program	• Coordinate with Ecology to discuss the proposed Park development plans and potential modifications to the existing landfill management systems • Consider re-evaluating the potential for grant funding after the legislature finalizes the 2015-2017 biennium budget

7.0 USE OF THIS REPORT

This project startup summary report has been prepared for the exclusive use of Walker Macy and the City of Bellevue for specific application to the proposed Bellevue Airfield Park development at the site of the former Eastgate Landfill in Bellevue, Washington. No other party is entitled to rely on the information included in this document without the express written consent of Landau Associates. Further, the reuse of information provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

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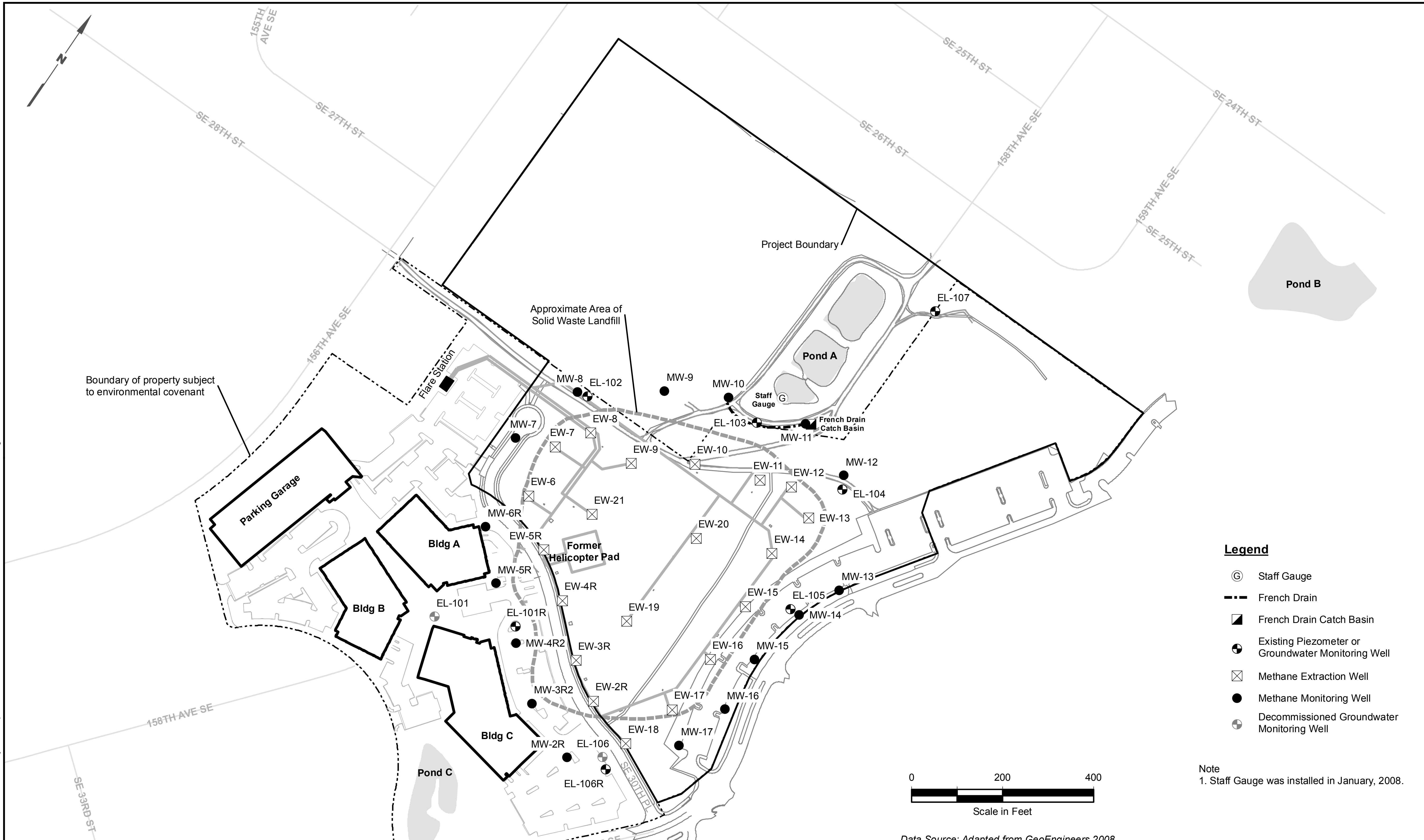
Data Source: Esri 2012

G:\Projects\1548\001\010\011\Project Startup\F011 VicinityMap.mxd 10/9/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

LANDAU ASSOCIATES

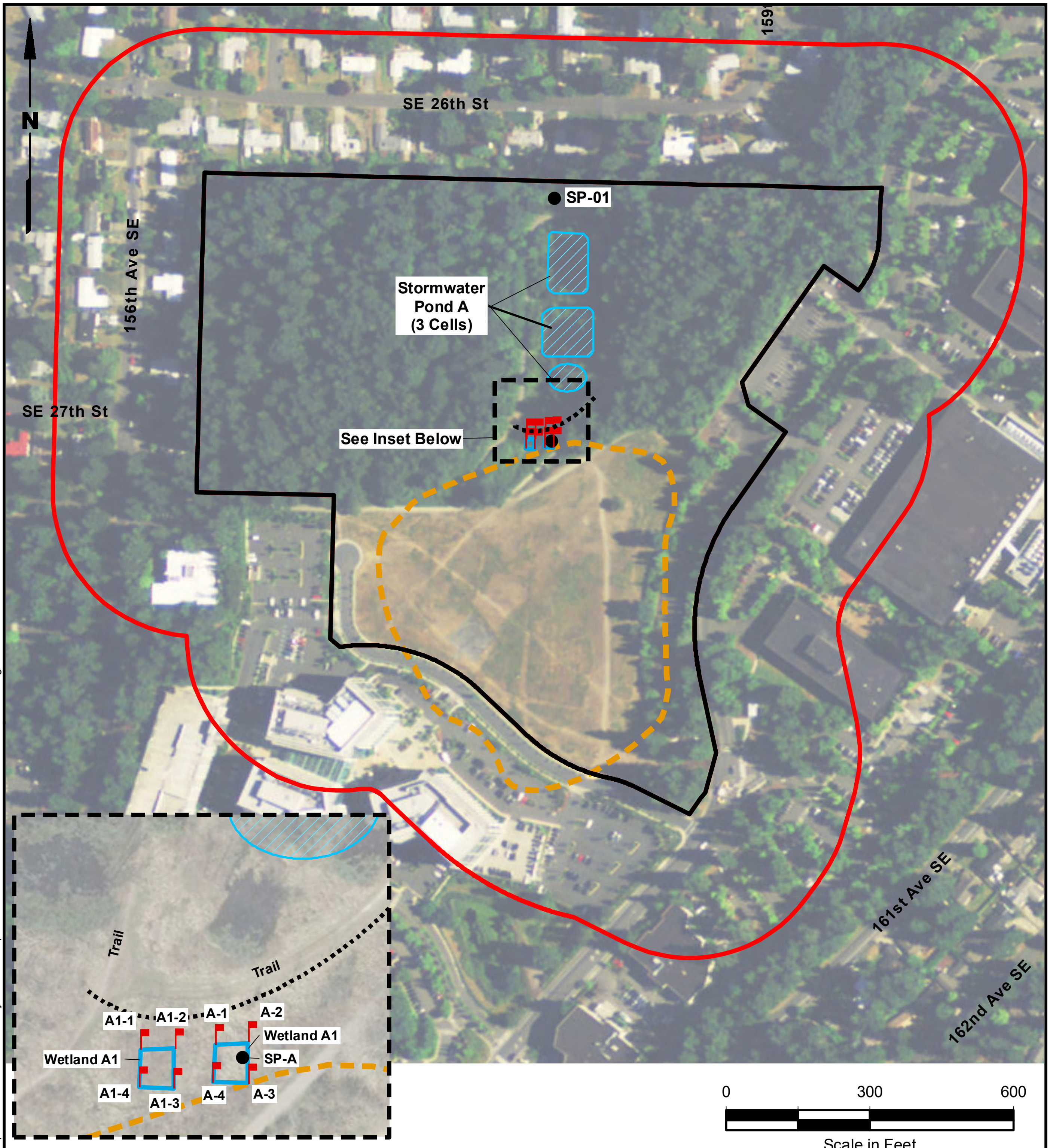
Bellevue Airfield Park Bellevue, Washington	**Vicinity Map**	Figure 1-1



G:\Projects\1548\001\010\011\Project Startup\F012 EnvMonLocations.mxd 10/19/2015 NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet

LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**Environmental Monitoring Locations**	Figure 1-2



Legend

- Sample Point
- Wetland Flag
- Wetland A
- Stormwater Ponds
- Project Area
- Study Area
- Approximate Area of Solid Waste Landfill
- Approximate Location of French Drain

Notes

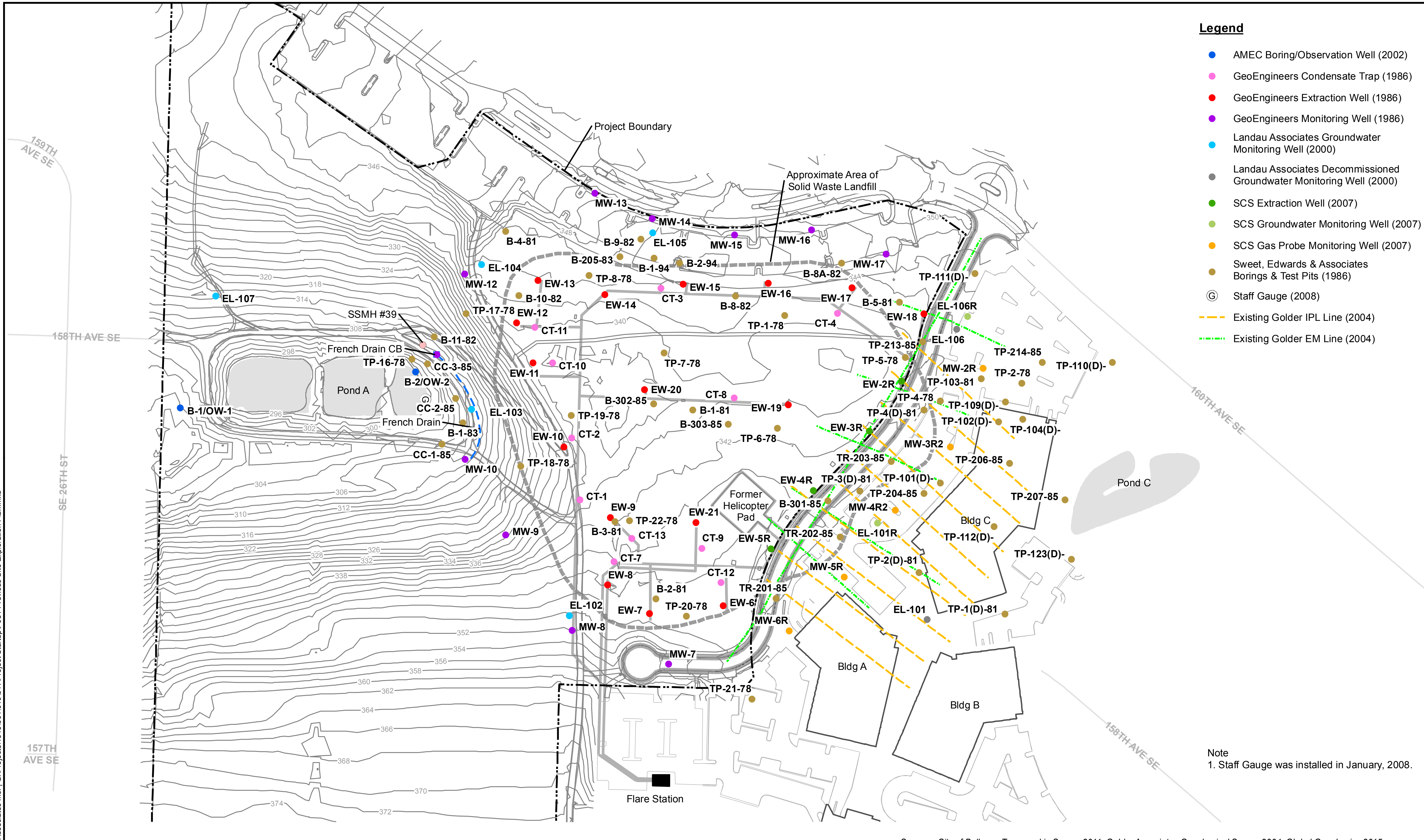
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Sources: King County GIS; Esri World Imagery.

G:\Projects\1548\001\010\011\Project Startup\F021 WetlandWaterwayLocationMap.mxd 10/19/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**Wetland/Waterway Location Map**	Figure 2-1



Sources: City of Bellevue Topographic Survey 2011; Golder Associates Geophysical Survey 2004, Global Geophysics 2015

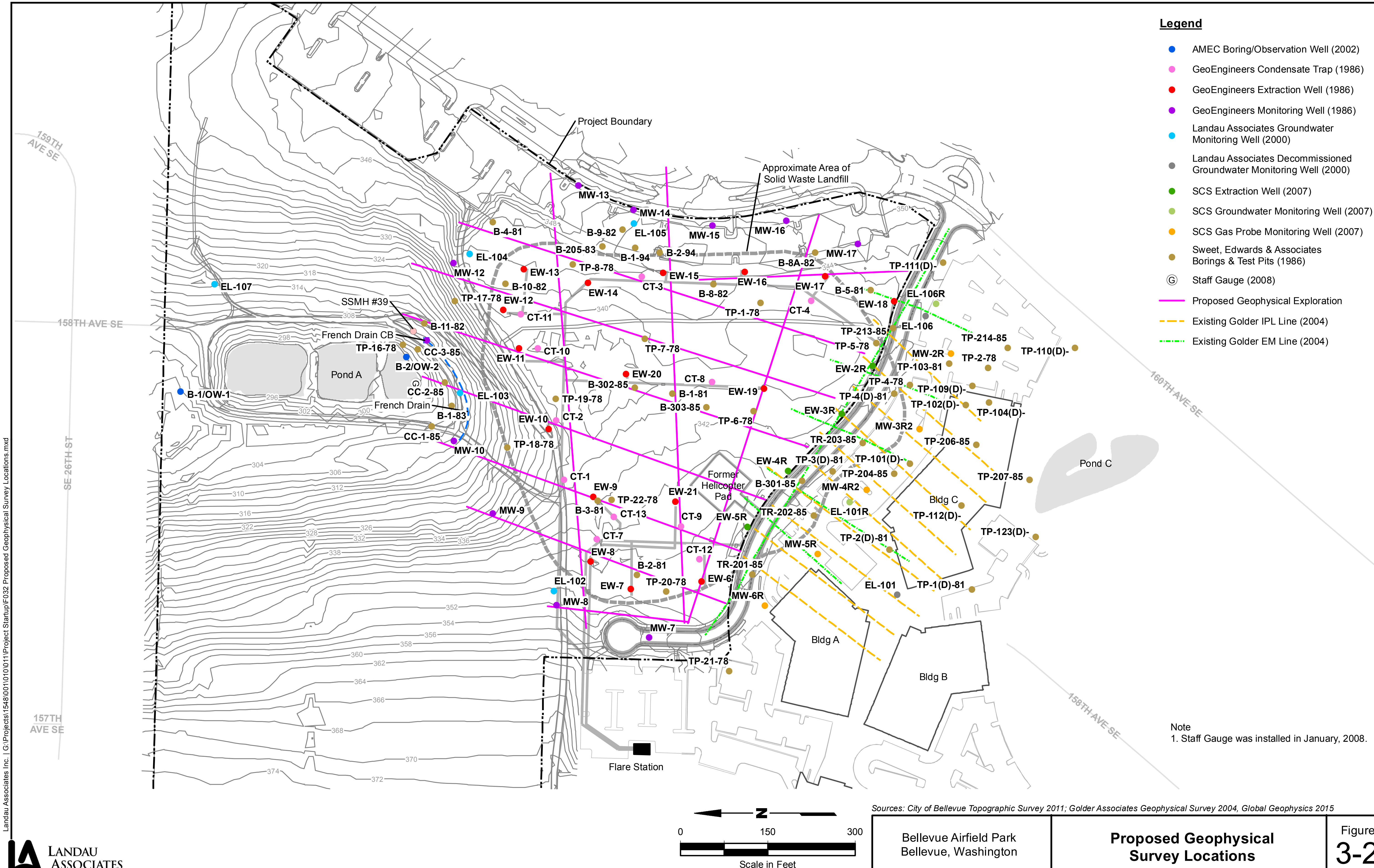
Bellevue Airfield Park
Bellevue, Washington

Previous Site Exploration Plan

Figure
3-1

Landau Associates

Landau Associates Inc. | G:\Projects\1548\001\010\011\Project Startup\F031 Previous Site Exploration Plan.mxd



Sources: City of Bellevue Topographic Survey 2011; Golder Associates Geophysical Survey 2004, Global Geophysics 2015

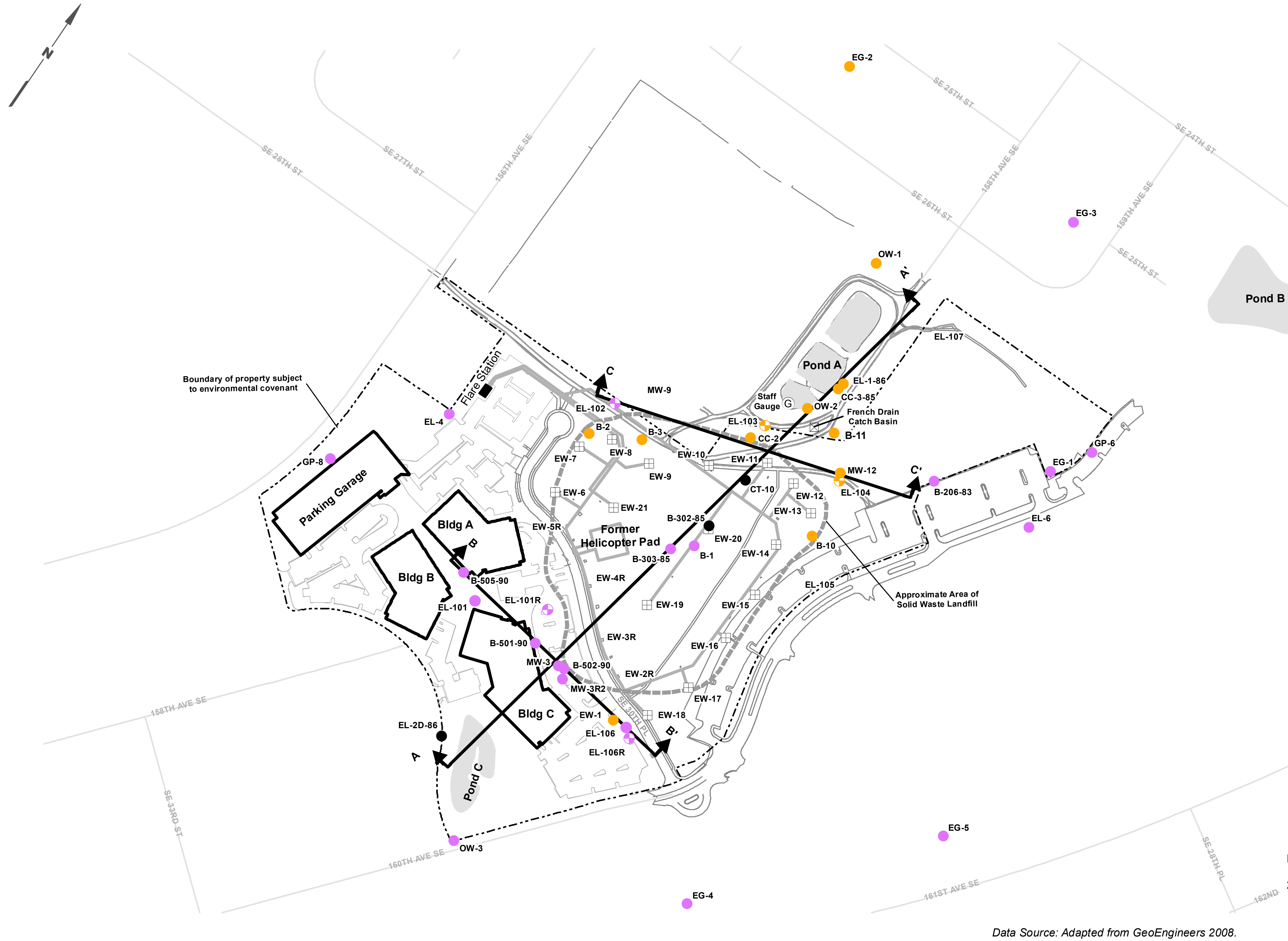
Landau Associates

Bellevue Airfield Park
Bellevue, Washington

Proposed Geophysical Survey Locations

Figure 3-2

Landau Associates Inc. | G:\Projects\1548\001\010\011\Project Startup\F032 Proposed Geophysical Survey Locations.mxd



Legend

- Parking
- Methane Collection System
- Landfill
- Pond
- Staff Gauge
- French Drain Catch Basin
- Location Where Glacial Till is Known to be Present Based on Available Information
- Location Where Glacial Till is Known to not be Present Based on Available Information
- Other Former Borings and Wells
- Methane Extraction Well
- Existing Piezometer or Groundwater Monitoring Well

Notes
1. Staff Gauge was installed in January, 2008.
2. This figure is based on the report 2007 Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, by Landau Associates dated May 23, 2008.

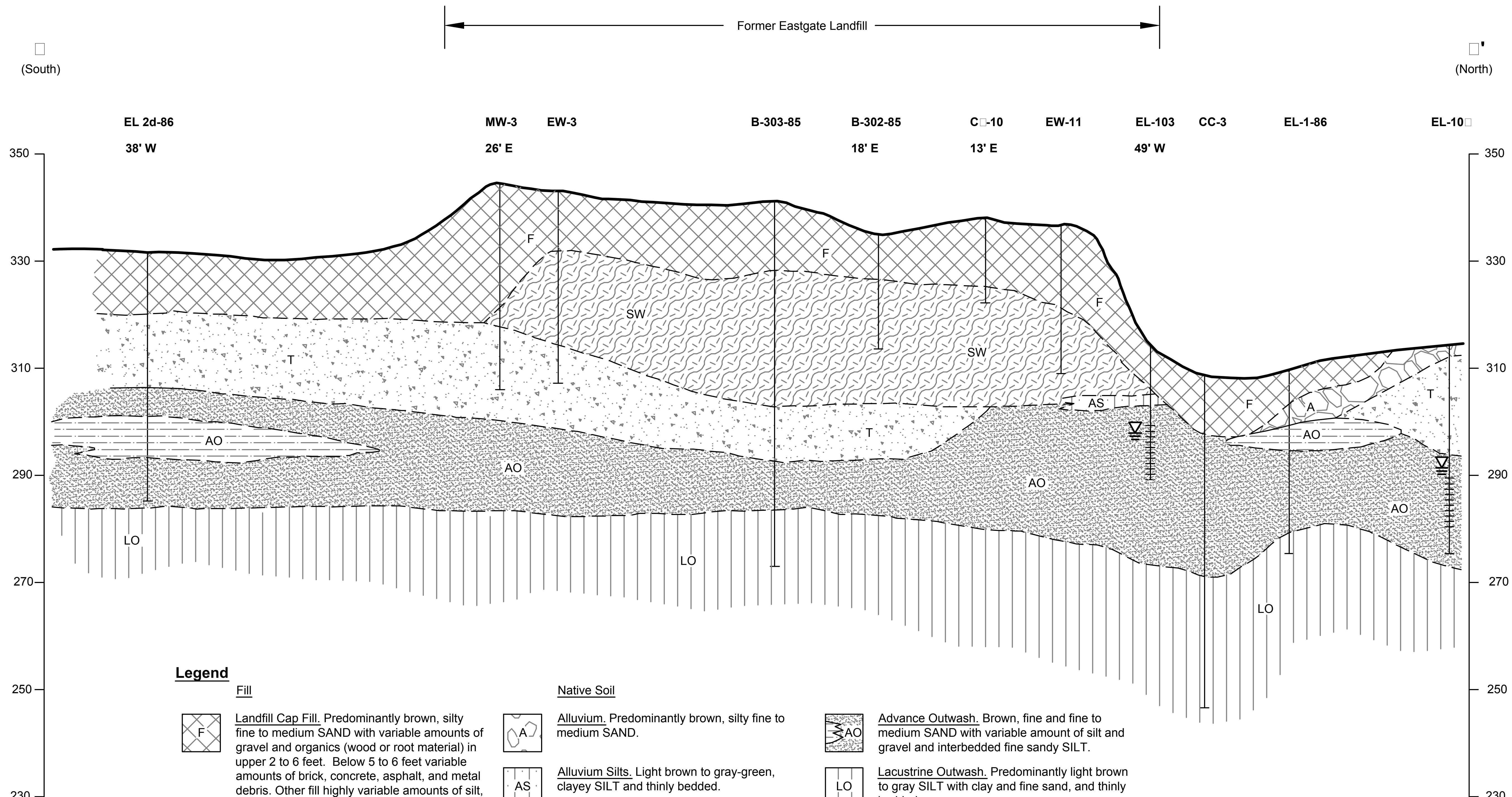
Data Source: Adapted from GeoEngineers 2008.

0 250 500
Scale in Feet

G:\Projects\1548\001\010\011\Project Startup\F033 Glacial Till Occurrences.mxd 10/19/2015

LANDAU ASSOCIATES

Former Eastgate Landfill Bellevue, Washington	**Cross Section Locations and Glacial Till Occurrences**	Figure 3-3



Legend

Fill

F — Landfill Cap Fill. Predominantly brown, silty fine to medium SAND with variable amounts of gravel and organics (wood or root material) in upper 2 to 6 feet. Below 5 to 6 feet variable amounts of brick, concrete, asphalt, and metal debris. Other fill highly variable amounts of silt, sand, and gravel

SW — Landfill Solid Waste. Predominantly brown, silty fine to medium SAND with gravel and variable amounts of construction debris (concrete, wood, and asphalt) and domestic refuse (metal, plastics, cloth, glass, and paper). With clayey SILT to fine sandy SILT layers.

Native Soil

A — Alluvium. Predominantly brown, silty fine to medium SAND.

AS — Alluvium Silts. Light brown to gray-green, clayey SILT and thinly bedded.

T — Till. Light brown to gray, fine and fine to medium SAND with variable amounts of silt and gravel, and occasional cobbles.

AO — Advance Outwash. Brown, fine and fine to medium SAND with variable amount of silt and gravel and interbedded fine sandy SILT.

LO — Lacustrine Outwash. Predominantly light brown to gray SILT with clay and fine sand, and thinly bedded.

Groundwater Level at Time of Drilling

Monitoring Well and Screen Interval

Notes

1. This cross section approximates geologic conditions based on interpretations from borings and well log information.
2. This figure was reproduced from the 2007 Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, by Landau Associates dated May 23, 2008.

0 150 300
Horizontal Scale in Feet
Vertical Exaggeration = 7.5x

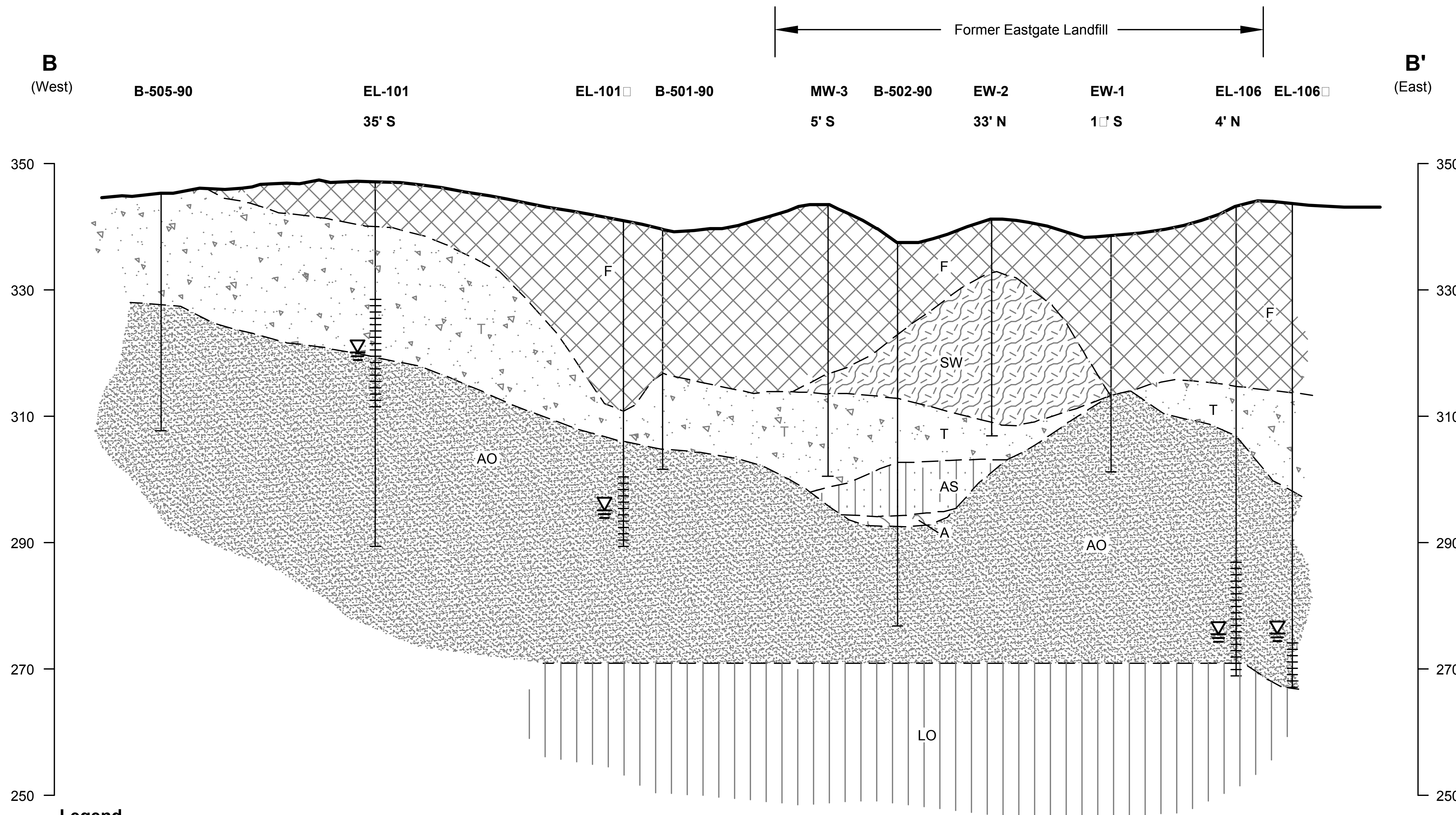
LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, Washington

Geologic Cross Section □-□'

Figure 3-4

Boeing/Eastgate Landfill | G:\Projects\1548\001\010\011\Project Startup\F034 Xsection AA.dwg (A) "Figure 3-4" 10/19/2015



Legend

Fill

Landfill Cap Fill. Predominantly brown, silty fine to medium SAND with variable amounts of gravel and organics (wood or root material) in upper 2 to 6 feet. Below 5 to 6 feet variable amounts of brick, concrete, asphalt, and metal debris. Other fill highly variable amounts of silt, sand, and gravel

Landfill Solid Waste. Predominantly brown, silty fine to medium SAND with gravel and variable amounts of construction debris (concrete, wood, and asphalt) and domestic refuse (metal, plastics, cloth, glass, and paper). With clayey SILT to fine sandy SILT layers.

Native Soil

Alluvium. Predominantly brown, silty fine to medium SAND.

Alluvium Silts. Light brown to gray-green, clayey SILT and thinly bedded.

Till. Light brown to gray, fine and fine to medium SAND with variable amounts of silt and gravel, and occasional cobbles.

Advance Outwash. Brown, fine and fine to medium SAND with variable amount of silt and gravel and interbedded fine sandy SILT.

Lacustrine Outwash. Predominantly light brown to gray SILT with clay and fine sand, and thinly bedded.

Groundwater Level at Time of Drilling

Monitoring Well and Screen Interval

Notes

1. This cross section approximates geologic conditions based on interpretations from borings and well log information.
2. This figure was reproduced from the 2007 Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, by Landau Associates dated May 23, 2008.

0 150 300

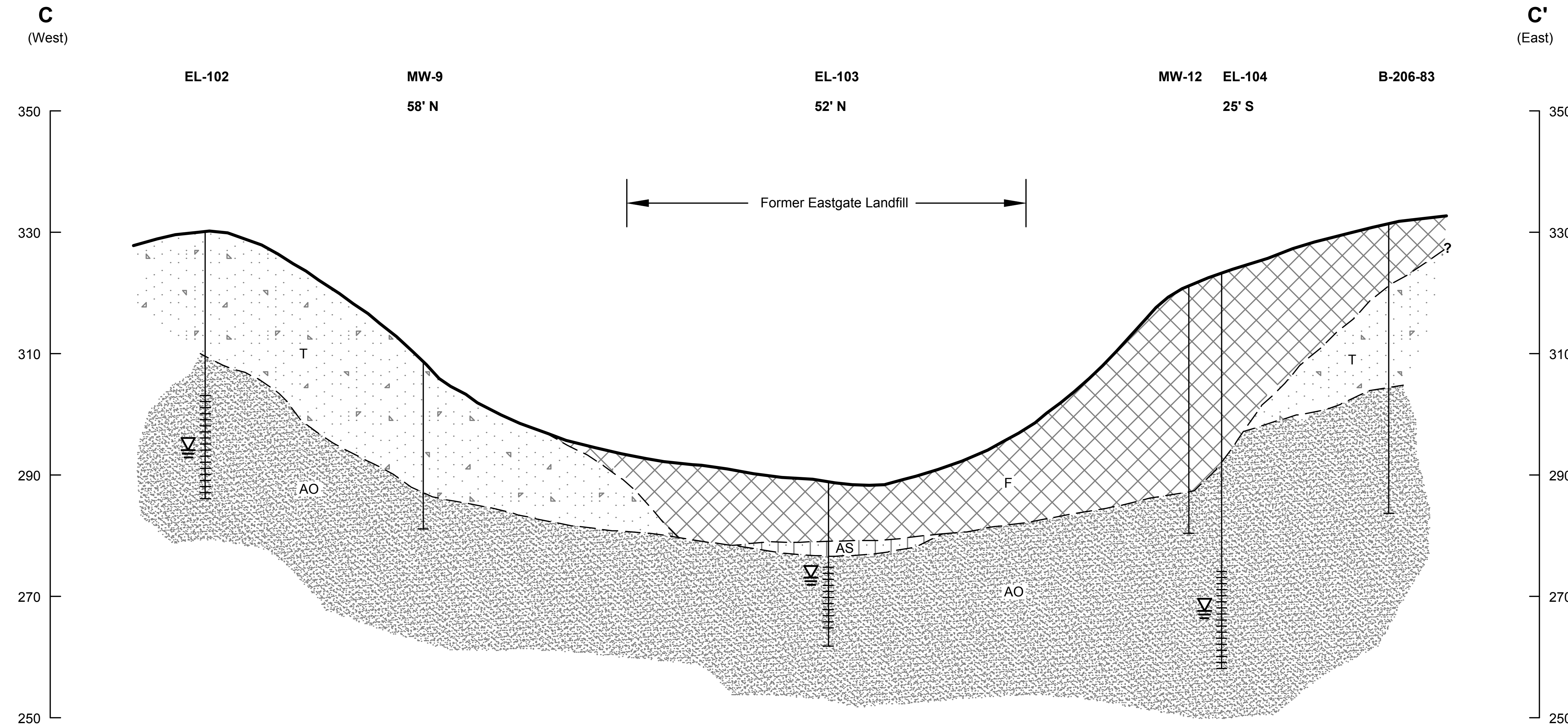
Horizontal Scale in Feet
Vertical Exaggeration = 7.5x

Landau Associates

Bellevue Airfield Park
Bellevue, Washington

Geologic Cross Section B-B'

Figure
3-5



Legend

Fill

F — Landfill Cap Fill. Predominantly brown, silty fine to medium SAND with variable amounts of gravel and organics (wood or root material) in upper 2 to 6 feet. Below 5 to 6 feet variable amounts of brick, concrete, asphalt, and metal debris. Other fill highly variable amounts of silt, sand, and gravel

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LO — Lacustrine Outwash. Predominantly light brown to gray SILT with clay and fine sand, and thinly bedded.

Groundwater Level at Time of Drilling

Monitoring Well and Screen Interval

Notes

1. This cross section approximates geologic conditions based on interpretations from borings and well log information.
2. This figure was reproduced from the 2007 Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, by Landau Associates dated May 23, 2008.

0 150 300
Horizontal Scale in Feet
Vertical Exaggeration = 7.5x

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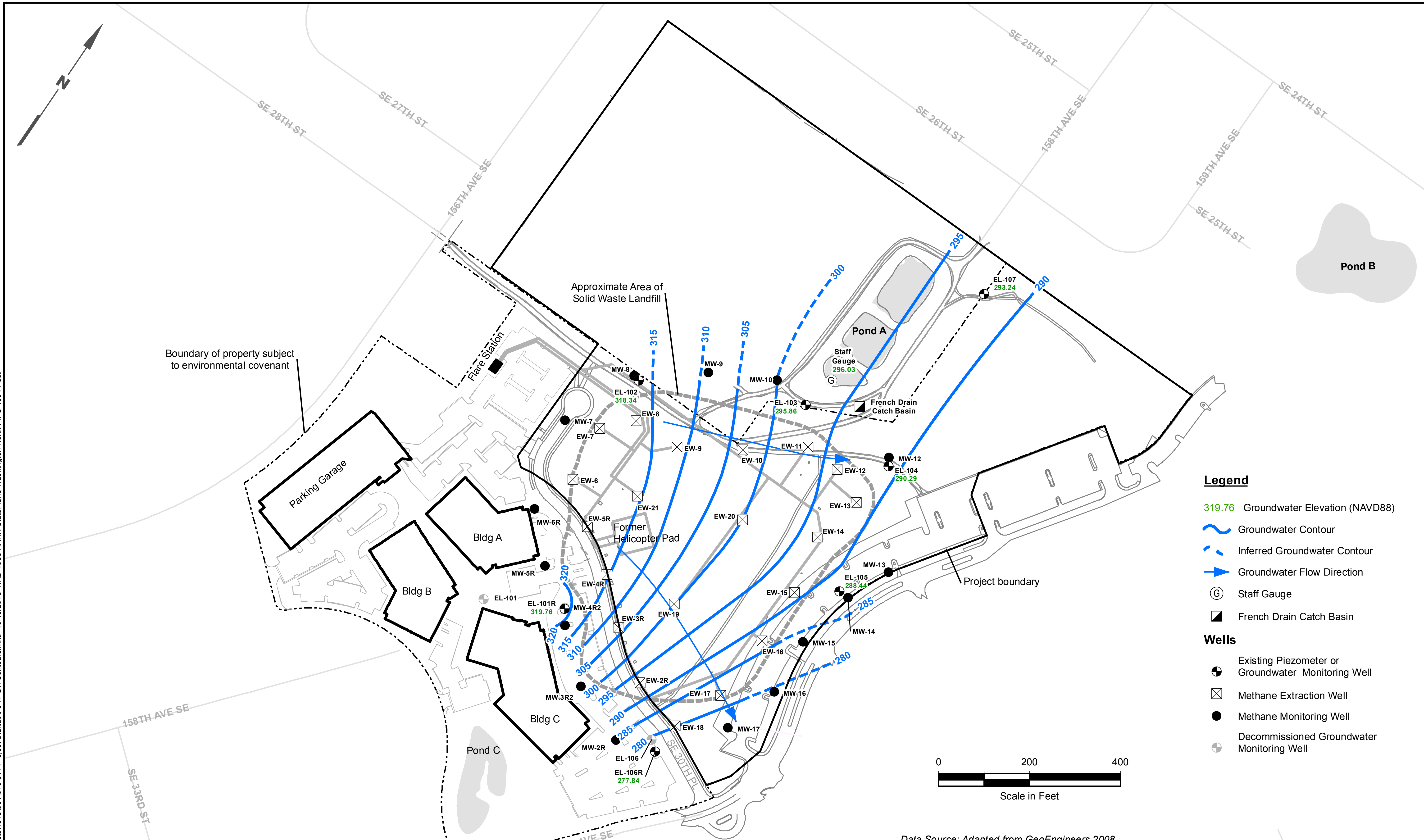
Bellevue Airfield Park
Bellevue, Washington

Geologic Cross Section C-C'

Figure 3-6



Data Source: Adapted from GeoEngineers 2008.

G:\Projects\1548\001\010\011\Project Startup\F041 GWContours.mxd 10/19/2015 NAD 1983 HARN StatePlane Washington North FIPS 4601 Feet

LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**Groundwater Flow Contours** **May 7, 2015**	Figure 4-1

Table 5-1
Adminstrative Options for Cleanup
Eastgate Landfill

	Description	Opinion on Cleanup From Ecology	Supervision of Cleanup by Ecology	Public Involvement	Settlement of Liability with State	Contribution Protection from State
Independent	Independent	No	No	No	No	No
Voluntary Cleanup Program	Independent	Yes	No	No	No	No
Agreed Order	Ecology-supervised	Yes	Yes	Yes	No	No
Consent Decree	Ecology-supervised	Yes	Yes	Yes	Yes	Yes

Table 5-2
Adminstrative Option Comparison
Eastgate Landfill

Key Considerations	Voluntary Cleanup Program (VCP)	Agreed Order (AO) or Consent Decree (CD)
Legal Agreements	The VCP does not include a legal agreement. A site can be withdrawn from the VCP at any time.	An AO or a CD is a legal document which formalizes an agreement between Ecology and potentially liable persons (PLPs) for the actions needed at a site. A CD also includes settlement of liability to the state and provides protection from third-party contribution claims.
MTCA Process and Technical Requirements	Technical requirements of the MTCA process (i.e., from site discovery to remedial investigation and feasibility study through cleanup and delisting) are the same under the VCP, AO, and CD options. All cleanups must meet the substantive requirements of MTCA; however, the AO or CD option often requires additional effort to meet the requirements of the legal agreement.	
Schedule	Schedules are set independently allowing for more control over actions. No permit exemptions are provided.	Schedules are set in the AO or CD. The overall timeline may be longer compared to the VCP due to public comment periods, Ecology review/approval of documents, and additional investigations based on Ecology or public comments. However, exemptions from the administrative requirements of some permits are provided.
Funding Options for Cleanup	Overall cost may be lower compared to an AO or CD. MTCA grant funding (Independent Remedial Action Grants) may be available fpr up to 50% of eligible project costs; the maximum grant amount is $200,000.	Overall costs may be higher compared to the VCP. MTCA grant funding (Oversight Remedial Action Grants) may be available for up to 50% of eligible project costs; there is no maximum grant amount. Applications for grant funding are prioritized for certain types of large, multi-biennial projects, extended grant agreements, and sites with a high hazard ranking.

APPENDIX A

Draft Wetland Delineation Report

Draft
Wetland Delineation Report
Bellevue Airfield Park Development
(Former Eastgate Landfill)
Bellevue, Washington

October 19, 2015

Prepared for

Walker Macy
Portland, Oregon

LANDAU ASSOCIATES

EXECUTIVE SUMMARY

The City of Bellevue (City) is proposing development of Bellevue Airfield Park (Park) located adjacent to the I-90 Business Park in Bellevue, Washington. The proposed Park will include two synthetic turf athletic fields, concessions and restroom facilities, play and picnic areas, pedestrian trails, a spray deck, expansion and improvements to existing stormwater management facilities, and lighting and parking improvements. A portion of the Park site overlies the closed Eastgate Landfill, which has environmental restrictions and ongoing monitoring requirements under the Washington State Department of Ecology's (Ecology) Model Toxics Control Act (MTCA) voluntary cleanup program (VCP) and an environmental covenant for the site dated November 12, 2008.

Wetlands, waterways, and/or their buffers can fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act, Ecology under the State Water Pollution Control Act, and the City under the Critical Areas regulations of the City of Bellevue Municipal Code (BMC).

This report provides results of the critical areas delineation limited to wetlands and waterways in compliance with both the City's critical areas regulations and USACE requirements for compliance with Section 404 of the Clean Water Act.

Site Information

Location	Wetland Impact & Mitigation Sites (same)
Site Names	Bellevue Airfield Park
County	King
City	Bellevue
Township, Range, Section	Township 24N, Range 5E, Section 11
Latitude, Longitude	47° 35.124'N; 122° 7.745'W
Watershed	Cedar - Sammamish
WRIA	8

Summary of Wetland(s) and Waterway(s)

System	Classification	Ecology Rating (Score 1-100)	Ecology Category	Buffer Width (in feet)
Wetland A/A-1	PEM/Slope	23	Category 4	Not applicable (wetland less than 2.500 square feet and is not a designated critical area per the City Land Use Code)

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

BGS	Below Ground Surface
BMC	City of Bellevue Municipal Code
City	City of Bellevue
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
FEMA	Federal Emergency Management Act
ft	feet
HGM	hydrogeomorphic
HPA	hydraulic project approval
LUC	Land Use Code
MHW	mean high water
NRCS	Natural Resources Conservation Service
NI	no indicator
NWI	National Wetlands Inventory
OBL	obligate
OHWM	ordinary high water mark
Park	proposed Bellevue Airfield Park
RCW	Revised Code of Washington
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCP	Voluntary Cleanup Program
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area

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INTRODUCTION

The City of Bellevue (City) is proposing development of Bellevue Airfield Park (Park) located adjacent to the I-90 Business Park in Bellevue, Washington, King County, Washington (Figure 1). The proposed Park will include two synthetic turf athletic fields, concessions and restroom facilities, play and picnic areas, pedestrian trails, a spray deck, expansion and improvements to existing stormwater management facilities, and lighting and parking improvements. A portion of the Park site overlies the closed Eastgate Landfill, which has environmental restrictions and ongoing monitoring requirements under the Washington State Department of Ecology's (Ecology) Model Toxics Control Act (MTCA) voluntary cleanup program (VCP) and an environmental covenant for the site dated November 12, 2008.

Landau Associates, under contract to Walker Macy, conducted this investigation to assist the City in determining potential impacts to wetlands and other "waters of the U.S.," and other critical areas regulated by the City. The results of Landau Associates' wetland delineation are presented in this report, which identified one wetland within the project area.

SITE DESCRIPTION

The project area is approximately 27 acres consisting of three contiguous parcels (King County Parcels 1124059060, 11240569105, and 1124059123), and is generally located between 156th Avenue SE, SE 26th Street, and 160th Avenue SE, in the City of Bellevue, (Figure 2). The project is within the Cedar-Sammamish River watershed [Water Resource Inventory Area (WRIA) 8] in Township 24 North, Range 5 East, Section 11. Current land use in the project vicinity is primarily commercial and residential. The topography of the project area consists of relatively steep slopes in forested areas and relatively level areas of the former landfill.

The study area consists of the surrounding areas within 300 feet (ft) of the project area (Figure 2). Critical area delineation was limited to accessible areas within the project area. Wetland/waterway habitat that extends beyond the project footprint, and within 300 ft was, estimated both visually and using public domain resources to assess wetland/waterway extent.

The proposed Park site includes the former Eastgate Landfill, which was a municipal solid waste landfill operated by King County that accepted household and demolition wastes from 1951 until it was closed and covered in 1964. Bellevue Airfield runway was subsequently extended over the former landfill and operated until 1983. After landfill closure, Cabot, Cabot & Forbes purchased the property, including most of the landfill, and developed the I-90 Business Park. Boeing acquired portions of the former Eastgate Landfill property and adjacent properties in 1980 and 1983. The Boeing-owned property was partially developed by Boeing in the mid to late 1980s; however, no buildings have been constructed directly over the former landfill to date. Landfill leachate is collected by a French drain located on the north side of the landfill and south of stormwater detention Pond A and is discharged to the King County sanitary sewer.

REGULATORY BACKGROUND

The Clean Water Act requires authorization for the discharge of dredged or fill material into the "waters of the U.S." under Section 404. The City Land Use Code (LUC) contains requirements for establishing wetland and stream buffer widths and building setbacks, and for any alteration, including fill, of wetlands, streams, and their buffers. Ecology requires compliance with the State Water Pollution Control Act [Revised Code of Washington (RCW) 90.48], and it has administrative oversight of Section 401 of the Clean Water Act for water quality certification in the case of impacts to U.S. Army Corps of Engineers (USACE) jurisdictional "waters of the U.S." Any work that will use, divert, obstruct, or change the bed or flow of state waters, including streams and rivers, must do so under the terms of an Hydraulic Project Approval (HPA) issued by the Washington Department of Fish and Wildlife (WDFW). WDFW HPA is administered under RCW 77.55 and rules set forth in Washington Administrative Code (WAC) 220-110. Wetlands and certain waterways are regulated by federal, state, and local governmental agencies, and compliance with one agency does not necessarily fulfill permitting requirements of any other agencies.

All wetlands and waterways described in this report are subject to verification by the USACE. The USACE determines the jurisdiction of a wetland based on the connection, more commonly referred to as adjacency, to other "waters of the U.S." Those wetlands determined to be "isolated" do not fall under the jurisdiction of the USACE. If identified "waters of the U.S." are determined to be adjacent rather than isolated, any filling or dredging of onsite wetlands/streams would require compliance with Section 404 and 401 of the Clean Water Act and the Endangered Species Act. Only the USACE can make the determination if a "waters of the U.S." is adjacent or isolated. If wetlands are determined to be isolated, they may still be subject to regulation by Ecology under the State Water Pollution Control Act (RCW 90.48).

METHODOLOGY

Landau Associates conducted an information review and onsite delineation of wetlands and surface waters associated with the proposed project according to the methods described below.

WETLAND/WATERWAY INVESTIGATION

Landau Associates conducted this wetland delineation in accordance with the USACE *Wetland Delineation Manual* (USACE 1987); and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010). The investigation of waterways was based on the methodology provided by Ecology's *Determining the Ordinary High Water Mark (OHWM) on Streams in Washington State* (Olson and Stockdale 2010) and City Critical Areas code (Part 20.25H) of the LUC.

In general, the USACE and Ecology recommend preliminary data gathering and a synthesis of available background information, followed by a field investigation to determine the presence of "waters of the U.S," including wetlands and streams.

BACKGROUND INFORMATION REVIEW

Landau Associates reviewed the following public domain resources to determine existing conditions, potential wetlands/other "waters of the U.S.," and other critical areas within the study area:

- U.S. Geological Survey (USGS) topographic map [ESRI 2013; Appendix A, Figure A-1]
- Aerial photography (ESRI 2015; Figure 2)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map (USFWS 1981 to present; Appendix A, Figure A-2)
- (USDANRCS Soil Survey database (USDA, NRCS website 2006; Appendix A, Figure A-3; Appendix B)
- USDA, NRCS National Hydric Soils List (USDA, NRCS website 2014a)
- City Critical Areas map (City of Bellevue website 2009)
- Floodplains database [Federal Emergency Management Act (FEMA) 1996; Appendix A, Figure A-4]
- *Wetland, Stream, and Wildlife Habitat Study, Bellevue Airport Site* (The Watershed Company 2002)
- WDFW SalmonScape (WDFW website 2015a)
- WDFW PHS on the Web (WDFW website 2015b).

WETLAND DELINEATION

Both USACE and Ecology outline a three-parameter approach to determine the presence or absence of wetlands that requires evaluating vegetation, soil, and hydrology (Table 1). Landau Associates' biologists completed the field delineation using the routine onsite method, where data are collected at locations representative of typical wetlands and/or uplands within the study area. Following this method, an area is determined to be wetland if each of the following three criteria are met (also see Table 1):

- The dominant vegetation is hydrophytic.
- Soils are hydric.
- Wetland hydrology is present.

"Difficult wetland situations" may occur in which one or more of the required criteria have been disturbed by human or natural events (atypical situations) or are absent due to natural variability (problem areas). In cases of difficult wetland situations, a wetland determination can be based on the best available information of the site, knowledge of the ecology of wetlands in the region, and/or other undisturbed or present criteria at the time of the evaluation.

The wetland boundaries were delineated using numbered flagging where accessible.

WETLAND AND STREAM CLASSIFICATION, RATING, AND BUFFER WIDTH

Any wetlands identified as part of this project were classified according to the USFWS's Cowardin classification system (Cowardin et al. 1979) and the USACE's hydrogeomorphic (HGM) classification system (Brinson 1993).

Wetlands were rated according to the *Washington State Wetlands Rating System for Western Washington* (Hruby 2004), which is accepted practice by the City pursuant to LUC 20.25H.095. This system categorizes wetlands based on their existing functions, including water quality, hydrology, and habitat, as well as the wetland's rarity, sensitivity to disturbance, or irreplaceability. The wetland categories range from 1 to 4, and are defined in Part 20.25H.095 of the LUC as follows:

- Category I wetlands are those that (a) represent a unique or rare wetland type; or (b) are more sensitive to disturbance than most wetlands; or (c) are relatively undisturbed and contain ecological attributes that are impossible to replace within a human lifetime; or (d) provide a high level of functions.
- Category II wetlands are difficult, though not impossible, to replace, and provide high levels of some functions. These wetlands occur more commonly than Category I wetlands, but still need a relatively high level of protection. Category II wetlands in western Washington include wetlands scoring between 51 to 69 points (out of 100) on the questions related to the functions present. Wetlands scoring 51 to 69 points were judged to perform most functions

relatively well, or performed one group of functions very well and the other two moderately well.

- Category III wetlands are wetlands with a moderate level of functions (scores between 30 to 50 points). Wetlands scoring between 30 to 50 points generally have been disturbed in some way, and are often less diverse or more isolated from other natural resources in the landscape than Category II wetlands.
- Category IV wetlands have the lowest levels of functions (scores less than 30 points) and are often heavily disturbed. These are wetlands that we should be able to replace, and, in some cases, be able to improve. However, experience has shown that replacement cannot be guaranteed in any specific case. These wetlands may provide some important functions, and also need to be protected.

Wetland buffers were determined according to Part 20.25H.095(B) of the LUC.

WATERWAY DELINEATION

Where accessible, the OHWM of waterways was identified in accordance with methodology developed by Ecology (Olson and Stockdale 2010). The methodology focuses on examining existing hydrologic data and observation of field indicators including hydrology, soil and sediments, vegetation, marks of scouring, etc.

CRITICAL AREAS INVESTIGATION RESULTS

This section provides the results of the background information review and onsite field delineation.

BACKGROUND INFORMATION REVIEW

This section provides a summary of topographic mapping, soil survey information, NWI mapping, and other sources documenting conditions in and adjacent to the project area.

WATERWAYS

The topographic map appears to identify an unnamed tributary to Squibbs Creek originating in the southeast corner of the project area (Appendix A, Figure A-1). City of Bellevue Critical Areas mapping, Salmonscape, and Priority Habitat and Species (PHS) on the Web do not identify this waterway. The waterway mapped on the USGS topographic map is in the area of former landfill.

WETLANDS

The NWI map (USFWS 1981 to present) does not identify any additional wetlands intersecting the study area (Appendix A, Figure A-2). City of Bellevue Critical Area Mapping (City of Bellevue website 2009) identifies a “Type B” wetland in the project area. The area of the wetland is a three-cell stormwater detention pond (Pond A).

The 2002 *Wetland, Stream, and Wildlife Habitat Study, Bellevue Airport Site* (The Watershed Company 2002) also identifies the stormwater pond and two additional wetlands in the project area. A freshwater marsh/wet meadow is described on the north facing slope south of the stormwater pond, and a deciduous forested wetland is described east of a drainage channel and north of the berm on the north side of the stormwater pond.

SOIL

The *Soil Survey Geographic Database for King County Area, Washington* (USDA, NRCS website 2006) identifies four soil series within the study area (Appendix A, Figure A-3; complete soil profile reports are provided in Appendix B):

- Arents (AmC, An) is soil that has been modified by plowing, spading, or other methods of moving by humans (USDA NRCS 1999). Arents is not listed in the National Hydric Soils List (USDA NRCS website 2014a).
- Alderwood (AmC) consists of moderately deep to a densic contact, moderately well drained soils formed in glacial drift and outwash over dense glaciomarine deposits (USDA NRCS

2014b). A perched water table is at its highest from January through March. The Arents, Alderwood soil series is not listed in the National Hydric Soils List (USDA, NRCS website 2014a).

- Everett (EvC) consists of very deep, somewhat excessively drained soil that formed in gravelly and sandy glacial outwash. (USDA, NRCS website 2014c). The Everett gravelly sandy loam series is not listed in the National Hydric Soils List (USDA, NRCS website 2014a).
- Kitsap (KpB) consists of very deep, moderately well drained soil formed in lacustrine sediments (USDA, NRCS website 2000). The Kitsap silt loam is classified as hydric in the National Hydric Soils List (USDA, NRCS website 2014a) in depressions that contain components of the Bellingham, Seattle, or Tukwila soil series.

FLOODPLAIN

The Q3 flood data (FEMA 1996) identifies the study area is outside the limits of a 100-year floodplain. The nearest 100-year floodplain to the project area is located approximately 800 ft to the north, associated with Phantom Lake.

LAND USE

Aerial photographs of the study area show developments (i.e., residential and/or commercial), open space (former landfill area), and forest in the study area (Figure 2).

PRECIPITATION

Precipitation data for the Puget Sound Lowlands during the 3-month period prior to the field investigations (National Climatic Data Center website 2015) indicate recorded precipitation levels were within the normal range listed in NRCS WETS tables (USDA, NRCS website 2002; Appendix C). However, a statewide drought emergency has been declared due to low snowpack (Ecology website 2015).

FIELD INVESTIGATION

Landau Associates' ecologists Steven Quarterman and Jamie Sloan conducted a field investigation on September 21, 2015; the weather during the investigation was sunny and warm.

Detailed information on soil, vegetation, and hydrology was recorded at two sampling points, and the boundaries of one wetland was delineated (Figure 3). No regulated waterways were identified in the study area. The completed data sheets describing the sample points, rating form, and site photographs are provided in Appendix D, Appendix E, and Appendix F, respectively.

WETLAND A/A1

Wetland A/A1 is approximately 600 square feet (subject to survey verification), and is located on the north facing slope south of the stormwater pond (see Figure 3), in the vicinity of wetland delineation in 2002 (The Watershed Company 2002). The wetland consists of two relatively small areas on the slope (flags A-1 to A-4 and A1-1 to A1-4) separated by a relatively narrow rise in elevation parallel to the slope.

Sampling Point SP-A was recorded to characterize the vegetation, hydrology, and soils of Wetland A, and Sampling Point SP-01 was recorded to describe the adjacent upland area (Appendix D).

VEGETATION

Wetland A/A1 satisfies the hydrophytic vegetation parameter by the prevalence index indicator. The dominant plant species and their indicator status at Sampling Point SP-A include:

- Reed canarygrass [*Phalaris arundinacea*, Facultative Wetland (FACW)]
- Himalayan blackberry [*Rubus armeniacus*, Facultative Upland (FACU)].

Additional species found in Wetland A/A1 include, but are not limited to, soft rush (*Juncus effusus*, FACW) and evergreen blackberry (*Rubus laciniatus*, FACU). Hydrophytic vegetation is considered present based on the prevalence index, as the wetland includes areas containing both reed canary grass and soft rush.

Soil

The soil at Sampling Point SP-A is characterized as sandy redox, which satisfies USACE hydric soil parameter. From 0 to 6 inches below ground surface (BGS), the soil matrix is a very dark gray-brown (10YR 3/2) loamy sand, underlain by a dark gray-brown (2.5Y 4/2) loamy sand with dark brown (7.5YR 3/4) and strong brown (7.5YR 4/6) redox features from 6 to 12 inches BGS. Gravel refusal was encountered at 12 inches BGS.

Hydrology

No primary indicator of wetland hydrology was observed at the time of the field investigation. However, previous investigation of the site references observation of saturation and ground seeps from the adjacent landfill. Drought conditions and years with unusually low winter snowpack are identified as a “difficult wetland situation” in the USACE Regional Supplement. In these instances, if wetland hydrology indicators appear to be absent on a site that has hydrophytic vegetation and hydric soil; no significant hydrologic manipulation (e.g., no dams, levees, water diversions, land grading, etc.); and the site is not within the zone of influence of any drainage ditches or subsurface drains), the area should be identified as a wetland. The site may be re-visited and verified for wetland hydrology indicators during normal climatic periods.

Wetland Determination

All three mandatory wetland criteria are satisfied for Wetland A/A1. Landau Associates classified Wetland A as a palustrine emergent (PEM)/slope (Cowardin/HGM classification) wetland. The wetland is located immediately upslope of the existing landfill leachate French drain, which was installed in approximately 1983, and discharges to the King County sanitary sewer. The purpose of the French drain is to intercept landfill leachate and protect water quality in the downgradient stormwater pond. Hydrology from Wetland A/A1 is likely intercepted by the French drain.

Using the Ecology wetland rating form, Wetland A is rated as a Category 4 wetland, with a total score of 22. Wetland A/A1 scored highest for water quality functions, receiving a score of 12; hydrologic and habitat functions were rated with a score of 6 and 5, respectively. In accordance with Chapter 20.25H.095 BMC, Category 4 wetlands under 2,500 square feet are not designated critical areas, and no buffer is assigned.

Upland Characterization

The upland area of the project area is represented by Sampling Point SP-01, which satisfies only one of the three mandatory wetland criteria. Sampling Point SP-01 is located north of the stormwater detention ponds in an area described as wetland (The Watershed Company 2002). The area of Sampling Point SP-01 is a low topographic depression near the end of a riprap drainage swale adjacent to the walking trail west of the stormwater ponds.

Vegetation in Sampling Point SP-01 is dominated by:

- Pacific willow (*Salix lucida*, FACW)
- Red alder (*Alnus rubra*, FAC)
- Salmonberry (*Rubus spectabilis*, FAC)
- Ornamental cherry species (*Prunus* sp., No Indicator [NI])
- Yellow archangel (*Lamiastrum galeobdolon*, NI).

Additional species in Sampling Point SP-01 include Indian plum (*Oemleria cerasiformis*, FACU).

Areas upslope from Sampling Point SP-01 may contribute surface flow, but no hydrology indicators were observed. During the field investigation, the soil in Sampling Point SP-01 was dry. The soil from 0 to 4 ft BGS was a black fibrous sandy loam, underlain by a black (7.5YR 2.5/1) sandy loam with dark brown (7.5YR 3/4) and dark yellowish brown (10YR 3/6) features from 4 to 22 inches BGS. The features observed were hard nodules that appear to be relict features. Nodules and concretions that are actively forming often have gradual or diffuse boundaries, whereas relict or degrading nodules and concretions have sharp boundaries (Vepraskas 1992 in USACE 2010). Additionally, nodules are generally not considered to be redox concentrations under the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (USACE 2010).

The former landfill area within the project area is dominated by unidentified grasses and herbaceous species. Grasses were unidentifiable at the time of the field investigation due to the lack of distinguishable features (as conditions were dry and the site is mowed); other herbaceous vegetation includes, but is not limited to, Queen Anne's lace (*Daucus carota*, FACU) and bird's-foot trefoil (*Lotus corniculatus*, FAC). A grass-lined swale was observed in this section of the study area, and vegetation in the swale was typical of the area.

Forest stands in the project area are dominated by Douglas-fir (*Pseudotsuga menziesii*, FACU). Western red cedar (*Thuja plicata*, FAC) and big leaf maple (*Acer macrophyllum*, FACU) are also present within the stand. Understory species include, but are not limited to:

- Salal (*Gaultheria shallon*, FACU)
- Vine maple (*Acer circinatum*, FAC)
- European mountain ash (*Sorbus aucuparia*, NI)
- Red huckleberry (*Vaccinium parvifolium*, FACU)
- English ivy (*Hedera helix*, FACU)
- Beaked hazelnut (*Corylus cornuta*, FACU)
- Oceanspray (*Holodiscus discolor*, FACU)
- Himalyan blackberry (FACU)
- Evergreen blackberry (FACU)
- Sword fern (*Polystichum munitum*, FACU)
- Indian plum (FACU)
- Red elderberry (*Sambucus racemosa*, FACU)
- Thimbleberry (*Rubus parviflorus*, FACU)
- Snowberry (*Symphoricarpos albus*, FACU)

Soil in the forested areas were generally similar to those seen in Sampling Point SP-01, but lacked nodules, and no hydrology indicators were observed.

STORMWATER DETENTION POND A

A three-cell stormwater detention pond (Pond A) was observed within the north-central portion of the project area. Pond A is designed as a wet pond, and contained standing water in each cell at the time of the field investigation. Pond A was initially constructed in the early 1980s and was modified to a three-cell configuration in 1983 to improve its water quality treatment capability. Pond A is reportedly dredged every 5 to 10 years (city of Bellevue Staff personal communication 2015). Pond A is bordered by walking trails and drains via underground piping to Phantom Lake.

Vegetation adjacent to the Pond A cells include, but is not limited to:

- Pacific willow (FACW)

- Scouler’s willow (*Salix scouleriana*, FAC)
- Sedges [*Carex spp*.; species of this genus are generally FACW or obligate (OBL)]
- Reed canary grass (FACW).

The Pond A stormwater detention cells appear to be excavations and are presumed to have been constructed in uplands.

REGULATORY ASSESSMENT

As indicated in the BMC, and in accordance with the Growth Management Act, wetlands are "…areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas to mitigate the conversion of wetlands." As mentioned above, Category 4 wetlands less than 2,500 square feet are not designated critical areas in accordance with the BMC. As a result, Wetland A/A1 and the stormwater detention ponds are not considered critical area features regulated by the City.

Based on guidance developed by the U.S. Environmental Protection Agency (EPA) and USACE (EPA, USACE 2007), the agencies assert jurisdiction based on adjacency and significant nexus to traditional navigable waters. In accordance with current definition of "waters of the United States" (effective August 28, 2015), stormwater control features created in dry land are not "waters of the U.S." As a result, the stormwater detention ponds are not jurisdictional "waters of the U.S."

Wetland A/A1 may be a jurisdictional "waters of the U.S." due to possible connectivity to Phantom Lake, which drains to Lake Sammamish. However, the wetland is located immediately upslope of the existing landfill leachate French drain, which discharges to the King County sanitary sewer. The purpose of the French drain is to intercept landfill leachate and protect water quality in the downgradient stormwater pond. Hydrology from Wetland A/A1 is likely intercepted by the French drain. To make its jurisdictional determination, the USACE will evaluate the indicators of the relative permanence of flow and significant nexus of the wetlands and waterways identified in this report.

The information provided in this report is presented to assist the agencies that are ultimately responsible for determining jurisdiction. The jurisdictional determinations made by the City/USACE can be amended to this report or documented in another agreed-upon format.

USE OF THIS REPORT

The findings presented herein are based on our understanding of the City of Bellevue Municipal Code, the U.S. Army Corps of Engineers wetland delineation methodology, and on our interpretation of the vegetative, soil, and hydrological conditions observed during the site visit on September 21, 2015. Within the limitations of scope, schedule, and budget, the findings presented in this report were prepared in accordance with generally accepted sensitive area investigation principles and practices in this locality at the time the report was prepared. We make no other warranty, either express or implied.

This report was prepared for the use of Walker Macy, City of Bellevue, and applicable regulatory agencies. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk.

Wetland areas delineated by Landau Associates are considered preliminary until the USACE and/or local jurisdictional agencies validate the wetland boundaries. Because wetlands are dynamic communities, wetland boundaries may change over time. The agencies typically recognize wetland delineations for a period of 5 years following an approved jurisdictional determination. In addition, changes in government code, regulations, and/or laws may occur.

This document has been prepared under the supervision and direction of the following key staff.

LANDAU ASSOCIATES, INC.

Steven J. Quarterman
Associate Ecologist

SJQ/tam

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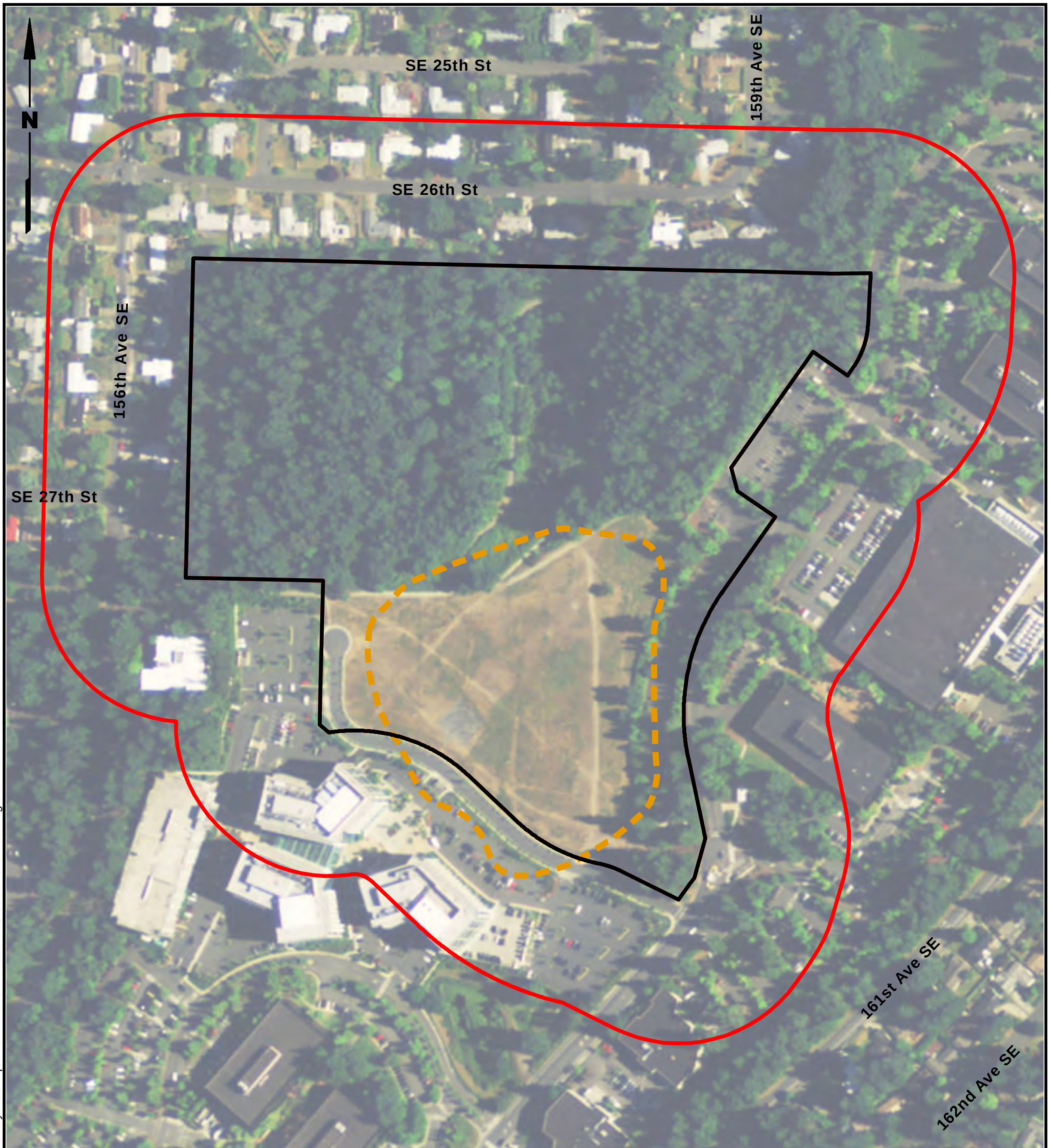
Data Source: Esri 2012

G:\Projects\1548\001\010\011\Wetland\F01VicinityMap.mxd 9/24/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**Vicinity Map**	Figure 1



Legend

- Project Area
- Study Area
- Approximate Area of Solid Waste Landfill

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

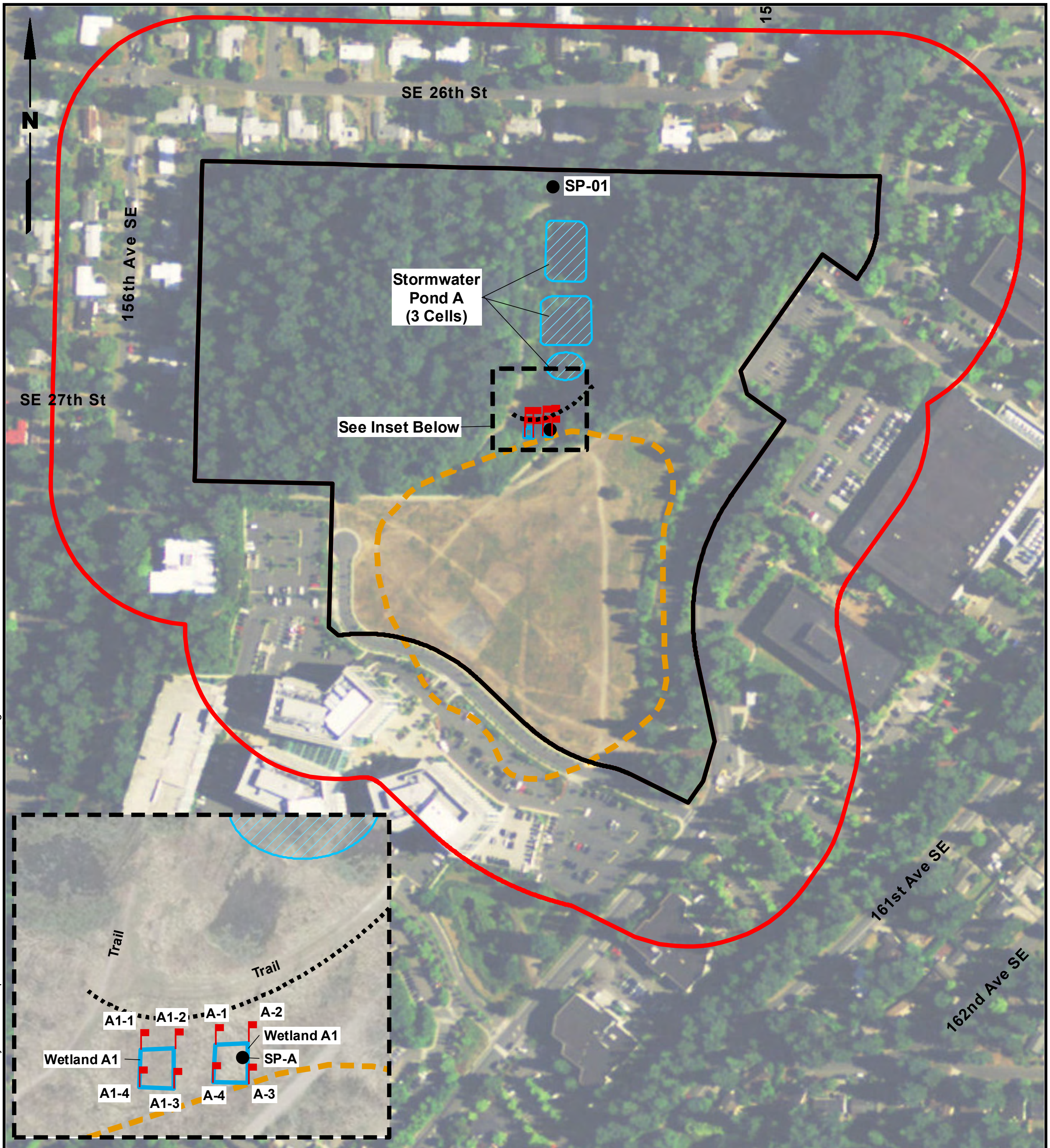
Scale in Feet

Data Sources: King County GIS; Esri World Imagery.

G:\Projects\1548\001\010\011\Wetland\F02StudyAreaMap.mxd 9/30/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Landau Associates

Bellevue Airfield Park Bellevue, Washington	**Study Area Map**	Figure 2



G:\Projects\1548\001\010\011\Wetland\F03WetlandWaterwayLocationMap.mxd 10/16/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Sampling Point
- Wetland Flag
- Wetland A
- Stormwater Ponds
- Project Area
- Study Area
- Approximate Area of Solid Waste Landfill
- Approximate Location of French Drain

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 300 600

Scale in Feet

Data Sources: King County GIS; Esri World Imagery.

Landau Associates

Bellevue Airfield Park
Bellevue, Washington

Wetland/Waterway Location Map

Figure 3

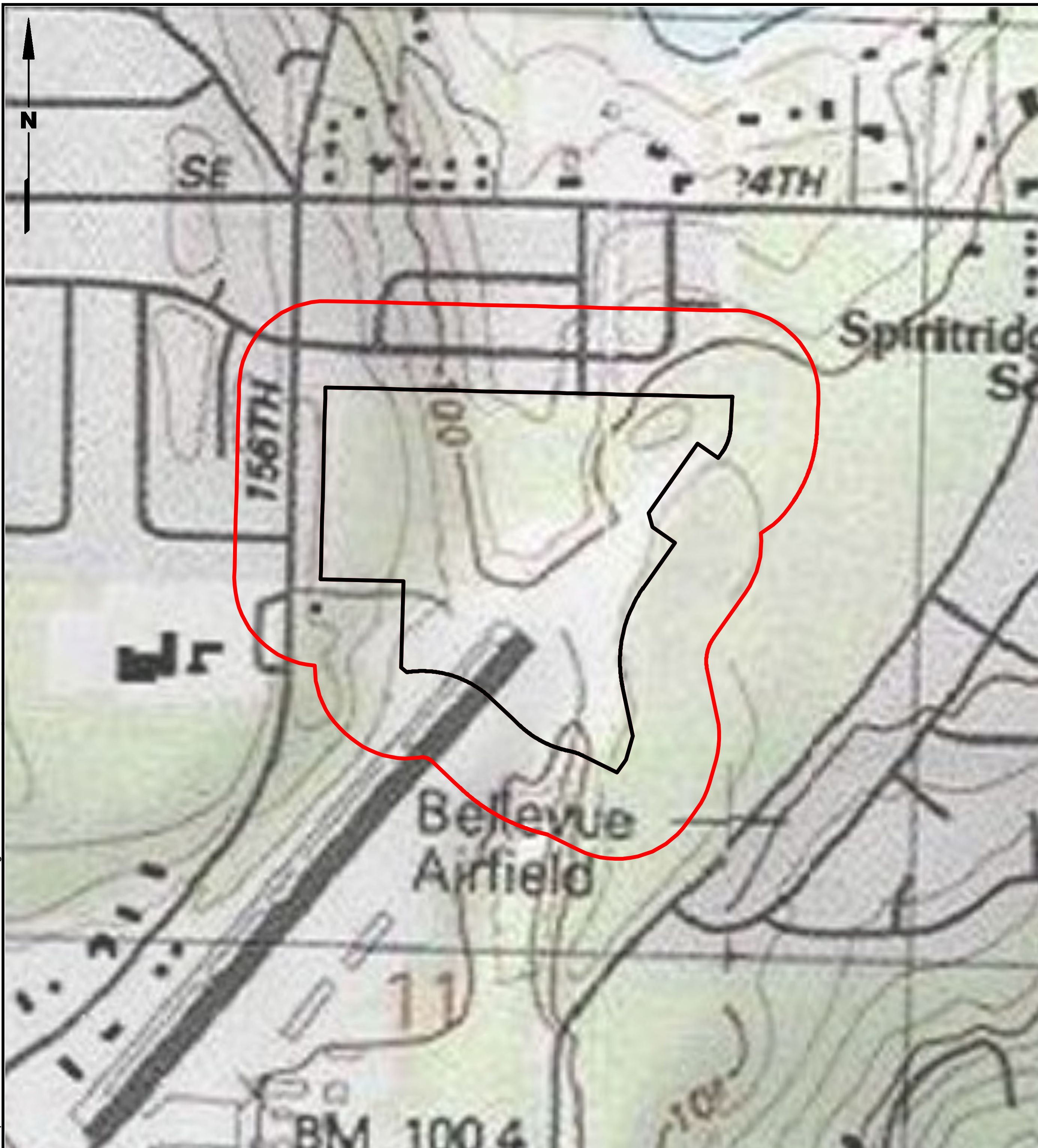
TABLE 1
METHODS FOR WETLAND DETERMINATION
AIRFIELD PARK
BELLEVUE, WASHINGTON

Parameter	Definition	Field Indicators	Field Assessment
Wetland Vegetation	Wetland vegetation is adapted to saturated soil conditions. The U.S. Army Corps of Engineers (USACE) has assigned a wetland indicator to each plant species that denotes its frequency of occurrence within wetlands (Lichvar et al 2014). These are: • Obligate (OBL) wetland plants usually occur in wetlands under natural conditions (more than 99 percent of the time). • Facultative wetland (FACW) plants usually occur in wetlands (67 to 99 percent of the time), but are occasionally found in non-wetlands. • Facultative (FAC) plants are equally likely to occur in wetlands or non-wetlands (34 to 66 percent of the time). • Facultative upland (FACU) plants usually occur in non-wetlands, but are occasionally found in wetlands (1 to 33 percent of the time). • Obligate upland (UPL) plants usually occur in uplands (more than 99 percent of the time).	More than 50 percent of the dominant plants totaled from all vegetation strata are hydrophytic, i.e., those species with indicators of OBL, FACW, or FAC (regardless of modifier), or A plant community has a visually estimated cover percentage of OBL and FACW species that exceeds the coverage of FACU and UPL species. If dominance is not met, the Prevalence Index is calculated, or consideration is given to morphological adaptations and/or non-vascular plants observed.	Dominance: The dominant plants and their wetland indicator status are evaluated quantitatively within data plots and visually throughout the study area. If the test for dominance fails, and indicators of wetland soil and hydrology are present, the Prevalence Index is calculated. Prevalence Index: A weighted average of the percent cover for each indicator status is calculated (see data sheets in Attachment 4 of this report). An index of 3 or less is considered meeting the hydrophytic vegetation criterion. If the Prevalence Index is not met, then consideration is given to morphological adaptations and/or non-vascular plants. Morphological Adaptations/Non-Vascular Plants: Some plants develop recognizable morphological adaptations when occurring in wetland areas. These features must be observed on >50 percent of the individuals of the FACU listed species living in an area where indicators of hydric soil and wetland hydrology are present. Wetland non-vascular plants can include bryophytes (mosses, liverworts, hormworts). The cover of wetland bryophytes must be >50 percent of the total bryophyte cover in a plot in coastal Washington forested wetlands
Wetland Soil (a)	Soil are classified as hydric, or they possess characteristics that are associated with reducing soil conditions. A hydric soil is formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil.	Hydric soil has an identifiable color pattern, which occurs if the soil is saturated, flooded, or ponded for a long period of time. Faint or washed-out colors typically form in the soil, and mottles of bright color, such as rust (known as redoxymorphic features) form. Accumulations of organic matter at the surface, a sulfur odor, and organic matter stains may also be present.	A shovel is used to dig holes at least 20 inches below ground surface (BGS) at multiple locations in the study area. Direct observation of the soil is made at multiple locations in both wetlands and uplands, as applicable. Soil organic content is determined visually and texturally, and soil color is determined using the Munsell soil color chart (Greytag Macbeth 1994). Depth to water saturation and/or inundation is also observed. The characteristics observed are compared to the hydric soil indicators for “all soils,” “sandy soils,” and “loamy clayey soils,” as described in the USACE Regional Supplement (USACE 2010).
Wetland Hydrology (b)	The area is inundated either permanently or periodically at mean water depths less than or equal to 6.6 feet, or The soil is inundated or saturated to the surface for at least 14 consecutive days during the growing season (c).	Primary indicators of wetland hydrology include surface inundation (standing water), saturated soil, watermarks, drift lines, sediment deposits, and drainage patterns. Secondary indicators of hydrology include water-stained leaves, oxidized root channels, or local soil survey data for identified soil. In the absence of any primary indicators, at least two secondary indicators are required to meet the wetland hydrology criterion.	During soil investigation, soil pits are allowed to stand for up to 20 minutes to allow percolation of any groundwater into the pit to determine groundwater level for the soil profile. Additional digging may occur to 24 inches BGS during the dry season to investigate groundwater levels. In addition, the extent of soil saturation and presence/absence of oxidation are determined in the soil removed as part of the soil sample. Other indicators of wetland hydrology are observed at ground surface.

(a) USACE 1987, 2010; U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) 2011.
(b) USACE 1987, 2010.
(c) The growing season is the time during which two or more non-evergreen vascular plant species growing in a wetland or surrounding area exhibit biological activity, such as new growth. Growing season can also be determined by soil temperature. The growing season identified on project area WETS table is February 7 to December 8.

APPENDIX A

Background Information Review Figures



Legend

Project Area

Study Area

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 500 1,000

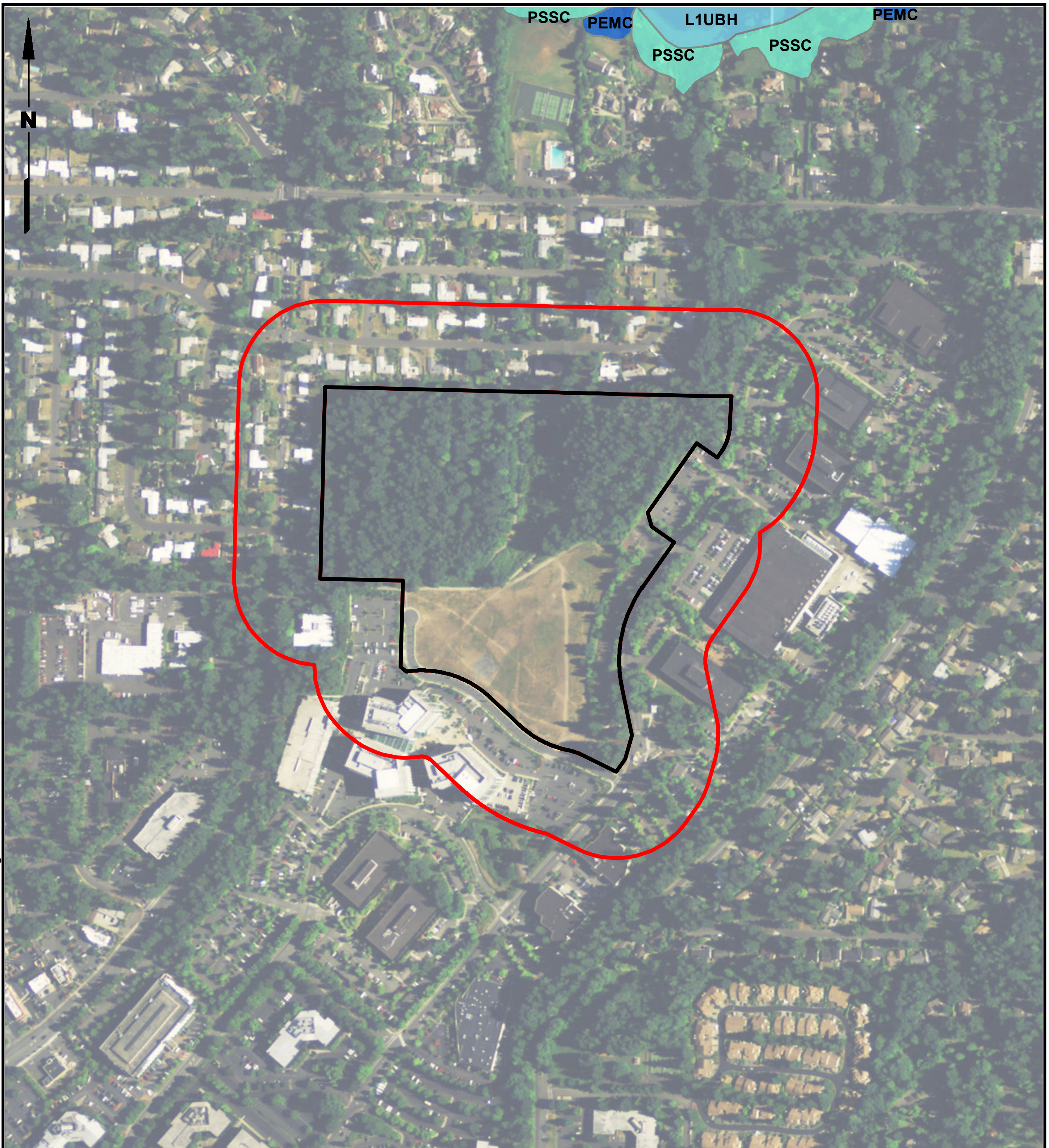
Scale in Feet

Data Sources: King County GIS; USGS.

G:\Projects\1548\001\010\011\Wetland\FA-1Topo.mxd 9/24/2015 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Landau Associates

Bellevue Airfield Park Bellevue, Washington	**USGS Topographic Map**	Figure A-1



Legend

- L1UBH - Lake
- PEMC - Freshwater Emergent Wetland
- PSSC - Freshwater Forested/Shrub Wetland
- Project Area
- Study Area

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 500 1,000

Scale in Feet

Data Sources: King County GIS; USFWS; Esri World Imagery.

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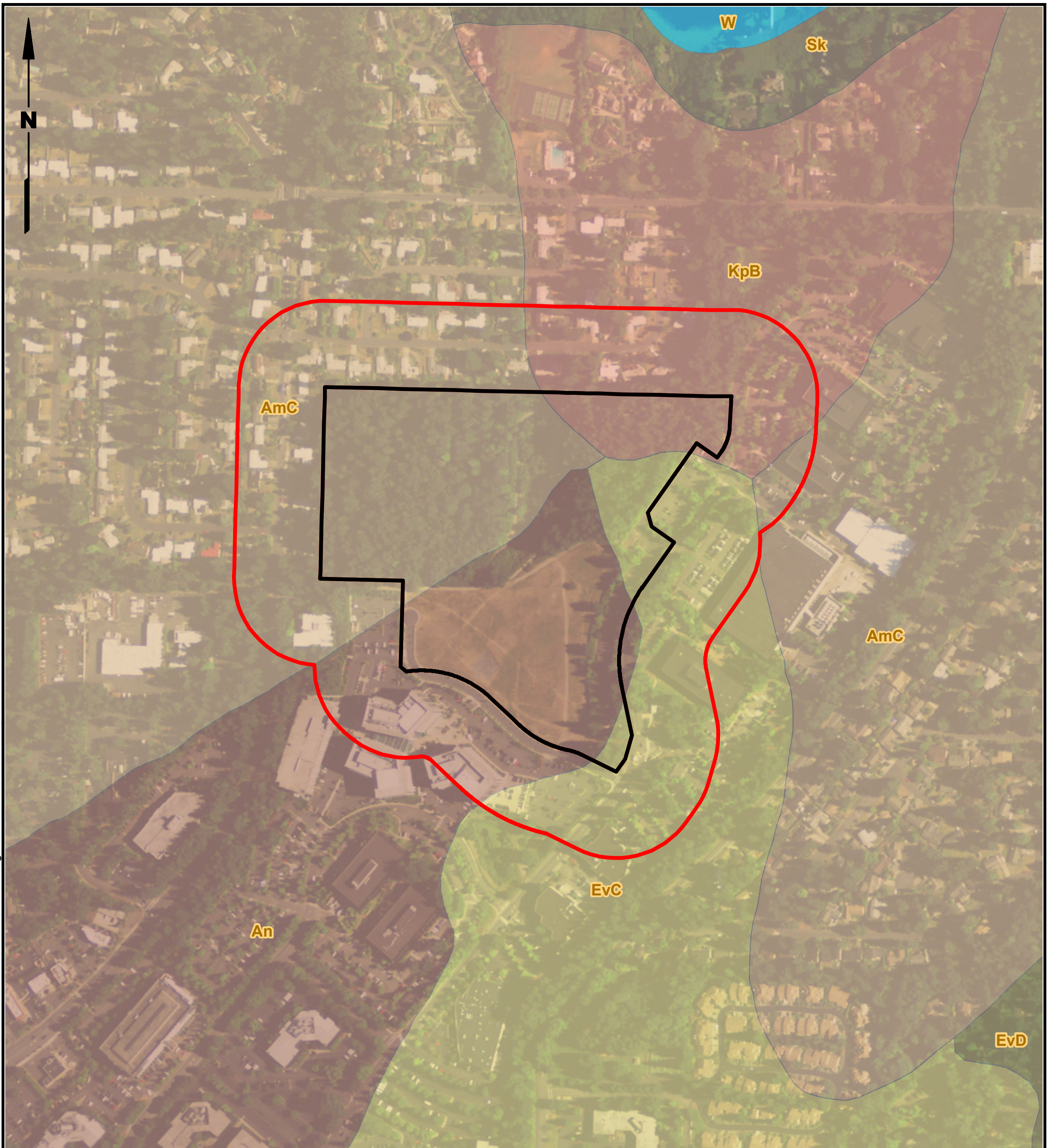
LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**U.S. Fish and Wildlife Service National Wetlands Inventory Map**	Figure A-2



Legend

AmC - Arents, Alderwood Material, 6-15% Slopes
An - Arents, Everett Material
EvC - Everett Gravelly Sandy Loam, 5-15% Slopes
EvD - Everett Gravelly Sandy Loam, 15-30% Slopes
KpB - Kitsap Silt Loam, 2-8% Slopes
Sk - Seattle Muck
W - Water
Project Area
Study Area

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 500 1,000

Scale in Feet

Data Sources: King County GIS; USDA NRCS; Esri World Imagery.

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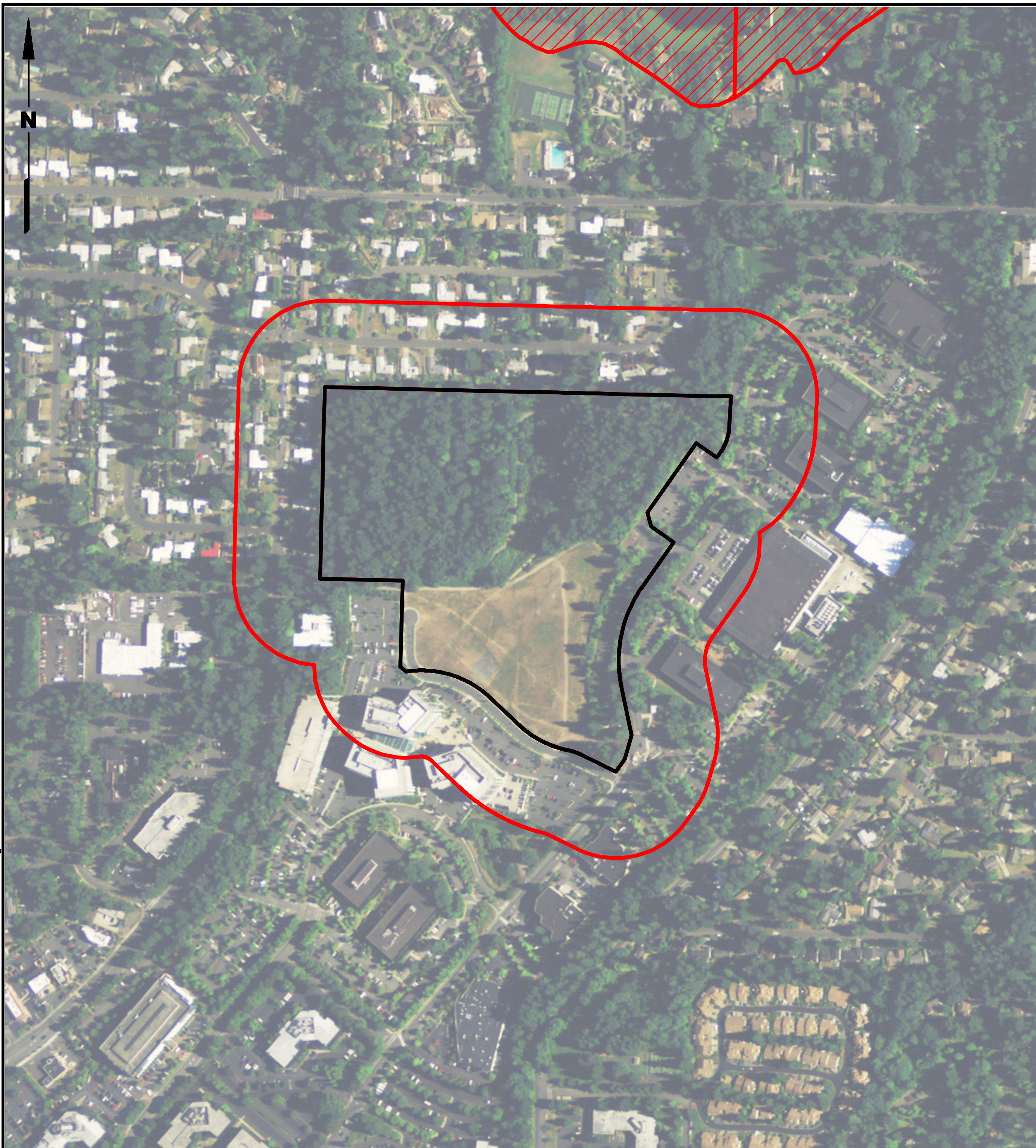
Landau Associates

Bellevue Airfield Park Bellevue, Washington	**Soils Map**	Figure A-3



Legend

- 100-Year Floodplain
- Project Area
- Study Area

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 500 1,000

Scale in Feet

Data Sources: King County GIS; FEMA; Esri World Imagery.

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LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, Washington	**FEMA 100-Year Floodplain Map**	Figure A-4

APPENDIX B

Soil Profile Reports

LOCATION ALDERWOOD WA

Established Series
Rev. AD/BAL/KMS
11/2014

ALDERWOOD SERIES

The Alderwood series consists of moderately deep to a densic contact, moderately well drained soils formed in glacial drift and outwash over dense glaciomarine deposits. Alderwood soils are on glacially modified hills and ridges on glacial drift plains and have slopes of 0 to 65 percent. The mean annual precipitation is about 1,000 mm and the mean annual temperature is about 10 degrees C.

TAXONOMIC CLASS: Loamy-skeletal, isotic, mesic Aquic Dystroxerepts

TYPICAL PEDON: Alderwood gravelly sandy loam - forested. (Colors are for moist soil unless otherwise noted.)

A--0 to 18 cm; very dark grayish brown (10YR 3/2) gravelly sandy loam, brown (10YR 5/3) dry; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine roots; few fine irregular pores; 20 percent gravel; moderately acid (pH 5.8); abrupt smooth boundary. (7 to 18 cm thick)

Bw1--18 to 53 cm; dark yellowish brown (10YR 4/4) very gravelly sandy loam, yellowish brown (10YR 5/4) dry; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many fine roots; many fine tubular and irregular pores; 35 percent gravel; gradual smooth boundary; moderately acid (pH 5.8).

Bw2--53 to 75 cm; brown (10YR 4/3) very gravelly sandy loam, pale brown (10YR 6/3); dry; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine tubular pores; 40 percent gravel; moderately acid (pH 5.8); clear wavy boundary. (Combined Bw1 and Bw2 horizons is 35 to 67cm thick)

Bg--75 to 89 cm; 50 percent olive brown (2.5Y 4/4) very gravelly sandy loam, light yellowish brown (2.5Y 6/4) dry and 50 percent dark grayish brown (2.5Y 4/2) iron-manganese nodules with strong brown (7.5YR 5/6) coatings on fragments, light brownish gray (2.5Y 6/2) and reddish yellow (7.5YR 6/6) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; common fine tubular and interstitial pores; 45 percent gravel; moderately acid (pH 6.0); abrupt wavy boundary. (8 to 38 cm thick)

2Cd1--89 to 109 cm; dark grayish brown (2.5Y 4/2) very gravelly sandy loam, light brownish gray (2.5Y 6/2) dry; dark yellowish brown (10YR 4/4), olive (5Y 4/4), yellowish red (5YR 4/6) and strong brown (7.5YR 5/6) coatings in cracks; massive; extremely hard; extremely firm, nonsticky and nonplastic; few fine roots; few fine tubular pores; 40 percent gravel; moderately acid (pH 6.0); abrupt irregular boundary. (13 to 51 cm thick)

2Cd2--109 to 150 cm; grayish brown (2.5Y 5/2) dense glacial till that breaks to very gravelly sandy loam, light gray (2.5Y 7/2) dry; massive; extremely hard, extremely firm, nonsticky and nonplastic; 40 percent gravel; moderately acid (pH 6.0).

TYPE LOCATION: Snohomish County, Washington; about 8 km east of Lynnwood on Maltby road; 61meters south and 122 meters east of the center of section 28, T. 27 N., R. 5 E. Willamette Meridian;
Latitude: 47.7980000
Longitude: -122.1760000
Datum: WGS84.

RANGE IN CHARACTERISTICS:
Depth to densic contact: 50 to 100 cm
Mean annual soil temperature: 8 to 13 degrees C.
Moisture control section: dry 60 to 75 consecutive days following the summer solstice
Reaction: strongly acid to slightly acid
Depth to redox features with chroma of 2 or less: 45 to 75 cm
Particle-size control section (weighted average):
> Clay content: 5 to 15 percent
> Rock fragments: 35 to 65 percent

A horizon
Hue: 10YR or 7.5YR
Value: 2 or 3 moist, 3 to 5 dry
Chroma: 2 to 4, moist or dry
Total fragments: 15 to 65 percent
Grave content: 15 to 65 percent
Cobble content: 0 to 5 percent
Stone content: 0 to 5 percent

Bw horizons
Hue: 10YR or 7.5YR
Value: 2 to 6, dry or moist
Chroma: 2 to 6, dry or moist
Fine earth texture: sandy loam, coarse sandy loam, or loam
Total fragments: 15 to 65 percent
Grave content: 15 to 65 percent
Cobble content: 0 to 5 percent
Stone content: 0 to 5 percent

Bg horizon
Hue: 10YR or 2.5Y
Value: 5 to 7 dry
Chroma: 2 to 4, moist or dry
Fine earth texture: sandy loam, coarse sandy loam, or loam
Redox concentrations - beginning within 75 cm of the surface
Total fragments: 35 to 85 percent
Grave content: 35 to 85 percent

Cobble content: 0 to 25 percent
Stone content: 0 to 5 percent

2Cd horizons
Hues: 10YR or 2.5Y
Value: 4 to 8 dry
Chroma:1 to 3, moist or dry
Fine earth texture: sandy loam, fine sandy loam, coarse sandy loam, or loamy sand
Total fragments: 15 to 45 percent
Grave content: 15 to 45 percent
Cobble content: 0 to 10 percent
Stone content: 0 to 5 percent

An E horizon less than 3 cm thick is sometimes present.

COMPETING SERIES: This is the Whidbey series. Whidbey soils are dry 75 to 90 consecutive days following the summer solstices.

GEOGRAPHIC SETTING: These soils are on glacial drift plains at elevations of 0 to about 245 meters. Slope is 0 to 65 percent. The soils formed in glacial till. Alderwood soils are in a cool marine climate. The summers are cool and dry, and the winters are mild and wet. Mean annual precipitation is 406 to 1524 millimeters, most of which falls as rain from November through March. Mean January temperature is 3 degrees C, mean July temperature is 16 degrees C, and mean annual temperature is 10 degrees C. The growing season (-2 degrees C) is about 200 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the, , Everett, , Indianola, , McChord, and Whidbey series. Everett and Indianola soils lack a densic layer. McChord soils have a densic horizon at 100 to 150 cm.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Moderately well drained; high saturated hydraulic conductivity above the densic layer and low saturated hydraulic conductivity in the densic material. A perched water table is at its highest from January through March.

USE AND VEGETATION: Used mostly for woodland, field crops, hay and pasture, orchards, vineyards, wildlife habitat, watershed, and non-farm uses. The natural vegetation is Douglas-fir, western hemlock, western redcedar, and red alder with an understory of salal, Oregon-grape, western brackenfern, western swordfern, Pacific rhododendron, red huckleberry, evergreen huckleberry, and Orange honeysuckle.

DISTRIBUTION AND EXTENT: Northwestern Washington; MLRA 2. The series is extensive.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Portland, Oregon

SERIES ESTABLISHED: Snohomish County, Washington 1936.

REMARKS: Diagnostic horizons and features recognized in this soil:
Ochric epipedon - from 0 to 18 cm
Cambic horizon - from 18 to 89 cm
Densic contact - from 89 to 150 cm

Aquic feature - redox depletions with chroma of 2 or less at 75cm.
Particle-size control section - 25 to 89 cm.
Zone of episaturation - 68 to 89 cm.

9/2013 The OSD was revised as part of the SDJR harmonization project. The Alderwood soils is mapped extensively in MLRA 2 and the map units need to be redesigned to more accurately reflect the landforms and series complexity.

2011 The TL was moved and the current typical pedon is borderline in meeting the Aquic subgroup criteria and is also borderline in meeting Humic subgroup criteria. Based on the range of characteristics, the present classification is marginal to being Aquic subgroup and marginal to not meeting Humic subgroup criteria. It is recommended a new typical pedon be selected to represent the series concept and classification.

The series has had a long history in classification, much of it involves the cementation or not of the upper part of the glacial till. The series in 1978 started as a loamy-skeletal, mixed, mesic Dystric Entic Durochrepts, then in 1988 to a loamy-skeletal, mixed, mesic, ortstein Aquic Haplorthods, then in 1994 to a loamy-skeletal, mixed, mesic Vitrandic Durochrepts, then in 2000 to a loamy-skeletal, isotic, mesic Vitrandic Dystroxerepts and in 2011 to a loamy-skeletal, isotic, mesic Aquic Dystroxerepts. The 89 to 109 cm horizon is the horizon in question as to cementation or not, and if cemented, what is the cementing agent. The material was studied in the late 1960's and early 1970's and it was though at that time to be cemented, but the cementing agent was not easily identifiable. The strength of Vitrandic properties in the upper part of the solum is very weak. Given all this change in classification the typical pedon has remained the same and the concept of a moderately deep and moderately well drained soil has remained the same.
An in depth study of the glacial till is needed throughout the Puget Sound foothills on several similar soil series.

ADDITIONAL DATA: Partial data available for this series. Sample # S71WA033002, 71WA033003, S04WA-061-002, and S09WA053098.

National Cooperative Soil Survey
U.S.A.

LOCATION EVERETT WA

Established Series
Rev. CAB/BAL/KMS
11/2014

EVERETT SERIES

The Everett series consists of very deep, somewhat excessively drained soils that formed in gravelly and sandy glacial outwash. Slopes are 0 to 65 percent. They occur on kames, moraines, and eskers on glacial outwash plains and glacial drift plains. The mean annual precipitation is about 1,050 millimeters and the mean annual temperature is about 10 degrees C.

TAXONOMIC CLASS: Sandy-skeletal, isotic, mesic Humic Dystroxerepts

TYPICAL PEDON: Everett very gravelly sandy loam - on a north-facing slope of 3 percent at 150 meters elevation in forest. When described on October 21, 2009, the soil was slightly moist throughout. (Colors are for moist soil unless otherwise noted.)

Oi --0 to 3 centimeters; slightly decomposed plant material consisting of leaves, needles, and twigs.

A--3 to 8 centimeters; very dark brown (7.5YR 2.5/2) very gravelly sandy loam, brown (7.5YR 4/3) dry; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common medium and fine tubular pores; 35 percent gravel, 10 percent cobbles; strongly acid (pH 5.3); clear smooth boundary. (3 to 15 centimeters thick)

Bw--8 to 60 centimeters; dark brown (7.5YR 3/4) very gravelly sandy loam, brown (7.5YR 5/4) dry; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine through medium roots; common fine tubular pores; 35 percent gravel, 10 percent cobbles; strongly acid (pH 5.5); clear wavy boundary. (15 to 55 centimeters thick)

C1--60 to 90 centimeters; dark yellowish brown (10YR 4/4) very gravelly loamy sand, yellowish brown (10YR 5/4) dry; single grain; loose, nonsticky and nonplastic, common medium and few coarse roots; many very fine interstitial pores; 40 percent gravel, 10 percent cobbles; strongly acid (pH 5.5); gradual wavy boundary. (15 to 50 centimeters thick)

C2--90 to 152 centimeters; dark yellowish brown (10YR 4/4) extremely cobbly sand, yellowish brown (10YR 5/4) dry; single grain; loose, nonsticky and nonplastic; few coarse; roots; many very fine interstitial; 40 percent gravel, 35 percent cobbles; moderately acid (pH 5.6)

TYPE LOCATION: Thurston County, Washington; Joint Base Lewis-McChord; 629 meters east and 566 meters south of NW corner of sec.3, T. 17 N., R. 1 E. USGS Tenalquot Prairie Quadrangle; Latitude - 46 degrees, 59 minutes, 28 seconds N and Longitude - 122 degrees, 40 minutes, 1 second W, NAD 83.
Lattitude: 46.99097

Longitude: -122.66686
Datum: WGS84

RANGE IN CHARACTERISTICS:
Mean annual soil temperature: 9 to 12 degrees C.
Moisture control section: dry 60 to 75 days following the summer solstice
Reaction: moderately acid to very strongly acid
Particle size control section:
> Clay content: 2 to 10 percent
> Rock fragments:
>> Total: 35 to 85 percent
>> Gravel: 35 to 85 percent
>> Cobble: 0 to 40 percent
>> Stone: 0 to 5 percent

A horizon
Hue: 10YR, 7.5YR, or 5YR
Value: 2 or 3 moist, 4 or 5 dry
Chroma: 1 to 3, moist or dry.
Total fragments: 0 to 65 percent
Gravel content: 0 to 45 percent
Cobble content: 0 to 15 percent
Stone content: 0 to 5 percent

Bw horizons
Hue: 10YR or 7.5YR
Value: 3 to 6, moist or dry
Chroma: 2 to 6, moist or dry
Fine-earth texture: silt loam in the upper part ranging to coarse sand, loamy sand, or loamy coarse sand in the lower part
Total fragments: 35 to 55 percent
Gravel content: 35 to 85 percent
Cobble content: 0 to 40 percent
Stone content: 0 to 5 percent

C horizons
Hue: 7.5YR to 5Y
Value: 3 or 6 moist, 4 to 6 dry
Chroma: 1 to 6, moist or dry
Fine-earth texture: coarse sandy loam, loamy sand, or loamy coarse sand in the lower part
Total fragments: 35 to 55 percent
Gravel content: 35 to 85 percent
Cobble content: 0 to 40 percent
Stone content: 0 to 5 percent

COMPETING SERIES: There are no competing series in this family.

GEOGRAPHIC SETTING: The Everett soils occur on kames, eskers and moraines on glacial outwash plains and drift plains with at elevations of 10 to 275 meters. Slopes are 0 to 65 percent. The climate consists of cool and dry summers and mild and wet winters. Mean annual precipitation is generally 900 to 1800 millimeters, but ranges as high as 2300 millimeters in Mason County, WA. Mean January temperature is 2 degrees C; mean July temperature is 17 degrees C; and the mean annual temperature is 10 degrees C. The frost-free season is 180 to 240 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Alderwood, Baldhill, Indianola, and Kapowsin soils. Alderwood soils have a densic contact at a depth of 50 to 100 cm and are on drift plains and moraines. Indianola soils are sandy throughout on hills, terrace escarpments, eskers, and kames. Kapowsin soils are coarse-loamy and on glacial drift plains. Baldhill soils are loamy-skeletal and on terminal moraines.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat excessively drained; high to very high saturated hydraulic conductivity.

USE AND VEGETATION: Everett soils are mainly used for pasture, timber production, urban development, and a source of sand and gravel. Potential natural vegetation includes bigleaf maple, red alder, Douglas-fir, western redcedar, western hemlock, salal, hairy brackenfern, red huckleberry, Nootka rose, oceanspray, and Cascade Oregongrape and orange honeysuckle

DISTRIBUTION AND EXTENT: Northwest Washington MLRA 2, Puget Sound Area. Series is of large extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Portland, Oregon

SERIES ESTABLISHED: 1910 Reconnaissance Survey of Eastern Puget Sound Basin, Washington.

REMARKS: Diagnostic horizons and features recognized in this soil:
Ochric epipedon - 0 to 18 cm
Cambic horizon - 8 to 60 cm (Bw horizon)

In 1974 Everett was classified as a Dytric Xerochrepts. In 1994 it was changed to Vitrandic Dystrochrept but lab analyses did not support the Vitrandic sub group so it was changed to Typic Dystroxerpts in 2010. The Everett series does contain some volcanic ash but not enough to meet the Vitrandic subgroup criteria. In 2011 it was changed to Humic Dystroxerepts. In 2014 Everett was harmonized with the SDJR initiative and minor edits were made to the OSD.

ADDITIONAL DATA: Laboratory data is available for this series. National Soil Survey Laboratory S09WA067069, S09WA053124, S09WA-053-001

National Cooperative Soil Survey
U.S.A.

LOCATION KITSAP WA

Established Series
Rev. JPE/AZ/RJE
01/2000

KITSAP SERIES

The Kitsap series consists of very deep, moderately well drained soils formed in lacustrine sediments. Kitsap soils are on terraces and terrace escarpments and have slopes of 0 to 70 percent. The mean annual precipitation is about 37 inches. The mean annual temperature is about 50 degrees F.

TAXONOMIC CLASS: Fine-silty, isotic, mesic Aquandic Dystroxerepts

TYPICAL PEDON: Kitsap silt loam - pasture. (Colors are for moist soil unless otherwise noted.)

Ap--0 to 6 inches; very dark grayish brown (l0YR 3/2) silt loam, grayish brown (l0YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; moderately acid (pH 5.8); abrupt smooth boundary. (3 to 6 inches thick)

Bwl--6 to l0 inches; dark brown (l0YR 4/3) silt loam, pale brown (l0YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; few very fine pores; many 2 to 5 mm light brown (7.5YR 6/4) concretions; moderately acid (pH 6.0); clear wavy boundary. (3 to l2 inches thick)

Bw2--l0 to l7 inches; brown (l0YR 4/3) silty clay loam, pale brown (l0YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine roots; common very fine pores about 3 percent fine pebbles; few 2 to 5 mm light brown (7.5YR 6/4) concretions; few silt balls; few krotovinas; slightly acid (pH 6.4); clear wavy boundary. (4 to 22 inches thick)

BC--l7 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam, light gray (2.5Y 7/2) dry; many large prominent strong brown (7.5YR 5/6) redox concentrations; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine roots; common very fine pores; slightly acid (pH 6.5); clear irregular boundary. (0 to 35 inches thick)

C--32 to 60 inches; light olive brown (2.5Y 5/4) silt loam and silty clay loam, light brownish gray (2.5Y 6/2) dry; very fine and fine stratification; hard, firm, moderately sticky and moderately plastic; few roots; few very fine pores; tongues of grayish brown (2.5Y 5/2) material like the B3 horizon; neutral; (pH 6.6).

TYPE LOCATION: Pierce County, Washington; l00 feet north of corner of l04th St. and 80th Ave.; 2,050 feet west and 2,750 feet south of the northeast corner of sec. 5, T. l9 N., R. 4 E.

RANGE IN CHARACTERISTICS: These soils are usually moist but are dry in the moisture control section for 45 to 60 consecutive days following summer solstice. The mean annual soil temperature is estimated to range from 50 to about 53 degrees F. These soils range from moderately acid to neutral throughout. Coarse fragments in the control section average 0 to 5 percent by volume. Depth to redoximorphic features with a chroma of 2 or less is 5 to 24 inches.

The A horizon has value of 2, 3 or 4 moist, 4, 5 or 6 dry, and chroma of 2 or 3 moist or dry. It is silt loam or loam.

The Bw horizon has value of 3 through 5 moist, 5 through 7 dry, and chroma of 3 or 4 moist or dry. It is silt loam or silty clay loam, and has weak or moderate blocky structure. The BC horizon has hue of l0YR or 2.5Y, value of 4 through 6 moist, 6 through 8 dry and is prominently mottled. It has blocky or prismatic structure or is massive.

The C horizon has hue of l0YR, 5Y or 2.5Y, value of 5 or 6 moist, 6 through 8 dry, chroma of 2 through 4 moist and dry and is mottled. In some pedons bluish gray (5B 5/l) gleying is prominent in root channels. This horizon is stratified silt, silt loam and silty clay loam. Some pedons contain thin strata of silty clay, silt, or fine sand.

COMPETING SERIES: This is the Aloha series and the similar Giles and Saxon series. Aloha soils have an average soil temperature of 54 to 56oF and lack strata of silty clay loam in the lower part of the particle- size control section. Giles and Saxon soils lack grayish colors or mottles in the subsoil and are well drained. Also, Saxon soils have a dense laminated silt, clay, or silty clay loam B horizon.

GEOGRAPHIC SETTING: Kitsap soils are on terraces and terrace escarpments at elevations ranging from near sea level to about 500 feet. Slopes are 0 to 70 percent. The soils formed in lacustrine sediments. These soils occur in a mild marine climate. Summers are cool and dry and winters are mild and wet. The mean annual precipitation ranges from 30 to 45 inches. The mean January temperature is 39 degrees F., mean July temperature is 6l degrees F., and mean annual temperature is 50 degrees F. The frost-free season is l60 to 200 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Alderwood, Everett, Harstine, and Indianola soils. These soils have less than l8 percent clay in the control section. Alderwood and Harstine soils have a duripan. Everett soils are sandy-skeletal, and Indianola soils are sandy.

DRAINAGE AND PERMEABILITY: Moderately well-drained; slow or medium runoff; slow permeability.

USE AND VEGETATION: Mostly forests and some cropland and pasture. Native vegetation is Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple, and willows, with understory of western brackenfern, western swordfern, salal, Oregon-grape, trailing blackberry, red huckleberry, vine maple, evergreen huckleberry, red elderberry, and wild ginger.

DISTRIBUTION AND EXTENT: Northwestern Washington. The series is of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Portland, Oregon

SERIES ESTABLISHED: Kitsap County, Washington, l934.

REMARKS: Classification changed 4/94 and 1/00 because of amendments to Soil Taxonomy. The 0 to 10 inch depth is estimated to have >5 percent volcanic glass and >0.4 percent Al + 1/2 Fe by acid-oxalate.

ADDITIONAL DATA: Partial laboratory data available on this soil. Pedon # S77WA-061-30, NSSL, Lincoln, NE.

National Cooperative Soil Survey
U.S.A.

APPENDIX C

Precipitation Data

WETS Station : SEATTLE TCOMA WSCMO AP, WA7473   Creation Date: 09/10/2002
Latitude: 4727   Longitude: 12218   Elevation: 00400
State FIPS/County(FIPS): 53033   County Name: King
Start yr. - 1971   End yr. - 2000

Month	Temperature (Degrees F.) avg daily max	avg daily min	avg	Precipitation (Inches) avg	30% chance will have less than	more than	avg # of days w/.1 or more	avg total snow fall
January	45.8	35.9	40.9	5.13	3.58	6.10	11	2.4
February	49.5	37.2	43.3	4.18	2.73	5.02	10	1.3
March	53.2	39.1	46.2	3.75	2.77	4.40	10	0.6
April	58.2	42.1	50.1	2.59	1.71	3.11	7	0.1
May	64.3	47.2	55.7	1.77	1.16	2.13	5	0.0
June	69.5	51.7	60.6	1.49	0.96	1.79	4	0.0
July	75.2	55.3	65.3	0.79	0.43	0.97	2	0.0
August	75.5	55.7	65.6	1.02	0.38	1.24	2	0.0
September	70.1	51.9	61.0	1.63	0.62	2.03	4	0.0
October	59.7	45.7	52.7	3.19	1.96	3.86	7	0.1
November	50.5	39.9	45.2	5.90	4.10	7.02	13	1.1
December	45.4	35.9	40.7	5.62	3.94	6.68	11	1.9
Annual	-----	-----	-----	------	33.52	40.09	--	----
Average	59.7	44.8	52.3	------	------	------	--	----
Total	-----	-----	-----	37.07	------	------	86	7.5

GROWING SEASON DATES

Probability	Temperature 24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	1/20 to 12/28 343 days	2/ 7 to 12/ 8 304 days	3/ 9 to 11/15 252 days
70 percent *	> 365 days > 365 days	1/31 to 12/15 319 days	3/ 3 to 11/21 263 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

StateCode	Division	YearMonth	PCP	TAVG	PDSI	PHDI	ZNDX	PMDI	CDD	HDD	SP01	SP02	SP03	SP06	SP09	SP1
45	03	201506	.4	64.8	-2.8	-2.8	-3.5	-2.8	55	61	-1.68	-2.43	-2.67	-1.09	-.27	-.1
45	03	201507	.48	68	-3.77	-3.77	-3.77	-3.77	114	21	-.66	-1.63	-2.63	-1.15	-.91	-.2
45	03	201508	1.98	66.4	-3.54	-3.54	-.5	-3.54	82	38	.91	.35	-.79	-1.22	-.82	-.1

Airfield Park

Figure 19–7 Rainfall documentation worksheet

Rainfall Documentation
(use with photographs)

Date: 9/21/15

Weather station: ____________ Landowner: ____________ Tract no.: ________

County: ____________ State: ____________

Soil name: ____________ Growing season: ____________

Photo date: ________

	Month	Long-term rainfall records: 3 yrs. in 10 less than	Normal	3 yrs. in 10 more than	Rain fall	Condition dry, wet, normal	Condition value	Month weight value	Product of previous two columns
1st prior month*	8	0.38	1.02	1.24	1.98	wet	3	3	9
2nd prior month*	7	0.43	0.79	0.97	0.48	Normal	2	2	4
3rd prior month*	6	0.96	1.49	1.79	0.11	Dry	1	1	1
								Sum	14

* Compared to photo date

Note: If sum is
- 6 - 9 then prior period has been drier than normal
- 10 - 14 then prior period has been normal
- 15 - 18 then prior period has been wetter than normal

Condition value:
- Dry =1
- Normal =2
- Wet =3

Conclusions:

Normal

APPENDIX D

Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Airfield Park City/County: Bellevue/King Sampling Date: 9/21/2015

Applicant/Owner: City of Bellevue State: WA Sampling Point: SP-01

Investigator(s): Steven Quarterman and Jamie Sloan Section, Township, Range: S 11, T 24 N, R5 E

Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): Concave Slope (%):

Subregion (LRR): A, Northwest Forests and Coast Lat: Long: Datum:

Soil Map Unit Name: Arents, Alderwood NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Hydric Soil Present?	Yes ☐ No ☒	
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks: Located north of ponds. State is in declared drought.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lucida	30	Yes	FACW
2. Alnus rubra	30	Yes	FAC
3. Prunus sp.	10	No	FACU
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5 ft)			
1. Rubus spectabilis	50	Y	FAC
2. Oemleria cerasiformis	5	N	FACU
3. Prunus sp.	45	Y	FACU
4.			
5.			
	100	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Lamium galeobdolon	75	Y	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
	0	= Total Cover	
% Bare Ground in Herb Stratum 25			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks:

SOIL

Sampling Point: SP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100						Fibrous sandy loam
4-22+	7.5 YR 2.5/1	95	7.5YR 3/4	2	C	M		Sandy loam
			10YR 3/6	3	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☒

Remarks: Redox features are hard nodules (relict features). Some plastic debris in soils, evidence of dumping.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches):

Water Table Present? Yes ☐ No ☒ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches):

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Airfield Park City/County: Bellevue/King Sampling Date: 9/21/2015

Applicant/Owner: City of Bellevue State: WA Sampling Point: SP-A

Investigator(s): Steven Quarterman and Jamie Sloan Section, Township, Range: S 11, T 24 N, R5 E

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): None Slope (%): >5

Subregion (LRR): A, Northwest Forests and Coast Lat: Long: Datum:

Soil Map Unit Name: Arents, Alderwood NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☐ No ☒ (If no, explain in Remarks.)

Are Vegetation N, Soil Y, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	**Is the Sampled Area within a Wetland?** Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	

Remarks: Located south of ponds on fillslope associated with former landfill. State is in declared drought.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 5 ft)			
1. Rubus armeniacus	25	Y	FACU
2. Rubus laciniatus	5	N	FACU
3.			
4.			
5.			
= Total Cover	30		
Herb Stratum (Plot size: 5 ft)			
1. Phalaris arundinacea	90	Y	FACW
2. Juncus effusus	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
= Total Cover	100		
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
= Total Cover	0		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species	100	x 2 = 200
FAC species		x 3 =
FACU species		x 4 =
UPL species	30	x 5 = 150
Column Totals:	130 (A)	350 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is >50%

☒ Prevalence Index is ≤3.0[1]

☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

☐ Wetland Non-Vascular Plants[1]

☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks:

SOIL

Sampling Point: SP-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 3/2	100						Loamy sand
6-12	2.5 Y 4/2	96	7.5YR 3/4	3	C	M		Loamy sand
			7.5 YR 4/6	1	C	M		
12+	refusal							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ________

Depth (inches): ________

Hydric Soil Present? Yes ☒ **No** ☐

Remarks: Soils moist but not saturated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present?	Yes ☐	No ☒	Depth (inches):
Water Table Present?	Yes ☐	No ☒	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ☐	No ☒	Depth (inches):

Wetland Hydrology Present? Yes ☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Hydrology assumed present based on "difficult wetland situation" and past observation of saturation in 2002.

APPENDIX E

Rating Form

WETLAND RATING FORM – WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users
Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): Wetland A (Airfield Park) Date of site visit: 9-21-15

Rated by SJQ Trained by Ecology? Yes X No___ Date of training______

SEC: 11 TWNSHP: 24N RNGE: 5E Is S/T/R in Appendix D? Yes___ No X

Map of wetland unit: Figure 3 Estimated size 600 sq ft

SUMMARY OF RATING

Category based on FUNCTIONS provided by wetland

I___ II___ III___ IV X

Category I = Score >=70
Category II = Score 51-69
Category III = Score 30-50
Category IV = Score < 30

Score for Water Quality Functions	12
Score for Hydrologic Functions	6
Score for Habitat Functions	5
TOTAL score for Functions	23

Category based on SPECIAL CHARACTERISTICS of wetland

I___ II___ Does not Apply X

Final Category (choose the "highest" category from above)

Summary of basic information about the wetland unit

Wetland Unit has Special Characteristics		**Wetland HGM Class used for Rating**	
Estuarine		**Depressional**	
Natural Heritage Wetland		**Riverine**	
Bog		**Lake-fringe**	
Mature Forest		**Slope**	X
Old Growth Forest		**Flats**	
Coastal Lagoon		**Freshwater Tidal**	
Interdunal			
None of the above	X	Check if unit has multiple HGM classes present	

Does the wetland unit being rated meet any of the criteria below?

If you answer YES to any of the questions below you will need to protect the wetland according to the regulations regarding the special characteristics found in the wetland.

Check List for Wetlands That May Need Additional Protection (in addition to the protection recommended for its category)	**YES**	**NO**
SP1. *Has the wetland unit been documented as a habitat for any Federally listed Threatened or Endangered* ***animal or plant*** *species (T/E species)?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state or federal database.		X
SP2. *Has the wetland unit been documented as habitat for any State listed Threatened or Endangered* ***animal*** *species?* For the purposes of this rating system, "documented" means the wetland is on the appropriate state database. Note: Wetlands with State listed plant species are categorized as Category I Natural Heritage Wetlands (see p. 19 of data form).		X
SP3. *Does the wetland unit contain individuals of Priority species listed by the WDFW for the state?*		X
SP4. *Does the wetland unit have a local significance in addition to its functions*? For example, the wetland has been identified in the Shoreline Master Program, the Critical Areas Ordinance, or in a local management plan as having special significance.		X

<u>To complete the next part of the data sheet you will need to determine the Hydrogeomorphic Class of the wetland being rated.</u>

The hydrogeomorphic classification groups wetlands into those that function in similar ways. This simplifies the questions needed to answer how well the wetland functions. The Hydrogeomorphic Class of a wetland can be determined using the key below. See p. 24 for more detailed instructions on classifying wetlands.

Classification of Wetland Units in Western Washington

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides (i.e. except during floods)?
NO – go to 2 **YES** – the wetland class is **Tidal Fringe**

If yes, is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)? **YES – Freshwater Tidal Fringe NO – Saltwater Tidal Fringe (Estuarine)**

*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is rated as an **Estuarine** wetland.* Wetlands that were called estuarine in the first and second editions of the rating system are called Salt Water Tidal Fringe in the Hydrogeomorphic Classification. Estuarine wetlands were categorized separately in the earlier editions, and this separation is being kept in this revision. To maintain consistency between editions, the term "Estuarine" wetland is kept. Please note, however, that the characteristics that define Category I and II estuarine wetlands have changed (see p.).

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.
NO – go to 3 **YES** – The wetland class is **Flats**

If your wetland can be classified as a "Flats" wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet both** of the following criteria?
___The vegetated part of the wetland is on the shores of a body of permanent open water (without any vegetation on the surface) at least 20 acres (8 ha) in size;
___At least 30% of the open water area is deeper than 6.6 ft (2 m)?
NO – go to 4 **YES –** The wetland class is **Lake-fringe (Lacustrine Fringe)**

4. Does the entire wetland unit **meet all** of the following criteria?
__X_The wetland is on a slope (*slope can be very gradual*),
__x_The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
__X_The water leaves the wetland **without being impounded**?
NOTE: *Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3ft diameter and less than 1 foot deep).*
NO - go to 5 **YES –** The wetland class is **Slope**

S	Slope Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to improve water quality	Points (only 1 score per box)
S	**S 1. Does the wetland unit have the potential to improve water quality?**	*(see p.64)*
S	S 1.1 Characteristics of average slope of unit: Slope is1% or less *(a 1% slope has a 1 foot vertical drop in elevation for every 100 ft horizontal distance)* points = 3 Slope is 1% - 2% points = 2 Slope is 2% - 5% points = 1 Slope is greater than 5% points = 0	0
S	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic *(use NRCS definitions)* YES = 3 points NO = 0 points	0
S	S 1.3 Characteristics of the vegetation in the wetland that trap sediments and pollutants: *Choose the points appropriate for the description that best fits the vegetation in the wetland. Dense vegetation means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 inches.* Dense, uncut, herbaceous vegetation > 90% of the wetland area points = 6 Dense, uncut, herbaceous vegetation > 1/2 of area points = 3 Dense, woody, vegetation > ½ of area points = 2 Dense, uncut, herbaceous vegetation > 1/4 of area points = 1 Does not meet any of the criteria above for vegetation points = 0 Aerial photo or map with vegetation polygons	Figure 3 6
S	**Total for S 1** *Add the points in the boxes above*	6
S	**S 2. Does the wetland unit have the opportunity to improve water quality?** Answer YES if you know or believe there are pollutants in groundwater or surface water coming into the wetland that would otherwise reduce water quality in streams, lakes or groundwater downgradient from the wetland. *Note which of the following conditions provide the sources of pollutants. A unit may have pollutants coming from several sources, but any single source would qualify as opportunity*. — Grazing in the wetland or within 150ft — Untreated stormwater discharges to wetland — Tilled fields, logging, or orchards within 150 feet of wetland — Residential, urban areas, or golf courses are within 150 ft upslope of wetland X Other Seeps from landfill **YES** multiplier is **2** **NO** multiplier is **1**	*(see p.67)* multiplier 2
S	**TOTAL - Water Quality Functions** Multiply the score from S1 by S2 ***Add score to table on p. 1***	12

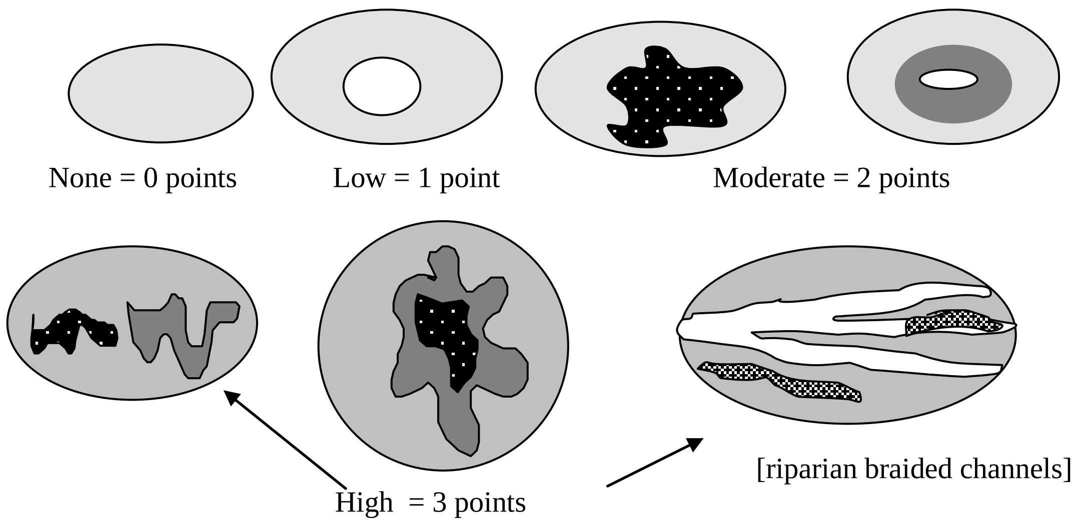
Comments

S	Slope Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to reduce flooding and stream erosion	Points (only 1 score per box)
	S 3. Does the wetland unit have the potential to reduce flooding and stream erosion?	***(see p.68)***
S	S 3.1 Characteristics of vegetation that reduce the velocity of surface flows during storms. *Choose the points appropriate for the description that best fit conditions in the wetland. (stems of plants should be thick enough (usually > 1/8in), or dense enough, to remain erect during surface flows)* Dense, uncut, **rigid** vegetation covers > 90% of the area of the wetland. points = 6 Dense, uncut, **rigid** vegetation > 1/2 area of wetland points = 3 Dense, uncut, **rigid** vegetation > 1/4 area points = 1 More than 1/4 of area is grazed, mowed, tilled or vegetation is not rigid points = 0	6
S	S 3.2 Characteristics of slope wetland that holds back small amounts of flood flows: The slope wetland has small surface depressions that can retain water over at least 10% of its area. YES points = 2 NO points = 0	0
S	*Add the points in the boxes above*	6
S	**S 4. Does the wetland have the opportunity to reduce flooding and erosion?** Is the wetland in a landscape position where the reduction in water velocity it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows? *Note which of the following conditions apply.* — Wetland has surface runoff that drains to a river or stream that has flooding problems — Other______________________________________ *(Answer NO if the major source of water is controlled by a reservoir (e.g. wetland is a seep that is on the downstream side of a dam)* **YES** multiplier is **2** **NO** multiplier is **1**	***(see p. 70)*** multiplier 1
S	**TOTAL - Hydrologic Functions** Multiply the score from S 3 by S 4 ***Add score to table on p. 1***	6

Comments

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that unit functions to provide important habitat	**Points** (only 1 score per box)
H 1. Does the wetland unit have the <u>potential</u> to provide habitat for many species?	
H 1.1 <u>Vegetation structure</u> ***(see p. 72)*** *Check the types of vegetation classes present (as defined by Cowardin)- Size threshold for each class is ¼ acre or more than 10% of the area if unit is smaller than 2.5 acres.* ____Aquatic bed ___XEmergent plants ____Scrub/shrub (areas where shrubs have >30% cover) ____Forested (areas where trees have >30% cover) *If the unit has a forested class check if:* ____The forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the forested polygon *Add the number of vegetation structures that qualify. If you have:* 4 structures or more points = 4 Map of Cowardin vegetation classes 3 structures points = 2 2 structures points = 1 1 structure points = 0	**Figure** _3_ 0
H 1.2. <u>Hydroperiods</u> ***(see p. 73)*** *Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ acre to count. (see text for descriptions of hydroperiods)* ____Permanently flooded or inundated 4 or more types present points = 3 ____Seasonally flooded or inundated 3 types present points = 2 ____Occasionally flooded or inundated 2 types present point = 1 _X__Saturated only 1 type present points = 0 ____ Permanently flowing stream or river in, or adjacent to, the wetland ____ Seasonally flowing stream in, or adjacent to, the wetland ____ ***Lake-fringe wetland* = 2 points** ____***Freshwater tidal wetland* = 2 points** Map of hydroperiods	**Figure** __3 0
H 1.3. <u>Richness of Plant Species</u> ***(see p. 75)*** Count the number of plant species in the wetland that cover at least 10 ft^2. (*different patches of the same species can be combined to meet the size threshold)* *You do not have to name the species.* *Do not include Eurasian Milfoil, reed canarygrass, purple loosestrife, Canadian Thistle* If you counted: > 19 species points = 2 *List species below if you want to:* 5 - 19 species points = 1 < 5 species points = 0	0

Total for page __0__

H 1.4. Interspersion of habitats ***(see p. 76)*** Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.  NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	**Figure** 3 0
H 1.5. Special Habitat Features: ***(see p. 77)*** *Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.* ____Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long). ____Standing snags (diameter at the bottom > 4 inches) in the wetland ____Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30degree slope) OR signs of recent beaver activity are present *(cut shrubs or trees that have not yet turned grey/brown)* ____At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated.*(structures for egg-laying by amphibians)* ____ Invasive plants cover less than 25% of the wetland area in each stratum of plants *NOTE: The 20% stated in early printings of the manual on page 78 is an error.*	0
H 1. TOTAL Score - potential for providing habitat *Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5*	0

Comments

Refer to Figure 3. Wetland is relatively small, is entirely emergent vegetation and contains no depressions.

H 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers *(see p. 80)* *Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of "undisturbed."* — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use) **Points = 5** — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference. **Points = 4** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference. **Points = 4** — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25% circumference, . **Points = 3** — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for > 50% circumference. **Points = 3** **If buffer does not meet any of the criteria above** — No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland > 95% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — No paved areas or buildings within 50m of wetland for >50% circumference. Light to moderate grazing, or lawns are OK. **Points = 2** — Heavy grazing in buffer. **Points = 1** — Vegetated buffers are <2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland **Points = 0**. X Buffer does not meet any of the criteria above. **Points = 1** Aerial photo showing buffers	Figure 3 1
H 2.2 Corridors and Connections ***(see p. 81)*** H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (*dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor*). YES = **4 points** (*go to H 2.3*) NO = go to H 2.2.2 H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? **OR** a **Lake-fringe** wetland, if it does not have an undisturbed corridor as in the question above? YES = **2 points** (*go to H 2.3*) NO = H 2.2.3 H 2.2.3 Is the wetland: within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR within 1 mi of a lake greater than 20 acres? YES = **1 point** NO = **0 points**	1

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW ***(see new and complete descriptions of WDFW priority habitats, and the counties in which they can be found, in the PHS report http://wdfw.wa.gov/hab/phslist.htm)*** Which of the following priority habitats are within 330ft (100m) of the wetland unit? *NOTE: the connections do not have to be relatively undisturbed.* ____**Aspen Stands:** Pure or mixed stands of aspen greater than 0.4 ha (1 acre). ____**Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report p. 152*). ____**Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock. ____**Old-growth/Mature forests:** (Old-growth west of Cascade crest) Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 20 trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. **(**Mature forests) Stands with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%; crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80 - 200 years old west of the Cascade crest. _____**Oregon white Oak:** Woodlands Stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158*). ____**Riparian**: The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other. ____**Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161*). ____**Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. ____ **Nearshore**: Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in Appendix A).* ____**Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human. ____**Cliffs:** Greater than 7.6 m (25 ft) high and occurring below 5000 ft. ____**Talus:** Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs. ____**Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 51 cm (20 in) in western Washington and are > 2 m (6.5 ft) in height. Priority logs are > 30 cm (12 in) in diameter at the largest end, and > 6 m (20 ft) long. If wetland has **3 or more** priority habitats **= 4 points** If wetland has **2** priority habitats = **3 points** If wetland has **1** priority habitat **= 1 point** No habitats = 0 points *Note: All vegetated wetlands are by definition a priority habitat but are not included in this list. Nearby wetlands are addressed in question H 2.4)*	0

H 2.4 Wetland Landscape *(choose the **one** description of the landscape around the wetland that best fits*) ***(see p. 84)*** There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development. points = 5 The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile points = 5 There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed points = 3 The wetland is Lake-fringe on a lake **with** disturbance and there are 3 other lake-fringe wetland within ½ mile points = 3 There is at least 1 wetland within ½ mile. points = 2 There are no wetlands within ½ mile. points = 0	3
H 2. TOTAL Score - opportunity for providing habitat *Add the scores from H2.1,H2.2, H2.3, H2.4*	5
TOTAL for H 1 from page 14	0
Total Score for Habitat Functions – add the points for H 1, H 2 and record the result on p. 1	5

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate answers and Category.

Wetland Type *Check off any criteria that apply to the wetland. Circle the Category when the appropriate criteria are met.*	**Category**
SC 1.0 Estuarine wetlands ***(see p. 86)*** Does the wetland unit meet the following criteria for Estuarine wetlands? — The dominant water regime is tidal, — Vegetated, and — With a salinity greater than 0.5 ppt. YES = Go to SC 1.1 NO _X_	
SC 1.1 Is the wetland unit within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? YES = Category I NO go to SC 1.2	**Cat. I**
SC 1.2 Is the wetland unit at least 1 acre in size and meets at least two of the following three conditions? YES = Category I NO = Category II — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. If the non-native *Spartina* spp. are the only species that cover more than 10% of the wetland, then the wetland should be given a dual rating (I/II). The area of Spartina would be rated a Category II while the relatively undisturbed upper marsh with native species would be a Category I. Do not, however, exclude the area of Spartina in determining the size threshold of 1 acre. — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland has at least 2 of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands.	**Cat. I** **Cat. II** **Dual rating** **I/II**

<table>
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SC 2.0 Natural Heritage Wetlands ***(see p. 87)***

Natural Heritage wetlands have been identified by the Washington Natural Heritage Program/DNR as either high quality undisturbed wetlands or wetlands that support state Threatened, Endangered, or Sensitive plant species.

SC 2.1 Is the wetland unit being rated in a Section/Township/Range that contains a Natural Heritage wetland? *(this question is used to screen out most sites before you need to contact WNHP/DNR)*

S/T/R information from Appendix D ___ or accessed from WNHP/DNR web site ___

YES____ – contact WNHP/DNR (see p. 79) and go to SC 2.2 NO _X_

SC 2.2 Has DNR identified the wetland as a high quality undisturbed wetland or as or as a site with state threatened or endangered plant species?

YES = Category I NO ____not a Heritage Wetland

</td><td>

Cat. I

</td></tr>
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SC 3.0 Bogs ***(see p. 87)***

Does the wetland unit (**or any part of the unit**) meet both the criteria for soils and vegetation in bogs? *Use the key below to identify if the wetland is a bog.* ***If you answer yes you will still need to rate the wetland based on its functions.***

1. Does the unit have organic soil horizons (i.e. layers of organic soil), either peats or mucks, that compose 16 inches or more of the first 32 inches of the soil profile? (See Appendix B for a field key to identify organic soils)? Yes - go to Q. 3 No - go to Q. 2

2. Does the unit have organic soils, either peats or mucks that are less than 16 inches deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on a lake or pond?

   Yes - go to Q. 3 No - Is not a bog for purpose of rating

3. Does the unit have more than 70% cover of mosses at ground level, AND other plants, if present, consist of the "bog" species listed in Table 3 as a significant component of the vegetation (more than 30% of the total shrub and herbaceous cover consists of species in Table 3)?

   Yes – Is a bog for purpose of rating No - go to Q. 4

   NOTE: If you are uncertain about the extent of mosses in the understory you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16" deep. If the pH is less than 5.0 and the "bog" plant species in Table 3 are present, the wetland is a bog.

1. Is the unit forested (> 30% cover) with sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Englemann's spruce, or western white pine, WITH any of the species (or combination of species) on the bog species plant list in Table 3 as a significant component of the ground cover *(> 30% coverage of the total shrub/herbaceous cover)?*

2. YES = Category I No___ Is not a bog for purpose of rating

</td><td>

Cat. I

</td></tr>
</table>

SC 4.0 Forested Wetlands ***(see p. 90)*** Does the wetland unit have at least 1 acre of forest that meet one of these criteria for the Department of Fish and Wildlife's forests as priority habitats? *If you answer yes you will still need to rate the wetland based on its functions.* — **Old-growth forests**: (west of Cascade crest) Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/acre (20 trees/hectare) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 inches (81 cm) or more. NOTE: The criterion for dbh is based on measurements for upland forests. Two-hundred year old trees in wetlands will often have a smaller dbh because their growth rates are often slower. The DFW criterion is and "OR" so old-growth forests do not necessarily have to have trees of this diameter. — **Mature forests**: (west of the Cascade Crest) Stands where the largest trees are 80 – 200 years old OR have average diameters (dbh) exceeding 21 inches (53cm); crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth. YES = Category I NO _X_ not a forested wetland with special characteristics	**Cat. I**
SC 5.0 Wetlands in Coastal Lagoons ***(see p. 91)*** Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? — The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks — The lagoon in which the wetland is located contains surface water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* YES = Go to SC 5.1 NO_X_ not a wetland in a coastal lagoon SC 5.1 Does the wetland meets all of the following three conditions? — The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of invasive plant species (see list of invasive species on p. 74). — At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — The wetland is larger than 1/10 acre (4350 square feet) YES = Category I NO = Category II	**Cat. I** **Cat. II**

SC 6.0 Interdunal Wetlands *(see p. 93)* Is the wetland unit west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? YES - go to SC 6.1 NO __ not an interdunal wetland for rating ***If you answer yes you will still need to rate the wetland based on its functions.*** In practical terms that means the following geographic areas: • Long Beach Peninsula- lands west of SR 103 • Grayland-Westport- lands west of SR 105 • Ocean Shores-Copalis- lands west of SR 115 and SR 109 SC 6.1 Is the wetland one acre or larger, or is it in a mosaic of wetlands that is once acre or larger? YES = Category II NO – go to SC 6.2 SC 6.2 Is the unit between 0.1 and 1 acre, or is it in a mosaic of wetlands that is between 0.1 and 1 acre? YES = Category III	**Cat. II** **Cat. III**
Category of wetland based on Special Characteristics *Choose the "highest" rating if wetland falls into several categories, and record on p. 1.* If you answered NO for all types enter "Not Applicable" on p.1	N/A

APPENDIX F

Selected Site Photographs

1. Sampling Point SP-A.

2. Component of Wetland A dominated by soft rush.

3. Sampling Point SP-01.

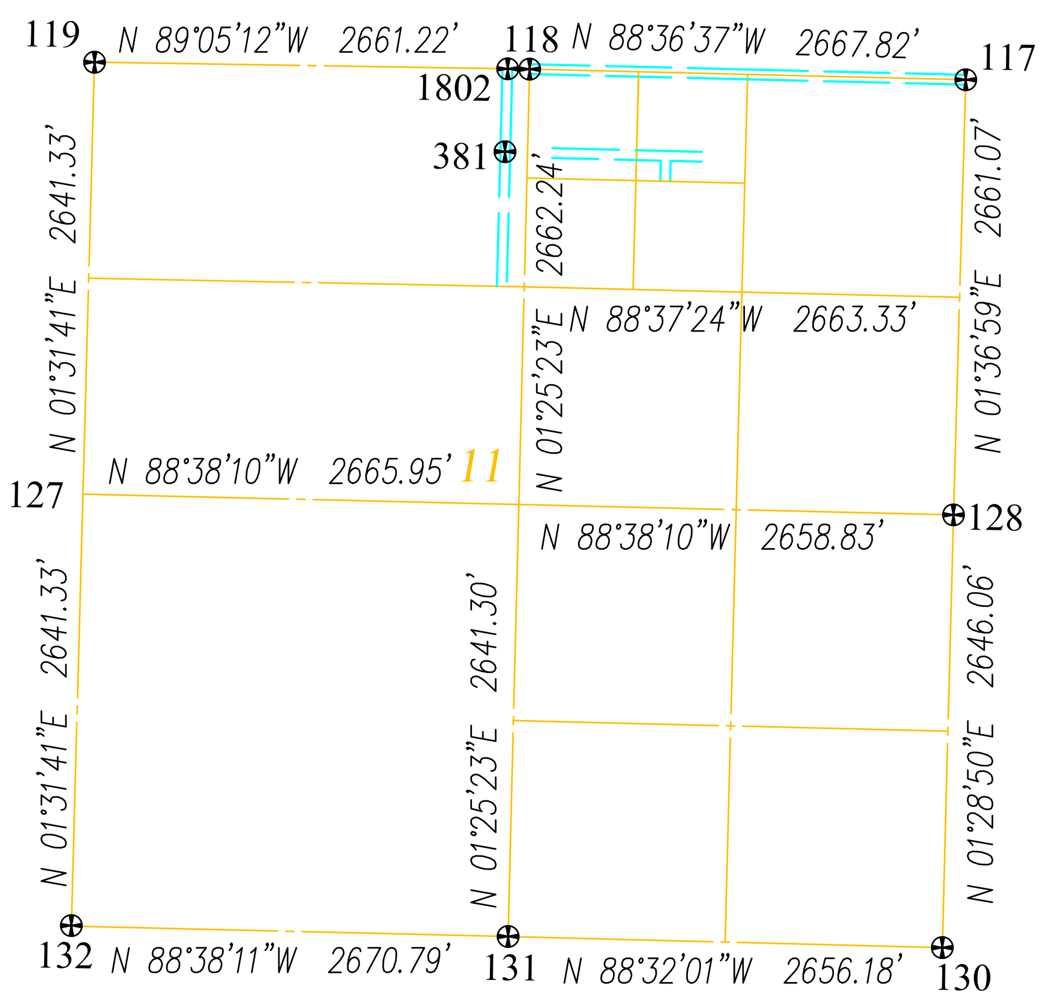
4. Drainage swales near stormwater ponds.

LANDAU ASSOCIATES	Bellevue Airfield Park Bellevue, Washington	**Selected Site Photographs**	Figure F-2

5. Former landfill area.

6. Stormwater detention pond.

7. In vicinity of northwest corner of site facing southeast.



HORIZONTAL CONTROL:

Section 11
T.24 N., R.5 E., W.M.
Not To Scale
Reference City of Bellevue Survey
Station Data Cards noted at GLO
Corners and Street Mons

Basis of Bearing: NAD 83 (2007)
Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG
160th Ave. S.E. 600'+/- North of SE 33rd ST
Elev.=344.29' HORZ STA 0382

BM #499: 3"X3" CONC MON W/ 3/8" BRASS
PLUG AT INTERSECTION OF 156th Ave. S.E. &
S.E. 26th ST
Elev.=379.61' HORZ STA 0381

BM #838: 4"X4" CONC MON W/ 1 3/4" BRASS
CAP AT INTERSECTION OF 158th Ave. S.E. &
S.E. 26th ST
Elev.=301.397' HORZ STA 3182

PROPERTY DESCRIPTION: (Refer to Pacific Norrthwest Title Company of Washington, Order No. 1169536, dated September 12, 2011, Schedule A - LEGAL DESCRIPTION)

PARCEL A:
THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER AND
THE WEST 250 FEET OF THE NORTH 60 FEET OF THE SOUTHEAST QUARTER OF THE NORTHWEST
QUARTER OF THE NORTHEAST QUARTER, ALL IN SECTION 11, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON.

PARCEL B:
A PORTION OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 11,
TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 11,
THENCE ALONG THE SOUTH LINE OF SAID NORTHWEST QUARTER OF THE NORTHEAST QUARTER, SOUTH 88°38'09" EAST 665.85 FEET;
THENCE NORTH 01°27'57" EAST 116.64 FEET,
SAID POINT BEING THE TRUE POINT OF BEGINNING;
THENCE NORTH 01°27'57" EAST 489.00 FEET;
THENCE SOUTH 88°37'31" EAST 250.00 FEET;
THENCE SOUTH 01°27'57" WEST 370.00 FEET;
THENCE SOUTH 65°56'11" WEST 277.05 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL C:
PARCEL 5, CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO 02-149004LW, RECORDED UNDER RECORDING NO 20030305900019, IN KING COUNTY, WASHINGTON.

TAX ACCOUNT NUMBERS: 112405-9060-02, 112405-9105-09, AND 112405-9123-07

EASEMENT NOTES: (Refer to Pacific Norrthwest Title Company of Washington, Order No. 1169536, dated September 12, 2011, Schedule B - SPECIAL EXCEPTIONS)

Parcel A:
No. 3; Rec. No. 20040519900009: ROS noting conditions, easements, provisions & encroachments - Partially Plotted
Rec. No. 20030305900019: BLA on adjoining parcel noting conditions and easements - Partially Plotted

Parcel B:
No. 13; Rec. No. 8005130448: Covenants, conditions, restrictions and/or easements - Also includes Modifications in Rec. Nos. 8010210323, 8110150240, and 8403220558 - Not Plotted
No. 14; Rec. No.8106220268: Deed with reservations, easements, and exceptions set forth in Exhibit II - a re-record of 8007300538 and amended with 8203180678 - Not Plotted
No. 19; Rec No 8411050290: Terms and Conditions of Site Plan Review from City of Bellevue, modified with 8504250469 and 8601170846 - Not Plotted
Rec. No. 20030305900019: BLA on adjoining parcel noting conditions and easements - Partially Plotted

Parcel C:
No. 22; Rec. No. 8212139001: Record of Survey with conditions, notes, easements, provisions, and/or encroachments noted - Partially Plotted
No. 23; Rec. No. 1755257: Reservation of Coal, Oil, Gas, and Minerals - Not Plotted
No. 26; Rec. No. 8003120648: Concomitant Zoning Agreement - amended with 20030221002030 - Not Plotted
No. 27; Rec. No. 8108280987: Concomitant Agreement - Not Plotted
No. 29; Rec. No. 8201130375: City of Bellevue Resolution No. 3773 - Not Plotted
No. 34; Rec. No. 8411050290: Terms and Conditions of COB Comprehensive Development Plan - Not Plotted
No. 35; Rec. Nos. 8504250469 and 8601170846: Terms and Conditions of COB Administrative Decision - Not Plotted
No. 45; Rec. No. 20030404000887: Reciprocal Easement Agreement for Operation of Landfill Management Systems - Not Plotted
No. 48; Rec. No. 20030404000891: Declaration of Restrictive Covenant (Future City Surface Lots) - Not Plotted
Rec. No. 20030305900019: BLA noting conditions and easements - Partially Plotted

SURVEY REFERENCES:

- King County Tax Assessor Map (NW 11-24-05, Rev. 8/11/2010 and NE 11-24-05, Rev. 8/11/2010);
- City of Bellevue Survey Station Data Cards (08/31/2011) & (09/26/2011) & (10/25/2011);
- Plats of Phantom Lake View Div. No. 1 (Vol. 55, Pages 19&20) and Phantom Lake View Div. No. 2 (Vol. 57, Pages 21&22) and Phantom Lake View Div. No. 3 (Vol. 58, Pages 69&70);
- Binding Site Plan done in 2008, recorded in AFN 20080904000529;
- Topo and selected Utility Line Reference from PACE dwg 9398-SRV done for COB Parks
- Topo Reference from COB DTM points

autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - Cover Page

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY:	S. Bratz	DATE:	11/16/2011
WORK ORDER NO.:	11069	SHEET:	1 of 5

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007)
Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG
160th Ave. S.E. 600'+/- North of SE 33rd ST
Elev.=344.29' HORZ STA 0382

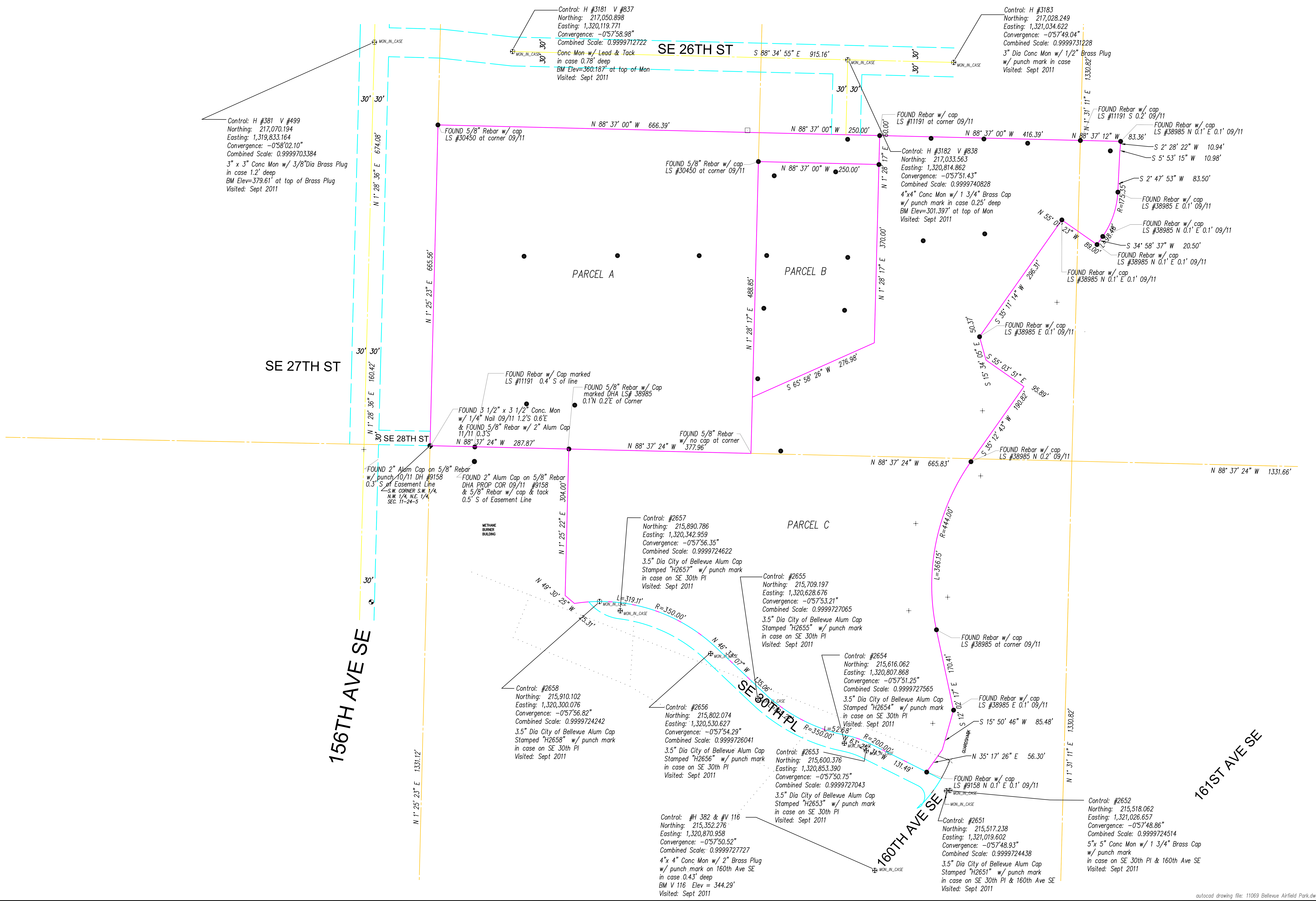
BM #499: 3"X3" CONC MON W/ 3/8" BRASS
PLUG AT INTERSECTION OF 156th Ave. S.E. &
S.E. 26th ST
Elev.=379.61' HORZ STA 0381

BM #838: 4"X4" CONC MON W/ 1 3/4" BRASS
CAP AT INTERSECTION OF 158th Ave. S.E. &
S.E. 26th ST
Elev.=301.397' HORZ STA 3182

LEGEND:

Existing Right of Way
Existing Property Line
Existing Easements
Section Line

Survey Control
MON IN CASE
IRON ROD
PK NAIL



NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - Control & Boundaries

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY: S. Bratz
DATE: 11/16/2011
WORK ORDER NO.: 11069
SHEET: 2 of 5

NO.	DATE	BY	APPR.	REVISIONS

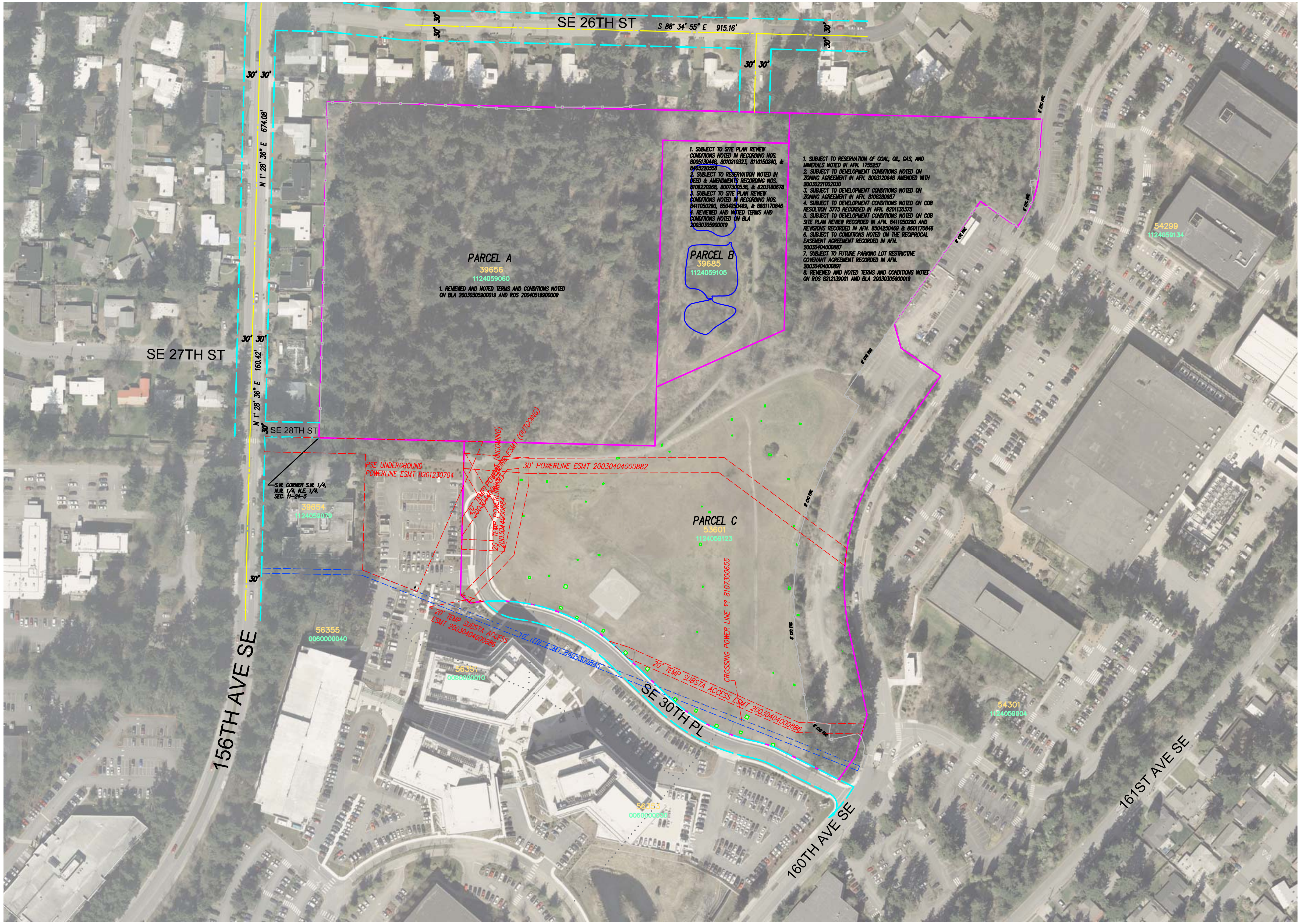
Bellevue Airfield Park

Eastgate Area - Easements

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY: S. Bratz
DATE: 07/12/2012
WORK ORDER NO.: 11069
SHEET: 3 of 5



LEGEND:

- Existing Right of Way
- Existing Property Line
- Existing Easements
- Existing Easements (Not in Title Report)
- Section Line

Survey Control
- MON IN CASE
- IRON ROD
- PK NAIL

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007) Washington, North Zone

Vertical Datum: NAVD 1988

autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - PSE Easements

City of Bellevue

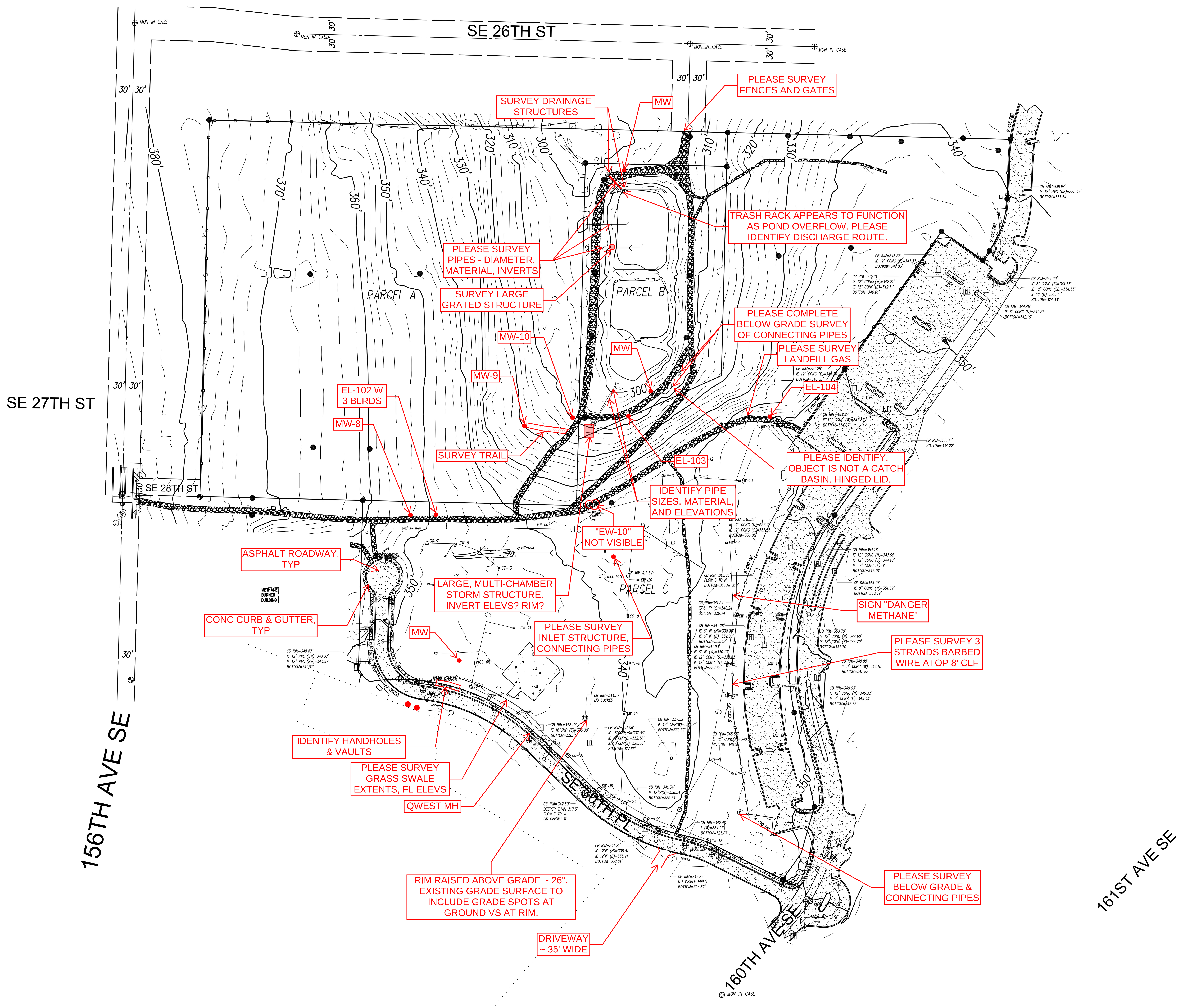
Civic Services Department

Topographic Survey

situated in

NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY:	S. Bratz	DATE:	07/12/2012
WORK ORDER NO.:	11069	SHEET:	3A of 5



LEGEND:

— — — — —	Existing Right of Way
————	Existing Property Line
—— S ——	Existing Sanitary Sewer Line
—— D ——	Existing Storm Drainage Line
—— W ——	Existing Water Line
—— G ——	Existing Gas Line
—— OHP ——	Overhead Power Line
—— UGC ——	Underground Telecom Line
—— G ——	Monitoring Well Gas Line

Survey Control: MON IN CASE, IRON ROD, PK NAIL

Sanitary Sewer: CLEAN OUT, SEWER MANHOLE

Storm Drainage: CATCH BASIN, DRAIN MANHOLE

Water: FIRE HYDRANT, WATER VALVE, WATER METER

Gas: GAS VALVE, GAS METER

Groundwater Monitoring: VAULTS, MONITORING WELLS

Power: UTILITY POLE, POWER VAULT

Telecommunications: TELEPHONE RISER, TELEPHONE VAULT

Traffic Control: TRAFFIC SIGNAL, TRAFFIC CONTROLLER, STREET LIGHT, AREA LIGHT, JUNCTION BOX, STREET SIGN

Landscaping: CONIFER TREE, DECIDUOUS TREE

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007)
Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG 160th Ave. S.E. 600'+/- North of SE 33rd ST Elev.=344.29' HORZ STA 0382

BM #499: 3"X3" CONC MON W/ 3/8" BRASS PLUG AT INTERSECTION OF 156th Ave. S.E. & S.E. 26th ST Elev.=379.61' HORZ STA 0381

BM #838: 4"X4" CONC MON W/ 1 3/4" BRASS CAP AT INTERSECTION OF 158th Ave. S.E. & S.E. 26th ST Elev.=301.397' HORZ STA 3182

autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

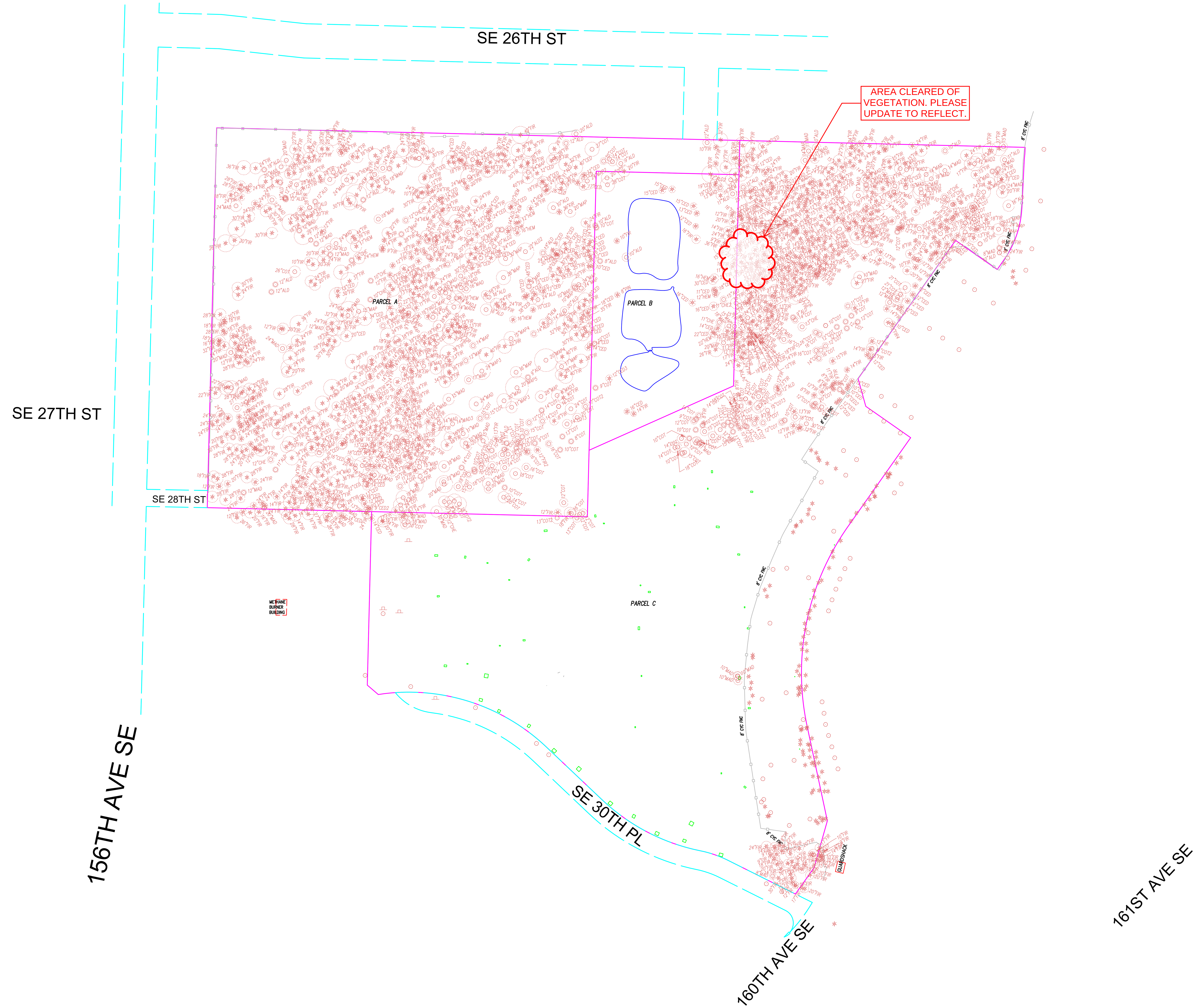
Bellevue Airfield Park

Eastgate Area - Topography

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY:	S. Bratz	DATE:	11/16/2011
WORK ORDER NO.:	11069	SHEET:	4 of 5



LEGEND:

Existing Right of Way
Existing Property Line
Existing Fenceline

Landscaping - Trees over 6" DBH

- CONIFER TREE
- DRIPLINE
- DECIDUOUS TREE
- FIR = DOUGLAS FIR
- CED = CEDAR
- MAP = MAPLE
- COT = COTTONWOOD
- HEM = HEMLOCK
- PIN = PINE
- ALD = ALDER
- MAD = MADRONA
- WIL = WILLOW
- POP = POPLAR
- CHE = CHERRY

Groundwater Monitoring

- VAULTS
- MONITORING WELLS

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007)
Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG
160th Ave. S.E. 600'+/- North of SE 33rd ST
Elev.=344.29' HORZ STA 0382

BM #499: 3"X3" CONC MON W/ 3/8" BRASS PLUG AT INTERSECTION OF 156th Ave. S.E. & S.E. 26th ST
Elev.=379.61' HORZ STA 0381

BM #838: 4"X4" CONC MON W/ 1 3/4" BRASS CAP AT INTERSECTION OF 158th Ave. S.E. & S.E. 26th ST
Elev.=301.397' HORZ STA 3182

autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - Trees

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY: S. Bratz
DATE: 02/16/2012
WORK ORDER NO.: 11069
SHEET: 5 of 5

Draft
Geotechnical Engineering Report
Bellevue Airfield Park Development
(Former Eastgate Landfill)
Bellevue, Washington

June 2, 2016

Prepared for

Walker Macy
Portland, Oregon

LANDAU ASSOCIATES

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Draft Geotechnical Engineering Report
Bellevue Airfield Park Development
Former Eastgate Landfill
Bellevue, Washington

This document was prepared by, or under the direct supervision of, the undersigned, whose seal is affixed below.

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Date:

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Document reviewed by: ______________________________
David A. Pischer, PE

Date:	June 2, 2016
Project No.:	1548001.010.011
File path:	P\1548\001\FileRoom\R
Project Coordinator:	RGM

LANDAU ASSOCIATES

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FIGURES

APPENDICES

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1.0 INTRODUCTION

This report summarizes the results of geotechnical engineering services conducted to support design related to the proposed Bellevue Airfield Park (Park) development at the site of the former Eastgate Landfill in Bellevue, Washington as shown on the Vicinity Map on Figure 1. The proposed Park will include two synthetic turf athletic fields, concessions and restroom facilities, play and picnic areas, pedestrian trails, a spray deck, expansion and improvements to existing stormwater management facilities, and lighting and parking improvements.

A portion of the Park site overlies the closed Eastgate Landfill, which has environmental restrictions and ongoing monitoring requirements under the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) voluntary cleanup program (VCP) and an environmental covenant for the site dated November 12, 2008.

In addition to the geotechnical engineering conclusions and recommendations contained herein, Landau Associates, under subcontract to Walker Macy, is also assisting the design team and the City of Bellevue (City) by providing environmental engineering, permitting support, and landfill cover design services for Phase 1 of the Park development. Evaluations and recommendations related to stormwater management, utilities, civil engineering design, landfill gas management, and air quality monitoring will be provided separately by other members of the Walker Macy design team.

Improvements associated with Phase 1 of the Park development include the Park entry, southern athletic field, concessions and restroom building, stormwater facilities and detention pond, trails, and certain modifications to the groundwater monitoring and landfill gas control systems.

1.1 Site Description

The proposed Bellevue Airfield Park is located adjacent to the I-90 Business Park in Bellevue, Washington (Figure 1). A master plan for the Park, entitled “Bellevue Airfield Park, Eastgate Area Properties Master Plan,” was prepared in 2012 for the City of Bellevue Parks & Community Services Department by The Portico Group (The Portico Group 2012). The Eastgate Area Properties are comprised of three parcels totaling 27.9 acres within the Phantom Lake watershed. The City previously purchased portions of these properties from The Boeing Company (Boeing) and the Bellevue School District with the intent of developing an active-use community park. An access road (SE 30th Place, also referred to as the “Shared Entrance Road”) has already been constructed along the southern side of the proposed Park as part of the Advanta Office Commons development.

The proposed Park site includes the former Eastgate Landfill, which was operated by King County as a municipal solid waste landfill, and accepted household and demolition wastes from 1951 until it was closed and covered in 1964. The Bellevue Airfield runway was subsequently extended over the former landfill, and operated until 1983. After landfill closure, Cabot, Cabot & Forbes purchased property, including most of the landfill, and developed the I-90 Business Park. Boeing acquired portions of the former Eastgate Landfill property and adjacent properties in 1980 and 1983. The Boeing-owned property was partially developed by Boeing in the mid to late 1980s; however, no buildings have been constructed directly over the former landfill to date. Closure activities performed at the landfill by King County; Cabot, Cabot & Forbes; the City of Bellevue; or Boeing include landfill capping with a soil cover, groundwater monitoring, stormwater management, leachate collection, and landfill gas migration control (LAI 2000). Leachate is collected on the north side of the landfill in a French drain that discharges to the King County sanitary sewer. Groundwater monitoring wells and landfill gas extraction monitoring wells are located around the perimeter of the landfill. Monitoring well locations, the gas extraction system, the leachate collection system, and the approximate landfill area are shown on Figure 2.

In 2007 to 2008, the Advanta Office Commons development (including three buildings designated buildings A, B, and C, a parking garage, and the shared entrance road) was constructed by Schnitzer Northwest LLC (Schnitzer) adjacent to the southern end of the landfill. This resulted in construction of relatively low-permeability hardscape surfaces (asphalt roadways and parking areas) over a portion of the southern extent of the landfill.

2.0 SCOPE OF SERVICES

Walker Macy retained Landau Associates to provide geotechnical engineering services to support design of the proposed Park improvements, including the new synthetic turf athletic fields, concessions and restroom facilities, parking area and access roads, retaining walls, and associated projects features for each (i.e., underground utilities, etc.). Our scope of services includes the following specific tasks:

- Collecting and reviewing readily available geotechnical and geologic data for the project area
- Obtaining utility clearances prior to performing field explorations
- Performing a Geophysical Survey to estimate the horizontal and vertical limits of the landfill
- Advancing a series of exploratory borings, test pits, and hand auger borings throughout the Park area in the vicinity of proposed improvements and locations needed to identify existing landfill solid waste deposits underlying the site
- Collecting representative soil samples at selected intervals
- Logging the borings, test pits, and hand auger borings and recording pertinent information including soil sample depths, stratigraphy, soil engineering characteristics, groundwater occurrence, and evidence of potential soil or groundwater contamination
- Conducting limited laboratory testing
- Evaluating data from the subsurface investigation and laboratory testing programs and performing certain engineering analyses
- Developing geotechnical engineering conclusions and recommendations to support design of proposed improvements
- Preparing and submitting this written report summarizing our findings and geotechnical engineering conclusions and recommendations. This report includes:
  - a site plan showing the locations of current and previous subsurface explorations, and other pertinent site features.
  - logs of the current and previous borings and other subsurface information.
  - a summary of subsurface soil and groundwater conditions anticipated in the vicinity of the proposed park improvements, as suggested by current and previous exploration data.
  - an evaluation of the settlement-susceptibility of the site soils due to static loads, including estimated settlement magnitudes under the weight of new fill and structures, and recommendations to limit settlements beneath the proposed improvements to within tolerable levels.
  - recommendations for site preparation for the proposed park improvements, including a discussion related to ground improvement techniques (e.g., preloading) that might be necessary to mitigate settlement risks.
  - design recommendations for applicable foundation support type(s) for the proposed park buildings (i.e., spread footings, mat foundations, etc.), including subgrade

preparation, allowable soil bearing pressures, estimates of settlement, and soil parameters for lateral load resistance.

- site factors for use in seismic design of the structures under the 2012 International Building Code (2012 IBC).
- recommendations for subgrade preparation, including reuse of site soil; criteria for selection, placement, and compaction of structural fill; and a discussion of the effects of weather and/or construction equipment on the native soil.
- a discussion related to expected excavation conditions for site utilities.
- recommended design criteria, including earth pressures, for retaining walls. Included is a discussion on approaches to limit settlements beneath the proposed retaining walls to within tolerable levels.
- recommended pavement sections for parking areas and access roads.
- recommendations for monitoring and testing during construction.

2.1 Site Conditions

This section provides a discussion of the general geologic setting of the project area and describes the surface and subsurface conditions observed at the project site at the time of our investigation. Interpretations of the site conditions are based on the results of our review of available information, and the results of our site reconnaissance, subsurface explorations, and laboratory testing.

2.2 General Geologic Conditions

General geologic information for the project site was obtained from the Geologic Map of King County, Washington (Booth, Troost, and Wisher 2006), published by the University of Washington. According to this geologic map, near-surface deposits in the vicinity of the project site consist of alluvial soils, recessional outwash, glacial till, and advance outwash. Soil defined as alluvium is characterized as a loose to medium dense, moderately sorted mixture of gravel and sand with varying amount of silt and clay and silty fine sand with clayey silt interbeds. Recessional outwash soils are typically described as loose to medium dense, stratified sand and gravel deposits and/or well-bedded silty sand and silty clay. Soil defined as glacial till typically consists of a dense to very dense, unsorted mixture of subrounded boulders, cobbles, gravel, and sand in a matrix of silt and clay. Advance outwash deposits typically include dense to very dense well-bedded sand and gravel.

2.3 Surface Conditions

The surface of the existing soil cap layer over the former Eastgate Landfill exhibits a generally hummocky topography with depressions and ridges that appear to promote surface drainage toward the existing stormwater management facilities. Elevations across the upper portions of the soil cap over the landfill range from 335 to about 350 ft (NAVD 1988). Vegetation across the former landfill typically consists of maintained grass and gravel pathways, with asphalt paved surfaces over the southern portion of the landfill associated with the shared entrance road, parking areas, and the former helicopter pad that is currently used as a basketball court. Along the northern face of the landfill, the site slopes moderately down to the north toward Pond A (the existing three cell stormwater detention pond), with elevations ranging from 340 to about 300 ft. A gravel path circles Pond A, which is located near the bottom of a generally flat north-south trending valley. Moderate to steep slopes covered with heavy vegetation bound the east and west side of the valley where Pond A is located. Existing site topography is illustrated on Figures 3 and 4.

2.4 Subsurface Soil Conditions from Previous Reports

To evaluate the subsurface conditions prior to drilling, we reviewed the following reports and exploration logs:

- Groundwater Investigation, Former Eastgate Landfill, Bellevue, Washington, dated September 26, 2000, prepared by Landau Associates.
- Annual Groundwater Monitoring and Well Construction Detail Report, Former Eastgate Landfill, Bellevue, Washington, dated May 23, 2008, prepared by Landau Associates.
- Groundwater Monitoring Well Logs, dated 2007, prepared by SCS Engineers.
- Gas Probe Monitoring Well Logs, dated 2007, prepared by SCS Engineers.
- Closing Report, Geotechnical Services during Construction, Eastgate Landfill, Landfill Gas Collection System, Bellevue, Washington, dated October 29, 1986, prepared by GeoEngineers.
- Geotechnical and Environmental Studies, Bellevue Airport Site, Bellevue, Washington, dated May 28, 2002, prepared by AMEC Earth & Environmental.
- Report, Site Characterization Study, Portion of Boeing Eastgate Property, Bellevue, Washington, dated December 21, 2004, prepared by Golder Associates.
- Report, Geotechnical Engineering Services, Duct Bank Relocation, Boeing Eastgate Landfill, Bellevue, Washington, dated June 28, 2004, prepared by GeoEngineers.
- Eastgate Landfill Interim Status Report, dated April 22, 1986, prepared by Sweet, Edwards, & Associates.
- Eastgate Landfill Phase II Report, dated June 30, 1986, prepared by Sweet, Edwards, & Associates.
- Eastgate Landfill Summary Report, dated January 17, 1986, prepared by Sweet, Edwards, & Associates.
- Geotechnical Report, Parking Lot Subsidence Investigation, Boeing Computer Center, Bellevue, Washington, dated November 4, 1994, prepared by Converse Consultants NW.

Five geologic units have been previously identified at the site, in addition to the landfill solid waste materials. Previous reports have included borings for a variety of project and site features and have also included figures that show the relative position of the identified units. Approximate locations of selected borings from past studies and site work are shown on Figure 3.

2.5 Other Subsurface Information

Golder Associates (Golder) carried out a geophysical study in 2004 on the southern boundary of the landfill area along the shared entrance road for the Advanta Office Commons development located to the south of the project site (Golder 2004). Golder Associates conducted six induced polarization (IP) surveys and 10 electromagnetic (EM-31) surveys to define the limits of the landfill in this area. The approximate locations of the surveys are shown on Figure 3. Based on the results of their geophysical surveys, Golder reported that the landfill cap in the study area varied in thickness from 2 ft to 15 ft with a typical thickness of about 10 ft. Golder also reported that the landfill deposits extended to depths of up to 40 ft below ground surface (bgs) and provided their interpretation of the landfill boundary along the southern portion of the site. Golder's finding generally confirmed the subsurface soil conditions described in previous reports along the southern portion of the site.

2.6 Subsurface Conditions

Subsurface conditions at the project site were explored by Landau Associates in March 2016. The exploration program consisted of advancing 20 hollow stem auger borings for geotechnical design purposes and determination of the horizontal extent of the landfill solid waste, three test pits for pavement design purposes and 12 test pits to determine the lateral extent of landfill solid waste, and nine hand auger borings for design of pavements and picnic structure foundations in the northwest area at the approximate locations illustrated on Figure 4. A discussion of field exploration procedures, together with edited logs of the exploratory borings, test pits, and hand auger borings, are presented in Appendix A. A discussion of laboratory test procedures, together with the laboratory testing program results, are presented in Appendix B.

Subsurface cross sections indicating the generalized stratigraphy across the project site were developed. The location and orientation of subsurface cross section lines are shown on the Cross Section Alignment Plan (Figure 5), and the subsurface cross sections are presented on Figures 6A through 6F. The extrapolation of subsurface conditions between exploration locations is for illustrative purposes only; actual conditions between explorations may vary from those shown. The exploration logs presented in Appendices A and C provide more detail relative to subsurface conditions observed at specific locations and depths.

Based on the results of the field exploration program and our review of available geologic information and previous geotechnical reports, the site geotechnical condition are summarized below in order of increasing depth from the ground surface.

- **Soil Fill** - Soil fill overlies most of the developed areas of the site and also is present as the soil cap layer over the underlying landfill area. The soil fill generally consists of silty, fine to medium sand with occasional fine gravel. The thickness of the soil fill over the landfill solid waste was typically reported to vary from about 2 to 19 ft across the site.
- **Landfill Solid Waste** - The solid waste fill material below the surficial soil fill generally consists of a mixture of soil and municipal solid waste including brick, timber, asphalt, wood, paper,

metal, plastic, glass and concrete. The solid waste was landfilled between 1951 and 1964 (LAI 2000), so the putrescible portions of the waste would likely be in an advanced state of decay or not present. The solid waste material varies in thickness and was generally encountered to depths of about 2 to 42 ft bgs across the site.

- **Alluvium/Recessional outwash** – Alluvium and recessional outwash underlies the fill materials, and is typically an unconsolidated silty sand with clayey silt interbeds and varying amounts of gravel that underlies the northern area and forms the upper side slopes of the former landfill. The maximum identified thickness of alluvium was 12 ft. The top of the alluvium/recessional outwash is interpreted to be the pre-development ground surface.
- **Glacial Till** – The glacial till is typically a very dense, silty sand containing variable amounts of fine to medium gravel and scattered cobbles. Glacial till was observed to be discontinuous at the site, generally below the southern bottom and side slopes of the landfill and, where encountered in borings, ranged from about 9 to 42 ft thick. It was interpreted to be only sporadically present in the vicinity of detention Pond A.
- **Advance Outwash** – Advance outwash encountered below the glacial till and alluvium is typically a dense, slightly silty to silty, fine to medium sand with minor amounts of gravel. Silt lenses were commonly encountered within the advance outwash deposits. The maximum encountered thickness of advance outwash was greater than 37 ft.
- **Lacustrine Deposits** – Lacustrine deposits underlie the advance outwash unit and apparently becomes finer-grained with depth. The upper portion consists of interbedded sand and silt and the lower portion consists of silt interbedded with thinly laminated sand and silty sand. The lower limit of this unit is below the depth of exploratory borings advanced at the site to date.

The specific conditions and some of the proposed park features are discussed in the following paragraphs.

2.6.1 Sport Fields and Main Park Area within the Former Eastgate Landfill Boundary

Borings B-1-16 through B-3-16, B-6-16 through B-11-16, and B-13-16 through B-16-16 were advanced at strategic locations throughout the site of the former Eastgate Landfill. The borings were advanced to depths ranging from 15 to 56.5 feet bgs. Throughout our explorations, we encountered 2 to 15 ft of fill consisting of very loose to medium dense, very silty to silty sand with varying amounts of gravel, organics, and construction debris and dense to very dense silty, sandy gravel with varying amounts of organics and construction debris to depths that we interpreted to be existing landfill cover soil. Below the fill we encountered landfill solid waste deposits consisting of a mixture of soil and municipal solid waste including brick, timber, asphalt, wood, paper, metal, plastic, glass, and concrete to depths ranging from 2 to 36 ft bgs. Glacial till was encountered below the landfill solid waste deposits throughout the remaining depth explored in borings B-1-16, B-3-16, B-8-16, B-9-16, B-13-16, B-14-16, B-15-16, and B-16-16. Glacial till was generally observed to consist of dense to very dense, silty to very silty sand with gravel. Advance outwash was encountered below the landfill solid waste deposits throughout the remaining depth explored in borings B-2-16, B-6-16, B-7-16, and B-11-16. Advance outwash was generally observed to consist of very loose to dense silty sand with gravel.

2.6.2 Northeast Sport Field outside the Former Eastgate Landfill Boundary

Borings B-4-16, B-5-16, B-17-16, and test pit TP-12-16 were advanced at strategic locations outside the boundary of the former Eastgate Landfill in the northeast sport field area. The borings were advanced to depths ranging from 26.5 to 31.5 ft bgs and the test pit to a depth of 9.5 ft bgs. Boring B-4-16 encountered medium dense silty sand with gravel that we interpreted to be fill overlying glacial till comprised of very silty, gravelly sand to the full depth explored. In boring B-5-16, we encountered 1 inch of asphalt pavement overlying fill consisting of medium dense gravelly sand with trace silt to about 7.5 ft bgs overlying very dense, very silty sand with gravel interpreted to be glacial till. Boring B-17-16 encountered advance outwash consisting of dense to very dense, very silty sand with gravel to about 25 ft bgs overlying glacial till consisting of very dense silty sand with gravel. Test pit TP-12-16 encountered 5.5 ft of fill consisting of loose to medium dense silty to gravelly sand with varying amounts of organics, overlying 2.5 ft of advance outwash consisting of medium dense to dense gravelly sand with trace silt and glacial till consisting of very dense silty gravelly sand to the full depth explored.

2.6.3 Parking Areas

Test pits TP-1-16 and TP-2-16 were advanced at strategic locations outside the boundary of the former Eastgate Landfill in the vicinity of the proposed parking area on the east side of the site and borings B-10-16, B-12-16, B-19-16 and B-20-16 were advanced in the vicinity of the proposed parking area on the west side of the site. The test pits were advanced to depths ranging from 4 to 5 ft bgs while the borings were advanced to depths ranging from 6.5 to 31.5 ft bgs.

Test pits TP-1-16 and TP-2-16 advanced in the east side parking area generally encountered 0.6 ft of topsoil overlying 1 to 3.5 ft of fill consisting of loose to medium dense, silty, gravelly sand with varying amounts of construction debris and organics overlying weathered and unweathered glacial till consisting of medium dense to very dense silty gravelly sand to the full depth explored.

Borings B-10-16 and B-12-16 encountered 1.5 to 2.5 ft of medium dense to dense silty sand with gravel and silty, sandy gravel with trace construction debris that we interpreted to be fill. Underlying the fill was glacial till encountered to the full depth explored consisting of very dense, very silty sand with gravel. Boring B-19-16 encountered 5 inches of asphalt overlying loose to very dense silty sand with gravel that we interpreted to be glacial till. Boring B-20-16 encountered dense to very dense very silty sand with gravel that we interpreted to be glacial till that was encountered to the full depth explored.

2.6.4 Pond A Overlooks

Boring B-18-16 was advanced in the vicinity of the proposed pond overlook located on the west side of Pond A. The boring was advanced to a depth of 21.5 ft bgs and generally encountered 7 ft of loose to dense very silty sand with gravel that we interpreted to be fill. Underlying the fill, we encountered soft silt with iron staining and loose, very silty sand with gravel and iron staining that we interpreted to be weathered glacial till to a depth of about 15 ft bgs. Glacial till was encountered underlying the weathered glacial till consisting of very dense, very silty sand with gravel to the full depth explored.

Previous borings EL-103 (LAI 2000) and B-1-83 (Converse Consultants 1983) were advanced in the vicinity of the proposed south overlook along Pond A. These borings encountered fill mixed with some refuse at depth of 5 to 6.5 ft bgs. This layer of fill mixed with some refuse is approximately 4.5 ft thick in Boring EL-103; however, this layer was greater than 9.5 ft thick in Boring B-1-83, extending below the completion depth of that boring. The landfill perimeter test pits on the north side of the landfill area indicate that this layer of fill mixed with some refuse is isolated from the main landfill, and may be remnants of refuse that were relocated and mixed with soil during installation of the storm drain or other past site work in the Pond A area.

2.6.5 Northwest Picnic Structures and Parking Areas

Hand auger borings HA-1-16 through HA-9-16 were advanced at strategic locations outside the boundary of the former Eastgate Landfill in the vicinity of the proposed picnic structures and parking area on the northwest side of the site. The hand auger borings generally encountered about 1 ft of topsoil overlying recessional outwash consisting of medium dense to dense, silty sand with gravel to the full depth explored.

2.6.6 Limits of Landfill Solid Waste

Test pits TP-5-16 through TP-11-16, and TP 12-16 through TP-15-16 were advanced at strategic locations around the perimeter of the former Eastgate Landfill solid waste deposits to further define the boundary as shown on Figure 4. Test pits were completed by initially excavating near the line where the limits of refuse had been approximated by previous investigation using global positioning system equipment, and then extending the trench length horizontally until the actual horizontal limit of refuse was observed in the test pit. The found limit of the landfill refuse was then staked for final survey as shown on Figure 4. Selected photos of the test pits are included in Appendix A.

2.7 Geophysical Study

Global Geophysics (Global) carried out a geophysical study in January and February 2016 across the former Eastgate Landfill site underlying the majority of the proposed Park improvements. Global conducted 11 electrical resistivity tomography (ERT), induced polarization tomography (IPT), EM61 and ground penetration radar (GPR) surveys to help define the limits of the landfill in this area. An explanation of the geophysical survey methods used and results are provided in Appendix D. The approximate locations of the surveys are shown on Figure 4. Based on the results of their geophysical surveys, Global reported that the landfill cap in the study area varied in thickness from 2 ft to 15 ft. Global also reported that the landfill deposits extended to depths of up to 60 ft bgs and provided their interpretation of the landfill boundary. Global's findings generally confirmed the subsurface soil conditions found by the borings and matched well with what was described in previous reports they had prepared for utility installation along the southern portion of the site (Golder Associates 2014).

2.8 Groundwater Levels

Previous investigations at the site identified two aquifers below the site: a shallow perched aquifer and a deeper advance outwash aquifer (LAI 2015a). The shallow perched aquifer is encountered in the solid waste and alluvial materials, and in some locations, the glacial till underlying the fill and alluvial materials. The advance outwash aquifer is encountered below the glacial till layer that underlies most of the landfill area. The existing site monitoring wells and piezometer are screened in the advance outwash. Groundwater elevations calculated using water level measurements collected from each monitoring well and piezometer, and a surface water level measurement at the staff gauge in Pond A, are used to evaluate groundwater flow direction in the advance outwash aquifer. Groundwater elevation contours are plotted for each monitoring event using the measured groundwater elevations. The 2015 groundwater contours are provided in the Landau Associates Project Summary Report dated October 19, 2015 (LAI 2015b). The contours indicate the groundwater within the advance outwash aquifer has a generally easterly flow, which is consistent with flow direction that has been observed at the landfill since Landau Associates began monitoring activities in 2001. This differs from the flow within the perched aquifer (leachate) in the landfill, which generally flows to the north toward the leachate collection trench. Groundwater levels encountered in our borings at the time of drilling ranged from 15.5 to 34 ft bgs (Elevation 304 to 329) and are shown on the borings logs provided in Appendix A.

3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the field exploration, laboratory testing, and engineering analyses performed, and our understanding of the proposed Park development project, it is our opinion that the improvements proposed as part of Phase 1 of this project can be constructed at the site generally as planned. Design of the proposed improvements will need to consider the presence of compressible landfill deposits under the planned improvements which may require: 1) preloading/surcharging the proposed improvement area to pre-consolidate foundation soils prior to construction, and/or 2) using ground improvement techniques (e.g., drilled shafts, piles, stone columns, Geopiers, etc.) to reduce the settlement potential of the onsite soils. The presence of old landfill deposits will also require limiting contact and excavation of the solid waste materials, and controlling landfill gas (LFG) and leachate that continue to be produced by the landfill. Leachate production will be limited by installing a geomembrane cover over the landfill and upgrading the existing leachate collection trench to continue to discharge to the onsite sanitary sewer system. LFG will be better contained by the geomembrane cover, and will continue to be removed from the landfill area by upgrading the existing LFG extraction wells and venting system.

Conclusions and recommendations related to environmental considerations, health and safety considerations, contaminated soil handling and disposal, seismic considerations, site preparation, fill and compaction, wet weather earthwork, site settlement, preloading, underground utility installation, foundation support, pavement design, and landfill cover system are presented in the following sections.

3.1 Environmental Considerations

Contaminated soils in the form of landfill deposits are present underlying a significant portion of the site (Figures 2 through 5). Concentrations of dissolved iron, dissolved manganese, and 1,4-dichlorobenzene concentrations above screening levels were detected in water samples collected from the onsite leachate collection system. The existing leachate collection system appears to be adequately fulfilling its intended function. Water in the shallow perched aquifer that has been impacted by the landfill refuse is being captured and discharged directly to the onsite sanitary sewer line. The leachate collection system, along with Pond A, is functioning to protect downstream water quality. No exceedances of State surface water standards have been observed downstream of Pond A. Nonetheless, sampling and analysis of surface water from the leachate collection system will continue to be conducted on an annual schedule during the design phase for the Phase 1 Park development.

Further information on the groundwater monitoring and leachate collection systems and MTCA Compliance analysis can be found in LAI's Project Startup Summary Report (LAI 2015b).

3.2 Health and Safety Considerations

Excavations for the proposed improvements will likely be within compacted, clean, granular backfill, the existing cover soils overlying the landfill deposits, and/or native soils consisting of advance outwash and glacial till. However, deeper excavations extending below the existing grade may encounter potentially contaminated materials (landfill deposits) that were not encountered at shallower depths during our site investigation activities. Therefore, site excavations extending into existing site soil should be monitored for the presence of contamination. Monitoring should include visual and odor indications of contamination, as well as health and safety monitoring for LFG using a four gas explosivity and photoionization detector (PID) or similar equipment.

Due to the potential for encountering contaminated soil that was not discovered during previous site investigations, site work contractors should be required to prepare and submit a site-specific health and safety plan meeting applicable regulatory requirements prior to the start of construction. The contractor should also identify a Health and Safety Officer whose responsibility will be health and safety monitoring and oversight.

Current and previous field investigations in and around the Bellevue Airfield park site indicate that landfill deposits are present beneath portions of the site, and methane may be generated as a result of its presence and decomposition. Methane has the potential to accumulate in subsurface structures, voids, and vaults at concentrations that could pose a risk for explosion or oxygen depletion. As a result, development planning and design will need to address the potential presence of methane gas, and if present, accumulation in subsurface structures or voids.

3.3 Contaminated Soil Handling and Disposal

Environmental sampling and testing of the soil excavated and managed onsite should be planned as a part of the proposed project in the form of a soil management plan developed as part of the future Environmental Engineering Design Report (EEDR). Although there is no information suggesting contamination of the existing soil cover material, if soil is encountered during construction that visually appears to be contaminated or exhibits an odor (e.g., soil with oily residue or discoloration, visual landfill refuse, strong petroleum-like odors, groundwater with an oily sheen, etc.), the potentially impacted soil should be segregated, stored on plastic, and covered with plastic pending characterization for disposal. Soil samples should be collected from the potentially impacted soil and analyzed at an accredited laboratory for petroleum hydrocarbons and heavy metals. Additionally, if characterization indicates the presence of petroleum hydrocarbons in the heavy oil range, the soil should also be analyzed for PAHs and PCBs. If the concentration of contaminants in the soil is determined to be below the Model Toxics Control Act (MTCA Method A) concentration for unrestricted land use, the soil may be managed onsite as clean soil. If the contaminant concentrations are determined to be above MTCA Method A levels, the soil should be managed consistent with other contaminated materials identified on the site and removed for disposal at an approved offsite facility. Furthermore, if clearly contaminated soil is encountered during excavation activities, the contractor should establish appropriate contamination reduction and exclusion zones to help prevent the spread of contaminated materials on the site.

It is important to recognize that current solid waste regulations (WAC 173-350) may significantly restrict the offsite placement of site soil that contains hazardous substances, even if the concentrations are below MTCA cleanup levels. As a result, no existing site soil should be exported from the site, except to a solid waste landfill, without first determining whether the intended use and destination are allowable under Ecology regulations.

3.4 Seismic Considerations

The following sections present our conclusions and recommendations regarding the seismic hazard risk for the site and project, including design ground motions and the results of our liquefaction assessment.

3.4.1 Ground Motions

The Pacific Northwest is seismically active and the project site could be subject to ground shaking from a moderate to major earthquake. Consequently, moderate levels of earthquake shaking should be anticipated during the design life of the proposed Park improvements. In addition, the proposed improvement should be designed to resist earthquake loading using appropriate design methodology. The recommended ground motion design parameters for both design of structures over native soils and for structures over the landfill refuse are provided below.

Earthquake ground motions were estimated using the US Seismic Design Maps from the US Geological Survey (USGS) website (USGS 2015) in accordance with the 2012 IBC. The 2012 IBC accounts for an earthquake ground motion with a 2 percent probability of exceedance in 50 years (or approximately a 2,475-year return period). The seismic parameters in the 2012 IBC are based on maps prepared by the USGS. According to the USGS, the peak horizontal acceleration at the project site is approximately 0.54 times the acceleration due to gravity (0.54g).

3.4.1.1 Structures Over Fill and Native Soils

Based on the average field standard penetration resistance (N), and according to Chapter 20 of ASCE 7, the site classifies as Site Class D. The following parameters are recommended for design of the proposed structures:

- Spectral Acceleration for short periods (S_S): 133% of gravity (1.331g)
- Spectral Acceleration for a 1-second period (S_1): 51% of gravity (0.509g)

The above values can be modified for Site Class D using 1.000 for site coefficient F_a, and 1.500 for site coefficient F_v. The design spectral response acceleration parameters can be taken as two-thirds of the maximum considered earthquake spectral response acceleration presented above. Using the above site class and design adjustments, the following design spectral acceleration parameters can be used:

- S_{DS} = 0.887
- S_{D1} = 0.509

3.4.1.2 Structures Over the Landfill Refuse

Average shear wave velocities for the landfill solid waste deposits are estimated to range between 250 and 600 ft/s (Zekkos 2014). According to Chapter 20 of ASCE 7, the site classifies as Site Class E, based on the estimated shear wave velocities for the site where underlain by landfill refuse. The following parameters are recommended for design of the proposed structures:

- Spectral Acceleration for short periods (S_S): 133% of gravity (1.329g)
- Spectral Acceleration for a 1-second period (S_1): 51% of gravity (0.509g)

The above values can be modified for Site Class E using 0.900 for site coefficient F_a, and 2.400 for site coefficient F_v. The design spectral response acceleration parameters can be taken as two-thirds of the maximum considered earthquake spectral response acceleration presented above. Using the above site class and design adjustments, the following design spectral acceleration parameters can be used:

- $S_{DS} = 0.797$
- $S_{D1} = 0.814$

Soil liquefaction is generally limited to granular soils located below the water table that are in a relatively loose, unconsolidated condition at the time of a large, nearby earthquake. The landfill solid waste and dense, glacially consolidated deposits that underlie the project site are anticipated to have a low susceptibility to soil liquefaction. Consequently, it is our opinion that no special liquefaction-related design or construction procedures will be necessary for this project.

3.5 Site Preparation

Site preparation and earthwork will include demolition and removal of some existing structures, existing utilities (including parts of the existing LFG collection system), and asphalt concrete pavement. Site preparation and earthwork will also include stripping vegetation, grading the site with cuts and fills ranging from 2 to 13 ft, respectively, and (if encountered) handling and disposal of potentially contaminated soil. Specific conclusions and recommendations related to the handling and disposal of potentially contaminated soil are provided in Section 3.3.

All existing structures, pavement, vegetation, man-made debris, and other deleterious material should be cleared and stripped from all areas to be occupied by the proposed Park improvements and areas to receive fill. Utility lines and appurtenant structures that will be abandoned under future improvements should be completely removed to a point at least 5 ft (measured horizontally) beyond the foundations of proposed structures. Excavations resulting from the removal of abandoned utilities should be backfilled in accordance with the recommendations presented in Section 3.10.5 of this report. Utility lines that will be abandoned under future buildings may be abandoned in place, provided pipes 12 inches in diameter and larger are completely filled with controlled density fill (CDF). It should be noted that large-diameter utility lines that are abandoned in place could create obstructions for operations associated with future site development activities (e.g., building construction, site grading, etc.).

Pipes and appurtenant structures abandoned beyond the footprints of future buildings may be abandoned in place, provided pipes 12 inches in diameter and larger are completely filled with CDF. If the existing pipes are abandoned in this manner, structures such as manholes and vaults should be removed to a minimum depth of 3 ft below finish grade and the remaining portion (if any) of the excavation should be backfilled in accordance with the recommendations presented in Section 3.10.5.

Prior to placement of any structural fill to raise site grades in areas that were not previously preloaded, the exposed subgrade should be proof rolled to a dense and unyielding condition. Proof rolling should be accomplished with a fully-loaded dump truck, large self-propelled vibrating roller, or equivalent piece of equipment so that the upper 12 inches of exposed subgrade is compacted to at least 95 percent of its maximum dry density, as determined using test method ASTM International (ASTM) D 1557 (Modified Proctor). The purpose of this effort is to identify possible loose or soft soil deposits and to recompact the soil exposed during site stripping and demolition activities.

Proof rolling should be carefully observed by geotechnical personnel. Areas exhibiting significant deflection, pumping, or weaving that cannot be readily compacted should be overexcavated to firm or dense soil. Overexcavated areas should be backfilled with compacted granular material in accordance with subsequent recommendations for structural fill. During periods of wet weather, proof rolling or compaction could damage exposed subgrades. Under these conditions, a qualified geotechnical engineer should observe subgrade conditions to determine if proof rolling and compaction is feasible.

Construction in wet weather conditions may not allow proper compaction of the subgrade soils. Recommendations for wet weather earthwork are provided in Section 3.7.

3.6 Fill and Compaction

Structural fill used to raise site grades must be properly placed and compacted. In general, any suitable, non-organic, predominately granular soil may be used for fill material, including portions of the existing site fill, provided the material is properly moisture conditioned prior to placement and compaction, and the specified degree of compaction is obtained. If the existing onsite soil is to be reused for structural fill, pieces of wood or other deleterious material should be removed. Excavated site material containing topsoil, wood, trash, organic or fine-grained material, or construction debris will not be suitable for reuse as structural fill and should be placed in nonstructural areas where several inches of post-construction settlement is tolerable. Alternatively, this material could be exported from the site, provided the material is evaluated for contamination prior to removal from the site. If the material contains hazardous substances, disposal at a solid waste landfill would be required.

The suitability of any fine-grained soil excavated from the site or imported for use as compacted structural fill will depend on the gradation and moisture content of the soil when it is placed. As the amount of fines (that portion passing the US Standard No. 200 sieve) increases, the soil becomes increasingly sensitive to small changes in moisture content and adequate compaction becomes more difficult to achieve. Soil containing more than about 5 percent fines cannot consistently be compacted to a dense, non-yielding condition when the water content is greater than optimum. Optimum moisture content is the moisture content at which the greatest compacted dry density can be achieved. The moisture content of the site soil was observed to be variable. In addition, seasonal variation in the moisture content of shallow site soil should be expected.

The near-surface, onsite fill soil consists primarily of very loose to medium dense, very silty to silty sand with varying amounts of gravel and dense to very dense silty, sandy gravel. These soils will be suitable for use as structural fill under most conditions; however, the siltier portions of the fill soils are expected to be moisture sensitive. Furthermore, if the optimum moisture content of the soil is exceeded, moisture conditioning could be required. Moisture conditioning will also be required if onsite soil is obtained from excavations that encounter groundwater. The contractor should be prepared to segregate portions of the fill soils that contain organics and construction debris.

Structural fill soil should be placed in loose, horizontal lifts less than 8 to 10 inches in thickness and thoroughly compacted. All structural fill under future paved areas should be compacted to at least 95 percent of the maximum dry density, as determined using test method ASTM D 1557 (Modified Proctor). Fill placed within landscaped areas should be compacted to a minimum of 85 percent of its maximum dry density to reduce the potential for excessive settlement. Compaction criteria for trench backfill and excavations is presented in Section 3.10.5.

3.7 Wet Weather Earthwork

Some of the near-surface, onsite soil is considered to be moisture sensitive. As a result, it will be difficult to control the moisture content of these materials during periods of wet weather. If construction is accomplished during wet weather, or under wet conditions, exposed subgrades could be easily disturbed by construction equipment. In addition, stockpiles of onsite materials could become saturated and subject to erosion if not properly protected. Site preparation would be facilitated by scheduling such earthwork during the dry summer and early fall months. If fill is to be placed or earthwork is to be performed in wet weather or under wet conditions, the contractor may reduce soil disturbance by:

- Accomplishing earthwork in small sections
- Limiting construction traffic over unprotected soil
- Sloping excavated surfaces to promote runoff
- Limiting the size and type of construction equipment used
- Providing gravel “working mats” over areas of prepared subgrade

- Removing wet surficial soil prior to commencing fill placement each day
- Sealing the exposed ground surface by rolling with a smooth drum compactor or rubber-tired roller at the end of each working day
- Providing upgradient perimeter ditches or low earthen berms and using temporary sumps to collect runoff and prevent water from ponding and damaging exposed subgrades.

It may be necessary to overexcavate loose and wet surficial soil and replace it with clean, well graded sand and gravel or base-course material in paved areas. The depth of overexcavation required will depend on the condition of the soil at the time of construction, but the depth could be on the order of 6 to 12 inches. If the subgrade is particularly loose or disturbed by construction equipment during wet weather, an even thicker subbase layer or the use of a geotextile in combination with a granular base material may be needed to achieve suitable conditions for the proposed pavement sections and future buildings.

3.8 Site Settlement

The results of the current and previous subsurface exploration programs completed at the site indicate that loose fill and compressible municipal solid waste (MSW) underlie a significant portion of the project site. These soils will experience settlement during and after site grades are raised. Consequently, we recommend that any proposed underground utilities be installed after site grades have been raised and the site has been preloaded and/or improved through the use of other ground improvement techniques in order to reduce the magnitude of post-construction settlement.

Static settlement of the ground following placement of the new fill will depend on the height and width of the new fill, as well as the strength and compressibility characteristics of the underlying bearing soil. Ground settlement is anticipated to occur non-uniformly across the site due to the heterogeneous nature and variable thickness of the MSW, the presence of organic material, and the level of compaction the MSW experienced during original placement.

We estimate that the total amount of static ground settlement associated with the loading from the proposed structures in addition to the fill required to bring the site up to grade will be as much as 9 inches over a service life of 50 years. This amount of settlement is expected if no preloading or ground improvement is provided prior to construction of the Park amenities. The actual static settlements will depend on the rate of filling and the specific soil conditions beneath the new fill, which are expected to be variable across the site. Consequently, actual settlements and the time rate of settlement could potentially be greater or less than estimated herein. Preloading, as further described in Section 3.9, is therefore recommended to pre-consolidate the compressible onsite soils and landfill refuse prior to construction, and to reduce total and differential settlements beneath the proposed structures, Park improvements, and utilities to within acceptable levels.

As fill is being placed, installation and monitoring of settlement plates within the fill is recommended in order to identify the end of primary consolidation. Installation of the planned utilities and hardscaping should be deferred until the end of primary consolidation. If constructed in this manner, the majority of the differential settlement should occur prior to the installation of utilities and hardscaping.

3.9 Preloading

Preloading the landfill area of the site with granular fill is recommended to pre-consolidate the underlying compressible refuse and fill soils prior to construction in order to reduce total and differential post-construction settlements beneath the proposed park ball fields and landscape to within tolerable levels (i.e., less than about 1 to 2 inches).

The areas to be preloaded should be cleared and stripped in accordance with the recommendations in Section 3.5 prior to the preload/surcharge fill being placed. The preload/surcharge fill should consist of a predominately granular material such as sand or sand and gravel to facilitate placement and removal.

For schematic design purposes, it can be assumed that preload fill heights of up to 9 ft above proposed finished site grades will be required, with the fill heights varying with the thickness of underlying landfill solid waste deposits. The preloading program will require on the order of about 9 to 20 months to pre-consolidate the underlying soils to the point where about 95 percent of the primary settlement is achieved. For schematic design, a 2H:1V (horizontal:vertical) maximum preload side slopes may be assumed.

The specific design of the landfill preloading program will be provided in the EEDR. Depending on the height(s) of the preload fill selected, surface settlements on the order of about 7 to 8 inches are expected directly beneath the fill in the areas where underlying landfill refuse deposits are located. This expected settlement could affect the existing LFG system. The following measures could be taken to reduce the potential for affecting the operation of the LFG System and groundwater monitoring wells:

- Relocate existing LFG header pipes located beneath or adjacent to preloaded areas prior to the placement of the preload fill.
- Construct strategically placed temporary walls at the edge of the preload to limit its lateral extent and influence, if needed.
- Add well risers and flexible couplings such that the LFG system and groundwater monitoring wells can undergo the expected settlement without sustaining damage.

The preload grading plan based on the underlying refuse thickness will be provided in the EEDR.

3.10 Underground Utility Installation

Underground utilities will consist of piping for plumbing, stormwater, sanitary sewer, and electrical conduits. Underground utilities should only be installed over the landfill areas after preloading has induced 95 percent of the predicted primary settlement. The following sections provide geotechnical recommendations for design and construction of the proposed utility lines.

3.10.1 Dewatering Considerations

Depths to proposed underground utilities are currently unknown; however, they are expected to be constructed in the new structural fill or existing landfill soil cover material. While groundwater was not observed in our explorations at shallower depths in the landfill soil cover material, it is common for isolated pockets of perched groundwater to occur within more granular zones of the landfill soil cover. This type of groundwater typically results in seepage into an excavation for a period of time after it is encountered and often dissipates once the groundwater is allowed to drain into the excavation.

If groundwater is encountered in trench excavations, it is expected that pumping from sumps will be adequate to control the groundwater and remove it from the construction area to maintain a relatively dry excavation. The contractor should be responsible for the design, installation, monitoring, and maintenance of any required dewatering system(s). Prior to discharging water to King County sewer system, a disposal permit will need to be obtained from King County septage disposal program coordinator. Groundwater to be discharged to the King County sewer system must comply with the Industrial Waste Regulations of King County Code (KCC) 28.84.060. Prior to disposal of any groundwater encountered in excavations, the groundwater should be analyzed at a certified analytical laboratory for the compounds required by King County for discharge to the sanitary sewer system.

3.10.2 Trench Excavation

All trenching deeper than 4 feet bgs will require trench safety designed and approved by a professional engineer licensed in the State of Washington. Excavation for utility trenches should be in accordance with the requirements in Section 7-08 of the 2016 Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge and Municipal Construction (Standard Specifications; WSDOT 2016). Small to medium sized conventional construction equipment should be able to excavate the trench to typical utility trench depths. The contractor should be prepared to handle and dispose of oversized material such as cobbles and boulders. Actual trench configurations and maintenance of safe working conditions, including temporary excavation stability, should be the responsibility of the contractor, as discussed in the Site Preparation and Earthwork section of this report.

Trench boxes should provide suitable support for shallow excavations in fill or native soils, provided that settlement-sensitive structures are not situated immediately adjacent to the excavation. Trench boxes should meet the requirements in Safety Standards for Construction Work, WAC 296-155 Part N and WAC 296-155-657.

Where a trench box is used to support excavations, one or both sides of the trench may cave against the box, especially if loose, granular soil is present. The caving may extend out on either side of the trench for a distance approximately equal to the depth of the trench. Additional bracing or sheeting may be required where the near edge of the trench will be closer than 1.5 times the trench depth to settlement-sensitive utilities or structures. When the trench box is moved, precautions should be taken to minimize disturbance to the pipe, underlying bedding materials, and surrounding soil.

If bracing is needed to support the trench walls, the temporary bracing system should be designed by a structural engineer licensed in the State of Washington, and constructed to support lateral loads exerted by the retained soil mass. It is assumed that temporary shoring would consist of steel plates with internal bracing. Temporary shoring may also be used in conjunction with sloped excavations.

3.10.3 Pipe Foundation Support

Based on conditions observed at the exploration locations and our understanding of the geologic conditions in the area, soil at anticipated trench depths are anticipated to primarily consist of new structural fill or landfill cover soils, and should provide adequate foundation support for the pipes, provided the soil remains in a relatively undisturbed condition and the trench is properly dewatered.

If the trench bottom becomes disturbed due to excavation and/or foot traffic during placement of the pipe, the trench bottom may need to be overexcavated to expose undisturbed foundation soil. Removal and replacement of unsuitable foundation material should be in accordance with Section 7-08.3(1)A of the 2016 WSDOT Standard Specifications. The overexcavation should be backfilled with suitable foundation material to provide a firm trench bottom. Foundation material should meet the requirements for Class B Foundation Material in Section 9-03.12(1)B of the 2016 WSDOT Standard Specifications, and should be thoroughly compacted to provide a firm excavation bottom.

3.10.4 Bedding and Pipe Zone Backfill

To provide uniform support of buried utility pipes, the pipe should be bedded in accordance with Section 7-08.3(1)C of the 2016 WSDOT Standard Specifications. The bedding material should extend 6 inches below the invert of the pipe. Bedding material should extend above the pipe bottom a distance of at least 15 percent of the pipe outside diameter. Pipe zone backfill for rigid pipes should meet the requirements of Section 7.08-3(3) of the 2016 WSDOT Standard Specifications. Pipe zone backfill should extend 6 inches above the crown of the pipe. Pipe bedding material and pipe zone backfill should be brought up evenly around the pipe in relatively horizontal lifts not exceeding 6 inches, and worked under the haunches of the pipe by slicing with a shovel, vibration, or other approved procedures. Pipe zone backfill should be placed in accordance with Section 7-08.3(1)C of the 2016 WSDOT Standard Specifications.

3.10.5 Trench Backfill and Compaction

Most of the subsurface soil exposed in trench excavations is expected to consist of new structural fill or landfill soil cover material. If the excavated soil cannot be used as trench backfill or if additional backfill is needed, an imported material should be used. Imported trench backfill should meet the requirements for Bank Run Gravel for Trench Backfill in Section 9-03.19 of the 2016 WSDOT Standard Specifications. If wet weather construction is anticipated, then the amount of fines should be limited to 5 percent or less based on the fraction of the material passing a US Standard ¾-inch sieve.

Backfilling of trenches should be in accordance with the requirements of Section 7-08.3(3) of the 2016 WSDOT Standard Specifications. Trench backfill should be placed in 6-inch layers and compacted to a relative density of at least 92 or 95 percent maximum dry density, depending on whether the trench is located outside or within structure footprints. Compaction testing should be in accordance with the maximum dry density, as determined using ASTM test method D1557. Flooding and/or jetting of backfill may not be used as a means to consolidate or compact trench backfill. Hand-operated compaction equipment, or other approved methods, should be used to compact the first 18 inches of trench backfill above the pipe. Heavy compaction equipment should not be used for the first 18 inches of backfill above the initial backfill.

3.11 Foundation Support

Although preloading/surcharging the site will effectively force settlement in the underlying landfill refuse prior to construction, methane gas is still being generated by the landfill refuse indicating that decomposition is still occurring, at a very low rate, which could cause future secondary settlement. Foundation support for the proposed bath house structures and water play area underground vault may be provided by a lightly loaded structural slab mat type foundation founded either on existing landfill cover soil or properly placed and compacted structural fill that is underlain by existing landfill cover soils. For foundations that are supported by structural fill, the limits of the overexcavation around the foundation should extend laterally beyond the edge of each side of the footing a distance equal to one-half the depth of the excavation below the base of the structural slab. Alternatively, overexcavation areas could be backfilled to the design footing elevation with CDF or lean concrete, or foundations may be extended to bear on dense to very dense, undisturbed native glacial soils. If CDF or lean concrete is used to backfill the overexcavation, the limits of the overexcavation do not need to extend beyond the width of the footing.

Bearing soil disturbed during foundation excavation should either be properly recompacted or removed. All soil directly below structural slabs should be compacted to at least 95 percent of maximum dry density (ASTM D1557) prior to placement of forms, reinforcing steel, and concrete. The bottom elevation of structural slabs should be founded a minimum of 18 inches below the lowest adjacent final grade.

Assuming the above foundation support criteria are satisfied, structural slab mat type foundations founded directly new structural fill or existing landfill cover soil may be designed using a maximum allowable bearing pressure of 1,500 pounds per square foot (psf) if using a rigid mat method for design, or a maximum modulus of subgrade reaction (k-value) of 125 pounds per cubic inch (pci) if using the flexible method (elastic spring model) for design.

For minor structures such as planned picnic shelters located outside of the landfill area (Figure 4), continuous or isolated spread footings founded directly on medium dense to dense native soils may be proportioned using a maximum net allowable soil bearing pressure of 1,500 psf.

The term “net allowable bearing pressure” refers to the pressure that can be imposed on the soil at foundation level resulting from the total of all dead plus live loads, exclusive of the weight of the footing or any backfill placed above the footing. The net allowable bearing pressures recommended above may be increased by one-third for transient wind or seismic loads.

Passive earth pressures that develop against the sides of building foundations in conjunction with friction developed between the base of the footings and the supporting subgrade, will resist lateral loads transmitted from the structure to its foundation. For design purposes, the passive resistance of well-compacted fill placed against walls or the sides of foundations may be considered equivalent to a fluid with a density of 300 lbs per cubic ft (pcf). The recommended value includes a safety factor of about 1.5 and is based on the assumption that the ground surface adjacent to the structure is level in the direction of movement for a distance equal to or greater than twice the embedment depth. The recommended value also assumes drained conditions that will prevent the buildup of hydrostatic pressure in the compacted fill. In design computations, the upper 12 inches of passive resistance should be neglected if the soil is not covered by floor slabs or pavement. If future plans call for the removal of the soil providing resistance, the passive resistance should not be considered.

An allowable coefficient of friction between concrete and soil of 0.35, applied to vertical dead loads only, may be used to calculate the resistance to sliding at the base of the foundation elements bearing on undisturbed native soil or well-compacted granular fill. However, if passive and frictional resistance are considered together, one-half of the recommended passive soil resistance value should be used because larger strains are required to mobilize the passive soil resistance as compared to frictional resistance. A safety factor of about 1.5 is included in the base friction design value. We do not recommend increasing the coefficient of friction to resist seismic or wind loads.

3.12 Foundation Settlement

Settlement of structural slab mat type foundations depends on foundation size and bearing pressure, as well as the strength and compressibility characteristics of the underlying soil and/or refuse. Assuming construction is accomplished as previously recommended, including preloading/surcharging the site, and for the maximum allowable soil bearing pressures recommended above, we estimate the total settlement of foundations should be less than about 1 inch and differential settlement between two adjacent load-bearing components supported on competent soil should be less than about ½ inch.

Structures that cannot withstand the anticipated settlements or require higher bearing pressures should be supported on deep foundations founded in the underlying till as outlined in Section 3.14. The soil response to applied stresses caused by structural and other loads is expected to be predominately elastic in nature, with most of the settlement occurring during construction as loads are applied.

3.13 Site Drainage

To reduce the potential for groundwater to seep into interior spaces and prevent the buildup of hydrostatic pressure against subsurface walls, we recommend that an exterior footing drain system be constructed around the perimeter of any portion of the building foundations where the interior floor elevation is lower than the exterior grade. The drain should consist of a minimum 4-inch diameter perforated pipe, surrounded by a minimum 12 inches of filtering media and sloped to carry water to a suitable collection and discharge system. The filtering media may consist of open-graded drain rock wrapped by a non-woven geotextile (such as Mirafi 140N, Synthetic Industries 351, or equivalent). The drainage backfill should contain less than 3 percent by weight passing the US Standard No. 200 sieve, based on a wet sieve analysis of that portion passing the US Standard No. 4 sieve. The invert of the footing drain pipe should be placed at approximately the same elevation as the bottom of the footing or 12 inches below the adjacent floor slab grade, whichever is deeper, so that water will not accumulate behind walls or seep through walls or floor slabs. The footing drain should discharge to an approved drain system and include cleanouts to allow periodic maintenance and inspection.

Positive surface gradients should be provided adjacent to the proposed structures to direct surface water away from the foundation and toward suitable discharge facilities. Roof drainage should not be introduced into the perimeter footing drains, but should be discharged directly to the stormwater collection system or other appropriate outlet. Pavement and sidewalk areas should be sloped and drainage gradients should be maintained to carry all surface water away from the building toward the local stormwater collection system. Surface water should not be allowed to pond and soak into the ground surface near the building during or after construction.

3.14 Deep Foundations

Structures that cannot withstand the anticipated settlements or require higher bearing pressures should be supported on deep foundations extending through the landfill deposits and into the underlying glacial till or advance outwash deposits. Deep foundations may include the use of drilled shafts, augercast piles, or driven piles. Under no circumstances should deep foundations tips terminate in the landfill solid waste deposits.

Due to the non-uniform thickness of the landfill solid waste deposits, and if deep foundations are required for the project, Landau Associates will provide specific geotechnical recommendations for deep foundations as structural design details are developed. At a minimum, we require anticipated structural loading requirements, locations of structures and foundation elements, and type of deep foundations to be used.

Installation of drilled shafts or augercast piles can be performed with conventional drill rigs and equipment. Holes advanced for drilled shafts may be susceptible to caving and casing may be required to keep the hole open. In the event that groundwater is encountered, the concrete should be tremied to the bottom of the hole and poured from the bottom up displacing the groundwater out of the top of the hole. Groundwater expelled from the hole will need to be disposed of as described in Section 3.10.1 of this report. Landfill solid waste cuttings generated as a result of drilling operations will need to be disposed of as described in Section 3.3 of this report.

Installation of driven piles using a vibratory hammer will produce ground vibration in the vicinity of the pile installation. While unlikely, ground vibrations associated with installation of driven piles could potentially cause some damage to nearby structures. Ground vibrations could also result in the densification of loose soil and some settlement of the ground surface. Ground vibrations producing densification and settlement are dependent on a complex combination of factors, including energy and amplitude of the vibratory hammer, number of repetitions, soil properties, pile length, location of the water table, type of pile installation, and distance from the pile. The pile foundation axial and lateral capacity can be influenced by the equipment and construction procedures, and the quality of construction is greatly influenced by the experience of the foundation contractor.

3.15 Sport Field Lighting and Luminaire Foundations

According to preliminary plans provided by Walker Macy, luminaires are planned in the parking areas and throughout the Park and along walking areas. Stadium style light standards are planned for illumination of the sports fields.

3.15.1 Luminaire Foundations

Luminaires are planned in the parking areas and throughout the Park and along walking areas. We anticipate that the luminaries will be designed in general accordance with the WSDOT design method. Based on the results of our field exploration, laboratory testing, and engineering analyses, it is our opinion that new luminaries can be supported on drilled shaft foundations. The drilled shafts should be embedded sufficiently to resist lateral forces and the resulting overturning moments.

We anticipate that the luminaire foundations will be founded in properly placed and compacted structural fill overlying existing or recompacted landfill soil cover material. Based on these observations, and assuming the proposed luminaire foundations conform to WSDOT standards for design, we recommend using an allowable lateral bearing stress of 1,500 psf for design of the proposed luminaire standard foundations. Using WSDOT Standard Plan J-28.30-03, we recommend that a Type B foundation (8-foot long drilled shaft) be used. The WSDOT Standard foundation can be used on level ground and on slopes not exceeding 2H:1V.

Should the luminaries not meet WSDOT standards for design, a special foundation design will be required using the Broms Method as recommended in the 2015 WSDOT Geotechnical Design Manual (WSDOT 2015a) and specified in the 2001 AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires, and Traffic Signals. An allowable lateral bearing stress of 1,500 psf should be used when applying the Broms method to foundation design for luminaries.

If the bottom of the luminaire foundations encounter landfill solid waste, the foundations should be constructed in accordance with Method 2 as shown on WSDOT Standard Plan J-28.30-03.

3.15.2 Sport Field Lighting Foundations

The sports field light systems are expected to experience relatively high lateral loads requiring deep foundations possibly extending into the underlying landfill solid waste deposits, which exhibit very low lateral resistance. Due to these factors, a special foundation design will be required using the Broms Method as recommended in the 2015 WSDOT Geotechnical Design Manual and specified in the 2001 AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires, and Traffic Signals. The sport field light standards are planned along the north and south side of Sport Field 1 and on the northwest and southeast sides of Sport Field 2. An allowable lateral bearing stress as shown in the table below should be used when applying the Broms Method to foundation design for sport field lighting foundations. Elevations and thicknesses of the soil layers at the proposed field lighting locations are shown on Figure 6B.

Soil Type	Allowable Lateral Bearing Stress, psf
New Structural Fill	2,500
Existing Landfill Cover Soil	1,500
Landfill Solid Waste	750
Glacial Till / Advance Outwash	3,000

Under no circumstances should the sports field light system foundation bottoms be founded in the landfill solid waste deposits underlying the site. We recommend that all sport field lighting foundations extend through the landfill deposits and into the underlying glacial till or advance outwash.

3.16 Retaining Walls

Preliminary plans provided by Walker Macy indicate that retaining walls are planned to consist of gabions or cast in place (CIP) concrete walls. Gabions and CIP walls are considered to be a feasible wall type for both cut and fill retaining walls planned throughout the park, provided that sufficient space is available to accommodate temporary construction slopes. CIP walls are generally constructed with ready-mix concrete and steel reinforcement placed into removable forms erected on site. Gabions are typically made of stacked stone-filled welded wire baskets. Gabion walls are usually battered (angled back towards the slope), or stepped back with the slope, rather than stacked vertically. The combined weight of the gabions or CIP wall is utilized to resist the lateral earth pressure imposed by the retained soil.

3.16.1.1 Retaining Wall Subgrade Preparation

Based on the results of our explorations and the site topography, CIP concrete retaining walls will likely bear on new structural fill or existing landfill cover soil within the landfill area or loose to medium dense native soils outside the landfill area.

Upon reaching the foundation-bearing surface, the wall subgrade should be checked for the presence of loose to medium dense undocumented fill present over the glacial till. If loose fill or loose native deposits are encountered at the foundation-bearing level, we recommend that the loose soils be removed to a maximum depth of 24 inches from beneath the foundation-bearing surface and be scarified, moisture-conditioned to near optimum moisture, and recompacted in accordance with the recommendations in Sections 3.6. The width of the over-excavation should extend at least 2 ft horizontally beyond the outside edge of the facing units and the length of reinforcement. The excavated unsuitable soil should be replaced with Class B Gravel Backfill for Foundations in accordance with the requirements of Section 9-03.12(1)B of the 2016 WSDOT Standard Specifications.

If the foundation-bearing soil is composed of new structural fill, medium dense to dense landfill soil cover material, or medium dense to dense native soils, the need for extensive over-excavation, moisture conditioning, and recompaction is not anticipated, although localized subgrade preparation activities may be needed.

All prepared foundation-bearing surfaces should be free of any loose soil and water. Prepared footing subgrades should be observed by a qualified geotechnical or civil engineer to check that suitable bearing soils are present.

3.16.1.2 Retaining Wall Embedment

The minimum embedment depth (distance from the ground surface at the face of the blocks to the top of the leveling pad shall be based on bearing resistance, settlement, and stability requirements. At a minimum, the embedment shall be the maximum of 2 ft or the value provided in the following table.

Embedment Depth for CIP and Gabion Walls on Slopes

Slope in Front of Wall	Minimum Embedment Depth (ft)
Horizontal	2
4H:1V	H/10
3H:1V	H/10
2H:1V	H/7
1½H:1V	H/5

3.16.1.3 Lateral Earth Pressures

The CIP and gabions wall must be designed to resist active lateral earth pressures. The use of active lateral earth pressures assumes that sufficient deformation (0.1 to 0.2 percent of the wall height) of the soil behind the wall could occur to develop an active earth pressure. This lateral deformation is likely to be accompanied by some vertical settlement, which could be up to about 0.05 percent of the wall height.

We recommend that non-restrained (yielding) walls with level backfill under drained conditions be designed for an equivalent fluid density of 35 pcf for active soil conditions. Nonyielding (restrained at the top) walls with level backfill under drained conditions should be designed for an equivalent fluid density of 55 pcf for at-rest conditions. For undrained conditions, yielding walls with level backfill should be designed to resist an equivalent fluid density of 80 pcf. Nonyielding walls with level backfill under undrained conditions should be designed for an equivalent fluid density of 90 pcf. The equivalent fluid densities recommended for use under undrained conditions include hydrostatic pressure.

The above recommendations regarding active and at-rest earth pressures assume that the backfill placed against the below-grade walls will consist of properly compacted structural fill, and no adjacent surcharge loads due to traffic, staging areas, soil stockpiles, etc. If the subsurface walls will be subjected to the influence of surcharge loading within a horizontal distance equal to or less than the height of the walls, the walls should be designed for the additional horizontal pressure. For rigid walls, a uniformly distributed lateral pressure of 0.44 times the surcharge pressure should be included. For walls free to rotate during loading, a uniformly distributed lateral pressure of 0.28 times the surcharge pressure should be included. A minimum surcharge pressure of 250 psf should be assumed when estimating the additional load on retaining walls adjacent to parking areas, traveled paths for maintenance vehicles, and trafficked areas during construction.

Dynamic lateral earth pressures should be included in the design of below grade walls. A lateral pressure distribution of 8H (H is the vertical height of the wall in feet) should be added to the static lateral earth pressures for all non-restrained (yielding) walls with a level backslope. The recommended lateral earth pressure assumes that the wall will be free to rotate and translate during a strong motion earthquake. A lateral pressure distribution of 17H should be added to the static lateral earth pressures for all restrained (non-yielding) walls with a level backslope. The recommended lateral pressure assumes that the wall is restrained against rotation and translation during a strong motion earthquake.

3.16.1.4 Retaining Wall Allowable Bearing Capacity and Foundation Settlement

Continuous spread footings may be proportioned using an allowable bearing pressure (maximum bearing at the foundation level, which will not lead to a bearing capacity failure, global instability, or excessive settlement) of 1,500 psf, provided the following conditions are met:

- Footings are constructed on new structural fill, medium dense to dense landfill soil cover, or medium dense to dense native soils
- Depth of embedment is equal to at least 2 ft
- Horizontal bench in front of the wall extends at least 4 ft from the toe of the wall.

Settlement of shallow foundations depends on the foundation size and bearing pressure, as well as the strength and compressibility characteristics of the underlying bearing soil. Assuming the foundation for structural earth walls is situated on undisturbed glacially consolidated soils or on a properly prepared subgrade located within existing landfill cover soil or fill, has an effective footing width of 5 ft or less, and has a bearing pressure of 1,500 psf or less, we estimate that the settlement of the retaining wall footings will be less than 1 inch provided the recommendations for the placement and compaction of structural fill and preloading are followed. Differential settlement between two points spaced 100 ft away along the length of the wall will be ½ inch or less. Distortion due to differential settlement along the length of the wall should be less than 1/300 (ft/ft). Most of the settlement will occur during construction. Post-construction settlements should be negligible.

3.16.1.5 Wall Backfill and Drainage Considerations

Free-draining sand and gravel material, meeting the requirements for Gravel Backfill for Geosynthetic Retaining Walls, in Section 9-03.14(4) of the 2016 WSDOT Standard Specifications, should be used as retaining wall backfill. Backfill should be compacted in accordance with Section 3.6. To avoid overstressing of the wall during placement and compaction, backfill placed within 3 ft of the wall face should be compacted to between 90 and 92 percent of the maximum dry density as determined by Section 2-03.3(14)D of the 2016 WSDOT Standard Specifications or by the ASTM D1557 test procedure.

Underdrain pipe for gravity walls should be 6-inch-diameter and conform to Section 9-05.2 of the 2016 WSDOT Standard Specifications. The pipe should be placed with the perforations downward. The pipe should be placed in a minimum 12-inch-thick envelope of gravel meeting the requirements for Gravel Backfill for Drains in Section 9-03.12(4) of the 2016 WSDOT Standard Specifications. The drain gravel should completely surround the perforated drainpipe and be completely surrounded by a non-woven geotextile material with a minimum 12-inch overlap. The geotextile should meet the requirements for Moderate Survivability in Table 1 and for Class B in Table 2 of Section 9-33 of the 2016 WSDOT Standard Specifications. The top of the perforated pipe should be no higher than the top of the adjacent footing. The drain line should discharge into the storm drainage system, or an approved location.

To reduce the possibility of water ponding and infiltrating into the subsurface behind retaining walls, the adjacent ground surface behind the wall should be sloped to promote runoff away from the top of the wall. Alternatively, a line brow ditch could be constructed along the top of the wall to collect surface water runoff and route it to the storm drain system.

3.17 Pavement Design

The pavement section recommendations provided herein assume that the access roadways and parking lot subgrade will be prepared in accordance with the recommendations provided in Sections 3.5 and 3.6 of this report. The pavement section recommendations are also based on assumed traffic loading for parking lots ranging from about 24 to 54 stalls, the results of our field explorations, and an assumed 20-year performance period. Design pavement sections were determined using the 1993 American Association of State Highway and Transportation Officials (AASHTO) design method and procedures recommended in the WSDOT Pavement Policy dated June 2015.

3.17.1 Roadbed Soil Resilient Modulus

Based on the soils encountered in our borings, test pits, and hand auger explorations, subgrade soils will likely consist of silty sand with gravel comprising existing landfill soil cover materials or native advance outwash deposits. These soils correlate to “average” quality subgrade based on information obtained from the WSDOT Pavement Policy with an average resilient modulus of about 10,000 pounds per square inch (psi). A resilient modulus correlates to a CBR of about 11 using correlations by AASHTO (AASHTO 1993) and WSDOT (WSDOT 2015).

3.17.2 Traffic Loading Information

We anticipate that the drive and parking areas will consist primarily of light passenger cars and trucks making several passes throughout the day, seven days per week. Heavier maintenance vehicles, busses, and delivery trucks my occasionally pass over the paved areas depending on Park usage. Based on preliminary project drawings, we understand that the east parking area will have 54 stalls, the west parking area will have 43 stalls, and the northwest parking area will have 24 stalls.

3.17.3 Pavement Sections

Utilizing WSDOT and AASHTO design methodology (AASHTO 1993) for low volume pavement design, the following pavement section recommendations were developed.

In parking areas expected to receive less than 1,000 vehicles per day (light duty), we recommend the following construction sequence and surfacing for the proposed parking lot.

1. Grade the parking area to final subgrade, scarify the subgrade to a depth of 1 ft if cut into existing landfill soil cover, and compact the subgrade soil to at least 95 percent maximum dry density in accordance with Section 2-03.3(14)D of the 2016 WSDOT Standard Specifications

2. Place a minimum of 4 inches of CSBC and compact to at least 95 percent maximum dry density in accordance with Section 2-03.3(14)D of the 2016 WSDOT Standard Specifications

3. Place a minimum of 3 inches of hot mix asphalt (HMA) in one lift. If a thicker HMA pavement is desired, the asphalt should be placed in multiple lifts not less than 1.5 inches in thickness and no thicker than 3 inches.

In parking areas expected to receive more than 1,000 vehicles per day and less than 5,000 vehicles per day (heavy duty) or fire/emergency vehicle access lanes and areas to receive bus or heavy truck traffic, we recommend the following construction sequence and surfacing for the proposed parking lot.

1. Grade the parking area to final subgrade, scarify the subgrade to a depth of 1 ft if cut into existing landfill soil cover, and compact the subgrade soil to at least 95 percent maximum dry density in accordance with Section 2-03.3(14)D of the 2016 WSDOT Standard Specifications

2. Place a minimum of 6 inches of CSBC and compact to at least 95 percent maximum dry density in accordance with Section 2-03.3(14)D of the 2016 WSDOT Standard Specifications

3. Place a minimum of 4 inches of hot mix asphalt (HMA) in two lifts. The asphalt should be placed in multiple lifts not less than 1.5 inches in thickness and no thicker than 3 inches.

The HMA should consist of Class ½-inch PG 64-22 based on the WSDOT Pavement Policy, and meet the requirements in Section 5-04 of the 2016 WSDOT Standard Specifications. The CSBC should meet the gradation requirements in Section 9-03.9(3) of the 2016 WSDOT Standard Specifications. The CSBC should be placed and compacted in accordance with Section 4-04 of the 2016 WSDOT Standard Specifications. If used, the gravel base should meet the gradation requirements in Section 9-03.10 of the 2016 WSDOT Standard Specifications. The gravel base should be placed and compacted in accordance with Section 4-04.3 of the 2016 WSDOT Standard Specifications.

3.17.4 Pavement Subgrade Preparation

Prior to placement of the crushed surfacing base, the prepared subgrade for new surfacing or pavement sections should be compacted to at least 95 percent of its maximum dry density and proof-rolled in the presence of a qualified geotechnical engineer to check for the presence of soft, loose, and/or disturbed areas. If any soft, loose, and/or disturbed areas are revealed during proof-rolling, these areas should be moisture conditioned and recompacted to the required density. Alternatively, areas of soft, loose, and/or disturbed soil could be completely removed and replaced with Gravel Borrow meeting the requirements in Section 9-03.14(1) of the 2016 WSDOT Standard Specifications, and compacted to the required density. Crushed surfacing material should meet the requirements in Section 9-03.9(3) of the 2016 WSDOT Standard Specifications. Gravel base and crushed surfacing should be compacted in accordance with Section 4-04.3(5) of the 2016 WSDOT Standard Specifications. The maximum dry density and optimum moisture content may also be determined by the ASTM D 1557 test procedure (Modified Proctor).

3.18 Infiltration

Infiltration of stormwater will likely be feasible in portions of the site underlain by recessional outwash and possibly fill as these soils will provide more favorable infiltration characteristics. These areas are generally located on the northern area of the site. Areas underlain by glacial till and advance outwash deposits will likely not be favorable for infiltration of stormwater due to their relatively low infiltration characteristics. If the design team opts to include infiltration to manage stormwater, an additional boring will likely be required at the location of each infiltration facility to determine the depth to groundwater and impermeable surface (i.e. glacial till). Additionally, a pilot infiltration test (PIT) or single ring percolation test at the proposed bottom elevation of the infiltration facility will be required at each proposed infiltration facility to determine long term infiltration rates in accordance with the 2016 King County Surface Water Design Manual.

3.19 Cover System

The former Eastgate Landfill located below a portion of the proposed Park development will require a cover system which meets the requirements of the Ecology Minimum Functional Standards for Solid Waste Handling (MFS; Chapter 173-304 WAC). These regulations are the applicable or relevant and appropriate requirements (ARARs) for the site and contain typical closure requirements that are relevant based on the landfill closure dates and waste disposal history of the former Eastgate Landfill. The current refuse regulations, Criteria for Municipal Solid Waste Landfills (Chapter 173-351 WAC), are not applicable for the site because the current solid waste regulations are specifically applicable regulations for landfills that stopped accepting waste after October 9, 1991 (WAC 173-351-010[2][b]).

Per WAC 173-304-460 (3)(e) closure requirements, the landfill cover system shall consist of:

1. At least two feet of 1 x 10^{-6} cm/sec or lower permeability soil or equivalent shall be placed upon the final lifts. Artificial liners may replace soil covers provided that a minimum of fifty mils thickness is used;

2. The grade of surface slopes shall not be less than two percent, nor the grade of side slopes more than 33 percent; and

3. Final cover of at least 6 inches of topsoil be placed over the soil cover and seeded with grass, other shallow rooted vegetation or other native vegetation.

In addition to these MFS, the landfill cover system will be required to accommodate ballfields and buildings that are to be used by the general public. These end-use considerations will require additional design cover system elements to protect the public health and safety, including a landfill gas collection and control layer and a geogrid layer to help mitigate potential differential settlement. From the bottom up, the landfill cover system is therefore expected to consist of:

- Cut or fill of the existing soil cover material to the desired subgrade elevation
- Geogrid layer (embedded between subgrade and sand and gravel layer above)
- Sand and gravel layer six-inch thick to anchor geogrid
- Landfill gas collection and removal geocomposite layer (typically 200-mil thickness)
- Geosynthetic clay liner (GCL) (typically 100 to 150 mil thickness)
- Geomembrane liner (typically 40-mil thickness)
- Drainage layer geocomposite (typically 200-mil thickness)
- Minimum 2-foot thickness of landscape fill and/or synthetic ballfield surface layers. This depth of cover soil should be adequate to allow for evapotranspiration in natural landscape areas, thickness for synthetic ballfield layers and drainage pipes, and be thick enough to prevent penetration by incidental public activity or burrowing animals.

Combined together, the geosynthetic (geogrid, geocomposites, GCL, and geomembrane) portions of the landfill cover systems will be less than 1 inch thick. The sand and gravel layer and landscaping layer, however, will comprise the majority of the minimum 2-1/2-foot thick landfill cover system on the prepared subgrade. The above landfill cover section should be considered for the schematic design considerations. Specific design of the landfill cover system will be provided in the EEDR. Detailed construction drawings and specifications will be prepared to outline how the landfill cover system will be constructed. General construction considerations are provided in this section.

Per Section 3.9, the entire landfill footprint area will be preloaded/surcharges with soil to a design thickness in order to consolidate the underlying refuse. The settlement will be monitored until the settlement reaches 95 percent of primary settlement which is anticipated to require 9 to 20 months of loading. Once the majority of primary settlement is complete, the preload soil will be removed as necessary for site grading to the design subgrade of the final landfill cover system. The preload fill will need to be placed so that access will be allowed to the landfill gas system and monitoring wells, extending wells with risers, as necessary.

The landfill cover system will then be constructed in layers under the direction and observations of a geotechnical construction quality assurance (CQA) firm working on behalf of the City in order to verify that the cover system layers are constructed and tested according to the construction drawings and specifications. Each layer should be approved before the layer above it is constructed.

4.0 REVIEW OF DOCUMENTS AND CONSTRUCTION OBSERVATIONS

Landau Associates recommends that a geotechnical engineer familiar with the project design review the earthwork portions of the design drawings and specifications. The purpose of the review is to verify that the recommendations presented in this report have been properly interpreted and implemented in the design and specifications.

We recommend that geotechnical and environmental construction observation, testing, and consultation services be provided during trench excavation, fill placement and compaction, subgrade preparation, and other geotechnical related activities. We also recommend that periodic field density testing be performed to verify that an appropriate degree of compaction is obtained. The purpose of these services would be to observe compliance with the design concepts, specifications, and recommendations of this report, and, in the event subsurface conditions differ from those anticipated before the start of construction, provide revised recommendations appropriate to the conditions revealed during construction. Landau Associates would be pleased to provide these services.

5.0 USE OF THIS REPORT

This geotechnical engineering report has been prepared for the exclusive use of Walker Macy and the City of Bellevue for specific application to the proposed Bellevue Airfield Park development at the site of the former Eastgate Landfill in Bellevue, Washington. No other party is entitled to rely on the information included in this document without the express written consent of Landau Associates. Further, the reuse of information provided herein for extensions of the project or for any other project, without review and authorization by Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

CE/KWW/DAP/rgm

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Data Source: Esri 2012

G:\Projects\1548\001\010\002\Geotech Report\F01 VicinityMap.mxd 4/14/2016 NAD 1983 StatePlane Washington North FIPS 4601 Feet

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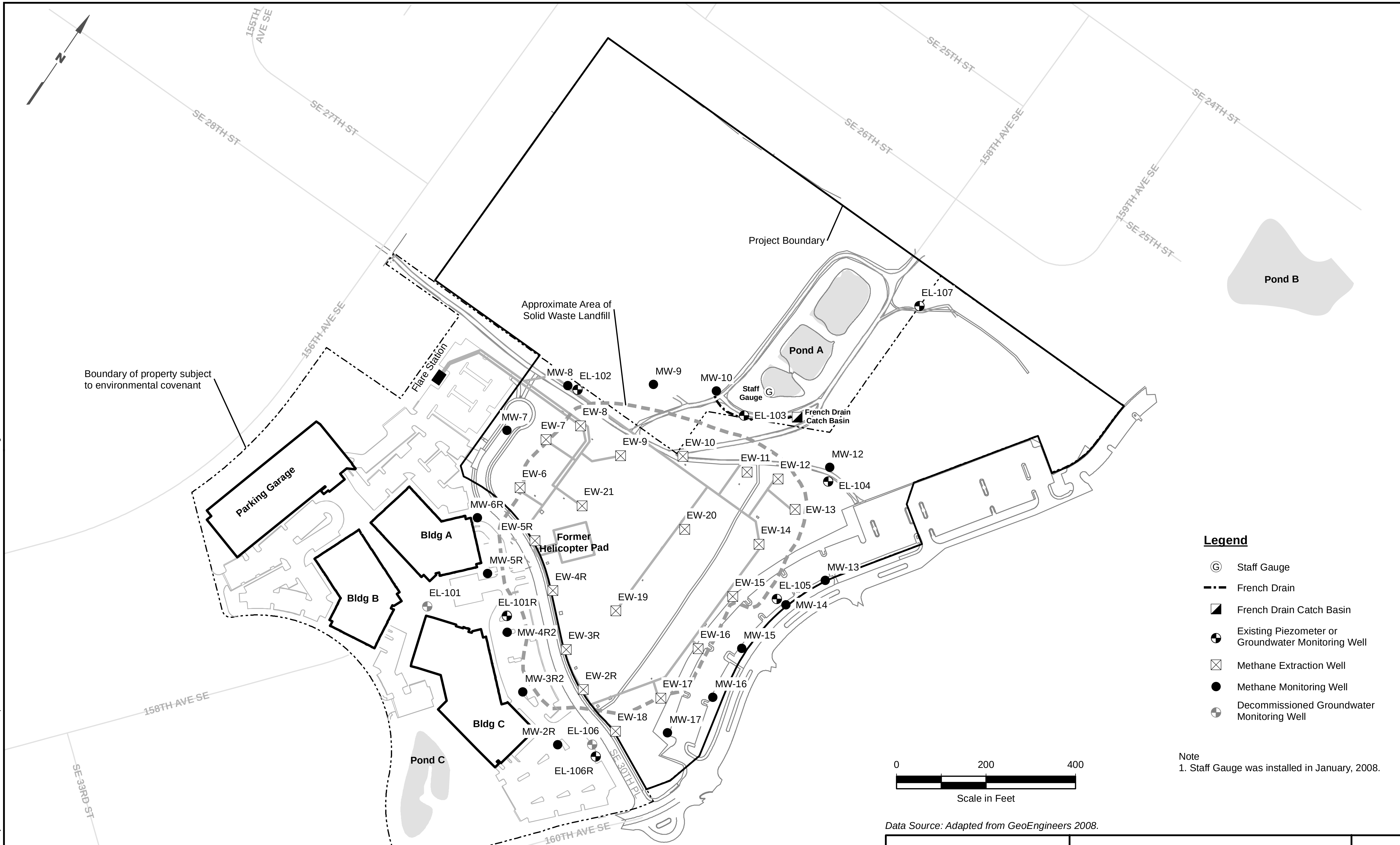
Bellevue Airfield Park Bellevue, Washington	**Vicinity Map**	Figure 1



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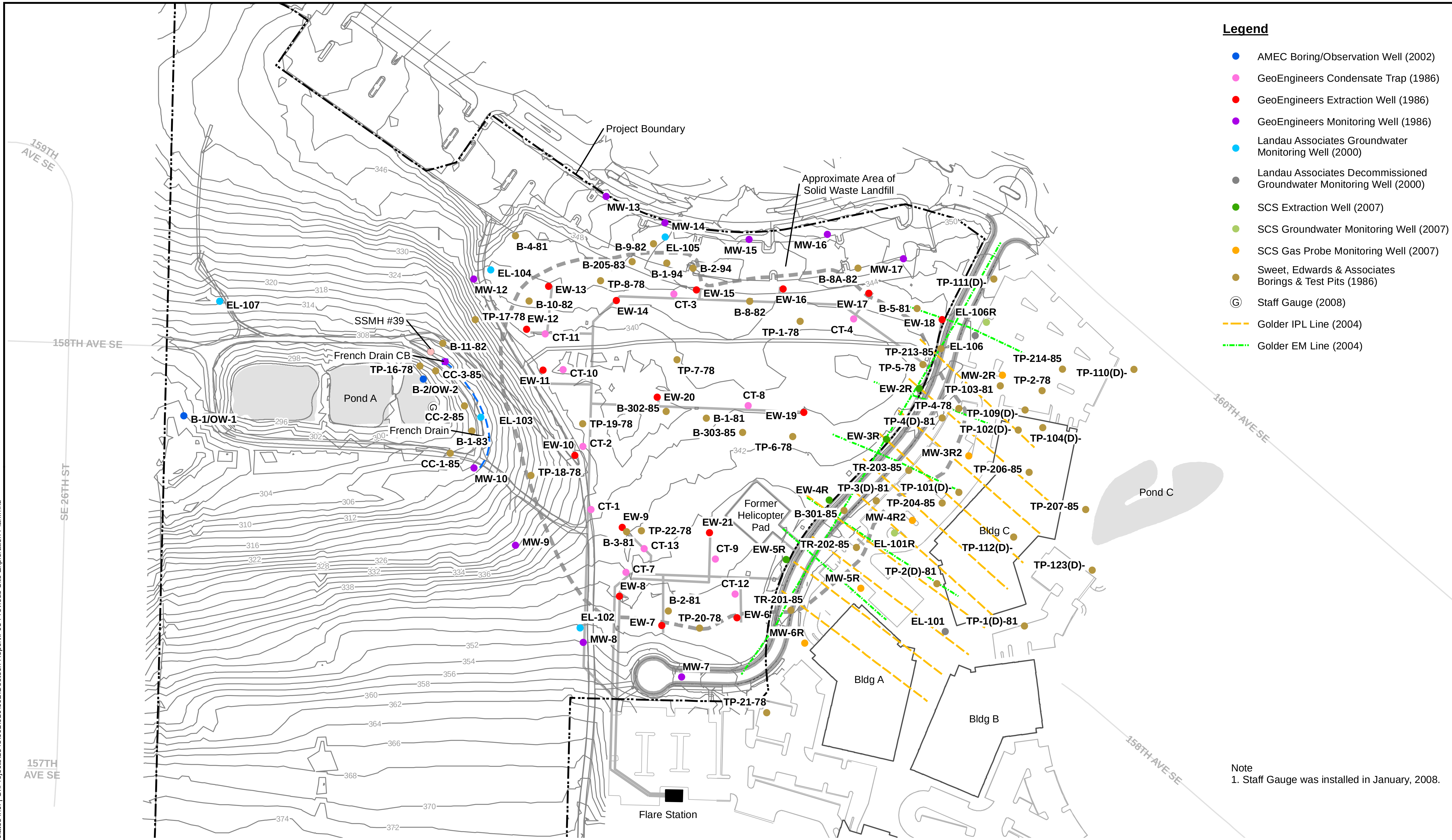
Bellevue Airfield Park Bellevue, Washington	**Environmental Monitoring Locations**	Figure 2



Sources: City of Bellevue Topographic Survey 2011; Golder Associates Geophysical Survey 2004, Global Geophysics 2015

Landau Associates Inc. | G:\Projects\1548\001\010\002\Geotech Report\F03 Previous Site Exploration Plan.mxd

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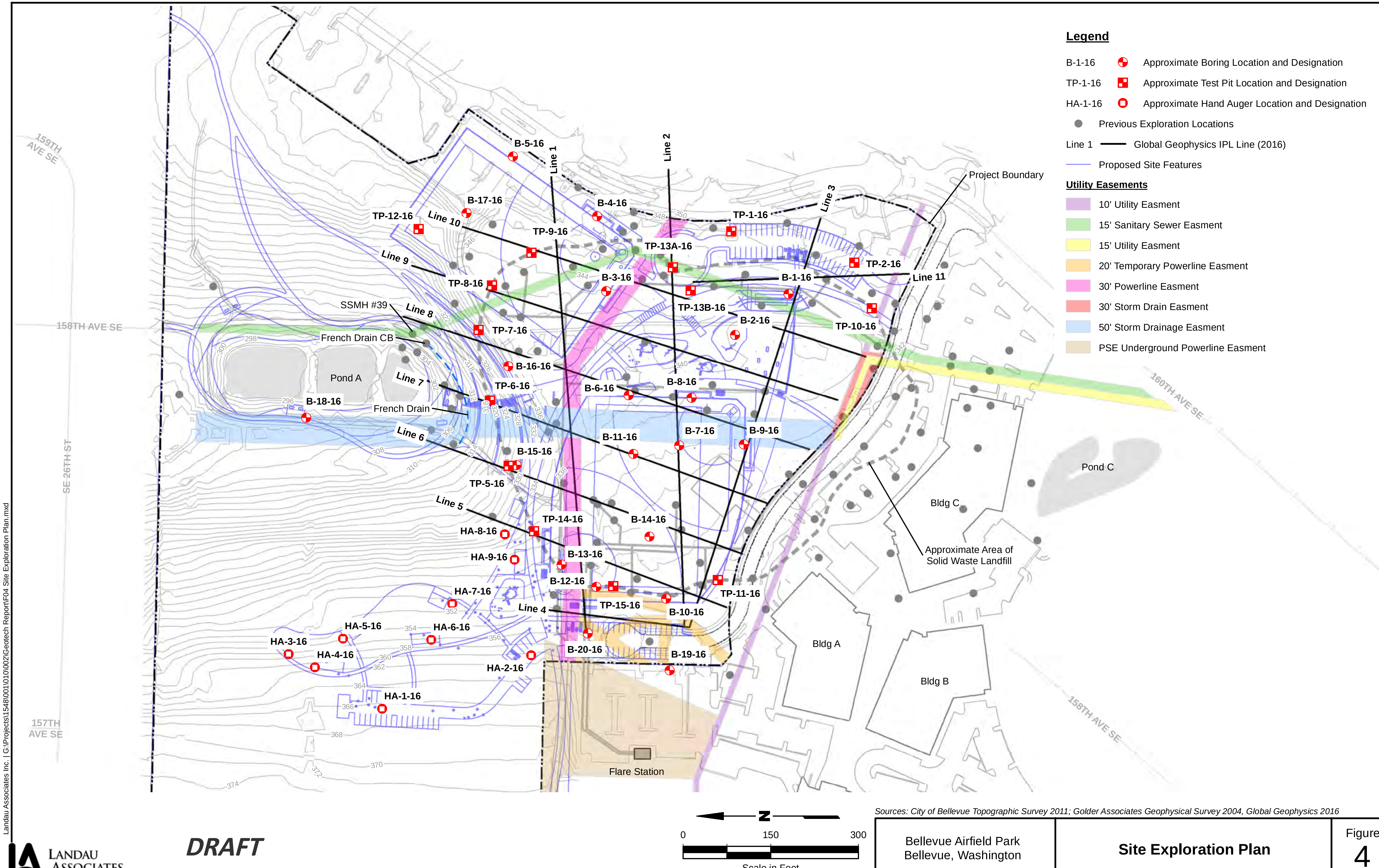
Bellevue Airfield Park Bellevue, Washington	**Previous Site Exploration Plan**	Figure 3



Sources: City of Bellevue Topographic Survey 2011; Golder Associates Geophysical Survey 2004, Global Geophysics 2016

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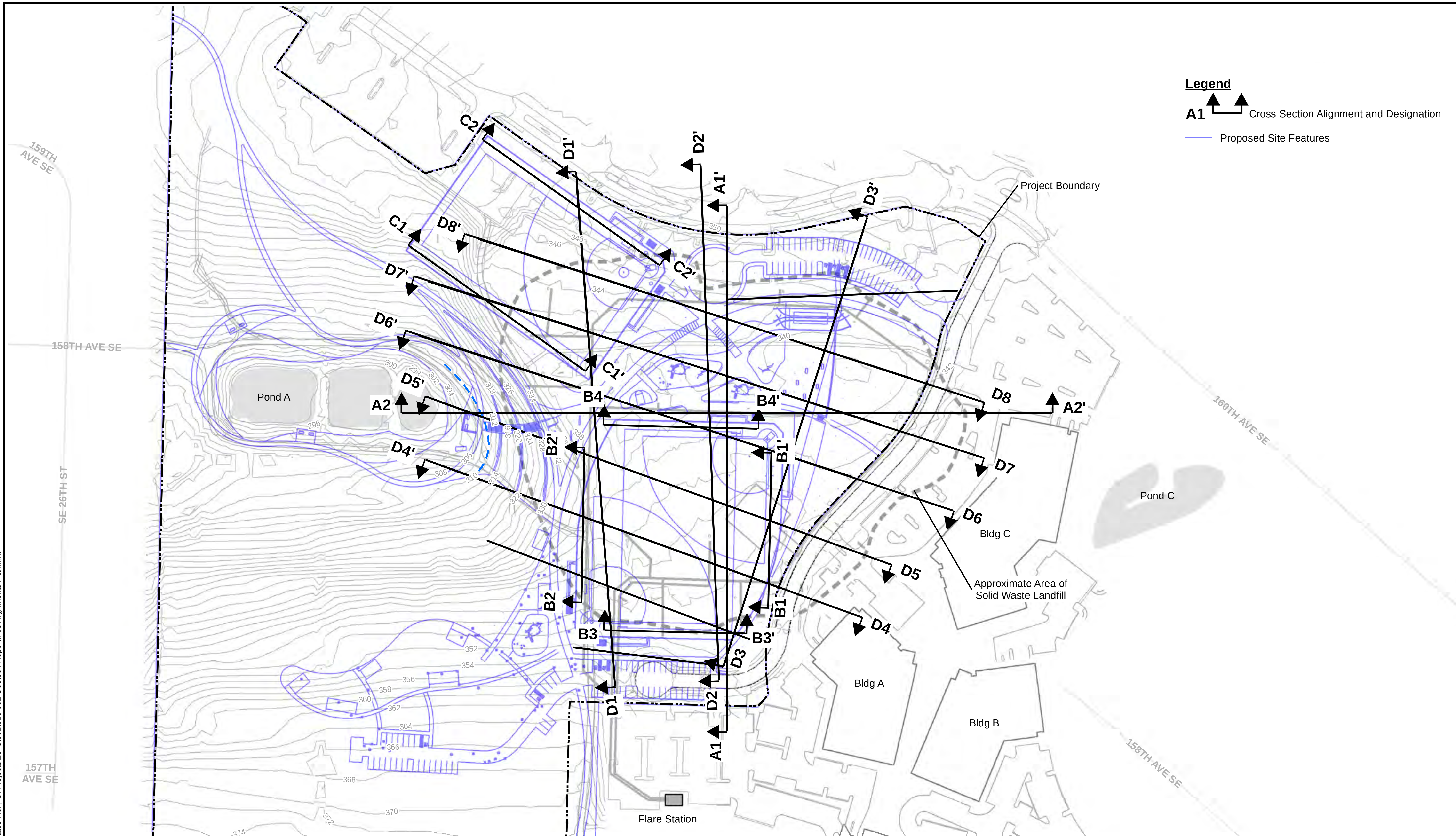
Bellevue Airfield Park
Bellevue, Washington

Site Exploration Plan

Figure
4



Sources: City of Bellevue Topographic Survey 2011; Golder Associates Geophysical Survey 2004, Global Geophysics 2016

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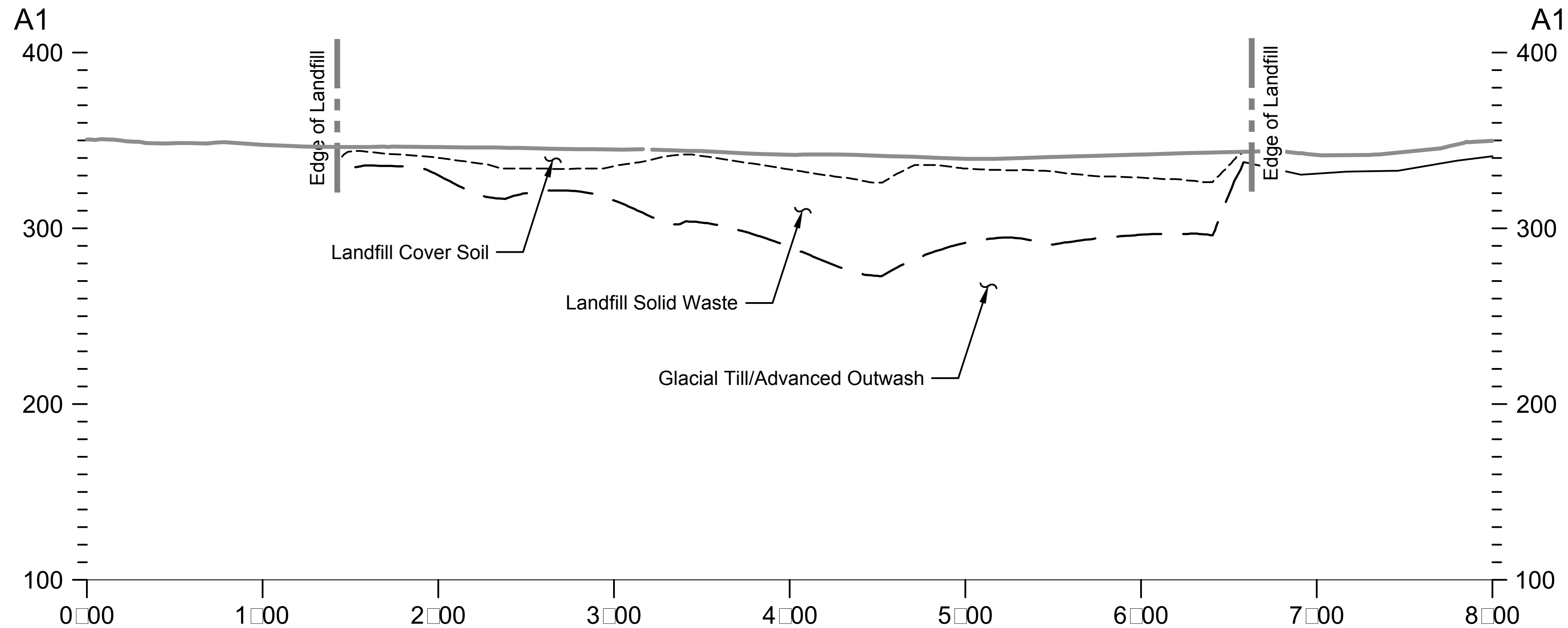
Bellevue Airfield Park
Bellevue, Washington

Cross Section Alignments Plan

Figure 5

Landau Associates Inc. | G:\Projects\1548\001\010\002\Geotech Report\F05 Alignments Plan.mxd



Geologic Profile A1

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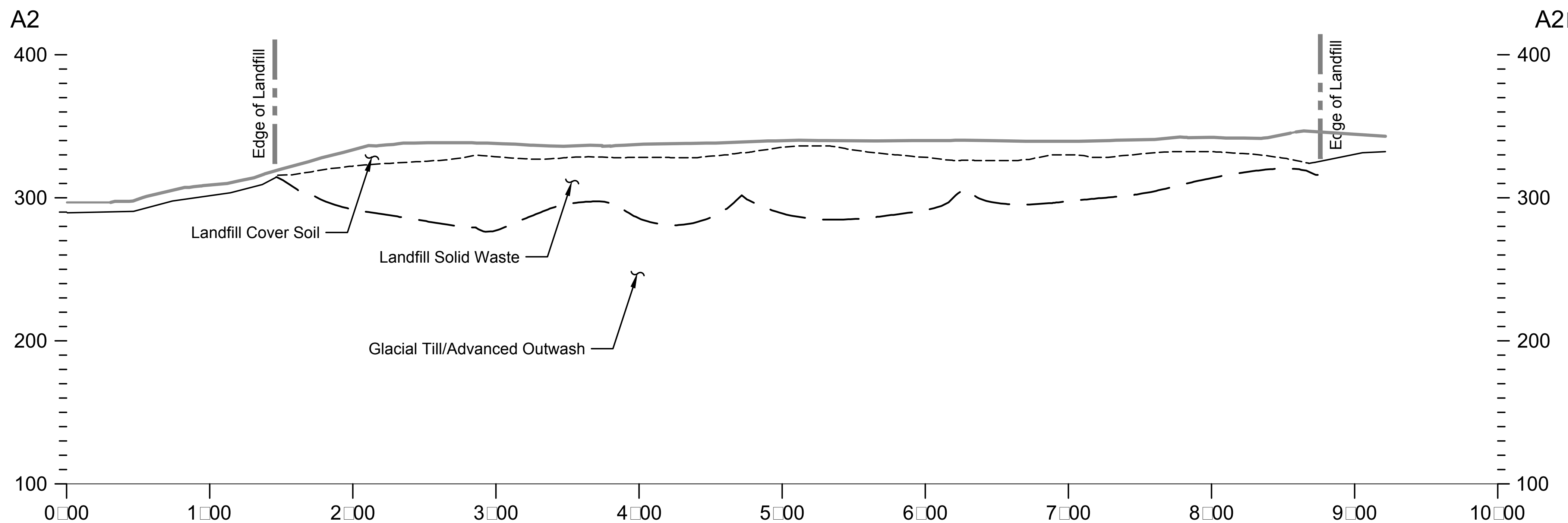

Geologic Profile A2

Horizontal Scale in Feet: 1"=100□
Vertical Scale in Feet: 1"=100□

Legend

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/ Advanced Outwash

LANDA□ ASSOCIATES, INC. | G:\Projects\1548\001\010\002\Geotech Report\F06-F011 TransectsProfiles.dwg (A) "Figure 6A" 5/27/2016

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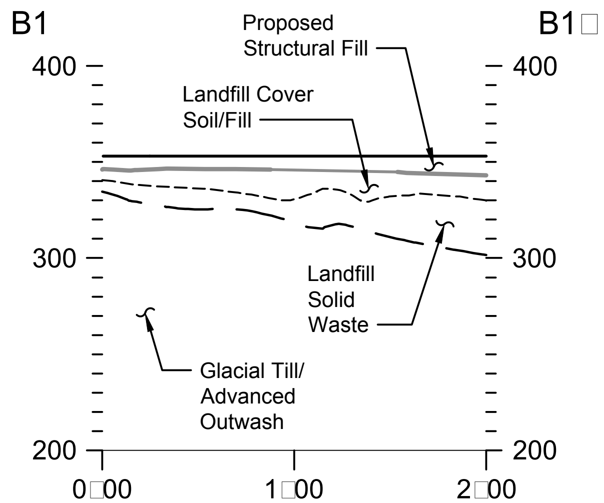
Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6A



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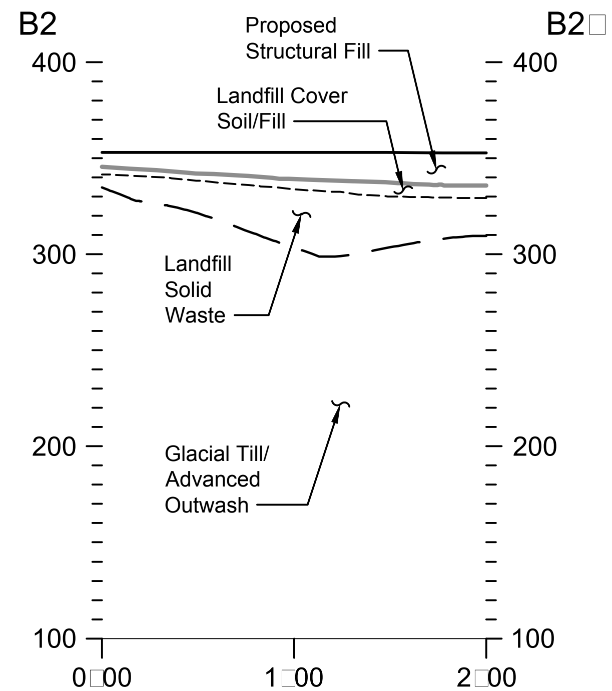

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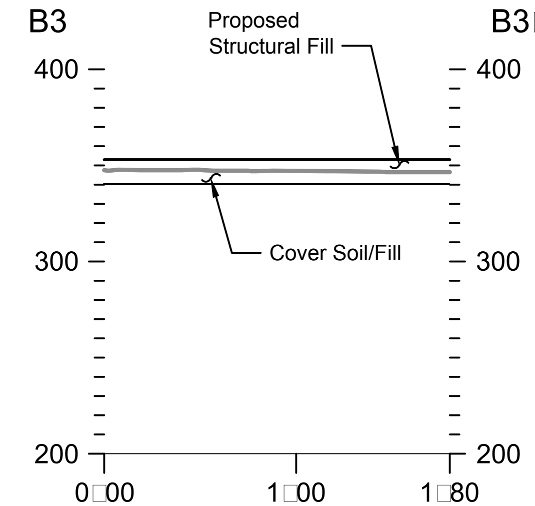

Geologic Profile B3
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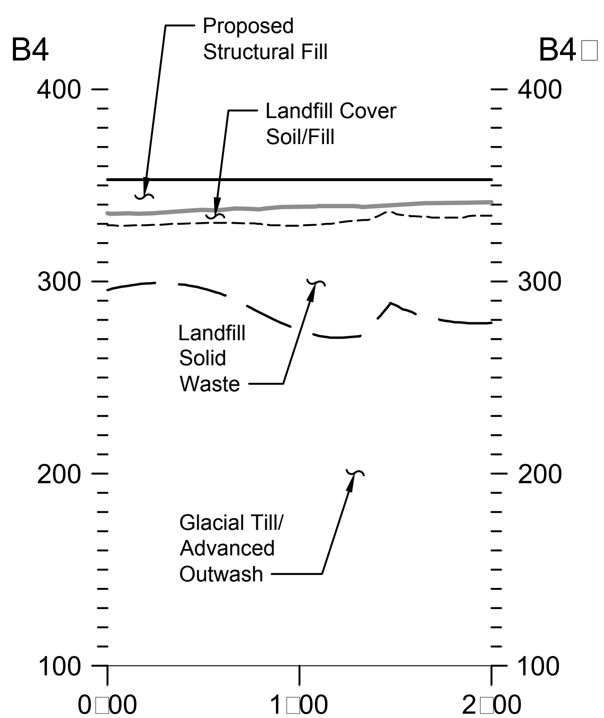
Legend

Proposed Structural Fill

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/
Advanced Outwash



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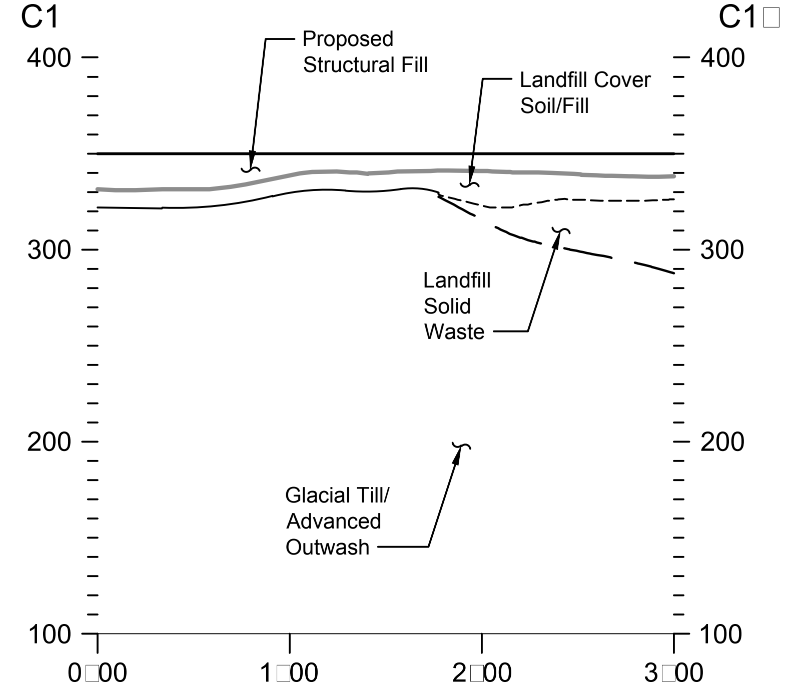

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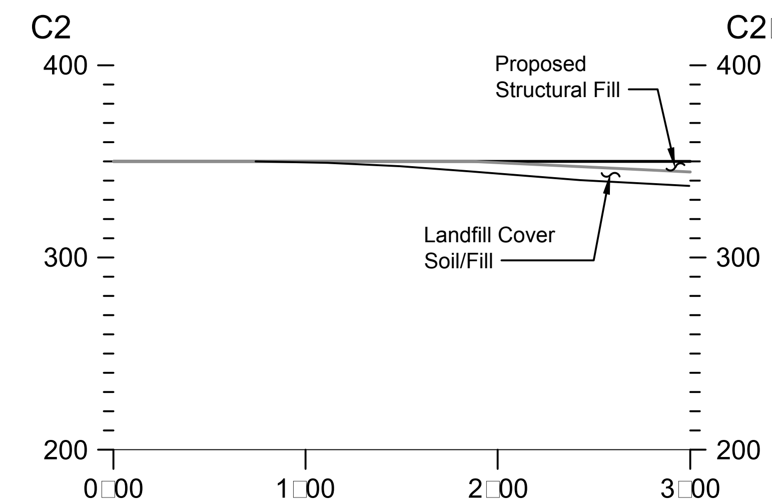

Geologic Profile C2
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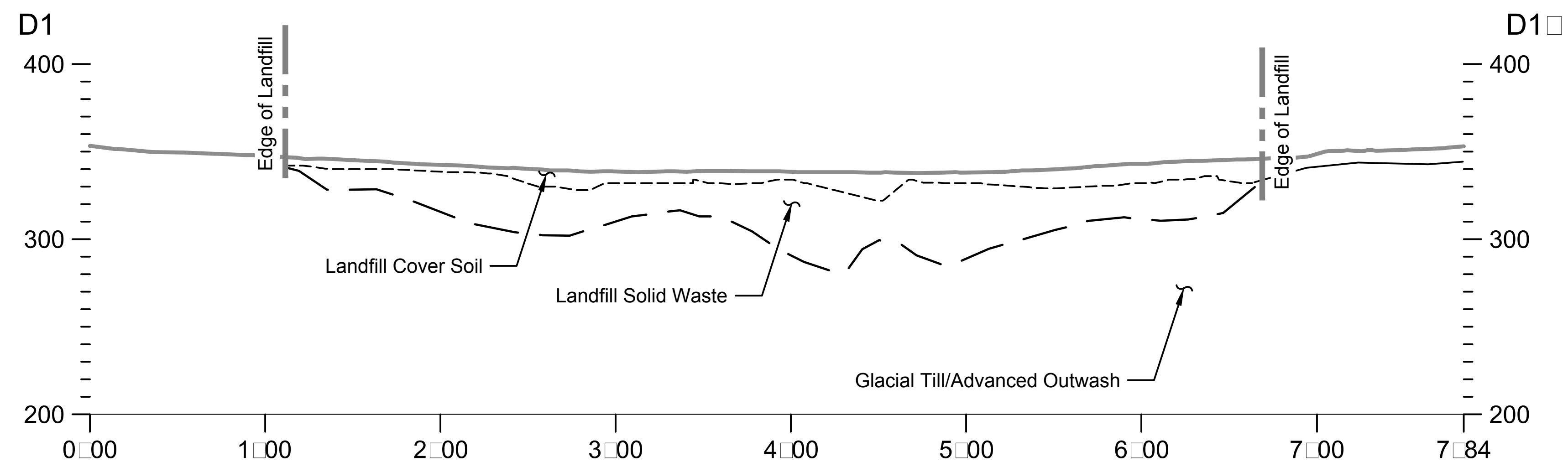
Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6B



Geologic Cross Section D1

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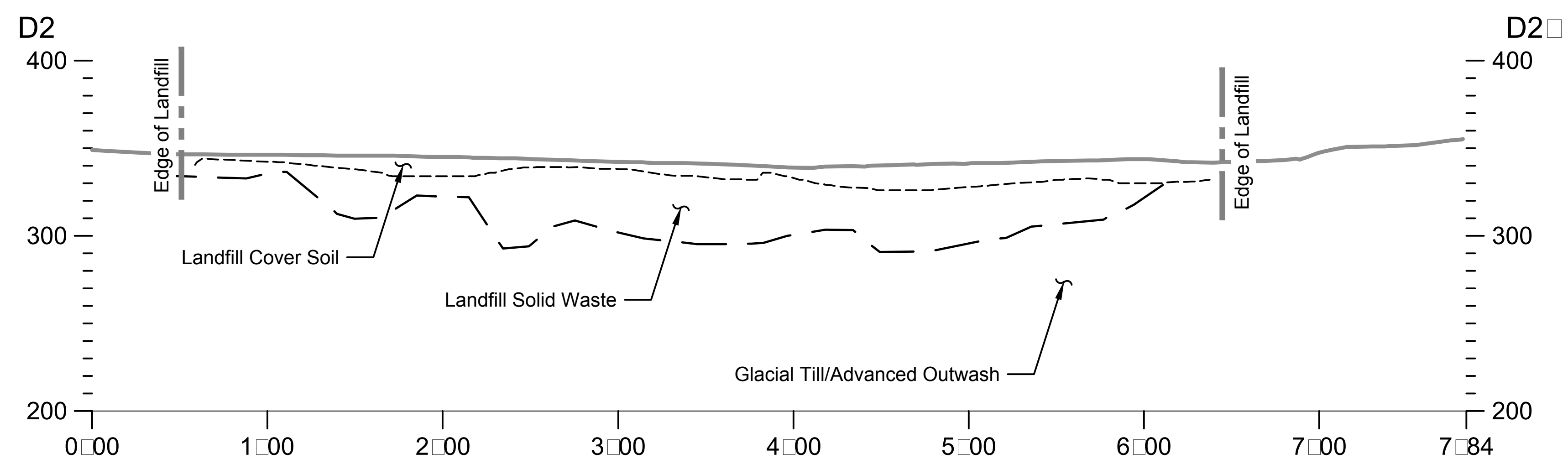

Geologic Cross Section D2

Horizontal Scale in Feet: 1"=100□
Vertical Scale in Feet: 1"=100□

Legend

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/ Advanced Outwash

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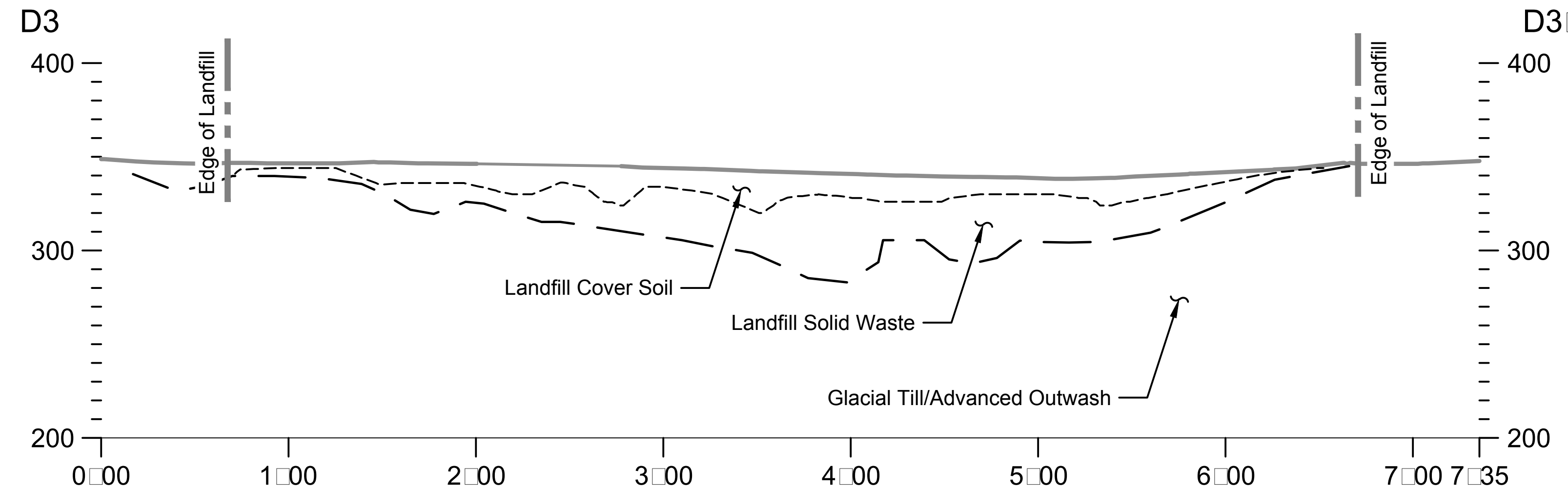
Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6C

Legend

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/ Advanced Outwash



Geologic Cross Section D3

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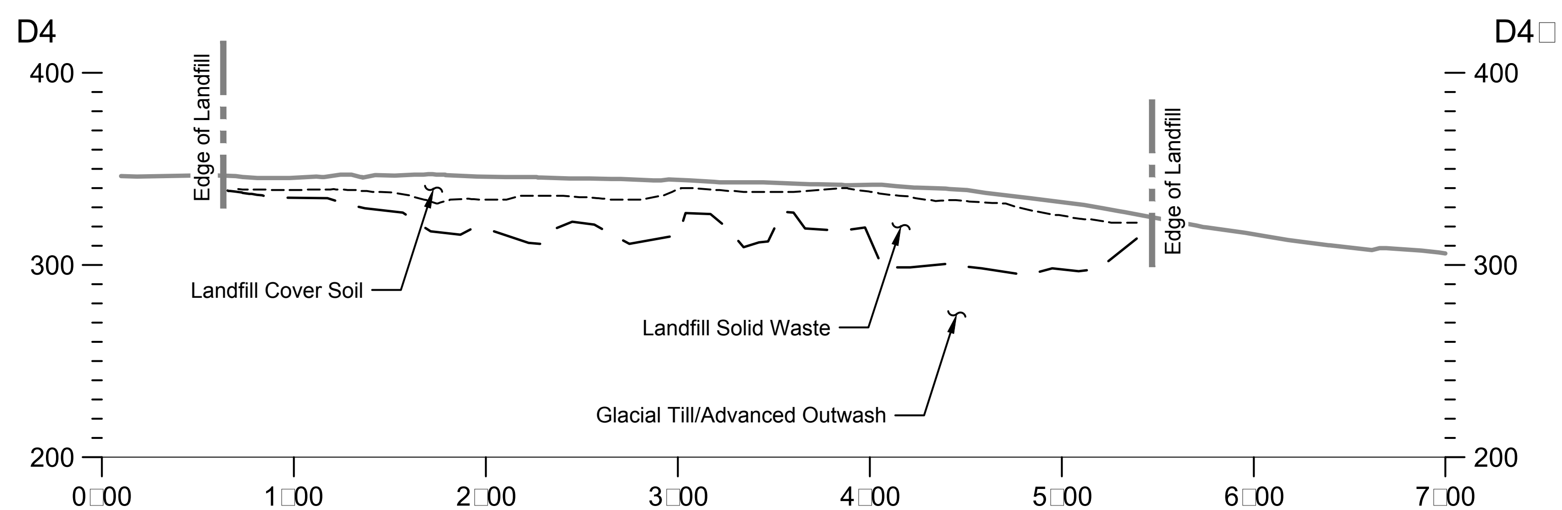

Geologic Cross Section D4

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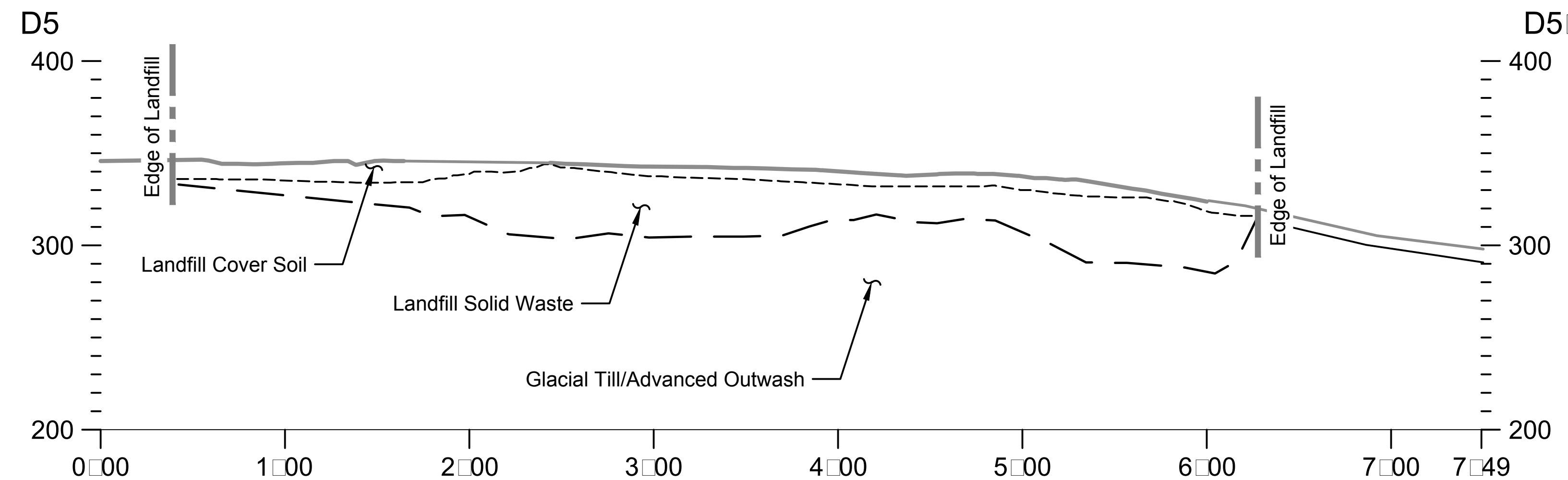
Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6D

Legend

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/ Advanced Outwash



Geologic Cross Section D5

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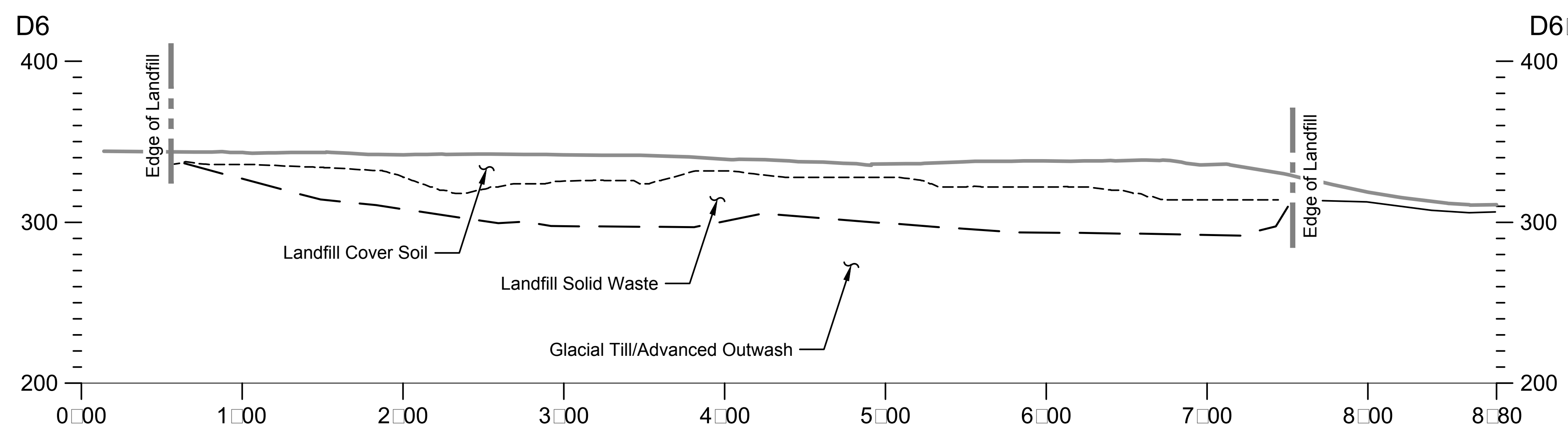

Geologic Cross Section D6

Horizontal Scale in Feet: 1"=100□
Vertical Scale in Feet: 1"=100□

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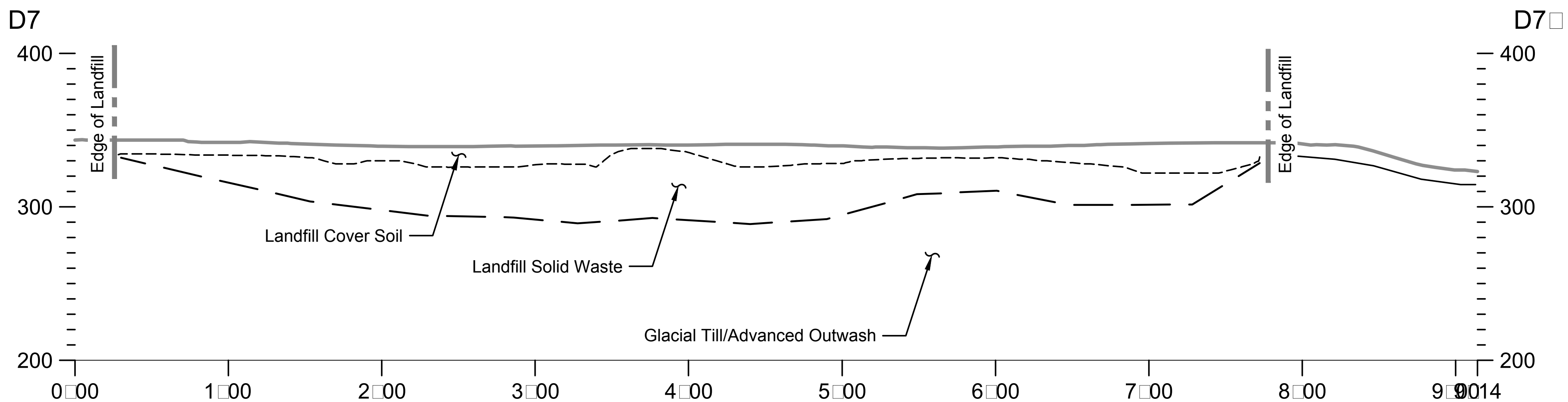
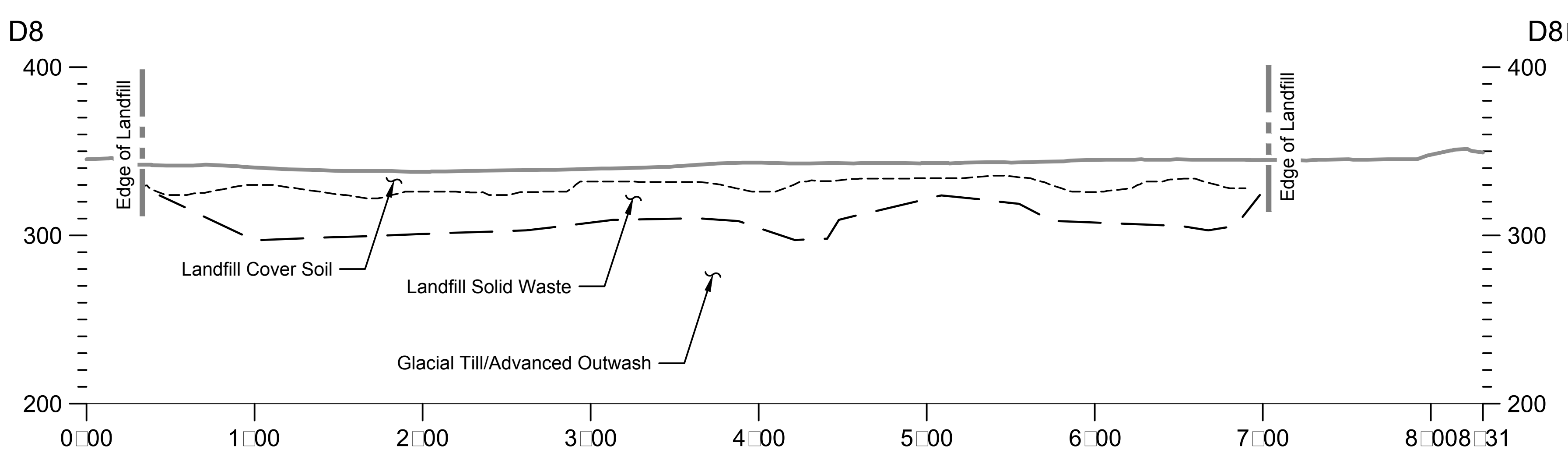
Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6E



Geologic Cross Section D7

Horizontal Scale in Feet: 1"=100
Vertical Scale in Feet: 1"=100



Geologic Cross Section D8

Horizontal Scale in Feet: 1"=100
Vertical Scale in Feet: 1"=100

Legend

Landfill Cover Soil/Fill

Landfill Solid Waste

Glacial Till/ Advanced Outwash

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Bellevue Airfield Park Bellevue, Washington	**Cross Sections**	Figure 6F

APPENDIX A

Boring Logs and Test Pit Photographs

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS [2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	- "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	- "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	- "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	- "with gravel," "with sand," "with silt," etc.
	≤ 5%	- "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

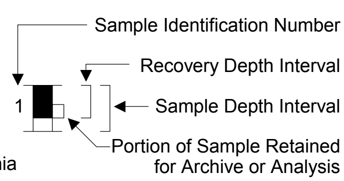
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)
▼ Approximate water level at time other than ATD

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Bellevue Airfield Park
Bellevue, WA

Soil Classification System and Key

Figure A-1

B- 1-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 341.61
Logged By: DSB   Date: 03/25/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
0						SM	Dark brown silty SAND with gravel and organics (medium dense, moist) **(FILL)**	
5	1	1	b2	13				
~6						SM/DB	Brown silty SAND with trace wood (loose, moist) **(MUNICIPAL SOLID WASTE)**	
		2	b2	6				
10		3	b2	7			woody, with trace glass	
15						SM	Gray silty SAND with gravel (very dense, wet) **(GLACIAL TILL)**	
		4	b2	50/ 6"	W = 11			
		5	b2	50/ 3"				
~22.5						SP	Gray medium SAND with silt and gravel (very dense, wet)	ATD
		6	b2	89/ 11"				
25		7	b2	50/ 2"				

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35. Elevation scale: 340, 335, 330, 325, 320.

Moisture Content (%): Plastic Limit, Liquid Limit; 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80
× Fines Content (%) ×: 20 40 60 80

Graph values: 50/ 6"; 50/ 3"; 89/ 11"; 50/ 2"

Boring Completed 03/25/16
Total Depth of Boring = 26.5 ft.

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

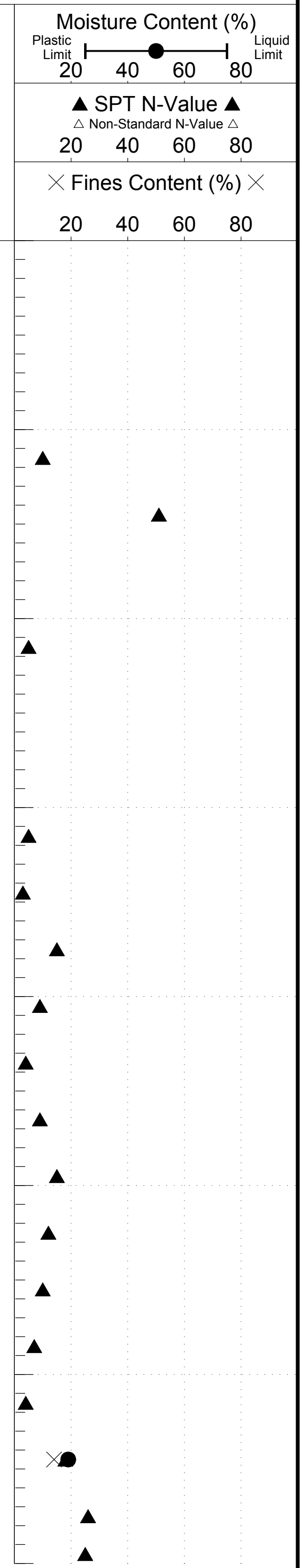
B- 2-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 339.15
Logged By: SMG Date: 03/29/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Groundwater
0						SP	Gray, fine to medium SAND (loose, moist) **(FILL)**	
	335							
5		1	b2	10		SM/ DB	Gray to brown silty SAND with gravel and municipal solid waste (very loose to very dense, wet) **(MUNICIPAL SOLID WASTE)**	
		2	b2	51			with wood, trace other waste	
	330							
10		3	b2	5				
	325							
15		4	b2	5				
		5	b2	3			predominately wood, plastic, and metal	
		6	b2	15				
	320						with glass, metal, and plastic	
20		7	b2	9				
		8	b2	4			with rubber	
		9	b2	9				
	315							
25		10	b2	15				
		11	b2	12				
		12	b2	10			with glass and wood debris	
	310	13	b2	7				
30						SP	Brown, coarse SAND with silt (very loose to dense, wet) **(ADVANCE OUTWASH)**	
		14	b2	4				ATD
		15	b2	18	W = 19 GS			
	305	16	b2	26				
35		17	b2	25				



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Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 2-16

Figure A-3 (1 of 2)

B- 2-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 339.15
Logged By: SMG Date: 03/29/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
35						SP	Brown, coarse SAND with silt (very loose to dense, wet) **(ADVANCE OUTWASH)**	
		18	b2	50				
	300							
40		19	b2	41				
		20	b2	28		SM	Gray, silty, coarse SAND (dense to very dense, moist) **(GLACIAL TILL)**	
	295							
45		21	b2	28				
		22	b2	29				
	290							
50		23	b2	56				
	285							
55		24	b2	44				

Moisture Content (%): Plastic Limit, Liquid Limit; 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △); 20 40 60 80
× Fines Content (%) ×; 20 40 60 80

Boring Completed 03/29/16
Total Depth of Boring = 56.5 ft.

60

65

70

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 2-16

Figure A-3 (2 of 2)

B- 3-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 343.26
Logged By: SMG Date: 03/28/16

Groundwater: Groundwater Not Encountered

Moisture Content (%): Plastic Limit — Liquid Limit, 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △), 20 40 60 80
× Fines Content (%) ×, 20 40 60 80

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile
0						SM	Brown, very silty SAND with gravel (loose, moist) **(FILL)**
						SM/DB	Brown, silty SAND with gravel and wood (very loose to dense, moist to wet) **(MUNICIPAL SOLID WASTE)**
	340	1	b2	6			
5		2	b2	6	W = 21 GS		
	335	3	b2	6			
10		4	b2	7			with wood, trace plastic ~ 6 inches of paper in sampler
	330						
15		5	b2	4			predominately wood with plastic, trace glass
							with wood and plastic
	325	6	c3				
20		7	b2	12			
		8	b2	36			with metal, trace glass
	320	9	b2	20	W = 11 -200 = 34	SM	Gray, very silty SAND with gravel (medium dense to very dense, moist) **(GLACIAL TILL)**
25		10	b2	68			
	315						
30		11	b2	42			
	310						
35							

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Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue, WA

Log of Boring B- 3-16

Figure A-4 (1 of 2)

B- 3-16

LAI Project No: 1548001.010

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 343.26 Logged By: SMG Date: 03/28/16	Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
35		12	b2	49			SM			

Boring Completed 03/28/16
Total Depth of Boring = 36.5 ft.

Groundwater Not Encountered

Moisture Content (%): Plastic Limit, Liquid Limit; 20 40 60 80
▲ SPT N-Value ▲; △ Non-Standard N-Value △; 20 40 60 80
× Fines Content (%) ×; 20 40 60 80

Depth scale: 35, 40, 45, 50, 55, 60, 65, 70

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue, WA

Log of Boring B- 3-16

Figure A-4

B- 4-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 346.68
Logged By: DSB Date: 03/25/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater	SPT N-Value
0	346.68					SM	Brown silty SAND with gravel (medium dense, moist) **(FILL)**		
		1	b2	11	W = 11 -200 = 26				
7.5						SM	Gray, silty, gravelly SAND (very dense, moist) **(GLACIAL TILL)**		
		2	b2	93/ 9"					93/ 9"
		3	b2	50/ 5"	W = 6 GS				50/ 5"
		4	b2	50/ 3"					50/ 3"
								ATD	
		5	b2	50/ 6"					50/ 6"
		6	b2	50/ 3"			becomes very gravelly		50/ 3"
		7	b2	50/ 5"					50/ 5"

Boring Completed 03/25/16
Total Depth of Boring = 31.5 ft.

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 4-16

Figure A-5

B- 5-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 355.71

Logged By: SMG Date: 03/24/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Groundwater	SPT N-Value
0	355					AC	Asphalt Pavement (1 inch thickness) **(ASPHALT)**		
						GP	Brown, gravelly SAND with trace silt (medium dense, moist) **(FILL)**		
		1	b2	14					
5	350								
		2	b2	50/ 6"		SM	Gray, very silty SAND with gravel (very dense, moist to wet) **(GLACIAL TILL)**		50/ 6"
10	345								
		3	b2	50/ 5"	W = 8				50/ 5"
15	340								
		4	b2	86					
20	335								
		5	b2	80/ 11"					80/ 11"
25	330								
								ATD	
		6	b2	50/ 5"					50/ 5"
30									

Moisture Content (%) — Plastic Limit, Liquid Limit: 20 40 60 80

▲ SPT N-Value ▲ — △ Non-Standard N-Value △: 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

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Boring Completed 03/24/16
Total Depth of Boring = 30.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 5-16

Figure A-6

B- 6-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 336.69

Logged By: SMG Date: 03/28/16

Moisture Content (%) — Plastic Limit / Liquid Limit: 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

Depth (ft): 0, 5, 10, 15, 20, 25, 30, 35

Elevation (ft): 335, 330, 325, 320, 315, 310, 305

Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
1	b2	14	W = 4
2	b2	14	
3	b2	3	
4	b2	3	
5	b2	8	
6	b2	3	
7	b2	6	
8	b2	5	
9	b2	6	
10	b2	21	
11	b2	5	

USCS Symbol	Description
SM	Gray, gravelly, silty SAND (medium dense, moist) **(FILL)**
	Brown silty SAND with municipal solid waste (very loose to medium dense, moist to wet) **(MUNICIPAL SOLID WASTE)**
	with gravel, glass, and plastic
	with metal, wood, and plastic
	trace plastic
	with plastic
	with wood, plastic
	Black, coarse SAND with silt and glass (loose, wet)

Groundwater: ATD

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Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 6-16

B- 6-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 336.69
Logged By: SMG   Date: 03/28/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
35		12	b2	3			Black, coarse SAND with silt and glass (loose, wet)	
	300	13	b2	18		ML	Light gray SILT (medium dense, wet) **(ADVANCE OUTWASH)**	
40		14	b2	34		SM	Gray, very silty SAND with gravel (dense, wet) **(GLACIAL TILL)**	

Moisture Content (%): Plastic Limit, Liquid Limit — 20, 40, 60, 80
▲ SPT N-Value ▲ — △ Non-Standard N-Value △ — 20, 40, 60, 80
× Fines Content (%) × — 20, 40, 60, 80

Boring Completed 03/28/16
Total Depth of Boring = 41.5 ft.

Depth scale: 35, 40, 45, 50, 55, 60, 65, 70

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Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 6-16

Figure A-7 (2 of 2)

B- 7-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 341.40

Logged By: SMG   Date: 03/23/16

Groundwater: Groundwater Not Encountered

Moisture Content (%): Plastic Limit – Liquid Limit (20, 40, 60, 80); ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) (20, 40, 60, 80); × Fines Content (%) × (20, 40, 60, 80)

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description
0						SM	Gray, very silty SAND with gravel and trace wood (very loose to medium dense, wet) **(FILL)**
		1	b2	3			
		2	b2	16	W = 10		
		3	b2	5		SM/DB	Gray and brown silty SAND with municipal solid waste (very loose to loose, wet) **(MUNICIPAL SOLID WASTE)**
		4	b2	7			with wood, plastic, rubber, trace glass and metal
		5	b2	10			with plastic and wood
		6	c3				
		7	b2	5			with wood, trace glass
		8	b2	9			with decayed organics, wood, plastic, brick pieces
		9	b2	5			with decayed organics and wood
		10	b2	1			with decayed organics, porcelain, trace glass

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35. Elevation scale: 340, 335, 330, 325, 320, 315, 310.

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Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 7-16

Figure A-8

B- 7-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger; Ground Elevation (ft): 341.40; Logged By: SMG; Date: 03/23/16	
35								with gravel, trace glass	Groundwater Not Encountered
	305	11	b2	36			SM	Gray, very silty SAND with gravel (dense, wet) **(ADVANCE OUTWASH)**	
40	300	12	b2	42					

Moisture Content (%): Plastic Limit, Liquid Limit; 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

Boring Completed 03/23/16
Total Depth of Boring = 41.5 ft.

45

50

55

60

65

70

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 7-16

Figure
A-8
(2 of 2)

B- 8-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 339.98
Logged By: SMG   Date: 03/23/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater	SPT N-Value
0						GM	Brown, silty, sandy GRAVEL (loose, moist) **(FILL)**		
		1	b2	6		SM/DB	Brown, silty SAND with gravel and municipal solid waste (very loose to dense, moist to wet) **(MUNICIPAL SOLID WASTE)**		6
5	335								
		2	b2	8			with wood, trace plastic		8
10	330								
		3	b2	10			with trace glass and paper		10
15	325								
		4	b2	11			with trace plastic		11
20	320								
		5	b2	12			predominately wood, trace plastic		12
		6	b2	31			with wood, plastic, rubber, trace metal		31
		7	b2	7					7
25	315	8	b2	14					14
		9	b2	15			with plastic and paper	ATD	15
		10	b2	21			with rubber		21
30	310	11	b2	10			with wood, trace metal		10
		12	b2	9					9
		13	b2	14			Black, coarse sand with silt, plastic, wood (very loose to medium dense, wet)		14
		14	b2	14					14
35	305								

Moisture Content (%): Plastic Limit — Liquid Limit; 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △); 20 40 60 80
× Fines Content (%) ×; 20 40 60 80

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 8-16

Figure A-9 (1 of 2)

B- 8-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 339.98
Logged By: SMG Date: 03/23/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile Description	Groundwater
35		15	b2	14				Black, coarse sand with silt, plastic, wood (very loose to medium dense, wet)	
		16	b2	4					
		17	b2	19			ML	Light gray, SILT (very stiff, moist) **(ADVANCE OUTWASH)**	
40	300	18	b2	50/ 5"			SM	Gray, very silty SAND with gravel (very dense, moist) **(Glacial Drift)**	
45	295	19	b2	50/ 6"					

Graph columns: Moisture Content (%) (Plastic Limit, Liquid Limit) 20 40 60 80; ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80; × Fines Content (%) × 20 40 60 80. Off-scale SPT values: 50/ 5" at 40 ft; 50/ 6" at 45 ft.

Boring Completed 03/23/16
Total Depth of Boring = 46.5 ft.

50

55

60

65

70

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B- 8-16

Figure A-9 (2 of 2)

B- 9-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 343.04

Logged By: SMG Date: 03/23/16

Groundwater: Groundwater Not Encountered

Moisture Content (%): Plastic Limit – Liquid Limit (20 40 60 80)

▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
1	b2	16	
2	b2	15	W = 13 GS
3	b2	4	
4	b2	4	
5	b2	3	
6	b2	18	
7	b2	9	
8	b2	7	
9	b2	25	
10	b2	12	
11	b2	8	
12	b2	28	

Depth (ft)	USCS Symbol	Description
0	SM	Brown, very silty SAND with trace gravel (medium dense, moist) **(FILL)**
~7.5	SM	Gray, gravelly, very silty SAND with gravel (very loose to medium dense, moist)
~13	SM/DB	Brown, silty SAND with gravel and municipal solid waste (very loose to dense, moist) **(MUNICIPAL SOLID WASTE)**
		with trace metal
		with wood
		predominately decayed paper, trace metal

Depth (ft): 0, 5, 10, 15, 20, 25, 30, 35

Elevation (ft): 340, 335, 330, 325, 320, 315, 310

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

B- 9-16

LAI Project No: 1548001.010

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile	Groundwater	SPT N-Value
35		13	b2	16				with wood, trace rubber	Groundwater Not Encountered	16
	305	14	b2	68			SM	Gray, very silty SAND (dense to very dense, moist to wet) **(GLACIAL TILL)**		68
40		15	b2	43						43

SAMPLE DATA / **SOIL PROFILE**

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 343.04
Logged By: SMG Date: 03/23/16

Moisture Content (%) — Plastic Limit, Liquid Limit: 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80
× Fines Content (%) ×: 20 40 60 80

Boring Completed 03/23/16
Total Depth of Boring = 41.5 ft.

Depth scale: 35, 40, 45, 50, 55, 60, 65, 70

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES | Bellevue Airfield Park, Bellevue, WA | Log of Boring B- 9-16 | Figure A-10 (2 of 2)

B-10-16

LAI Project No: 1548001.010

SAMPLE DATA | **SOIL PROFILE**

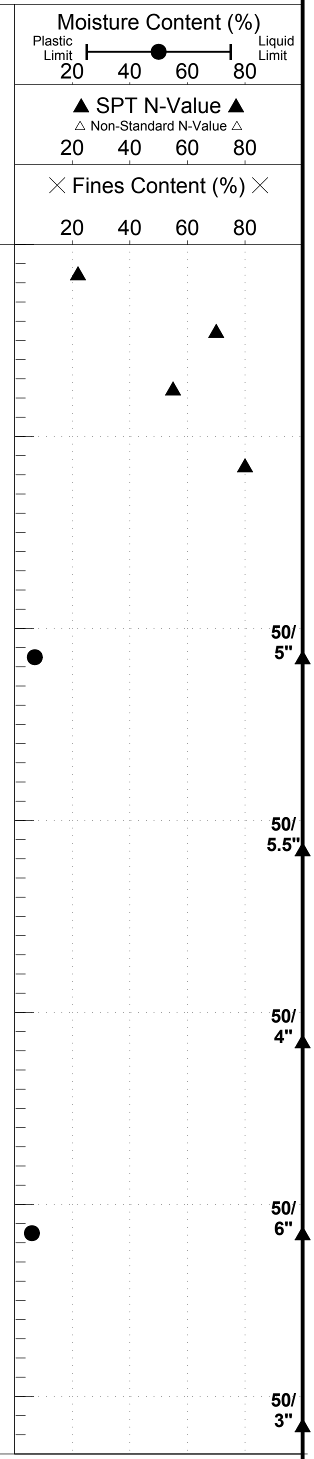
Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 346.61

Logged By: SMG Date: 03/30/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description
0						SM	Brown silty SAND with gravel (medium dense, moist) **(FILL)**
		1	b2	22			
	345	2	b2	70		SM	Gray, very silty SAND with gravel and iron-staining (very dense, moist to wet) **(GLACIAL TILL)**
		3	b2	55			
5		4	b2	80			
	340						
10		5	b2	50/ 5"	W = 7		
	335						
15		6	b2	50/ 5.5"			
	330						
20		7	b2	50/ 4"			
	325						
25		8	b2	50/ 6"	W = 6		
	320						
30		9	b2	50/ 3"			
35							

Groundwater: ATD (at approx. 30 ft)



Boring Completed 03/30/16
Total Depth of Boring = 31.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B-10-16

Figure A-11

B-11-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 341.15
Logged By: SMG Date: 03/29/16

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	USCS Symbol	Soil Profile	Groundwater
0				SM	Brown, silty SAND with trace gravel (dense, moist) **(FILL)**	
5	1	b2	27			
~6.5	2	b2	5		Brown, silty SAND with municipal solid waste (very loose to dense, moist to wet) **(MUNICIPAL SOLID WASTE)**	
	3	b2	13			
10	4	b2	5		with metal, glass, and paper	
15	5	b2	25		with trace wood	
20	6	b2	6		with glass, crushed rock, rubber	
	7	b2	11		with glass ~8" of paper in sampler	
	8	b2	11		with wood, decayed organics, trace glass	
25	9	b2	6			
	10	b2	4		with decayed organics, trace glass and plastic	
	11	b2	10			
30	12	b2	12		with decayed organics, wood, and plastic	
	13	b2	22			
~31.5	14	b2	39	SM	Gray, silty SAND with trace gravel (dense, moist to wet) **(ADVANCE OUTWASH)**	ATD
35						

Elevation (ft) scale: 340, 335, 330, 325, 320, 315, 310

Moisture Content (%) — Plastic Limit / Liquid Limit: 20 40 60 80
▲ SPT N-Value ▲ — △ Non-Standard N-Value △: 20 40 60 80
× Fines Content (%) ×: 20 40 60 80

Column headings: Depth (ft), Elevation (ft), Sample Number & Interval, Sampler Type, Blows/Foot, Test Data, Graphic Symbol, USCS Symbol, Groundwater

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-11-16

Figure A-12 (1 of 2)

B-11-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE				
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 341.15 Logged By: SMG Date: 03/29/16	Groundwater	Moisture Content (%) Plastic Limit / Liquid Limit 20 40 60 80; ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80; × Fines Content (%) × 20 40 60 80
35	305	15	b2	43			SM			

Boring Completed 03/29/16
Total Depth of Boring = 36.5 ft.

40

45

50

55

60

65

70

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B-11-16

Figure A-12 (2 of 2)

B-12-16

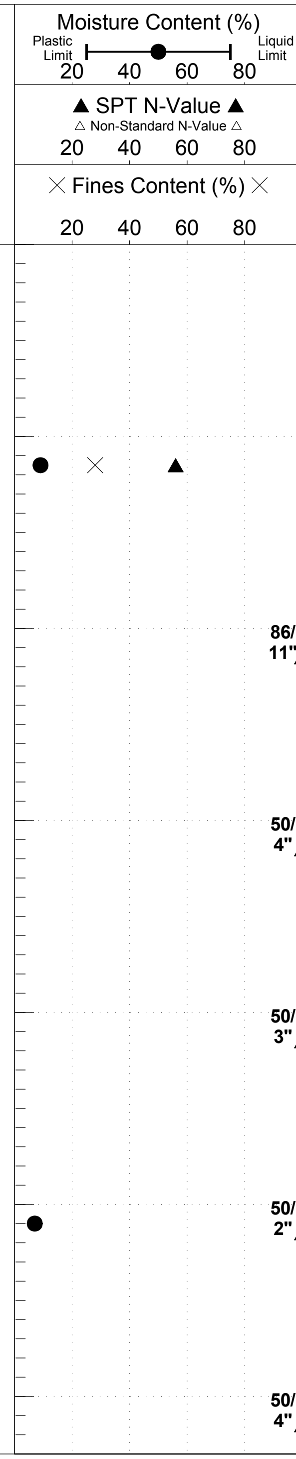
LAI Project No: 1548001.010

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
0	347.02						Brown, silty, sandy GRAVEL with trace construction debris (dense, moist) **(FILL)**	
3		1	d			SM	Gray, silty SAND with gravel (very dense, moist to wet) **(GLACIAL TILL)**	
5		2	b2	56	W = 9 -200 = 28			
10		3	b2	86/ 11"				
15		4	b2	50/ 4"				
20		5	b2	50/ 3"				
25		6	b2	50/ 2"	W = 7			
30		7	b2	50/ 4"				ATD

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 347.02

Logged By: SMG Date: 03/24/16



Boring Completed 03/24/16
Total Depth of Boring = 31.5 ft.

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B-12-16

Figure A-13

B-13-16

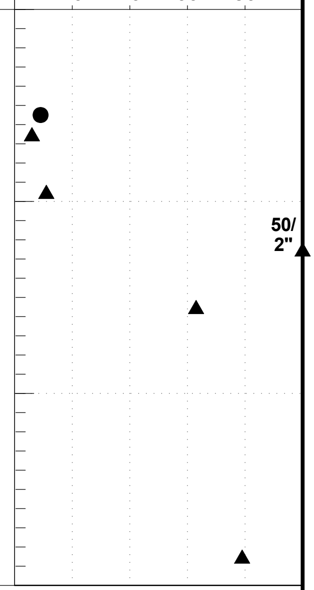
LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 346.94
Logged By: SMG   Date: 03/28/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Groundwater
0						SM	Brown, very silty SAND with gravel (loose, moist) **(FILL)**	Groundwater Not Encountered
	345	1	b2	6	W = 9			
5		2	b2	11			Brown, very silty SAND with gravel and trace landfill waste (medium dense, moist) **(MUNICIPAL SOLID WASTE)**	
		3	b2	50/ 2"		SM	Gray, very silty SAND with gravel (very dense, moist) **(GLACIAL TILL)**	
	340	4	b2	63				
10								
	335							
15		5	b2	79				

Moisture Content (%): Plastic Limit, Liquid Limit — 20, 40, 60, 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △) — 20, 40, 60, 80
× Fines Content (%) × — 20, 40, 60, 80



Boring Completed 03/28/16
Total Depth of Boring = 15.0 ft.

Depth (ft): 20, 25, 30, 35

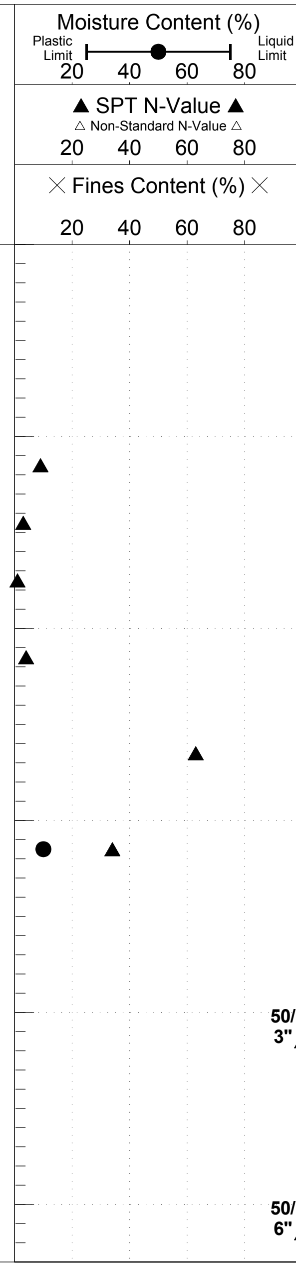
Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

B-14-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 344.82
Logged By: SMG Date: 03/30/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
0						SM	Gray, very silty SAND with gravel (loose, moist) **(FILL)**	Groundwater Not Encountered
5	340	1	b2	9				
		2	b2	3		SM/DB	Brown, silty SAND with trace municipal solid waste (very loose, moist) **(MUNICIPAL SOLID WASTE)**	
		3	b2	1				
10	335	4	b2	4				
		5	b2	63		SM	Gray, very silty SAND with gravel (dense to very dense, moist) **(GLACIAL TILL)**	
15	330	6	b2	34	W = 10			
20	325	7	b2	50/ 3"				
25	320	8	b2	50/ 6"				



Boring Completed 03/30/16
Total Depth of Boring = 26.5 ft.

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

DRAFT

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Bellevue Airfield Park
Bellevue, WA

Log of Boring B-14-16

Figure A-16

B-15-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 327.24

Logged By: DSB Date: 03/25/16

Moisture Content (%) — Plastic Limit / Liquid Limit: 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Groundwater
0						SM	Brown, very silty SAND with gravel (medium dense, moist) **(FILL)**	
	325	1	b2	17		SM/ DB	Brown, silty SAND with municipal solid waste (very loose to medium dense, moist to wet) **(MUNICIPAL SOLID WASTE)**	
5		2	b2	8			with wood, paper, trace plastic	
	320	3	b2	2			with wood, trace plastic	
10		4	b2	2				
	315	5	b2	5				
15		6	b2	4			with metal	
	310	7	b2	44		SP/ SM	Gray, fine to medium SAND with silt and trace gravels (very dense, moist to wet) **(GLACIAL TILL)**	
20								
	305	8	b2	50				ATD
25								
	300	9	b2	50/ 3"		SP	Light brown, SAND with silt and gravel (very dense, wet)	
30		10	b2	50/ 3"		SP	Gray, coarse SAND with trace gravel (very dense, wet)	
35								

Boring Completed 03/25/16
Total Depth of Boring = 31.0 ft.

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

B-16-16

LAI Project No: 1548001.010

SAMPLE DATA | **SOIL PROFILE**

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 335.84

Logged By: SMG   Date: 03/22/16

Moisture Content (%): Plastic Limit — Liquid Limit; scale 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △); scale 20 40 60 80

× Fines Content (%) ×; scale 20 40 60 80

Depth (ft)	Elevation (ft)	USCS Symbol	Description	Groundwater
0	335	SM	Brown, silty SAND with gravel (medium dense, moist) **(FILL)**	
5	330	ML	Gray, SILT with sand and gravel with iron-staining (very loose, moist to wet)	
		SM	Gray, silty, gravelly SAND (very loose to medium dense, moist to wet)	
10	325			
15	320	SM/DB	Gray and brown silty SAND with municipal solid waste (loose to dense, moist to wet) **(MUNICIPAL SOLID WASTE)**	▽ ATD
			with trace concrete	
20	315			
			with paper, plastic, trace metal	
25	310		with trace plastic and metal	
			with paper, plastic, trace glass	
30	305			
			with trace glass and plastic	
35				

Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
1	b2	16	
2	b2	4	
3	b2	2	W = 16 -200 = 22
4	b2	2	
5	b2	11	
6	b2	4	W = 17
7	b2	12	
8	b2	32	
9	b2	28	
10	b2	8	
11	b2	9	
12	b2	6	
13	b2	12	
14	b2	17	
15	b2	15	
16	b2	20	
17	b2	22	
18	b2	15	

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-16-16

Figure A-18 (1 of 2)

B-16-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE				Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 335.84 Logged By: SMG Date: 03/22/16	Groundwater	20 40 60 80
35								with trace glass		
	300	19	b2	25			SM	Gray silty SAND with gravel (very dense, moist) **(GLACIAL TILL)**		
40	295	20	b2	50/ 6"						50/ 6"

Boring Completed 03/22/16
Total Depth of Boring = 41.5 ft.

45

50

DRAFT

55

60

65

70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-16-16

Figure
A-18
(2 of 2)

B-17-16

LAI Project No: 1548001.010

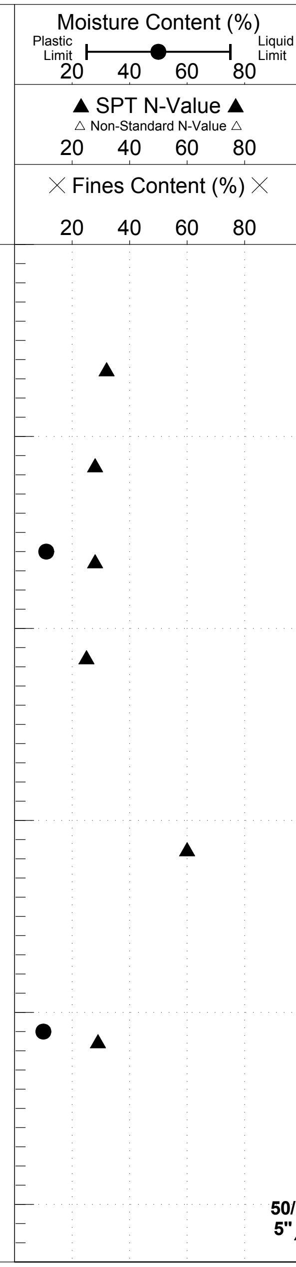
Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 353.73
Logged By: SMG Date: 03/22/16

SAMPLE DATA

Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
1	b2	32	
2	b2	28	
3	b2	28	W = 11
4	b2	25	
5	b2	60	
6	b2	29	W = 10
7	b2	50/ 5"	

SOIL PROFILE

USCS Symbol	Description	Groundwater
SM	Gray to brown, very silty SAND with fine to coarse gravel (dense to very dense, moist to wet) **(ADVANCE OUTWASH)**	ATD
SM	Gray, silty, fine to coarse SAND with gravel (very dense, moist) **(GLACIAL TILL)**	



Depth (ft): 0, 5, 10, 15, 20, 25, 30, 35
Elevation (ft): 350, 345, 340, 335, 330

Boring Completed 03/22/16
Total Depth of Boring = 26.5 ft.

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

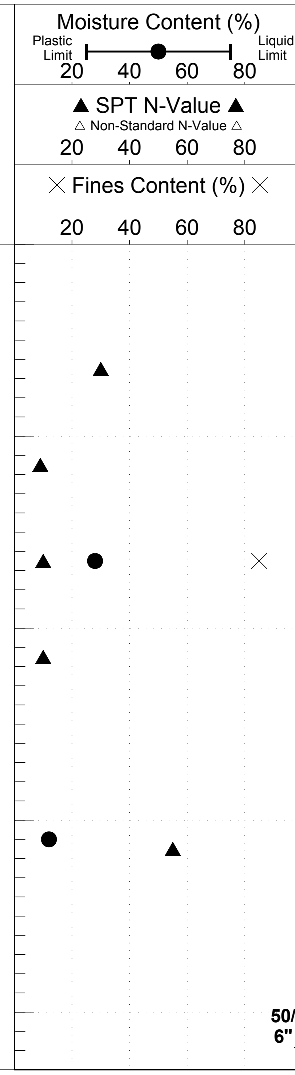
1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

B-18-16

LAI Project No: 1548001.010

Drilling Method: Hollow-Stem Auger
Ground Elevation (ft): 303.81
Logged By: SMG   Date: 03/24/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Profile	Groundwater
0						SM	Gray to brown, very silty SAND with gravel (loose to dense, moist) **(FILL)**	Groundwater Not Encountered
	300	1	b2	30				
5		2	b2	9				
	295	3	b2	10	W = 28 -200 = 85	ML	Light gray SILT with sand and iron-staining (soft, moist) **(WEATHERED TILL)**	
10		4	b2	10		SM	Light brown, very silty SAND with gravel and iron-staining (loose, moist to wet)	
15	290	5	b2	55	W = 12	SM	Brown to gray, very silty SAND with gravel (very dense, wet) **(GLACIAL TILL)**	
20	285	6	b2	50/ 6"				



Boring Completed 03/24/16
Total Depth of Boring = 21.5 ft.

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Landau Associates

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-18-16

Figure A-20

B-19-16

LAI Project No: 1548001.010

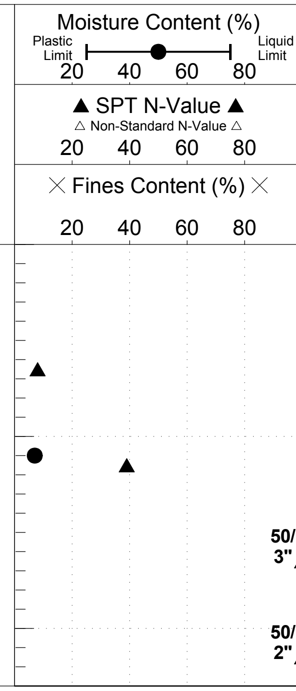
SAMPLE DATA / SOIL PROFILE

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 354.24

Logged By: DSB   Date: 03/29/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Groundwater
0						AC	Asphalt Pavement (5 inch thickness) **(ASPHALT)**	Groundwater Not Encountered
						SP	Brown silty SAND with gravel (loose to very dense, moist) **(GLACIAL TILL)**	
		1	b2	8				
5	350	2	b2	39	W = 7			
		3	b2	50/ 3"				
10	345	4	b2	50/ 2"				



Boring Completed 03/29/16
Total Depth of Boring = 11.5 ft.

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-19-16

Figure A-21

B-20-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE				Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 354.52 Logged By: DSB Date: 03/29/16	Groundwater	Plastic Limit – Liquid Limit 20 40 60 80; ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80; × Fines Content (%) × 20 40 60 80
0							SM	Brown, very silty SAND with gravel (dense to very dense, moist) **(GLACIAL TILL)**	Groundwater Not Encountered	
		1	b2	36	W = 11 GS					
5	350									
		2	b2	58						

Boring Completed 03/29/16
Total Depth of Boring = 6.5 ft.

Depth scale (ft): 0, 5, 10, 15, 20, 25, 30, 35

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring B-20-16

Figure A-22

HA-1-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger; Ground Elevation (ft): 366.52; Logged By: SMG; Date: 04/04/16		20 40 60 80
0		1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered	
	365	2	d				SM	Brown, silty SAND with gravel, trace organics (medium dense, moist) **(ADVANCE OUTWASH)**		

Boring Completed 04/04/16
Total Depth of Boring = 2.0 ft.

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-1-16

Figure A-23

HA-2-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger; Ground Elevation (ft): 361.55; Logged By: SMG; Date: 04/04/16		Plastic Limit – Liquid Limit 20 40 60 80; ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80; × Fines Content (%) × 20 40 60 80
0		1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered	
		2	d				SM	Brown, silty SAND with gravel, trace roots (medium dense, moist) **(ADVANCE OUTWASH)**		

Boring Completed 04/04/16
Total Depth of Boring = 1.5 ft.

5
10
15
20
25
30
35

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-2-16

Figure
A-24

HA-3-16

LAI Project No: 1548001.010

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description	Groundwater
0		1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered
	355	2	d				SM	Brown, silty SAND with gravel, trace roots (medium dense, moist) **(ADVANCE OUTWASH)** becomes gravelly with cobbles	

Drilling Method: Hand Auger

Ground Elevation (ft): 356.49

Logged By: SMG Date: 04/04/16

Moisture Content (%) — Plastic Limit / Liquid Limit: 20 40 60 80

SPT N-Value — Non-Standard N-Value: 20 40 60 80

Fines Content (%): 20 40 60 80

Boring Completed 04/04/16
Total Depth of Boring = 2.5 ft.

Depth (ft): 0, 5, 10, 15, 20, 25, 30, 35

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

HA-4-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger; Ground Elevation (ft): 361.17; Logged By: SMG; Date: 04/04/16		Plastic Limit – Liquid Limit 20 40 60 80; ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80; × Fines Content (%) × 20 40 60 80
0	360	1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered	
		2	d				SM	Brown, silty SAND with gravel, trace organics **(ADVANCE OUTWASH)** becomes gravelly with cobbles		
5										

Boring Completed 04/04/16
Total Depth of Boring = 4.0 ft.

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-4-16

Figure A-26

HA-5-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger Ground Elevation (ft): 353.69 Logged By: SMG Date: 04/04/16		Plastic Limit / Liquid Limit 20 40 60 80 ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80 × Fines Content (%) × 20 40 60 80
0		1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered	
		2	d				SM	Brown, silty SAND with gravel, trace organics (medium dense, moist) **(ADVANCE OUTWASH)**		

Boring Completed 04/04/16
Total Depth of Boring = 1.3 ft.

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-5-16

Figure A-27

HA-6-16

LAI Project No: 1548001.010

SAMPLE DATA | **SOIL PROFILE** | Groundwater | Moisture Content (%) (Plastic Limit, Liquid Limit) 20 40 60 80 / ▲ SPT N-Value ▲ (△ Non-Standard N-Value △) 20 40 60 80 / × Fines Content (%) × 20 40 60 80

Drilling Method: Hand Auger

Ground Elevation (ft): 356.26

Logged By: SMG Date: 04/04/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description	Groundwater
0		1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered
		2	d				SM	Brown, silty SAND with gravel, trace organics (medium dense, moist) **(ADVANCE OUTWASH)**	

Boring Completed 04/04/16
Total Depth of Boring = 1.3 ft.

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-6-16

Figure A-28

HA-7-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger Ground Elevation (ft): 350.85 Logged By: SMG Date: 04/04/16	
0	350	1	d				SM	Dark brown, silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered
		2	d				SM	Brown, silty SAND with gravel, trace organics (medium dense, moist) **(ADVANCE OUTWASH)**	

Moisture Content (%): Plastic Limit — Liquid Limit; 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △): 20 40 60 80

× Fines Content (%) ×: 20 40 60 80

Depth scale (ft): 0, 5, 10, 15, 20, 25, 30, 35

Boring Completed 04/04/16
Total Depth of Boring = 1.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-7-16

Figure A-29

HA-8-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger Ground Elevation (ft): 334.49 Logged By: SMG Date: 04/04/16	
0		1	d				SP	Dark brown, gravelly, silty SAND with organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered
		2	d				SP	Gray, gravelly SAND with silt (medium dense, moist) **(ADVANCE OUTWASH)**	

Boring Completed 04/04/16
Total Depth of Boring = 1.5 ft.

Moisture Content (%): Plastic Limit — Liquid Limit; 20 40 60 80
▲ SPT N-Value ▲ (△ Non-Standard N-Value △); 20 40 60 80
× Fines Content (%) ×; 20 40 60 80

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-8-16

Figure A-30

HA-9-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE				
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hand Auger Ground Elevation (ft): 339.00 Logged By: SMG Date: 04/04/16	Groundwater	Moisture Content (%) Plastic Limit / Liquid Limit 20 40 60 80; ▲ SPT N-Value ▲ △ Non-Standard N-Value △ 20 40 60 80; × Fines Content (%) × 20 40 60 80
0		1	d				SM	Dark brown silty SAND with gravel and organics (loose, moist) **(TOPSOIL)**	Groundwater Not Encountered	
		2	d				SM	Brown silty SAND with gravel, trace organics (medium dense, moist) **(ADVANCE OUTWASH)**		

Boring Completed 04/04/16
Total Depth of Boring = 1.8 ft.

5
10
15
20
25
30
35

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Bellevue Airfield Park
Bellevue, WA

Log of Boring HA-9-16

Figure A-31

TP- 1-16

LAI Project No: 1548001.010

SAMPLE DATA						SOIL PROFILE			Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Tracked Excavator; Ground Elevation (ft): 343.57; Logged By: BEC; Date: 03/23/16		
0		S-1	d5				PT	Topsoil (0.6 feet) (loose, wet) **(TOPSOIL)**	Groundwater Not Encountered	
		S-2	d5				GP	Crushed Rock 5/8 inch minus (medium dense, moist) **(FILL)**		
		S-3	d5		W = 17 GS		SM	Light brown, gravelly, silty, fine to medium SAND (medium dense, moist) **(WEATHERED TILL)**		Moisture ≈ 17
	340	S-4	d5				SM	Gray, gravelly, silty, fine to medium SAND (dense to very dense, moist) **(GLACIAL TILL)**		

Plastic Limit — Liquid Limit; ▲ SPT N-Value ▲; △ Non-Standard N-Value △; × Fines Content (%) ×; scales 20 40 60 80

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35

Boring Completed 03/23/16
Total Depth of Boring = 4.0 ft.

DRAFT

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

TP- 2-16

LAI Project No: 1548001.010

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile	Groundwater	Moisture Content (%) / SPT N-Value / Fines Content (%)
0	345	S-1	d5		W = 18 GS		SM	Brown, gravelly, silty, medium to coarse SAND with plastic and organics (loose, moist) **(FILL)**	Groundwater Not Encountered	
		S-2	d5				SM	Reddish brown, gravelly, silty, fine to medium SAND (loose to medium dense, moist)		
		S-3	d5							
		S-4	d5				SM	Gray brown, silty, gravelly, fine to medium SAND (dense, moist) **(GLACIAL TILL)**		
5										

Drilling Method: Tracked Excavator

Ground Elevation (ft): 345.09

Logged By: BEC Date: 03/22/16

Moisture Content (%): Plastic Limit — Liquid Limit; 20 40 60 80

▲ SPT N-Value ▲ (△ Non-Standard N-Value △); 20 40 60 80

× Fines Content (%) ×; 20 40 60 80

Boring Completed 03/22/16
Total Depth of Boring = 5.0 ft.

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35

DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Log of Boring TP- 2-16

Figure A-33

TP-12-16

LAI Project No: 1548001.010

SAMPLE DATA / SOIL PROFILE

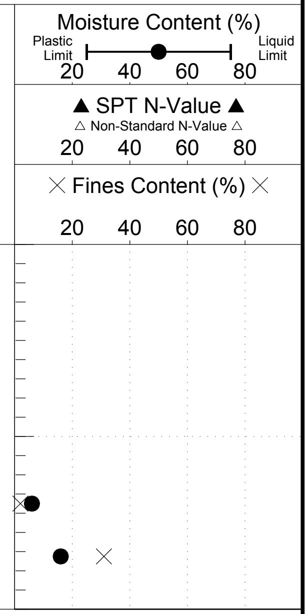
Drilling Method: Tracked Excavator

Ground Elevation (ft): 339.96

Logged By: BEC   Date: 03/23/16

Depth (ft)	Elevation (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Soil Description	Groundwater
0						PT	Forest Duff (loose, moist)	Groundwater Not Encountered
		S-1	d5			SM		
		S-2	d5			SM	Light brown, silty, fine to medium SAND (loose, moist) **(FILL)**	
		S-3	d5			SP-SM	Light brown and brown, silty, fine to medium SAND with some roots and organics (loose, moist)	
5	335	S-4	d5			SP	Light brown to yellow brown, gravelly, fine to medium SAND with silt (medium dense, moist)	
		S-5	d5		W = 6 -200 = 2		Light brown, gravelly, medium SAND with trace silt (medium dense to dense, damp to moist) **(RECESSIONAL OUTWASH)**	
		S-6	d5		W = 16 GS	SM	Mottled brown and light brown with iron staining, silty, gravelly, fine to medium SAND (very dense, damp) **(GLACIAL TILL)**	

Boring Completed 03/23/16
Total Depth of Boring = 9.5 ft.



DRAFT

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1548001.01 5/19/16 N:\PROJECTS\1548001.010.GPJ SOIL BORING LOG WITH GRAPH

Landau Associates

Bellevue Airfield Park
Bellevue, WA

Log of Boring TP-12-16

Figure A-34

Test Pit Photographs

Contact Cover Soil/Landfill Debris and Native Glacial Till Soils

Contact Cover Soil/Landfill Debris and Native Glacial Till Soils

Contact of Cover Soil and Native Glacial Till Soils

Contact of Cover Soil and Native Glacial Till Soils

Landfill Debris and Contact with Native Outwash Soils

Landfill Debris and Contact with Native Outwash Gravel Soils

Seepage at Contact with Landfill Debris and Native Glacial Till Soils

Contact with Outwash Gravel Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Landfill Debris and Cover Soils

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

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Bellevue Airfield Park
Bellevue, Washington

Test Pit – TP-9-16

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, Washington

Test Pit – TP-11-16

No Waste – Contact of Fill/Outwash and Native Glacial Till Soils

No Waste – Contact of Fill/Outwash and Native Glacial Till Soils

No Waste – Contact Native Glacial Till Soils

No Waste – Contact Native Glacial Till Soils

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, Washington

Test Pit – TP-13A-16

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact of Cover Soil/Landfill Debris with Native Glacial Till Soils

Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

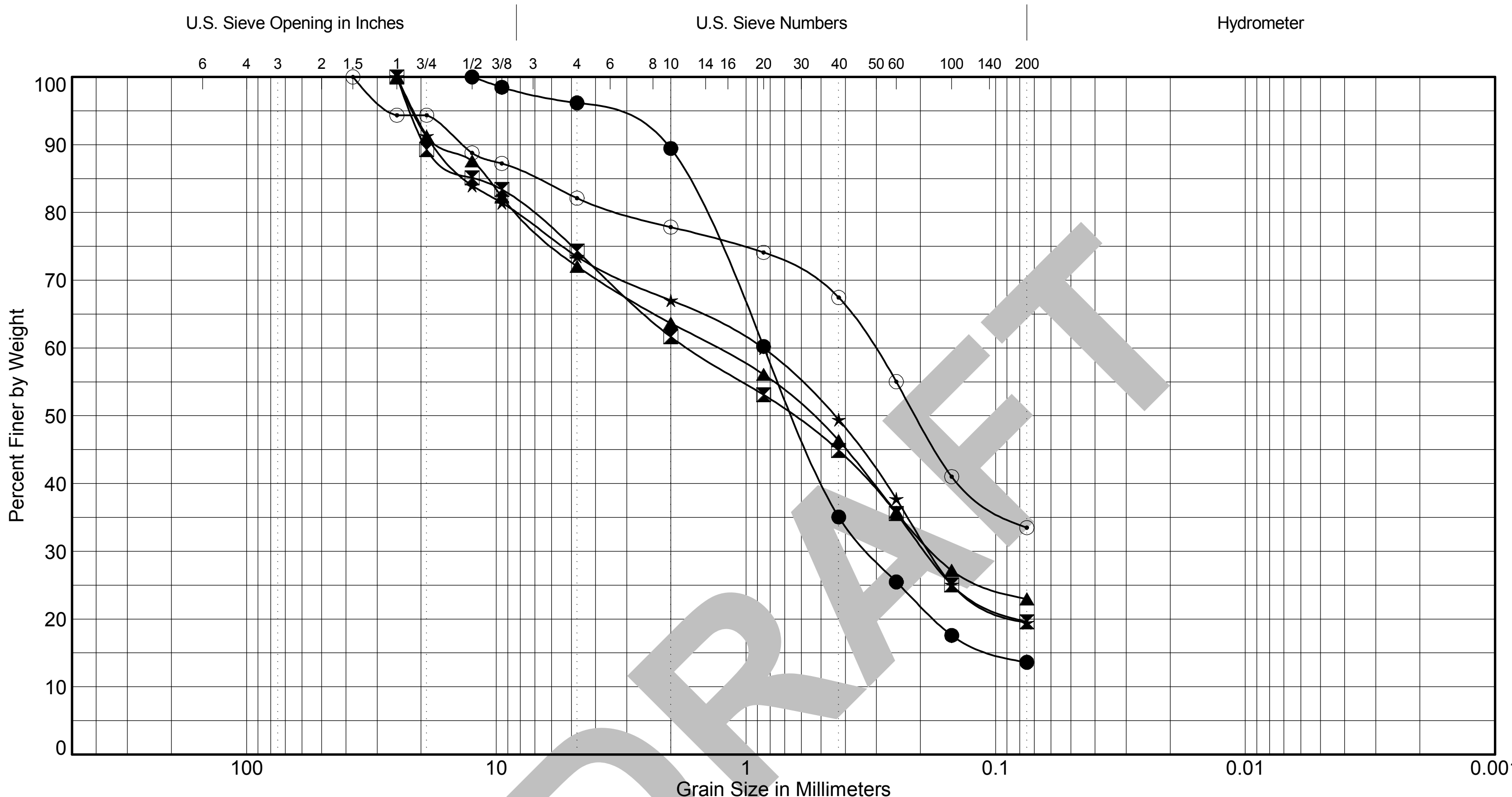
Contact Cover Soil/Landfill Debris with Native Glacial Till Soils

APPENDIX B

Laboratory Test Results

APPENDIX B
LABORATORY SOIL TESTING

The laboratory testing program, which was performed in general accordance with the ASTM International (ASTM) standard test procedures described below, was limited to visual inspection to confirm our field soil descriptions and determination of the natural moisture content and grain size distribution of selected samples. The natural moisture contents of selected soil samples obtained from our exploratory borings were determined in general accordance with ASTM D 2216 test procedures. The results from the natural moisture content determinations are indicated adjacent to the corresponding samples on the summary logs presented in Appendix A. The grain size distributions of selected soil samples obtained from our exploratory borings and test pits were determined in general accordance with ASTM D 422 test procedures. The results are presented in the form of a grain size distribution curves on Figures B-1 through B-2.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

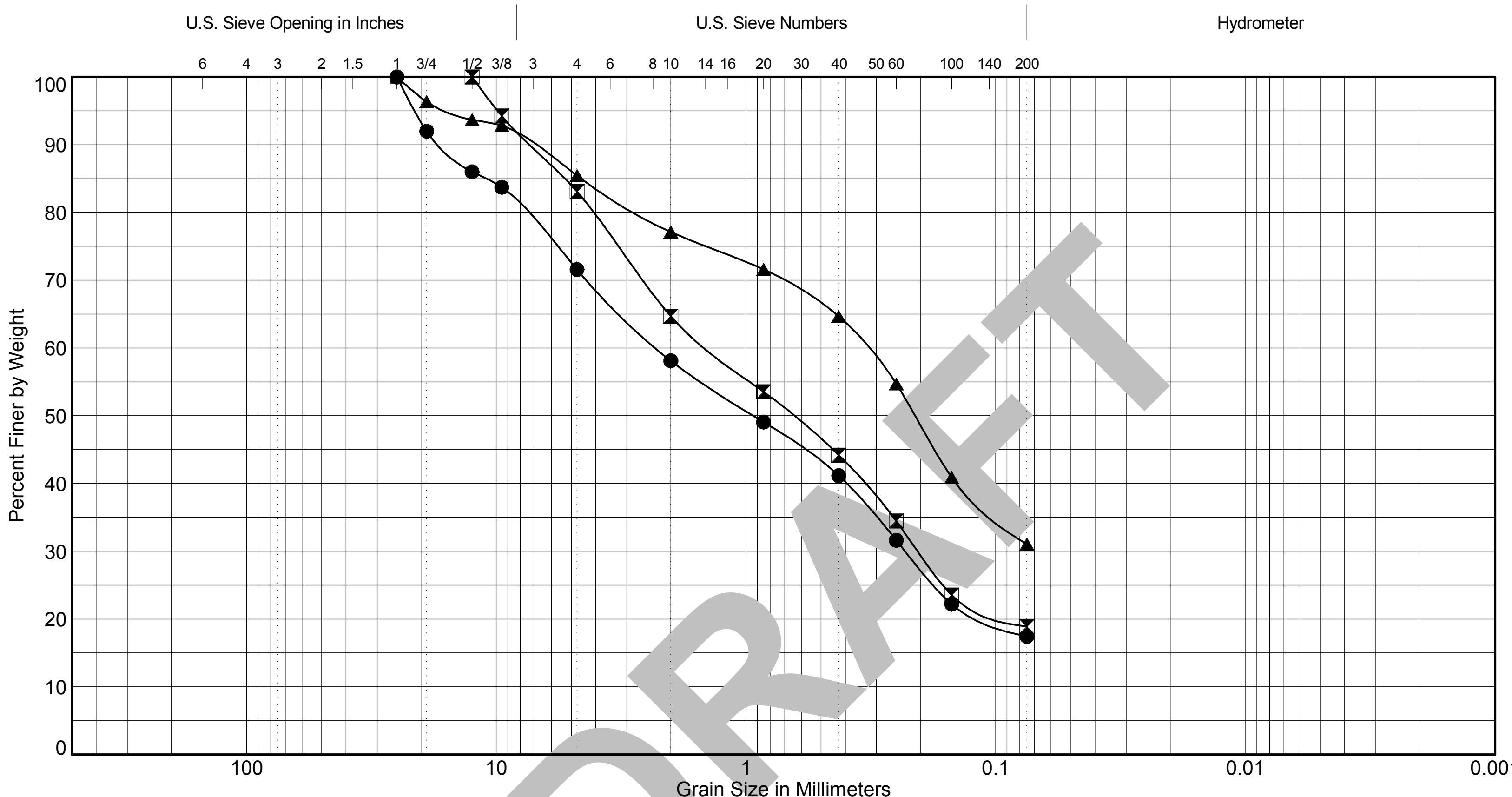
Symbol	Exploration Number	Sample Number	Depth (ft)	Natural Moisture (%)	Soil Description	Unified Soil Classification
●	B- 2-16	15	33.0	19	Brown, coarse SAND with silt	SP
⧗	B- 3-16	2	5.0	21	Brown, silty SAND with gravel and wood	SM/DB
▲	B- 4-16	3	12.5	6	Gray, gravelly, silty SAND	SM
★	B- 9-16	2	7.5	13	Gray, silty, gravelly SAND	SM
⊙	B-20-16	1	2.5	11	Brown, very silty SAND with gravel	SM

LANDAU ASSOCIATES

Bellevue Airfield Park
Bellevue, WA

Grain Size Distribution

Figure B-1



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

Symbol	Exploration Number	Sample Number	Depth (ft)	Natural Moisture (%)	Soil Description	Unified Soil Classification
●	TP- 1-16	3	1.5	17	Crushed rock, 5/8 inch minus	SP
⧗	TP- 2-16	1	1.0	18	Brown, gravelly, silty, fine to coarse SAND with plastics and organics	SM
▲	TP-12-16	6	8.0	16	Mottled brown and light brown silty, gravelly, fine to medium SAND with iron-staining	

LANDAU ASSOCIATES

Bellevue Airfield Park Bellevue, WA	Grain Size Distribution	Figure B-2

APPENDIX C

Boring Logs by Others

SCS ENGINEERS

Monitoring Well GW EL-101R

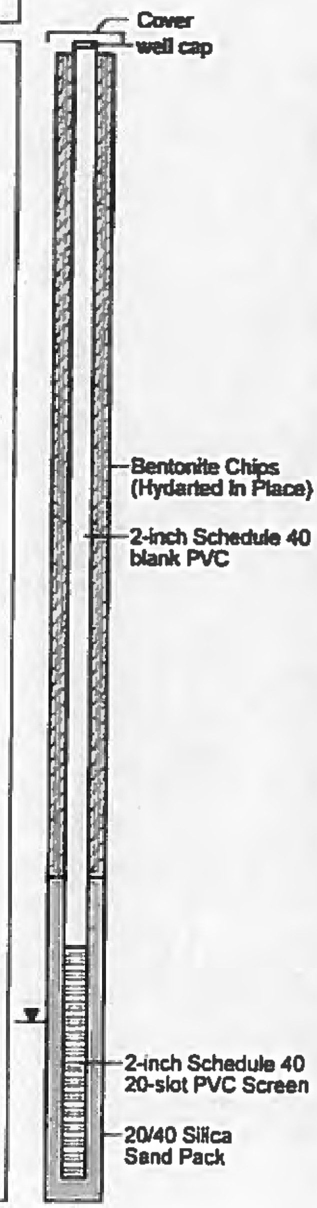
(Page 1 of 1)

Boeing Eastgate
Bellevue, WA
04206007.00

Started/Completed	: 9/7/07	Drilled By	: Environmental West
Drilling Method	: Air Rotary	Top of Casing Elev.	: 347.88
Diameter	: 6"	Total Depth	: 50.35'
Sampling Device	: Cuttings	Logged By	: Stephen Bond
		Reviewed By	: Ted Massart

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0				
5				
10		Brown, fine to medium SAND with trace silt, fine gravel and organics		
15		As above		
20		As above		
25		As above		
30		Moist, grey, fine-gravelly, fine to medium SAND with trace silt		
35		Moist, grey, fine to medium SAND with trace silt and fine gravel		
40		Damp, grey, fine to medium SAND with trace fine gravel		
45		Wet, grey, fine to medium SAND with silt		
50				
55				

Well GW EL-101R



SCS ENGINEERS

Monitoring Well GW EL-106R

Boeing Eastgate
Bellevue, WA
04205007.00

Started/Completed	: 9/5/07	Drilled By	: Environmental West
Drilling Method	: Air Rotary	Top of Casing Elev	: 345.65
Diameter	: 6"	Total Depth	: 80'
Sampling Device	: Cuttings	Logged By	: Stephen Bond
		Reviewed By	: Ted Massart

Depth (ft)	DESCRIPTION	REMARKS	Sample
0			
10	Brown, fine to medium SAND with silt		
25	Damp, brown, medium to coarse SAND with trace fine gravel and silt		
30	Wet, grey-brown, silty, fine to medium SAND		
35	Wet, grey, silty, fine to coarse SAND		
40	Moist/wet, grey, silty, fine to coarse SAND with trace fine gravel		
45	Moist/wet, grey, silty, medium to coarse SAND		
50	Moist/wet, grey-brown, medium to coarse SAND with silt		
60	Moist/wet, brown, medium to coarse SAND with trace silt		
70	Wet, brown, silty, fine to medium SAND		
80			
85			

Well GW EL-106R

07-03-2008 G:\04205007.00\Boring Logs\EL-106R.bor

SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 9/6/07
Hole Diameter	: 8"
Total Depth	: 48'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215527.28
Easting Coordinate	: 1320758.44
Top of Casing Elev.	: 344.19

GAS PROBE MW-2R

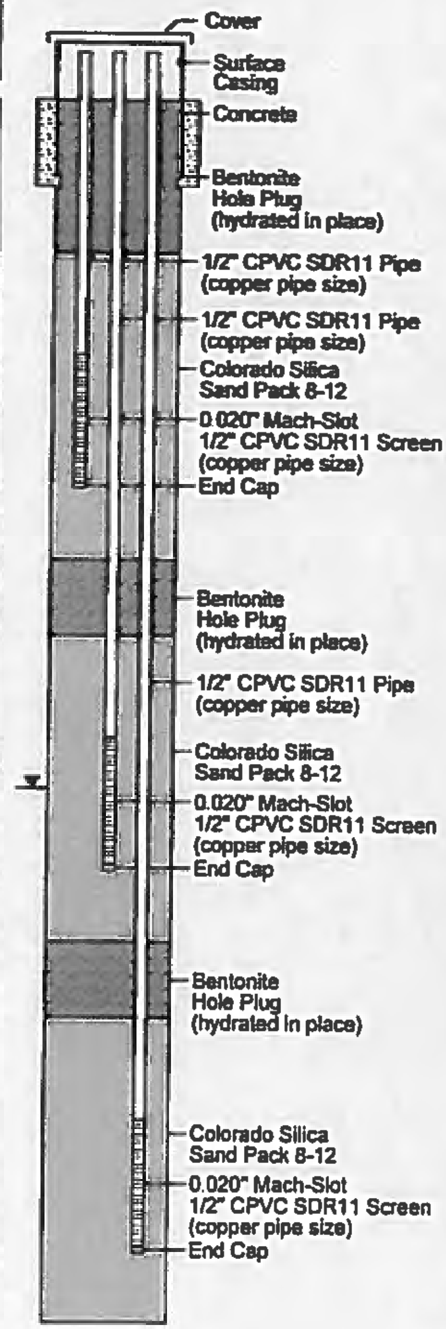
Logged By	: S. Bond
Reviewed By	: T. Massart
Surveyed By	: Skacska

Sample Type

Cuttings Sample

Probe1: MW-2Rs 14.90'
Probe2: MW-2Rm 29.75'
Probe3: MW-2Rd 45.05'

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0				
5		Grey, fine to medium SAND with silt and fine gravel		Cuttings Sample
10		Damp, dark grey, fine to medium SAND with silt and trace fine gravel		Cuttings Sample
15				Cuttings Sample
		Damp, dark grey, silty, fine to medium SAND with trace fine gravel		
20		Damp, dark grey, silty fine to medium SAND		Cuttings Sample
25		Moist, dark grey, medium to coarse SAND with silt and trace fine gravel		Cuttings Sample
30		Moist/wet, grey, silty, fine to coarse SAND with trace fine gravel		Cuttings Sample
35				Cuttings Sample
		Moist, brown, fine gravelly, medium to coarse SAND with silt		
40				Cuttings Sample
45		Moist/wet, brown, medium to coarse SAND with trace silt		Cuttings Sample
50				



SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 9/5/07
Hole Diameter	: 8"
Total Depth	: 48'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215581.20
Easting Coordinate	: 1320631.95
Top of Casing Elev.	: 348.80

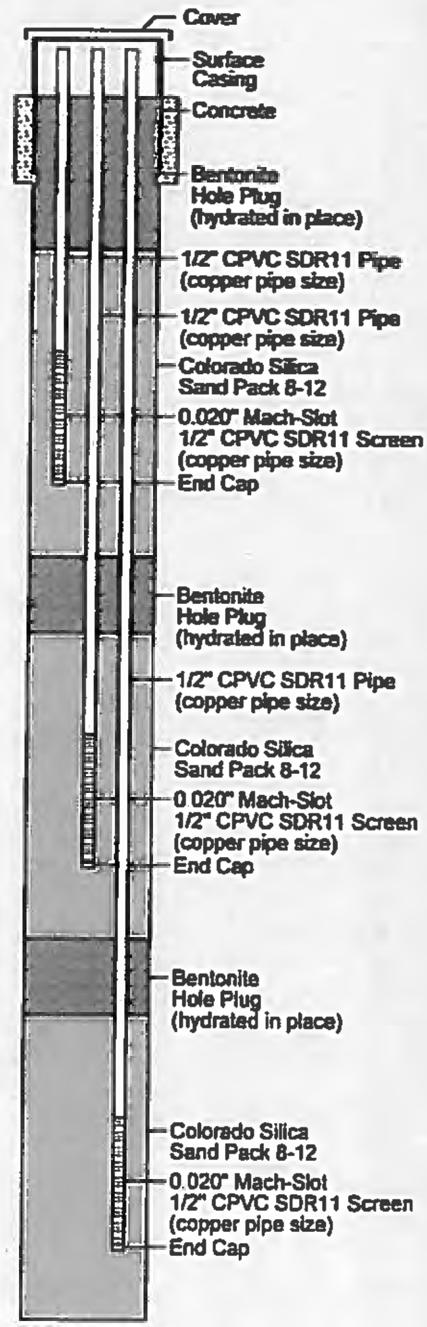
GAS PROBE MW-3R2

Logged By	: S. Bond
Reviewed By	: T. Massart
Surveyed By	: Skanska

Sample Type
Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0–10		Damp, grey, gravelly, silty, fine to medium SAND		
10–18		Brown, fine to medium SAND with trace fine gravel		
18–30		Damp, grey, fine to medium SAND with trace silt, fine gravel and organics		
		Damp/moist, dark grey/black, medium to coarse SAND with fine to medium gravel and trace organics		
30–48		Moist, grey, plastic SILT with fine to medium SAND and trace fine gravel		
		Moist, grey, fine to medium sandy, plastic SILT with fine gravel		

Probe1: MW-3R2s 14.80'
Probe2: MW-3R2m 29.70'
Probe3: MW-3R2d 45.05'



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 9/6/07 - 9/7/07
Hole Diameter	: 8"
Total Depth	: 48'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215673.15
Easting Coordinate	: 1320524.63
Top of Casing Elev.	: 349.04

GAS PROBE MW-4R2

(Page 1 of 1)

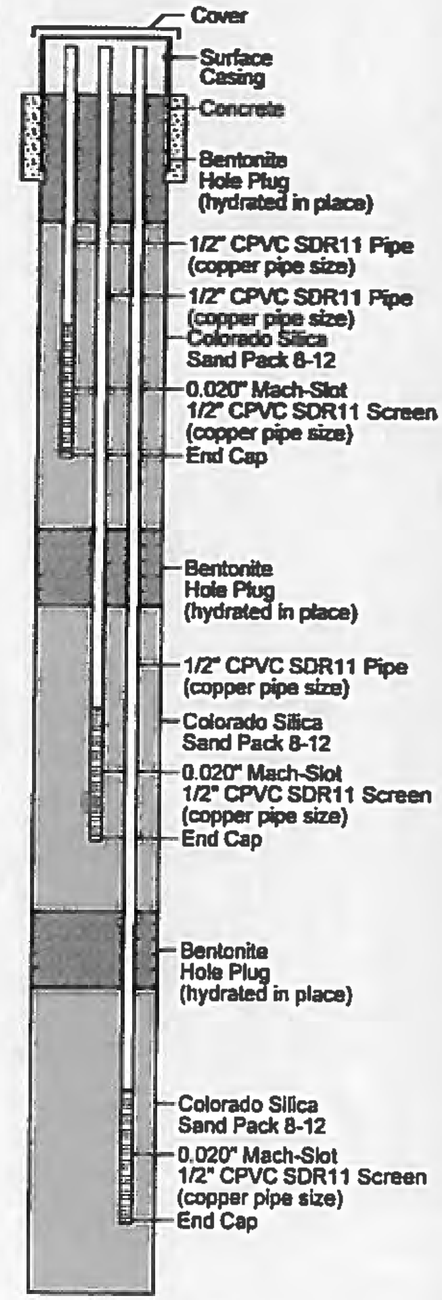
Logged By	: S. Bond
Reviewed By	: T. Massart
Surveyed By	: Skanska

Sample Type

Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
5		Damp, brown, silty, fine to medium SAND		Cuttings
10		Damp/dry, brown, fine to medium SAND		Cuttings
15		Damp, grey, fine to medium SAND with trace gravel		Cuttings
20		Damp, dark brown, fine to medium SAND		Cuttings
25		Damp, dark brown, fine to medium SAND with gravel, silt and trace organics		Cuttings
30		Moist, grey, fine to medium SAND with silt and trace fine to medium gravel		Cuttings
35		Damp, grey, fine to medium SAND with fine gravel		Cuttings
40		Damp, grey, fine to medium SAND with fine gravel and silt		Cuttings
45			Water encountered at ~45' bgs	Cuttings

Probe1: MW-4R2s
Probe2: MW-4R2m
Probe3: MW-4R2d



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 12-18-2007
Hole Diameter	: 8"
Total Depth	: 28.5'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215753.36
Easting Coordinate	: 1320409.73
Top of Casing Elev	: 348.44

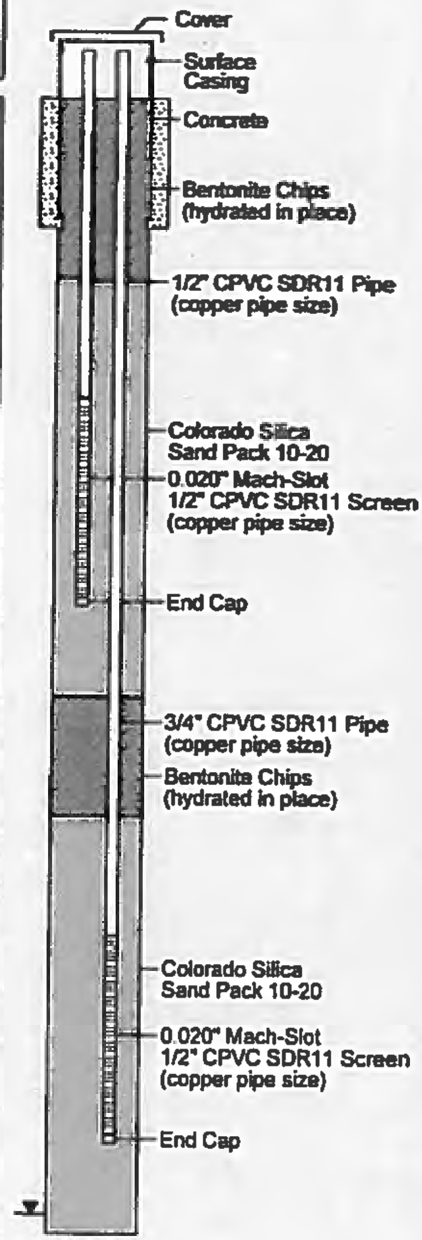
GAS PROBE MW-5R

Logged By	: B. Dean
Reviewed By	: T. Massart
Surveyed By	: Skanska

Sample Type
Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0		Drilling through fill. Air coming up around outside of casing. Casing spinning with cutting bit. No cuttings to surface.		
4		Grey, fine-grained, silty SAND with organics (small pieces of wood)		
10		Grey, fine-grained, silty SAND Moist to wet @ 28' bgs		

Probe1: MW-5Rs
Probe2: MW-5Rd



SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 4-28-2008
Hole Diameter	: 8"
Total Depth	: 28'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215541.45
Easting Coordinate	: 1320317.07
Top of Casing Elev.	: 351.16

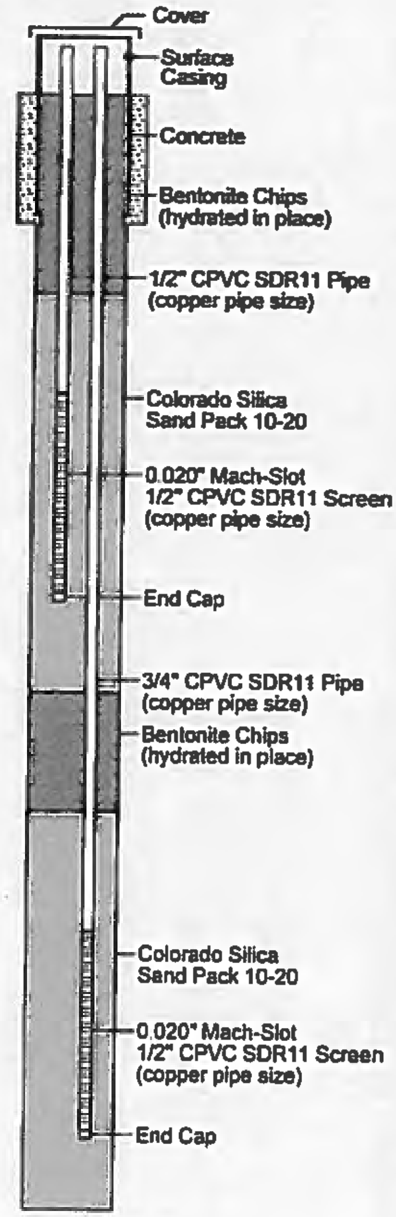
GAS PROBE MW-6R

Logged By	: E. Sonsthagen
Reviewed By	: T. Massart
Surveyed By	: Skanska

Sample Type
Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0–10	Moist, brown, silty, coarse-grained SAND		
10–24	Moist, brown to lt. brown, silty SAND with gravel/smooth cobbles up to 2"		
24–28	Sampling terminated at 24' bgs. Boring continues to 28' bgs.		

Probe1: MW-6Rs
Probe2: MW-6Rd



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 5-24-2007
Hole Diameter	: 30"
Total Depth	: 43'
Drilling Method	: Auger w/11" casing
Drilled By	: DBM
Northing Coordinate	:
Easting Coordinate	:
Top of Casing Elev.	:

EXTRACTION WELL EW-2R

(Page 1 of 1)

Logged By	: E. Sorsthagen
Reviewed By	: T. Massart
Surveyed By	:

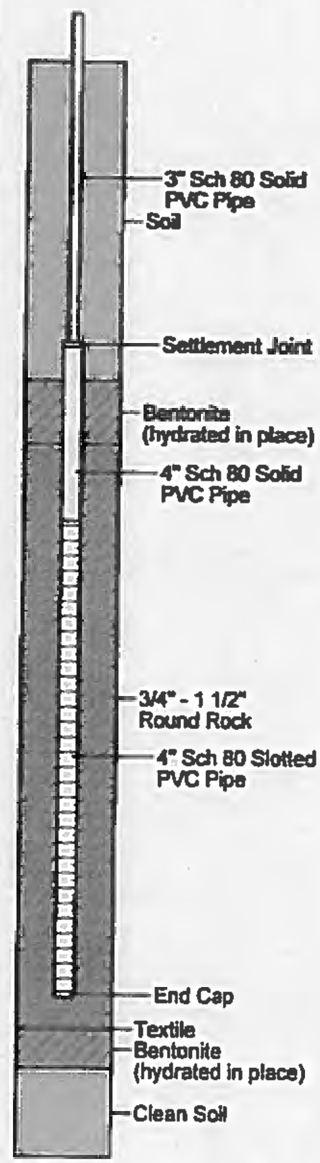
Sample Type

Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0	Moist to very moist, dark brown to very dark brown, poorly graded gravels (rounded cobbles to 4")		
7	Pea gravel at 7' bgs		
10	Refuse - clayey, meal, glass, black plastic, and textiles		
17.5		Temp 54.6	
19.5	Grey clay lense		
21	Refuse - wood, plastics, metal		
24.5		Temp 57.6	
26	Gravel/sandy layer with interbedded refuse (25-30% wood, plastic)		
28.5	28.5 Slightly moist, orange-brown, poorly graded SAND with gravel		
34	Refuse with interbedded clay - glass metal, plastics, dak bronw grading to black		
38	Slightly moist, grey to dark grey, CLAYEY SAND		

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Extraction Well EW-2R



SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 1-27-2007
Hole Diameter	: 30"
Total Depth	: 36'
Drilling Method	: Solid Stem Auger
Drilled By	: San Diego Drilling
Northing Coordinate	:
Easting Coordinate	:
Top of Casing Elev.	:

EXTRACTION WELL EW-3R

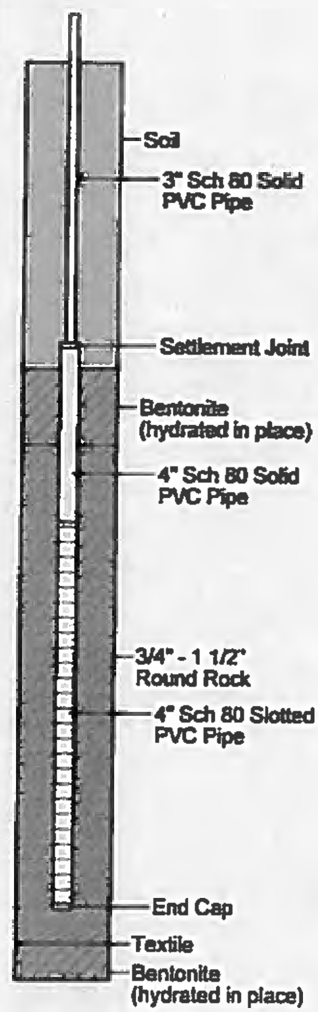
Logged By	: E. Scosthagen
Reviewed By	: T. Massart
Surveyed By	:

Sample Type

[IIIII] Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0		Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL (cobbles to 4")		
5		Some concrete at 7' bgs		
10		CLAYEY GRAVEL with interbedded refuse (5-10% refuse, very dark grey to black, moist to very moist)		
15				
20				
25				
30		CLAYEY GRAVEL with interbedded refuse (5-10% refuse - plastic, textile, glass, very dark grey, saturated)		
35		Moist, light grey, CLAYEY SAND		
40				
45				
50				

Extraction Well EW-3R



SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 1-25-2007
Hole Diameter	: 30"
Total Depth	: 35'
Drilling Method	: Solid Stem Auger
Drilled By	: San Diego Drilling
Northing Coordinate	:
Easting Coordinate	:
Top of Casing Elev	:

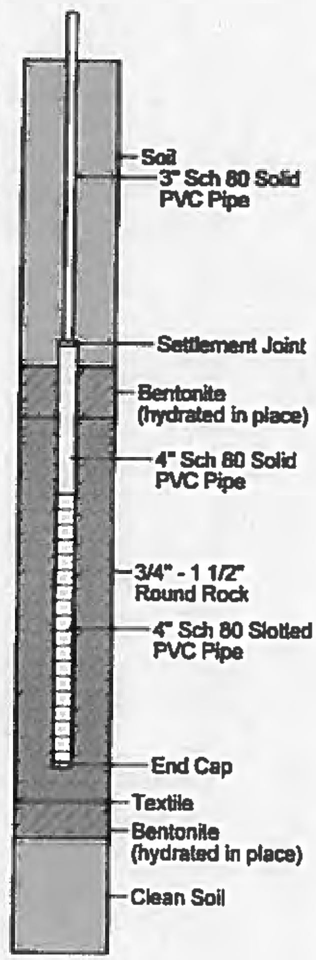
EXTRACTION WELL EW-4R

Logged By	: E Sonsthagen
Reviewed By	: T Massart
Surveyed By	:

Sample Type
Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0	Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL (cobbles to 6") with occasional refuse (glass,cans, metal) Grades to dark grey-brown		
10	Refuse - dark brown to black, metal, paper, plastic, rubber, wood, glass,	Temp 54	
20	Refuse - dark brown, metal, plastic, paper, wood, moist to very moist		
25	Refuse - moist, brown to dark brown, glass, wood, paper	Temp 55	
30	Very moist to saturated, grey to dark grey, silty GRAVEL (rounded cobbles to 6")		
35			

Extraction Well: EW-4R



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 1-26-2007
Hole Diameter	: 30"
Total Depth	: 38'
Drilling Method	: Bucket Auger
Drilled By	: San Diego Drilling
Northing Coordinate	:
Easting Coordinate	:
Top of Casing Elev.	:

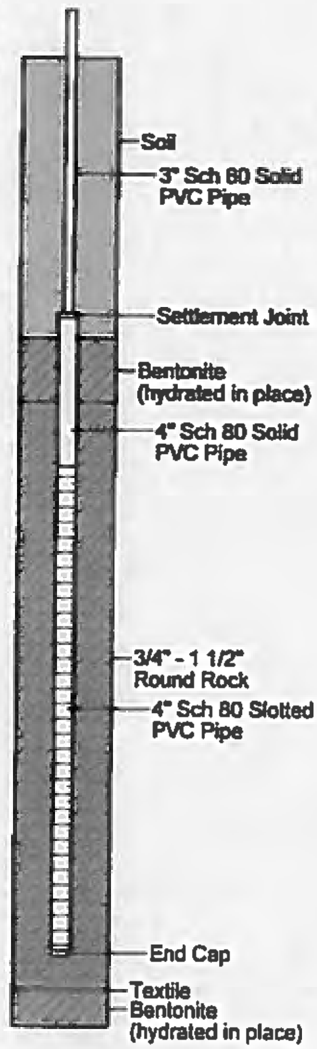
EXTRACTION WELL EW-5R

Logged By	: E. Soosthagen
Reviewed By	: T. Massart
Surveyed By	:

Sample Type
IIIII Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0		Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL		
10		Refuse, textile, paper, wire, plastic, intermittent soil		
16		Moist, dark grey to dark grey-brown, silty GRAVEL (rounded cobbles to 4") with sand	Temp 55	
23		Grades to light grey		

Extraction Well: EW-5R



SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	5-24-2007
Hole Diameter	30"
Total Depth	43'
Drilling Method	Auger w/11' casing
Drilled By	DBM
Northing Coordinate	:
Easting Coordinate	:
Top of Casing Elev	:

EXTRACTION WELL EW-2R

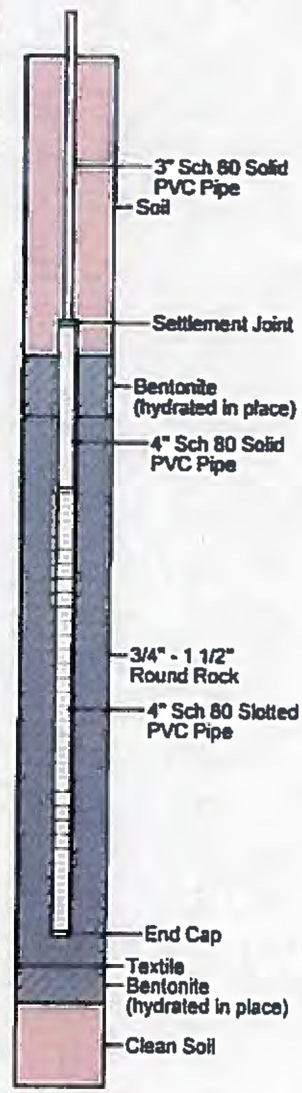
(Page 1 of 1)

Logged By	E. Sonsthagen
Reviewed By	T. Massart
Surveyed By	:

Sample Type: Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0	Moist to very moist, dark brown to very dark brown, poorly graded gravels (rounded cobbles to 4")		
7	Pea gravel at 7' bgs		
10	Refuse - clayey, meal, glass, black plastic, and textiles	Temp 54.6	
19.5	Grey clay lense		
20	Refuse - wood, plastics, metal	Temp 57.6	
26.5	Gravel/sandy layer with interbedded refuse (25-30% wood, plastic)		
28.5	28.5 Slightly moist, orange-brown, poorly graded SAND with gravel		
34	Refuse with interbedded clay - glass metal, plastics, dak bronw grading to black		
38	Slightly moist, grey to dark grey, CLAYEY SAND		

Extraction Well: EW-2R



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	1-27-2007
Hole Diameter	30"
Total Depth	36'
Drilling Method	Solid Stem Auger
Drilled By	San Diego Drilling
Northing Coordinate	
Easting Coordinate	
Top of Casing Elev	

EXTRACTION WELL EW-3R

(Page 1 of 1)

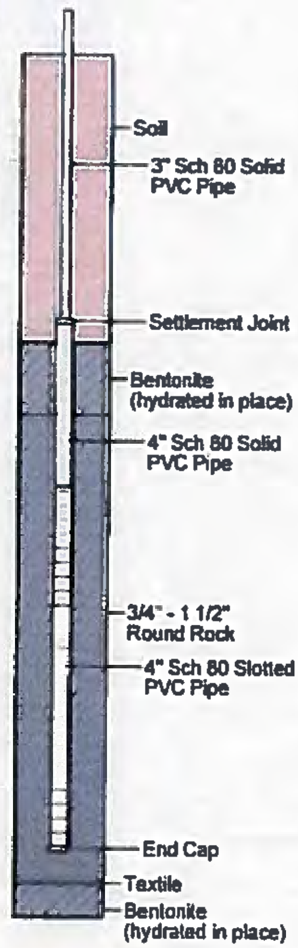
Logged By	E Scnsthagen
Reviewed By	T. Massart
Surveyed By	

Sample Type

Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0–8		Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL (cobbles to 4") Some concrete at 7' bgs		
8–35		CLAYEY GRAVEL with interbedded refuse (5-10% refuse, very dark grey to black, moist to very moist) CLAYEY GRAVEL with interbedded refuse (5-10% refuse - plastic, textile, glass, very dark grey, saturated)		
35–36		Moist, light grey, CLAYEY SAND		

Extraction Well EW-3R



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	1-26-2007
Hole Diameter	30"
Total Depth	35'
Drilling Method	Solid Stem Auger
Drilled By	San Diego Drilling
Northing Coordinate	
Easting Coordinate	
Top of Casing Elev	

EXTRACTION WELL EW-4R

(Page 1 of 1)

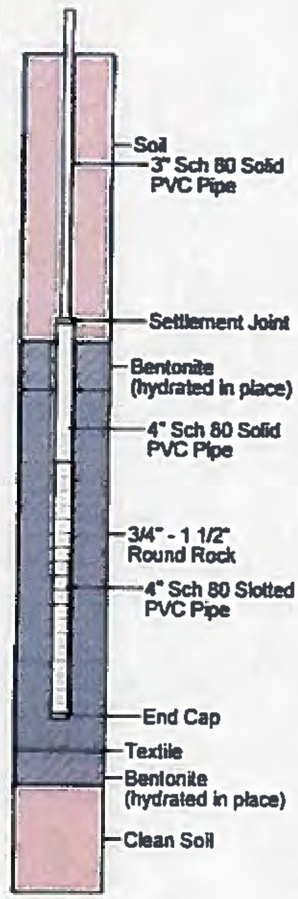
Logged By	E. Sandhagen
Reviewed By	T. Massart
Surveyed By	

Sample Type

Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0	Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL (cobbles to 6") with occasional refuse (glass,cans, metal)		
5	Grades to dark grey-brown		
10	Refuse - dark brown to black, metal, paper, plastic, rubber, wood, glass.		
15		Temp 54	
20	Refuse - dark brown, metal, plastic, paper, wood, moist to very moist		
25	Refuse - moist, brown to dark brown, glass, wood, paper	Temp 55	
30	Very moist to saturated, grey to dark grey, silty GRAVEL (rounded cobbles to 6")		
35			
40			
45			
50			

Extraction Well EW-4R



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	1-26-2007
Hole Diameter	30"
Total Depth	38'
Drilling Method	Bucket Auger
Drilled By	San Diego Drilling
Northing Coordinate	
Easting Coordinate	
Top of Casing Elev.	

EXTRACTION WELL EW-5R

(Page 1 of 1)

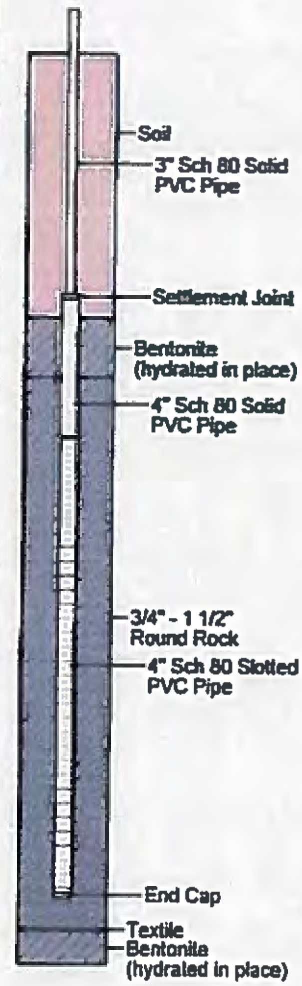
Logged By	E. [illegible]
Reviewed By	T. [illegible]
Surveyed By	

Sample Type

Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0	Moist to very moist, brown to dark brown, silty, coarse-grained GRAVEL		
10	Refuse, textile, paper, wire, plastic, intermittent soil		
16	Moist, dark grey to dark grey-brown, silty GRAVEL (rounded cobbles to 4") with sand	Temp 55	
22	Grades to light grey		

Extraction Well EW-5R



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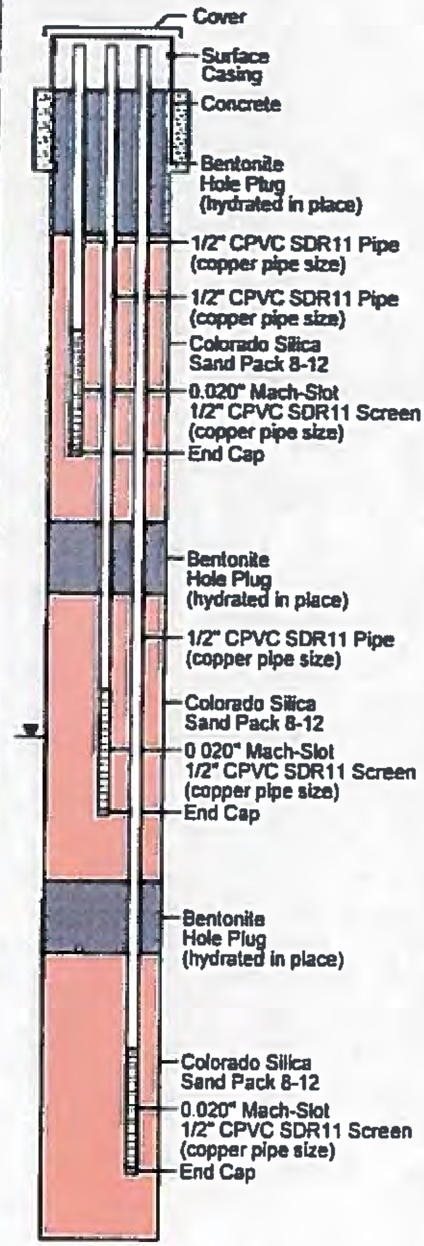
SCS ENGINEERS			GAS PROBE MW-2R (Page 1 of 1)	
Boeing Eastgate Landfill Bellevue, WA 04206007.00	Date Start/Complete	9/6/07	Logged By	S. Bond
	Hole Diameter	8"	Reviewed By	T. Massart
	Total Depth	48'	Surveyed By	Skanska
	Drilling Method	Air Rotary		
	Drilled By	Environmental West		
	Northing Coordinate	215527.28		
	Easting Coordinate	1320758.44		
	Top of Casing Elev	344.19		

Sample Type

Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0				
5		Grey, fine to medium SAND with silt and fine gravel		
10		Damp, dark grey, fine to medium SAND with silt and trace fine gravel		
15		Damp, dark grey, silty, fine to medium SAND with trace fine gravel		
20		Damp, dark grey, silty fine to medium SAND		
25		Moist, dark grey, medium to coarse SAND with silt and trace fine gravel		
30		Moist/wet, grey, silty, fine to coarse SAND with trace fine gravel		
35		Moist, brown, fine gravelly, medium to coarse SAND with silt		
40				
45		Moist/wet, brown, medium to coarse SAND with trace silt		
50				

Probe1: MW-2Rs 14.90'
Probe2: MW-2Rm 29.75'
Probe3: MW-2Rd 45.05'

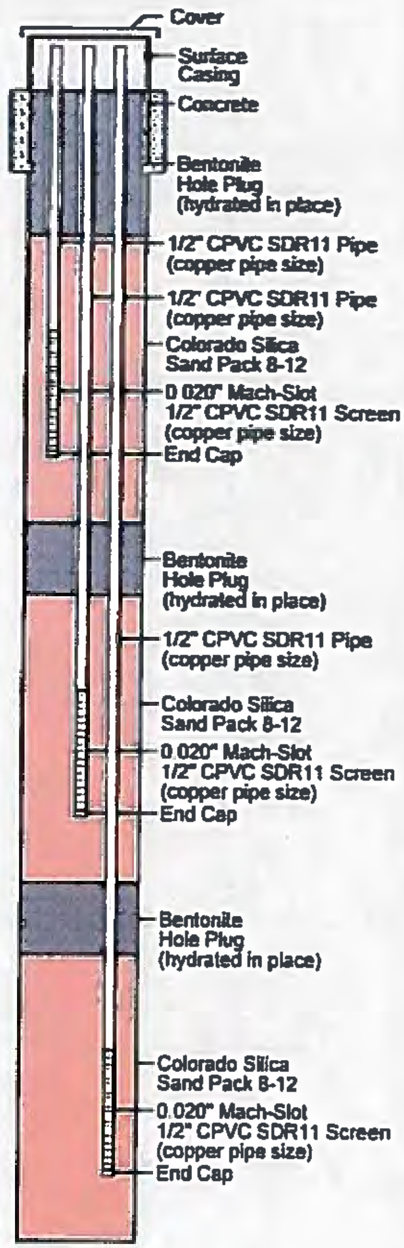


SCS ENGINEERS Boeing Eastgate Landfill Bellevue, WA 04206007.00	Date Start/Complete : 9/6/07 Hole Diameter : 8" Total Depth : 48' Drilling Method : Air Rotary Drilled By : Environmental West Northing Coordinate : 215581.20 Easting Coordinate : 1320531.95 Top of Casing Elev : 348.80	**GAS PROBE MW-3R2** (Page 1 of 1) Logged By : S Bond Reviewed By : T. Mussat Surveyed By : Skanska

Sample Type: Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0–10	Damp, grey, gravelly, silty, fine to medium SAND		Cuttings
10–18	Brown, fine to medium SAND with trace fine gravel		Cuttings
18–30	Damp, grey, fine to medium SAND with trace silt, fine gravel and organics Damp/moist, dark grey/black, medium to coarse SAND with fine to medium gravel and trace organics		Cuttings
30–48	Moist, grey, plastic SILT with fine to medium SAND and trace fine gravel Moist, grey, fine to medium sandy, plastic SILT with fine gravel		Cuttings

Probe1: MW-3R2s 14.80'
Probe2: MW-3R2m 29.70'
Probe3: MW-3R2d 45.05'



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	9/6/07 - 9/7/07
Hole Diameter	8"
Total Depth	48'
Drilling Method	Air Rotary
Drilled By	Environmental West
Northing Coordinate	215873.15
Easting Coordinate	1320524.63
Top of Casing Elev.	349.04

GAS PROBE MW-4R2

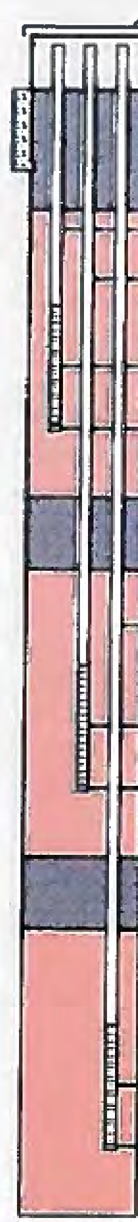
Logged By	S. Bond
Reviewed By	T. Massart
Surveyed By	Skarsda

Sample Type

Cuttings Sample

Depth (ft)	DESCRIPTION	REMARKS	Sample
0–13	Damp, brown, silty, fine to medium SAND		Cuttings Sample
	Damp/dry, brown, fine to medium SAND		Cuttings Sample
13–20	Damp, grey, fine to medium SAND with trace gravel		Cuttings Sample
20–30	Damp, dark brown, fine to medium SAND		Cuttings Sample
	Damp, dark brown, fine to medium SAND with gravel, silt and trace organics		Cuttings Sample
30–48	Moist, grey, fine to medium SAND with silt and trace fine to medium gravel		Cuttings Sample
	Damp, grey, fine to medium SAND with fine gravel		Cuttings Sample
	Damp, grey, fine to medium SAND with fine gravel and silt		Cuttings Sample
		Water encountered at ~45' bgs	Cuttings Sample

Probe1: MW-4R2s
Probe2: MW-4R2m
Probe3: MW-4R2d



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SCS ENGINEERS

Boeing Eastgate Landfill
Bellevue, WA
04206007.00

Date Start/Complete	: 12-18-2007
Hole Diameter	: 6"
Total Depth	: 28.5'
Drilling Method	: Air Rotary
Drilled By	: Environmental West
Northing Coordinate	: 215753.36
Easting Coordinate	: 1320409.73
Top of Casing Elev	: 348.44

GAS PROBE MW-5R

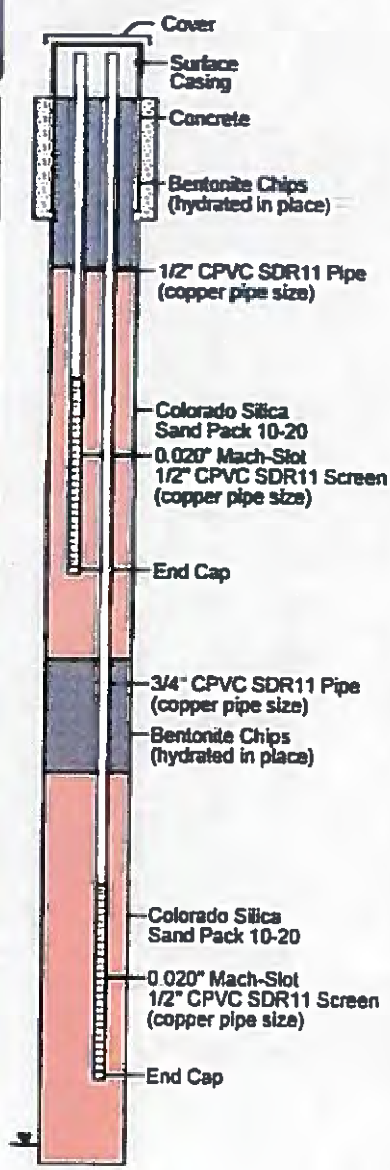
(Page 1 of 1)

Logged By	: B. Dean
Reviewed By	: T. Massart
Surveyed By	: Skanska

Sample Type: Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0		Drilling through fill. Air coming up around outside of casing. Casing spinning with cutting bit. No cuttings to surface.		
5		Grey, fine-grained, silty SAND with organics (small pieces of wood)		
10		Grey, fine-grained, silty SAND Moist to wet @ 28' bgs		
15				
20				
25				
30				

Probe1: MW-5Rs
Probe2: MW-5Rd

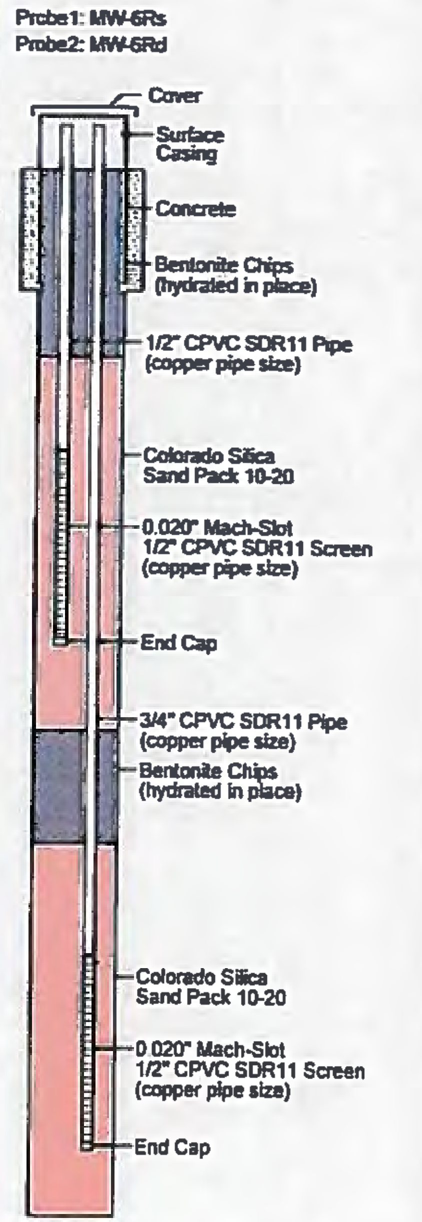


SCS ENGINEERS		
Boeing Eastgate Landfill Bellevue, WA 04206007.00	Date Start/Complete: 4-28-2008 Hole Diameter: 8" Total Depth: 28' Drilling Method: Air Rotary Drilled By: Environmental West Northing Coordinate: 215841.46 Easting Coordinate: 1320317.07 Top of Casing Elev: 351.16	**GAS PROBE MW-6R** (Page 1 of 1) Logged By: E Sorsthagen Reviewed By: T Massart Surveyed By: Skeeska

Sample Type: Cuttings Sample

Depth (ft)	GRAPHIC	DESCRIPTION	REMARKS	Sample
0–10		Moist, brown, silty, coarse-grained SAND		
10–24		Moist, brown to lt. brown, silty SAND with gravel/smooth cobbles up to 2"		
24–28		Sampling terminated at 24' bgs. Boring continues to 28' bgs.		

Depth scale: 0, 5, 10, 15, 20, 25, 30



07-03-2008 G:\04206007.00\Boring Logs\MW-6R.bor

APPENDIX

GENERALIZED SOIL LOGS

The generalized soil logs for the extraction wells, monitor wells and condensate traps are based on drill cuttings and other observations during construction activities. The soils have been classified visually in general accordance with ASTM D-2487-83.

GENERALIZED EXTRACTION WELL SOIL LOGS

EW-1	0 - 25 FEET	BROWN SILT AND SANDY SILT WITH PIECES OF CONCRETE
	25 - 38 FEET	BROWNISH-GRAY FINE TO COARSE SAND WITH GRAVEL AND OCCASIONAL COBBLES
EW-2	0 - 9 FEET	BROWN SILT WITH PIECES OF CONCRETE
	9 - 33 FEET	LAYERS OF SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES AND LANDFILL DEBRIS (DOMESTIC)
	33 - 35 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
EW-3	0 - 13 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL, COBBLES, RED BRICK AND CONCRETE
	13 - 33 FEET	DARK GRAY SILT WITH LANDFILL DEBRIS (WOOD AND DOMESTIC WASTE)
	33 - 41 FEET	BROWN GRADING TO GRAY SILTY FINE TO MEDIUM SAND WITH A TRACE OF GRAVEL
EW-4	0 - 15 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES AND WOOD WASTE
	15 - 18 FEET	LOG OR TREE STUMP
	18 - 40 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
EW-5	0 - 6 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
	6 - 7 FEET	LANDFILL DEBRIS (PRIMARILY DOMESTIC WASTE)
	7 - 42 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
EW-6	0 - 40 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND COBBLES GRADES TO GRAY AT 5 FEET

EW-7	0 - 42 FEET	BROWN FINE TO MEDIUM SAND WITH SILT AND GRAVEL GRADES TO GRAY AT 5 FEET
EW-8	0 - 3 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL AND COBBLES
	3 - 5 FEET	LANDFILL DEBRIS (DOMESTIC WASTE) WITH SILTY SAND
	5 - 40 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL AND COBBLES
EW-9	0 - 1 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
	1 - 21 FEET	GRAY SILTY FINE TO MEDIUMS AND WITH LANDFILL DEBRIS
	21 - 37 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL
EW-10	0 - 9 FEET	SILTY SAND WITH GRAVEL
	9 - 31 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
EW-11	0 - 19 FEET	SILTY SAND WITH GRAVEL
	19 - 32 FEET	LANDFLL DEBRIS (DOMESTIC WASTE)
EW-12	0 - 3 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
	3 - 20 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL CONCRETE AND RED BRICK
	20 - 30 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND LANDFILL DEBRIS (DOMESTIC WASTE)
	30 - 35 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH A TRACE OF GRAVEL
EW-13	0 - 15 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL AND COBBLES
	15 - 20 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND AND LANDFILL DEBRIS (WOOD WASTE)
	20 - 30 FEET	GRAY GRAVELLY FINE TO COARSE SAND WITH A TRACE OF SILT
	30 - 38 FEET	BROWN MEDIUM TO COARSE SAND WITH A TRACE OF GRAVEL AND COBBLES

EW-14	0 - 8 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL AND COBBLES
	8 - 25 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
	25 - 30 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH OCCASIONAL GRAVEL
	30 - 35 FEET	GRAY GRAVELLY MEDIUM TO COARSE SAND
	35 - 39 FEET	GRAY SILTY GRAVEL WITH SAND
EW-15	0 - 3 FEET	PIT RUN FILL
	3 - 13 FEET	DARK GRAY SILTY SAND WITH LANDFILL DEBRIS
	13 - 30 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND SOME LANDFILL DEBRIS
	30 - 38 FEET	GRAY FINE TO COARSE SAND WITH GRAVEL SLOW GROUND WATER SEEPAGE AT 3 FEET
EW-16	0 - 5 FEET	GRAY GRAVELLY FINE TO COARSE SAND WITH SILT
	5 - 13 FEET	DARK BROWN TO BLACK SILT AND LANDFILL DEBRIS (DOMESTIC WASTE)
	13 - 28 FEET	GRAY SILTY GRAVELLY FINE TO MEDIUM SAND
	28 - 35 FEET	GRAY FINE TO COARSE SAND WITH GRAVEL AND A TRACE OF SILT
	35 - 37 FEET	BROWN FINE TO MEDIUM SAND WITH A TRACE OF GRAVEL
EW-17	0 - 8 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND TREE ROOTS
	8 - 19 FEET	BROWNISH-GRAY FINE TO MEDIUM SAND WITH GRAVEL, OCCASIONAL COBBLES AND A TRACE OF SILT
	19 - 24 FEET	BROWNISH-GRAY SANDY GRAVEL WITH COBBLES
	24 - 37 FEET	BROWNISH-GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND COBBLES
	37 TO 39 FEET	GRAY FINE TO COARSE SAND WITH A TRACE OF SILT
EW-18	0 - 3 FEET	PIT RUN FILL
	3 - 24 FEET	BROWNISH-GRAY FINE TO MEDIUM SAND WITH GRAVEL AND A TRACE OF SILT
	24 - 25 FEET	GRAVEL AND COBBLES
	25 - 38 FEET	BROWNISH-GRAY FINE TO MEDIUM SAND WITH GRAVEL AND A TRACE OF SILT

EW-19	0 - 2 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
	2 - 15 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND WITH PIECES OF CONCRETE AND ASPHALT
	15 - 36 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND WITH LAYERS OF LANDFILL DEBRIS (DOMESTIC WASTE)
EW-20	0 - 7 FEET	BROWN GRAVELLY FINE TO MEDIUM SAND WITH SILT
	7 - 27 FEET	LAYERS OF GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL, OCCASIONAL COBBLES AND LANDFILL DEBRIS (DOMESTIC WASTE)
	27 - 33 FEET	GRAY SILTY FINE TO MEDIUM SAND GROUND WATER ENCOUNTERED AT 33 FEET
EW-21	0 - 2 FEET	BROWN FINE TO MEDIUM SAND WITH GRAVEL
	2 - 9 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
	9 - 19 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND WITH LAYERS OF LANDFILL DEBRIS (DOMESTIC)
	19 - 40 FEET	BROWNISH-GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL

GENERALIZED MONITOR WELL SOIL LOGS

MW-1	0 - 34 FEET	BROWN FINE TO MEDIUM SAND WITH GRAVEL, A TRACE OF SILT AND OCCASIONAL COBBLES NO GROUND WATER OBSERVED ATD
MW-2	0 - 29 FEET	BROWN FINE TO MEDIUM SAND WITH GRAVEL AND COBBLES AND A TRACE OF SILT
	29 - 32 FEET	BROWN AND GRAY CLAYEY SILT
	32 - 35 FEET	GRAY FINE TO MEDIUM SAND WITH A TRACE OF GRAVEL GROUND WATER LEVEL AT 31 FEET ATD
MW-3	0 - 10 FEET	SILTY SAND AND PIECES OF CONCRETE
	10 - 27 FEET	SILTY SAND WITH GRAVEL
	27 - 30 FEET	LANDFILL DEBRIS (DOMESTIC)
	30 - 43.5 FEET	SILTY SAND WITH GRAVEL NO GROUND WATER OBSERVED ATD
MW-4	0 - 20 FEET	BROWN SILTY SAND WITH GRAVEL AND COBBLES, ABUNDENT ROOTS FROM 15 TO 20 FEET
	20 - 44.5 FEET	GRAY SILTY SAND WITH GRAVEL GROUND WATER LEVEL AT 35 FEET ATD

MW-5	0 - 9 FEET	BROWN SILTY SAND WITH GRAVEL
	9 - 25 FEET	GRAY SILTY SAND WITH A TRACE OF GRAVEL
	25 - 31 FEET	GRAY SAND WITH SILT
		GROUND WATER LEVEL AT 25 FEET ATD
MW-6	0 - 2 FEET	SILTY SAND WITH GRAVEL
	2 - 38 FEET	GRAY SILTY SAND WITH GRAVEL AND COBBLES
	38 - 45 FEET	GRAY SAND WITH SILT
		GROUND WATER AT 28 FEET ATD
MW-7	0 - 32 FEET	SILTY SAND WITH GRAVEL
	32 - 41.5 FEET	GRAY SILTY SAND WITH GRAVEL AND SAND WITH SILT
		GROUND WATER LEVEL AT 34 FEET ATD
MW-8	0 - 48 FEET	GRAY FINE SAND WITH SILT AND A TRACE OF GRAVEL AND OCCASIONAL COBBLES
		GROUND WATER LEVEL AT 46 FEET ATD
MW-9	0 - 4 FEET	BROWN SILTY SAND WITH GRAVEL
	4 - 22 FEET	GRAY MEDIUM SAND WITH SILT AND A TRACE OF GRAVEL
	22 - 27 FEET	GRAY AND BROWN MEDIUM SAND WITH GRAVEL AND COBBLES
		NO GROUND WATER OBSERVED ATD
MW-10	0 - 2 FEET	BROWN SILTY SAND WITH GRAVEL AND ROOTS
	2 - 12.5 FEET	GRAY AND BROWN MEDIUM TO COARSE SAND WITH GRAVEL AND OCCASIONAL COBBLES
		NO GROUND WATER OBSERVED ATD
MW-11	0 - 2 FEET	BROWN SILTY SAND WITH GRAVEL AND ROOTS
	2 - 12 FEET	GRAY AND BROWN MEDIUM TO COARSE SAND WITH GRAVEL AND OCCASIONAL COBBLES
		NO GROUND WATER OBSERVED ATD
MW-12	0 - 6 FEET	BROWN SILTY SAND WITH GRAVEL
	6 - 34 FEET	GRAY MEDIUM TO COARSE SAND WITH SILT AND GRAVEL AND OCCASIONAL COBBLES
	34 - 41 FEET	GRAY MEDIUM TO COARSE SAND WITH GRAVEL AND COBBLES
		GROUND WATER LEVEL AT 36 FEET ATD
MW-13	0 - 25 FEET	GRAY SILTY SAND WITH GRAVEL AND COBBLES
	25 - 32 FEET	BROWN SAND WITH SILT AND GRAVEL
	32 - 48 FEET	BROWN MEDIUM TO COARSE SAND WITH A TRACE OF GRAVEL AND OCCASIONAL COBBLES
		SLIGHT SEEPAGE ENCOUNTERED IN UPPER HALF OF BORING ATD

MW-14	0 - 20 FEET	GRAY MEDIUM SAND WITH SILT, GRAVEL AND COBBLES
	20 - 31 FEET	GRAY SILTY SAND WITH GRAVEL
	31 - 45 FEET	BROWN MEDIUM TO COARSE SAND WITH A TRACE OF GRAVEL SLIGHT SEEPAGE AT VARIOUS DEPTHS ATD
MW-15	0 - 20 FEET	GRAY MEDIUM SAND WITH SILT, GRAVEL AND COBBLES
	20 - 35 FEET	GRAY SILTY SAND WITH GRAVEL
	35 - 41 FEET	BROWN MEDIUM TO COARSE SAND GROUND WATER SEEPAGE OBSERVED FROM 4 TO 16 FEET AND 36 TO 41 FEET ATD
MW-16	0 - 3 FEET	BROWN MEDIUM SAND WITH GRAVEL
	3 - 24 FEET	BROWN AND GRAY SILTY SAND WITH GRAVEL
	24 - 46.5 FEET	BROWN MEDIUM SAND WITH GRAVEL AND COBBLES MODERATE SEEPAGE OBSERVED AT 6 FEET ATD
MW-17	0 - 6 FEET	BROWN SILTY SAND WITH GRAVEL
	6 - 25 FEET	GRAY SILTY SAND WITH GRAVEL AND OCCASIONAL COBBLES
	25 - 44.5 FEET	BROWN FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES SEEPAGE OBSERVED AT 6 FEET ATD
MW-18	0 - 3 FEET	BROWN MEDIUM SAND
	3 - 25 FEET	BROWN SILTY SAND WITH GRAVEL AND OCCASIONAL COBBLES NO GROUND WATER OBSERVED ATD

GENERALIZED CONDENSATE TRAP SOIL LOGS

CT-1	0 - 5	SILTY SAND WITH GRAVEL
	5 - 10 FEET	SILTY SAND AND LANDFILL DEBRIS (DOMESTIC WASTE)
	10 - 18 FEET	SILTY SAND WITH GRAVEL
CT-2	0 - 9 FEET	SILTY SAND WITH GRAVEL
	9 - 15 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
CT-3	0 - 8 FEET	SILTY SAND WITH GRAVEL
	8 - 16 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
	16 - 20 FEET	SILTY SAND WITH GRAVEL

CT-4	0 - 10 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
	10 - 13.5 FEET	LANDFILL DEBRIS (WOOD WASTE)
	13.5 - 20 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL
CT-5	0 - 13 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES AND CONCRETE
	13 - 17 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND AND LAYERS OF LANDFILL DEBRIS (DEMOLITION AND DOMESTIC)
CT-6	0 - 6 FEET	BROWN SILTY FINE TO EMDIUM SAND WITH GRAVEL
	6 - 21 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND WITH LAYERS OF LANDFILL DEBRIS (DOMESTIC WASTE)
CT-7	0 - 5 FEET	SILTY SAND WITH GRAVEL
	5 - 15 FEET	SILTY SAND AND LANDFILL DEBRIS (DOMESTIC WASTE)
CT-8	0 - 3 FEET	SILTY SAND WITH GRAVEL
	3 - 18 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
CT-9	0 - 11 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
	11 - 16 FEET	DARK GRAY SILTY FINE TO MEDIUM SAND WITH LANDFILL DEBRIS
	16 - 17 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL
CT-10	0 - 15 FEET	SILTY SAND WITH GRAVEL
	15 - 17 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
CT-11	0 - 12 FEET	SILTY SAND WITH GRAVEL
	12 - 16 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
CT-12	0 - 5 FEET	BROWN SILTY FINE TO MEDIUM SAND WITH GRAVEL
	5 - 13 FEET	GRAY SILTY FINE TO MEDIUM SAND WITH LAYERS OF LANDFILL DEBRIS
	13 - 18 FEET	BROWNISH-GRAY SILTY FINE TO MEDIUM SAND WITH GRAVEL AND OCCASIONAL COBBLES
CT-13	0 - 5 FEET	SILTY SAND WITH GRAVEL
	5 - 15 FEET	LANDFILL DEBRIS (DOMESTIC WASTE)
	15 - 17 FEET	SILTY SAND WITH GRAVEL

EL 101

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
5	S-1	b2	20	
10	S-2	b2	50/ 6"	
15	S-3	b2	50/ 4"	
20	S-4	b2	50/ 6"	
25	S-5	b2	50/ 6"	
30	S-6	b2	83	
	S-7	b2	90	
	S-8	b2	50/ 6"	

SOIL PROFILE

Drilling Method: Air Rotary & Hollow Stem Auger

Ground Elevation (ft): 346 6 (MSL)

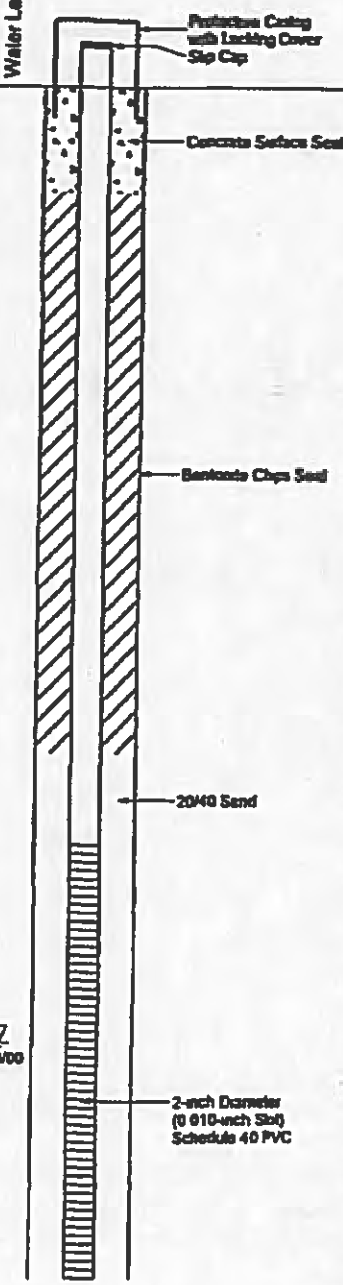
Drilled By: Cascade Drilling

Graphic Symbol	USCS Symbol	Description
	SM	Brown and gray-brown, fine to coarse SAND, with silt, trace of gravel (medium dense, damp) (fill)
	SP-SM	Gray, fine SAND with silt and gravel (very dense, damp to wet) (fill)
	SP	Gray to brown, fine and fine to medium SAND with trace gravel and silt (very dense, wet) (advance outwash)

GROUNDWATER

Water Level: 8/20/00

Detail



Notes
1 Stratigraphic contacts are based on field interpretations and are approximate
2 Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3 Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25089 016 9/26/00 G:\MODELING\GINT\PROJECTS\25089.GPJ WELL LOG

Log of Boring and EL 101

Figure A-2

EL 101

SAMPLE DATA

Drilling Method: Air Rotary & Hollow Stem Auger
Ground Elevation (ft): 345 6 (MSL)
Drilled By: Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
35	S-9	b2	57	
	S-10	b2	50/ 0 5"	
	S-11	b2	50/ 0 5"	
	S-12	b2	58	
40	S-13	b2	50	
	S-14	b2	85	
	S-15	b2	50/ 4"	
45	S-16	b2	83/ 11"	
50	S-17	b2	50/ 4"	
	S-18	b2	50/ 4"	
55	S-19	b2	50/ 6"	
	S-20	b2	65/ 3"	

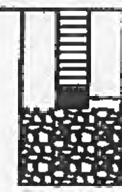
SOIL PROFILE

UBCS Symbol	Description
SP	Gray to brown, fine and fine to medium SAND with trace gravel and silt (very dense, wet) (advance outwash)
SP-SM	Gray to gray-brown, silty, fine and fine to medium fine SAND with fine gravel (very dense, damp to moist) (advance outwash)
GM	Gray to gray-brown silty sandy GRAVEL (very dense, damp to wet) (advance outwash)

GROUNDWATER

Water Level

Detail



Boring Completed 07/07/00
Total Depth of Boring = 58 3 ft.

Completed 07/18/00
Elevation at Top of Protective Casing = 349 97 ft.
Elevation at Top of Casing = 349 58 ft
Total Depth of = 36 6 ft.

Notes
1 Stratigraphic contacts are based on field interpretations and are approximate
2 Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3 Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25088 015 9/26/00 3 WODEL\HGNTHP\PROJECTS\25088 GPJ WELL LOG

Log of Boring and EL 101

Figure A-2
(2 of 2)

EL 102

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Water Level

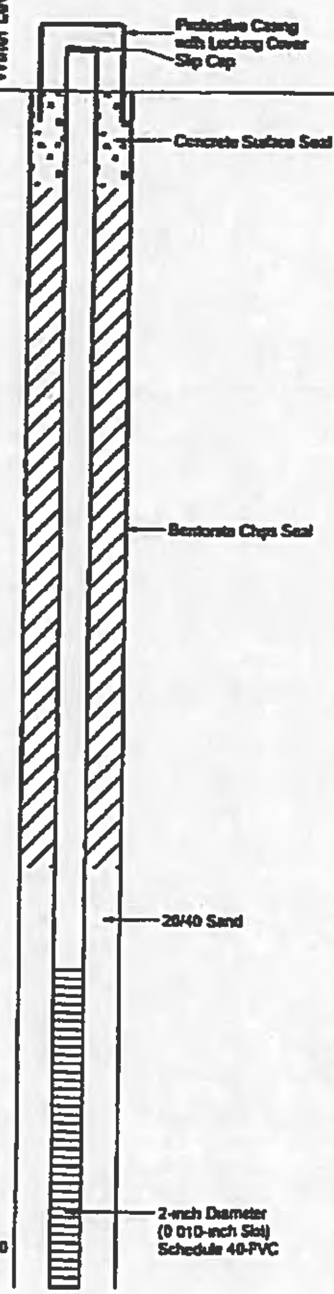
Drilling Method Hollow-stem Auger

Ground Elevation (ft) 350.3 (MSL)

Drilled By Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	USCS Symbol	Description	Water Level
0					SM	Light brown, gravelly silty fine SAND (very dense, damp) (weathered till)	
	S-1	b2	50/5"				
5							
					SM	Gray to brown, silty fine SAND with gravel (dense, moist to damp) (till)	
	S-2	b2	74/11"				
10							
	S-3	b2	50/6"				
15							
	S-4	b2	50/5"				
20							
					SP	Gray, fine to medium SAND with gravel (very dense, moist to wet) (advance sand)	
	S-5	b2	50/6"				
25							
	S-6	b2	50/5"				
30							
	S-7	b2	50/6"				
35							▽ 8/20/00

Detail



Notes. 1 Stratigraphic contacts are based on field interpretations and are approximate
2 Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3 Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25099 018 9/28/00 S:\MODELING\GINTW\PROJECTS\25099.GPJ WELL LOG

Log of Boring and EL 102	Figure A-3 (1 of 2)

EL 102

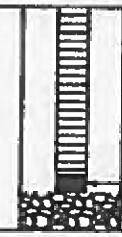
Drilling Method: Hollow-stem Auger
Ground Elevation (ft): 350.3 (MSL)
Drilled By: Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Soil Profile
						SP	Gray, fine to medium SAND with gravel (very dense, moist to wet) (advance sand)
	S-8	S2	50/ 5"				-with trace silt
40							
						SP-SM	Gray, fine to medium SAND with gravel and silt (very dense, wet) (advance sand)
	S-9	S2	50/ 4"				
45							

Boring Completed 07/20/00
Total Depth of Boring = 43.9 ft.

GROUNDWATER

Water Level | Detail



Completed 07/20/00
Elevation at Top of Protective Casing = 353.24 ft.
Elevation at Top of Casing = 352.83 ft.
Total Depth of = 42.7 ft.

Depth scale: 50, 55, 60, 65, 70

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols.

25069 015 8/28/00 S:\MODEL\NIGHTW\PROJECTS\25069.GPJ WELL LOG

Log of Boring and EL 102

Figure A-3
(2 of 2)

EL 103

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
	S-1	b2	17	
5	S-2	b2	4	
	S-3	b2	12	
10	S-4	b2	12	
	S-5	b2	50/ 6"	
15	S-6	b2	50/ 5"	
	S-7	b2	50/ 4"	
25	S-8	b2	38	

Boring Completed 07/21/00
Total Depth of Boring = 26.5 ft.

SOIL PROFILE

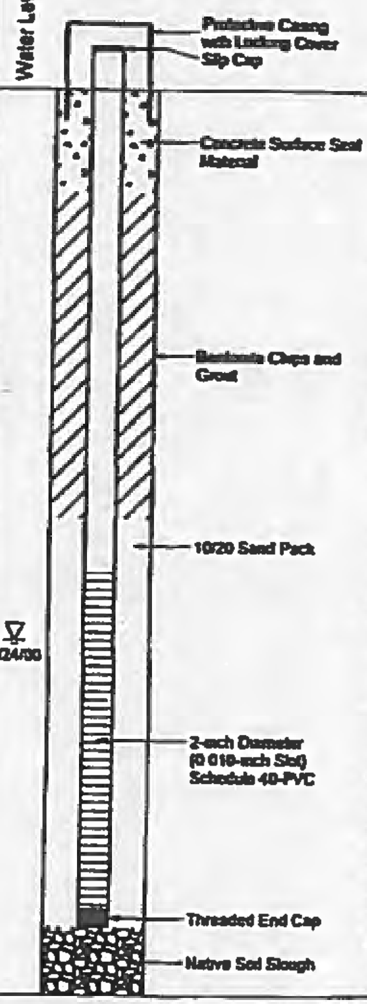
Drilling Method: Hollow-stem Auger
Ground Elevation (ft): 308.2 (MSL)
Drilled By: Cascade Drilling

Graphic Symbol	USCS Symbol	Description
	SM	Brown and gray mottled, gravelly, silty, fine to medium SAND with trace charcoal-like material (medium dense, moist to wet) (fill)
	SM	Brown to dark gray, gravelly, silty, fine to medium SAND with some refuse (brown glass, yellow type print paper, and some wood) (very loose to loose, wet) (mottled fill)
	SM/ ML	Dark brown to gray mottled, gravelly, fine to medium sandy SILT with trace refuge (plastic, wood, aluminum can) (stiff, wet) (fill)
	ML	Light brown to gray-green, clayey SILT, faintly laminated with trace fine roots (stiff, moist to wet) (alluvium)
	SP	Gray, fine SAND with gravel with interbedded fine to medium SAND with silt and gravel (very dense, wet)(advance sand)
		-dense

GROUNDWATER

Water Level: 7/24/00

Detail



Completed 07/21/00
Elevation at Top of Protective Casing = 310.75 ft
Elevation at Top of Casing = 310.07 ft
Total Depth of = 24.5 ft

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols.

25089 016 9/28/00 S:\MODEL\HIGHTW\PROJECTS\25089.GPJ WELL LOG

Log of Boring and EL 103

Figure A-4

EL 104

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
0				
	S-1	b2	11	
5				
	S-2	b2	21	
10				
	S-3	b2	14	
15				
	S-4	b2	38	
20				
25	S-5	b2	46	
	S-6	b2	88	
30				
	S-7	b2	50/ 6"	
35				

SOIL PROFILE

Drilling Method: Hollow-stem Auger

Ground Elevation (ft): 343.1 (MSL)

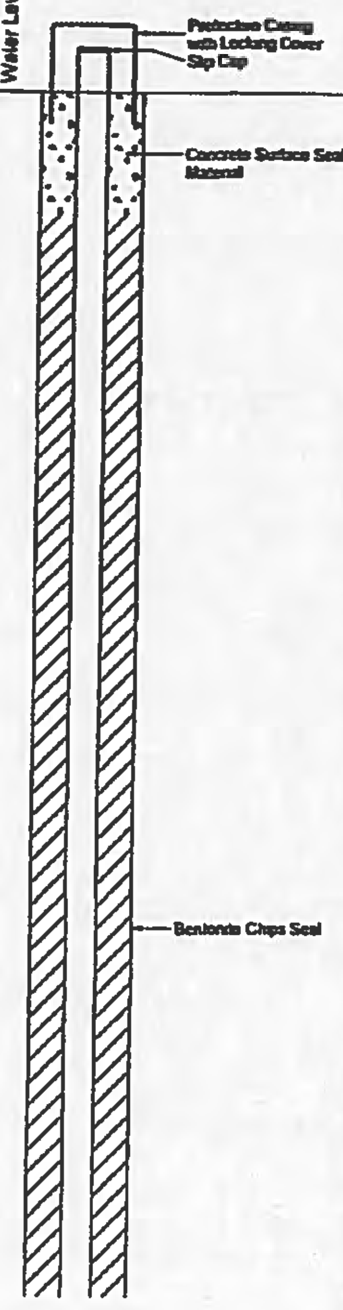
Drilled By: Cascade Drilling

Graphic Symbol	USCS Symbol	Description
	SM	Brown, very silty fine SAND with gravel and fine sandy SILT with gravel (medium dense, moist to wet) (fill)
	SM	Gray and mottled brown and dark brown, gravelly, silty, fine to medium SAND with trace fine organics (medium dense, moist to wet) (fill)
	SM	Light reddish-brown and gray, gravelly, silty fine SAND (medium dense to dense, moist)(fill)
	SP-SM	Brown, gravelly, fine to medium SAND with silt (dense, moist) (fill)
	SP-SM	Brown to light reddish-brown, gravelly, fine to medium SAND with silt to silty, gravelly, fine SAND (dense, moist) (fill)
	SP-SM	Brown, gravelly, fine to medium SAND with silt (very dense, moist) (advance outwash)

GROUNDWATER

Water Level

Detail



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols.

25098 015 9/29/00 S:\MODELING\NTH\PROJECTS\25098 (PJ) WELL LOG

Log of Boring and EL 104

Figure A-5
(1 of 2)

EL 104

SAMPLE DATA

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
35				
	S-8	b2	45	
40				
	S-9	b2	50/ 6"	
45				
	S-10	a1	50/ 6"	
50				
	S-11	a1	50/ 6"	
55				
	S-12	a1	50/ 6"	
60				
	S-13	a1	50/ 6"	
65				
70				

Boring Completed 07/22/00
Total Depth of Boring = 64 8 ft.

SOIL PROFILE

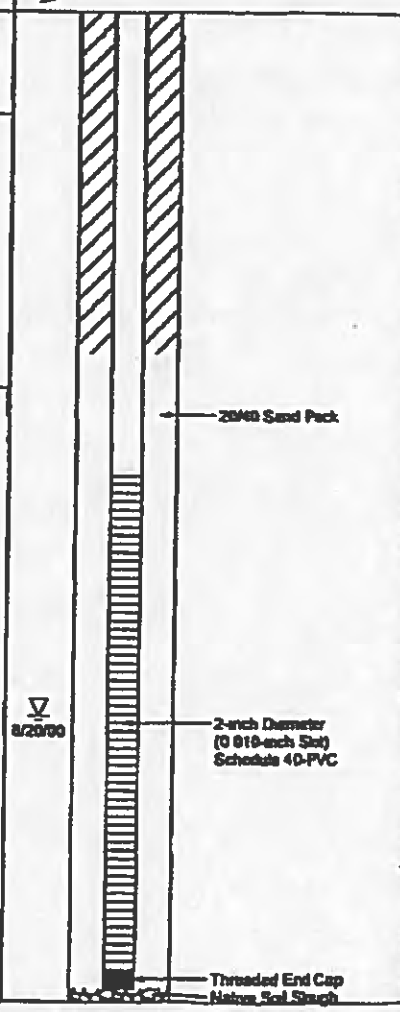
Drilling Method: Hollow-stem Auger
Ground Elevation (ft): 343 1 (MSL)
Drilled By: Cascade Drilling

Graphic Symbol	USCS Symbol	Description
	SP-SM	Brown, gravelly, fine to medium SAND with silt (very dense, moist) (advance outwash)
	SP	-interbedded brown fine SAND, trace gravel and silt
		Brown, interbedded fine SAND, with trace gravel and silt
	SP	Brown, fine to medium SAND with trace gravel and silt (very dense, moist to wet) (advance outwash)

GROUNDWATER

Water Level

Detail



Completed 07/22/00
Elevation at Top of Protective Casing = 345 82 ft
Elevation at Top of Casing = 345 33 ft
Total Depth of = 63 6 ft

Notes
1. Stratigraphic contacts are based on field interpretations and are approximate
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25089 015 8/28/00 S:\MODELING\GINT\WPROJECTS\25089 GPJ WELL LOG

Log of Boring and EL 104

Figure A-5
(2 of 2)

EL 105

SAMPLE DATA / SOIL PROFILE / GROUNDWATER

Drilling Method: Hollow-stem Auger

Ground Elevation (ft): 344.1 (MSL)

Drilled By: Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data
5	S-1	b2	50/ 6"	
10	S-2	a1	50/ 4"	
15	S-3	a1	50/ 5"	
20	S-4	a1	50/ 4"	
25	S-5	a1	50/ 4"	
30	S-6	a1	50/ 5"	
35	S-7	a1	50/ 5"	

Graphic Symbol | USCS Symbol

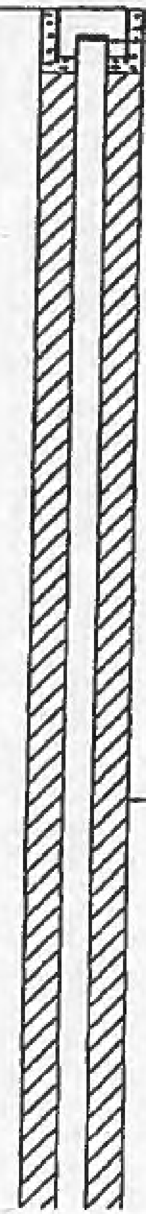
AC — Asphalt pavement

SP-SM — Light brown, gravelly, silty, fine SAND, to silty, gravelly, fine to medium SAND (very dense, damp to wet) (SM)

SW-SP — Brown to light brown, very gravelly to gravelly, fine to course SAND to fine to medium SAND (very dense, moist to wet) (advance outwash)

Water Level

Detail



Notes
1 Stratigraphic contacts are based on field interpretations and are approximate
2 Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3 Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25088 015 9/28/00 ... GPJ WELL LOG

Log of Boring and EL 105	Figure A-8 (1 of 2)

EL 105

SAMPLE DATA / SOIL PROFILE / GROUNDWATER

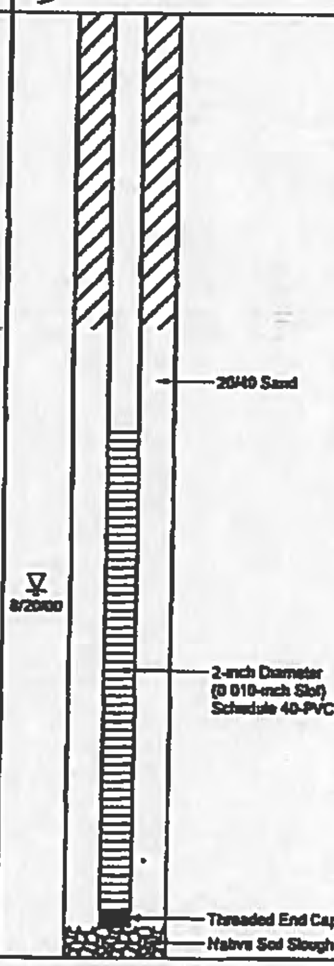
Drilling Method: Hollow-stem Auger
Ground Elevation (ft): 344.1 (MSL)
Drilled By: Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
						SW/SP	Brown to light brown, very gravelly to gravelly, fine to coarse SAND to fine to medium SAND (very dense, moist to wet) (advance outwash)
40	S-8	a1	50/6"				
45	S-9	a1	50/5"				
						SP	Brown to gray, fine SAND with trace silt (very dense, moist) (advance sand)
50	S-10	a1	50/6"				
55	S-11	a1	50/6"				
60	S-12	a1	50/6"				
65							
	S-13	a1	50/6"				
70							
75							

Boring Completed 07/22/00
Total Depth of Boring = 68.0 ft

Groundwater

Water Level / Detail



Completed 07/22/00
Elevation at Top of Protective Casing = 344.05 ft.
Elevation at Top of Casing = 343.69 ft.
Total Depth of = 68.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols.

25088 016 8/28/00 S:\MODELING\GNTW\PROJECTS\25088 (GPJ) WELL LOG

Log of Boring and EL 105

EL 106

Drilling Method: Hollow-stem Auger

Ground Elevation (ft): 343.4 (MSL)

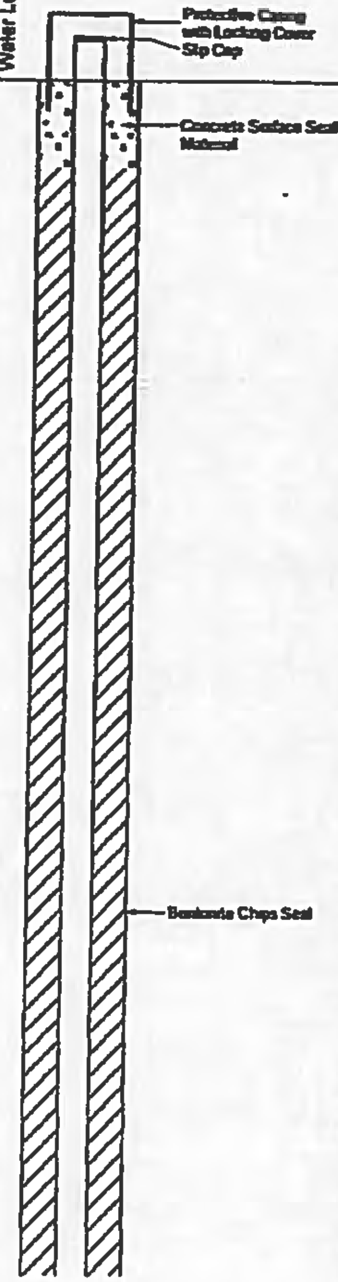
Drilled By: Cascade Drilling

SAMPLE DATA					SOIL PROFILE		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
0						SM	Dark gray, gravelly, silty, fine to medium SAND (very dense, moist) (fill) with trace fine roots and trace charcoal?
5	S-1	b2	50/ 5"				
10	S-2	b2	50/ 5"				-increasing SAND, and decreasing SILT
						SP/ SM	Gray to gray-brown, gravelly, silty, fine to medium SAND to silty, gravelly, fine to medium SAND (very dense, moist to wet) (till)
15	S-3	b2	65/ 5"				
20	S-4	b2	60/ 5"				
25	S-5	b2	70/ 6"				
30	S-6	b2	75/ 4"				
35	S-7	b2	70/ 6"				
						SW-SM	Brown, gravelly fine to course SAND with silt (very dense, moist to wet) (advance outwash)
40	S-8	b2	75/ 5"				

GROUNDWATER

Water Level

Detail



Notes
1. Stratigraphic contacts are based on field interpretations and are approximate
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols

25088 015 9/25/00 B:\MODEL\HOGHTWPROJECT\025088.GPJ WELL LOG

Log of Boring and EL 106

Figure A-7
(1 of 2)

EL 106

SAMPLE DATA / SOIL PROFILE / GROUNDWATER

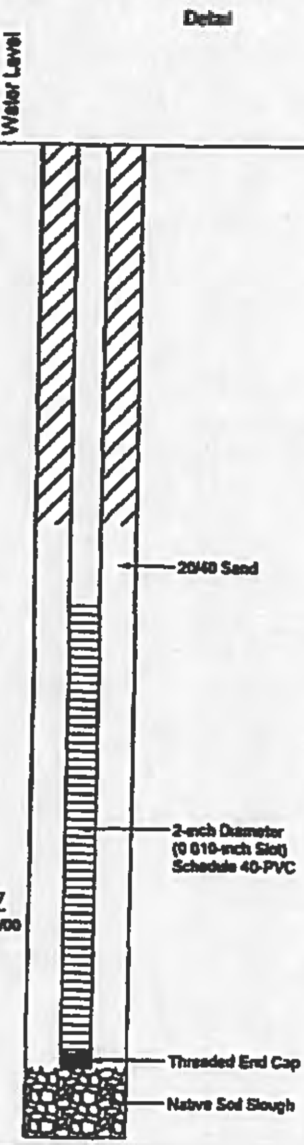
Drilling Method: Hollow-stem Auger

Ground Elevation (ft): 343.4 (MSL)

Drilled By: Cascade Drilling

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Description
						SW-SM	Brown, gravelly fine to coarse SAND with silt (very dense, moist to wet) (advance outwash)
						SP	Brown, fine to medium SAND with trace fine gravel and coarse sand (very dense, moist to wet) (advance outwash)
45	S-9	b2	N/A				
50	S-10	b2	50/5"				
55	S-11	b2	50/6"				
						SP	Brown, fine SAND with trace silt (dense to very dense, moist to wet) (advance outwash)
60	S-12	b2	50/5"				
65	S-13	b2	40				
70	S-14	b2	70				
						SP-SM	Brown, gravelly, fine to medium SAND with silt (very dense, wet) (advance outwash)
						SM	Reddish-brown and gray, SILT with fine sand and clay, thin interbedded (very dense, wet) (lacustrine outwash)
75	S-15	b2	50/6"				
80							

Water Level: 8/20/00



Boring Completed 07/21/00
Total Depth of Boring = 75.5 ft.

Completed 07/21/00
Elevation at Top of Protective Casing = 346.21 ft.
Elevation at Top of Casing = 345.55 ft.
Total Depth of = 72.6 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to Soil Classification System and Key figure for explanation of graphics and symbols.

25088 015 9/26/00 B WOODLHYGHNTWAPROJECTS25088 GPJ WELL LOG

Log of Boring and EL 106

Figure A-7 (2 of 2)

TP-1-78

TEST PIT 1 (EL. 332±)

DEPTH, FEET	
0.0 - 1.0	LOOSE BROWN SILTY SAND WITH SOME TO TRACE GRAVEL (MOIST) (FILL)
1.0 - 1.5	LOOSE GRAY SILTY SAND WITH SOME GRAVEL (WET) (FILL)
1.5 - 13.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND WITH SOME GRAVEL AND LIMBS (WET) (MODERATE TO STRONG ODOR)
	NO GROUNDWATER OBSERVED

TP-2-78

TEST PIT 2 (EL. 312±)

DEPTH, FEET	
0.0 - 3.5	LOOSE BROWN SILTY FINE SAND WITH TRACE GRAVEL (MOIST) (FILL) SMALL TREES ON CONTACT
3.5 - 8.0	MEDIUM DENSE TO DENSE GRAY SILTY SAND WITH SOME GRAVEL TO GRAVELLY SILTY SAND (WET) (FILL)
8.0 - 9.5	MEDIUM DENSE GRAY CLEAN GRAVELLY SAND (WET) (FILL)
	STICKS AT CONTACT
9.5 - 12.5	MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL (WET)
12.5- 14.0	FIRM BROWN AND GRAY MOTTLED SILTY FINE SAND (WET) (BADLY WEATHERED TILL?)
	GROUNDWATER SEEPAGE AT 3.0 AND 14.0 FEET LIGHT ODOR

TP-3-78

TEST PIT 3 (EL. 309±)

DEPTH, FEET	
0.0 - 1.5	LOOSE TO VERY LOOSE DARK BROWN SILTY SAND WITH ROOTS (MOIST) (TOPSOIL AND THIN FOREST DUFF LAYER)
1.5 - 4.0	MEDIUM DENSE TO DENSE GRAY AND BROWN MOTTLED SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST WITH SOME WET ZONES) (WEATHERED TILL)
4.0 - 10.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST) (GLACIAL TILL) NEAR- REFUSAL OF EXCAVATING EQUIPMENT AT 10.0 FEET
	NO GROUNDWATER OBSERVED

TP-4-78

TEST PIT 4 (EL. 329±)

DEPTH, FEET	
0.0 - 4.0	VERY SOFT TO SOFT BROWN FINE SANDY SILT TO SILTY FINE SAND WITH TRACE GRAVEL (WET) (FILL)
4.0 - 5.5	LOOSE TO MEDIUM DENSE DARK BROWN TO BLACK SILT AND SAND MIXED WITH CONCRETE AND ASPHALT RUBBLE (WET) (FILL)
5.5 - 7.0	CONCRETE RUBBLE
7.0 - 12.0	LOOSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL AND SCATTERED GARBAGE (WET) (FILL)
	NO GROUNDWATER OBSERVED SLIGHT TO MODERATE ODOR

TP-5-78

TEST PIT 5 (EL. 322±)

DEPTH, FEET	
0.0 - 1.0	LOOSE BROWN SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
1.0 - 12.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND LUMBER AND LIMBS (WET) (NEWSPAPER FROM 1963 STILL READABLE)
	NO GROUNDWATER OBSERVED STRONG ODOR

TP-6-78

TEST PIT 6 (EL. 333±)

DEPTH, FEET	
0.0 - 0.5	LOOSE BROWN SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
0.5 - 1.5	LOOSE GRAY SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
1.5 - 13.0	HOUSEHOLD GARBAGE MIXED WITH SAND, SILT, LIMBS AND LUMBER (WET) (1964 NEWSPAPER AT 3.0 FEET STILL READABLE)
	VERY HEAVY GROUNDWATER FLOW AT 4.0 FEET, WATER DOES NOT POND IN BOTTOM OF TEST PIT
	VERY STRONG ODOR

TEST PIT 7 (EL. 332±)

DEPTH, FEET	
0.0 - 0.2	PEA GRAVEL
0.2 - 5.5	LOOSE TO MEDIUM DENSE BROWN GRAVELLY SAND WITH SOME SILT (MOIST) (FILL)
5.5 - 12.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND, LIMBS AND LUMBER (WET) (1962 NEWSPAPER STILL READABLE)
	NO GROUNDWATER OBSERVED STRONG ODOR

TP-8-78

TEST PIT 8 (EL. 329±)

DEPTH, FEET	
0.0 - 7.5	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST) (FILL)
7.5 - 12.5	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND, CAR PARTS AND OTHER DEBRIS (WET) (1963 NEWSPAPER STILL READABLE)
	MODERATE GROUNDWATER FLOW AT 8.0 FEET STRONG ODOR

TP-9-78

TEST PIT 9 (EL. 341±)

DEPTH, FEET	
0.0 - 0.2	SOD
0.2 - 2.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND OF SOME GRAVEL (MOIST) (WEATHERED TILL)
2.0 - 6.5	DENSE TO VERY DENSE GRAY WITH MINOR BROWN MOTTLING SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-10-78

TEST PIT 10 (EL. 336±)

DEPTH, FEET	
0.0 - 0.5	FOREST DUFF
0.5 - 3.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND (MOIST)
3.0 - 8.0	LOOSE TO MEDIUM DENSE GRAY SAND WITH SOME LENSES OF HARD GRAY SANDY SILT (MOIST)
8.0 - 10.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL AND TRACE TO OCCASIONAL COBBLES (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-16-78

TEST PIT 16 (EL. 300±)

DEPTH, FEET	
0.0 - 0.4	SOD
0.4 - 2.5	MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL) SLIGHT GROUNDWATER SEEPAGE AT 2.5 FEET
2.5 - 5.0	MEDIUM DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
5.0 - 10.0	VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)

TP-17-78

TEST PIT 17 (EL. 314±)

DEPTH, FEET	
0.0 - 5.5	LOOSE BROWN SILTY SAND WITH SOME GRAVEL (WET) (FILL)
5.5 - 6.5	LOOSE GRAY GRAVELLY SILTY SAND TO GRAVELLY SAND WITH SOME SILT (MOIST) (FILL)
6.5 - 11.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST)
11.0- 14.0	MEDIUM DENSE TO DENSE LIGHT BROWN TO GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL) NO GROUNDWATER OBSERVED

PROPOSED I-90 /BELLEVUE BUSINESS PARK BELLEVUE, WASHINGTON PROJECT 78059	FIGURE 9

TP-18-78

TEST PIT 18 (EL. 312±) -78

DEPTH, FEET

0.0 - 0.2	SOD
0.2 - 2.0	LOOSE GRAY AND BROWN LAYERED SILTY SAND WITH SOME GRAVEL (MOIST) (FILL)
2.0 - 3.5	LOOSE BROWN SILTY SAND AND STICKS MIXED WITH HOUSEHOLD GARBAGE (MOIST) (FILL)
3.5 - 5.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
5.0 - 12.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-19-78

TEST PIT 19 (EL. 330±) – 78

DEPTH, FEET

0.0 - 1.5	LOOSE BROWN AND GRAY LAYERED SILTY SAND WITH SOME GRAVEL (MOIST) (FILL)
1.5 - 12.0	HOUSEHOLD GARBAGE MIXED WITH BLUE-GRAY SILTY GRAVELLY SAND, LUMBER AND ASH (WET) (STRONG ODOR)
	MODERATE GROUNDWATER FLOW AT 7.0 TO 8.0 FEET

bucknam associates	LOGS OF TEST PITS

PROPOSED I-90/BELLEVUE BUSINESS PARK BELLEVUE, WASHINGTON PROJECT 78059	FIGURE 10

TP-20-78

TEST PIT 20 (EL. 341±) -78

DEPTH, FEET

0.0 - 0.2 SOD

0.2 - 1.5 LOOSE TO MEDIUM DENSE GRAY SILTY SAND WITH SOME GRAVEL TO GRAVELLY SILTY SAND (MOIST) (FILL)

1.5 - 3.0 HOUSEHOLD GARBAGE AND ASH (WET) (MODERATE ODOR)

3.0 - 4.0 MEDIUM DENSE LIGHT BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)

4.0 - 9.0 DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)

NO GROUNDWATER OBSERVED

TP-21-78

TEST PIT 21 (EL, 343±) -78

0.0 - 0.1 LOOSE BROWN SILTY SAND WITH SOME GRAVEL (WET) (WEATHERED TILL)

0.1 - 3.0 VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)

NO GROUNDWATER OBSERVED

TP-22-78

TEST PIT 22 (EL. 338±) -78

DEPTH, FEET

0.0 - 2.0 LOOSE TO MEDIUM DENSE BROWN TO GRAY SILTY SAND WITH SOME GRAVEL (WET) (FILL)

2.0 - 12.0 HOUSEHOLD GARBAGE (WET) (STRONG ODOR)

NO GROUNDWATER OBSERVED

bucknam associates	LOGS OF TEST PITS

TP-23-78

TEST PIT 23 (EL. 340±)

DEPTH, FEET	
0.0 - 0.3	SOD
0.3 - 2.5	LOOSE BROWN SILTY SAND WITH SOME GRAVEL AND "BEDROCK" CHUNKS TO 10 INCHES IN DIAMETER (WET) (FILL)
2.5 - 4.0	LOOSE GRAY SILTY SAND WITH SOME GRAVEL AND STICKS (MOIST) (FILL)
4.0 - 7.0	LOOSE TO MEDIUM DENSE TAN GRADING TO GRAY-BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
7.0 - 9.0	VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL) NEAR-REFUSAL AT 9.0 FEET
	NO GROUNDWATER OBSERVED

TP-24-78

TEST PIT 24 (EL. 348±)

DEPTH, FEET	
0.0 - 2.5	LOOSE TO MEDIUM DENSE BROWN, SILTY SAND WITH SOME GRAVEL (WET TO MOIST) (WEATHERED TILL)
2.5 - 6.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

LOG OF BORING NO. B-1-94

Date drilled 10/19/94 Sampler / Driving Weight SPT, 140 lb 30"/drop Elevation (ft) 339.6

This log is part of the report prepared by Converse Consultants NW for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.

Depth, ft	Elevation	Sample No.	Blows/6"	Graphic Symbol	DESCRIPTION	Monitoring Well	Dry density pcf	Moisture Content, %	Other Tests
					3 1/2 inch Asphalt Pavement				
					FILL				
					GRAVEL; brown, trace silt, fine to coarse; moist				
					SILTY SAND; brown to gray mottled rust, little fine gravel; very dense, moist				
		1	11 15 46						
5	335								
		2	4 4 5		gray mottled brown, fine to coarse, trace fine gravel; loose				
		3	5 5 6		SILTY SAND WITH GRAVEL AND DEBRIS; brown, fine to coarse; medium dense, moist; with wood chips and glass				
10	330								
		4	4 5 6		layer of paper at depth 11 feet - 4 inches thick layer of wood chips and peat				
					ATD ▽				
		5	4 2 4		black, pieces of metal, paper, pieces of wire; loose, wet				
15	325								
		6	7 14 14		GRAVEL WITH DEBRIS; black, fine, debris consists of rubber, metal and paper; medium dense, wet				
		7	4 5 7		wood fragments, tape and wood chips; medium dense, wet				
	320								

Continued Next Page

Parking Lot Subsidence Investigation

Bellevue, Washington

Boeing Computer Services

Project No. **94-35156-01**

LOG OF BORING NO. B-1-94

Date drilled 10/19/94 Sampler / Driving Weight SPT, 140 lb 30"/drop Elevation (ft) 339.6

This log is part of the report prepared by Converse Consultants NW for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.

Depth, ft	Elevation	Sample No.	Blows/6"	DESCRIPTION	Monitoring Well	Dry density pcf	Moisture Content, %	Other Tests
		8	3, 4, 4	SILTY SAND WITH DEBRIS; brown, fine to coarse, trace fine gravel with debris, wood chips, plastic; medium dense, wet layer of newspaper from a depth of 21 to 21-1/4 feet				
		9	3, 5, 7	SAND AND GRAVEL; brown mottled gray, little silt; medium dense, wet				
25	315	10	6, 7, 8	little to some silt				
		11	5, 50, 50	NATIVE DEPOSITS SILTY SAND AND GRAVEL; mottled brown, fine to coarse; very dense, moist				
30	310			Bottom of boring at depth 29 feet Boring backfilled with bentonite chips and concrete cap installed at the ground surface ATD = at the time of drilling				
35	305							
	300							

Parking Lot Subsidence Investigation

Bellevue, Washington

Boeing Computer Services

Project No. 94-35156-01

Converse Consultants NW

Geotechnical Engineering and Applied Earth Sciences

Figure No. A-2

LOG OF BORING NO. B-2-94

Date drilled 10/19/94 Sampler / Driving Weight SPT, 140 lb 30"/drop Elevation (ft) 339.0

This log is part of the report prepared by Converse Consultants NW for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.

Depth, ft	Elevation	Sample No.	Blows/6"	DESCRIPTION	Monitoring Well	Dry density pcf	Moisture Content, %	Other Tests
				3 inch Asphalt Pavement				
				FILL SAND AND GRAVEL; brown, fine to coarse; wet grades to sand				
		1	8 16 24	SILTY SAND; brown mottled gray; fine to medium, trace fine gravel; dense, moist				
	335							
5		2	3 5 6	fine to coarse, scattered organics composed of wood chips, charcoal, peat; medium dense, very moist				
		3	2 6 9	ATD SAND; gray, fine to coarse, trace fine gravel, scattered organics; medium dense, wet				
	330							
10		4	2 2 2	GARBAGE; paper, wood chips, plastic; loose, wet small layer of silty gravel				
		5	3 3 2	plastic, wood, paper, egg shells, scattered fine gravel; loose, wet				
	325							
15		6	3 5 7	metal cans, steel wool, paper, glass, scattered gravel; medium dense, wet; slight oil sheen noted				
		7	7 14 19	SILTY SAND; gray mottled, fine to coarse, trace fine gravel, scattered organics; medium dense, wet				
	320							

Continued Next Page

LOG OF BORING NO. B-2-94

Date drilled 10/19/94 Sampler / Driving Weight SPT, 140 lb 30"/drop Elevation (ft) 339.0

This log is part of the report prepared by Converse Consultants NW for the named project and should be read together with that report for complete interpretation. This summary applies only at the location of this boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented are a simplification of actual conditions encountered.

Depth, ft	Elevation	Sample No.	Blows/6"	Graphic Symbol	DESCRIPTION	Monitoring Well	Dry density pcf	Moisture Content, %	Other Tests
		8	4 5 6		GARBAGE; wood, paper, cardboard, plastic, layered with silty sand, fine to medium; medium dense, wet				
	315	9	6 6 7		SILTY SAND; gray, fine to coarse, little fine gravel, trace organics; medium dense, moist				
25		10	46 50/ 3"		NATIVE DEPOSITS SILTY SAND WITH GRAVEL; gray, fine to coarse sand, fine to coarse gravel; very dense, moist				
					Bottom of boring at depth 26 feet Boring backfilled with bentonite chips and concrete cap installed at the ground surface ATD = at the time of drilling				
	310								
30									
	305								
35									
	300								

Parking Lot Subsidence Investigation

Bellevue, Washington

Boeing Computer Services

Project No. 94-35156-01

Converse Consultants NW

Geotechnical Engineering and Applied Earth Sciences

Figure No. A-3

LOG OF TEST PIT NO. 1   TP-1-80

Location: See Drawing 1   Elevation: Approx. 301'

Surface Conditions:

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1				SILTY GRAVELLY SAND	brown, fine to coarse; moist, loose.	severely weathered Glacial Till.
2						
3				SILT and CLAY	gray-brown, with little sand and scattered gravel; moist, medium stiff.	
4						
5				SILTY SAND	gray-brown, fine to coarse with little gravel, trace clay, scattered cobbles; moist, medium dense to dense.	unweathered Glacial Till.
6						
7						
8						
9				grades to SAND	with trace silt.	
10						
11					wet.	
12						
13				Bottom of test pit at 11.5'. No groundwater encountered. Completed July 22, 1980.		
14						
15						

PROPOSED POND A
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 80-5188

ConverseWardDavisDixon Geotechnical Consultants

Drawing No. 2

Approved for publication ______ by ______

√81

LOG OF TEST PIT NO. TP-3D -81

Location: See Drawing 1.

Elevation: Approx. 343

Surface Conditions: Brush and grass.

Depth In feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1			ML/CL	SILTY CLAY (Construction Fill)	gray, trace gravel; moist soft.	
2					concrete rubble (up to 4') throughout layer.	
3						
4						Light seepage at 4'.
5					wood debris	
6				SANITARY LANDFILL	silty sand tin cans, bottles, distinct odor.	
7						
8			SM	SAND (Weathered Till)	brown, fine to medium, some silt, little gravel; moist, medium dense.	
9			SM	SAND (Fresh Till)	gray, fine to medium, some silt, little gravel; moist, very dense.	
10						
11						
12					Bottom of test pit at depth 11.0'. Completed March 16, 1981.	
13						
14						
15						

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. TP-4D -81

-81

Location: See Drawing 1.

Elevation: Approx. 332

Surface Conditions: Brush and grass.

Depth	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
			ML/CL	SILTY CLAY (Construction Fill)	gray, trace gravel; moist, soft.	
					concrete rubble (up to 4') throughout layer.	
					wood debris	
					silty sand	
				SANITARY LANDFILL	tin cans, bottles, distinct odor.	
					Bottom of test pit at depth 12.0'. Completed March 16, 1981.	

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No.

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. 5 TP-5-81

Location: See Site Plan

Elevation: Approx. 338

Surface Conditions: Wooded Area

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
0–1			SM	SILTY SAND (Forest Duff)	brown, fine to medium, roots; moist, loose	
1–2.5			SM/SW	SILTY SAND (Weathered Till)	brown, medium to coarse, some gravel; moist, medium dense	roots to 2½' depth
2.5–6				SILTY SAND (Fresh Till)	gray, medium to coarse, some gravel; moist, very dense	
5					cobbles	
6				Bottom of test pit at depth 6.0' No groundwater encountered Completed 10/29/81		

BUILDING SITE 1 - I-90 BELLEVUE BUSINESS PARK
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5194

ConverseWardDavisDixon Geotechnical Consultants

Drawing No. 6

Approved for publication by

V-81

LOG OF TEST PIT NO. TP-103D -81

Location: See Drawing 1. **Elevation:** Approx. 318

Surface Conditions: Brush and grass.

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
0–2			SM	SILTY SAND (Construction Fill)	brown, fine to medium, little gravel; moist, loose. wood debris	
				grades to		
2.5–5				SAND	gray, little gravel, trace silt; moist, medium dense.	Slight seepage at 2.5'.
5–10				SANITARY LANDFILL	silty sand, tin cans, paper, and bottles.	
10				Bottom of test pit at depth 10.0'. Completed April 21, 1981.		

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. TP-110 -81

Location: See Drawing 1.

Elevation: Approx. 334

Surface Conditions: Brush and grass.

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1–2			SM	SILTY SAND (Weathered Till)	reddish brown, little gravel, trace roots; moist, loose.	
3–5			SM	SILTY SAND (Fresh Till)	gray, fine to medium, little gravel; moist, very dense.	Difficult to excavate below 2½'.

Bottom of test pit at depth 5.0'.
Completed April 21, 1981.

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No
81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-1-81

ELEVATION: Approx. 336

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0						LANDFILL sand, silt, tin cans, plastic bags, cloth, garbage odor		moist	
5	1A	7 4 2							loose
10	XA	2 11 10							m.dense
15	2A	19 20 20							dense
20	3A	12 4 8							loose to m.dense
25	XA	8 6 8							m.dense
30	4A	14 19 26				sand layer, some wood		11/2/81 wet	dense
35	5A	28 28 20				intact wood, smell of creosote			dense
40									

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 2

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO.B-1(Cont.) ELEVATION: Approx. 336

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE		CONSISTENCY	DEPTH IN FEET
	6A		12 18 18				SAND (Till)	gray, mottled brown, medium to coarse, trace silt, fine gravel		wet		dense	
45	7A		14 35 66					to brownish gray				v.dense	
50	8A		70										

Bottom of boring at depth 50.5'
Groundwater encountered at depth 31.5'
Piezometer installed to 50.5'
Completed 11/2/81

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 2a

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-2-81

ELEVATION: Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	DEPTH IN FEET
							GRAVELLY SAND (Fill)	brown, medium to coarse		moist	loose to m. dense	
							LANDFILL	paper, tin cans, cloth		moist	loose	
5												
							SAND (Till)	brown, medium to coarse, trace of gravel		moist	v.dense	
10	1A	■	29 50									
							Bottom of boring at depth 11.0' No groundwater encountered Piezometer installed to 11.0' Completed 11/2/81					
15												

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No
81-5186

Drawing No
3

ConverseWardDavisDixon Geotechnical Consultants

[redacted]ILLED: 11/2/81

SUMMARY: BORING NO. B-3-81

ELEVATION: Approx. 338

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
						LANDFILL	paper, glass, sand, silt, cloth, garbage odor		moist	dense
1		5 11 31								
										m.dense
2		10 11 3								
3		15 30 50/4"					sand layer, coarse, some gravel			v.dense
		9 6 5					intact wood			m.dense
4		30 50				SAND (Till)	gray, mottled brown, coarse, some gravel		moist	v.dense
5A		50					to gray			

Bottom of boring at depth 30.5'
No groundwater encountered
Piezometer installed to 30.5'
Completed 11/2/81

split-spoon sampler
O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 4

ConverseWardDavisDixon Geotechnical Consultants

SUMMARY: BORING NO. B-4-81

ELEVATION: Approx.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
						SAND (Fill)	brown, medium, trace silt, some gravel		moist	m.dense
						Bottom of boring at depth 5.0' No groundwater encountered Piezometer installed to 5.0' Completed 11/2/81				

split-spoon sampler
O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No 81-5186

Drawing No 5

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-5-81

ELEVATION: Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	DEPTH IN FEET
							SAND (Fill)	brown, medium, trace silt, some gravel		moist	m.dense	
							Bottom of boring at depth 5.0' No groundwater encountered Piezometer installed to 5.0' Completed 11/2/81					

A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 6

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED 10/1/82

SUMMARY: BORING NO. 6 -82

ELEVATION 332.3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
					GRAVELLY SAND	brown, fine to coarse, some silt	SW	moist	very dense
1A	8 25 40		8.1						
2A	14 50/6"					occasional cobbles		wet	very dense
					SILTY SAND (Glacial Till)	gray, fine to medium, little gravel, trace cobbles	SM	moist	very dense
3A	16 18 35		7.3						
4A	50/4"		6.4						
5A	50/5"		10.2			little to some gravel		very moist	
6A	50/5"		5.5					moist	
					GRAVELLY SAND (Advance Outwash)	brown, fine to coarse, clayey silt matrix	SW	moist	very dense
7A	25 50/3"		7.7						
						grades cleaner with less silt, occ. cobbles.			
8A	50/4"		5.8						
					Bottom of boring at depth 38.3'				

DEPTH IN FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40

ELEV: 330, 325, 320, 315, 310, 305, 300, 295

No groundwater encountered

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No. ~~11~~ 12

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED 10/2/82

SUMMARY: BORING NO. 7-82

ELEVATION: 333.9

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0–5	1A	4, 6, 7		15.6		SILTY SAND (Fill)	brown, fine to medium, some gravel	SM	very moist	medium dense
10	2A	1, 8, 17		15.5		SILTY SAND (Sanitary Landfill)	brown, fine to medium, some gravel, trace wood & debris (metal, plastic, cloth), organic odor		very moist	medium dense
15	3A	5, 3, 9		21.4			wood fragments (from drill action, occasional pieces of concrete 5.5-16.5' depth)			
20	4A	50/3"		5.7		SAND (Glacial Till)	blue-gray, fine to coarse, some silt and gravel, occasional cobbles	SM	slightly moist	very dense
25	5A	50/4"		6.1			grades slightly coarser			
30	6A	50/5"		6.1		GRAVELLY SAND (Advance Outwash)	gray, fine to coarse, trace silt, zones of clayey silt matrix	SW	moist	very dense
35	7A	50/6"		9.2						
						Bottom of boring at depth 33.5' No groundwater encountered				

ELEV: 330, 325, 320, 315, 310, 305, 300

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 12-15

DATE DRILLED 10/2/82

SUMMARY: BORING NO. 8-82

ELEVATION 340.4

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						SILTY SAND (Fill) brown, organic, little gravel, trace roots	SM	very moist	medium dense	340
	1A	6 12 10		10.8						
5						SILTY SAND (Sanitary Landfill) black, fine to medium, with paper, wood, plastic, metal & wire, organic odor				335
	2A	4 5 8		25.9						
10						(from drill action, concrete pieces 5-16.5' depth)				330
						grades finer with clayey silt, fabric fragments	ML			
	3A	5 17 13		14.1						
15										325
	4A	50/5"		5.5		SILTY SAND (Glacial Till) blue-gray, fine to coarse, some gravel, occasional cobbles	SM	moist	very dense	
20						boulder 20-21' depth				320
	5A	50/3"		4.2		(refusal on boulder at 25' depth; redrilled hole 6' north of original location)				
25										315
	6A	18 50/5"		9.8		SILT (Lacustrine Deposit) gray, some fine sand, trace gravel, laminated occasional layer of coarse sand	ML	slightly moist	very dense	
30										310
	7A	50/6"		10.1		SAND (Advance Outwash) brown, fine to coarse, some silt, trace clayey silt, occasional gravel	SP	moist	very dense	
35										305
	8A	25 50/5"		7.8		grades cleaner with less silt				
40						(Continued)				

A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. ~~13~~ 14

DATE DRILLED: 10/2/82

SUMMARY: BORING NO. 8-9? (Cont.)

ELEVATION

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY	ELEV
0							SAND (Cont.) brown, fine to coarse, silt matrix, trace gravel		moist	very dense	300
	9A	■	50/5"		4.8						
45							Bottom of boring at depth 43.5' No groundwater encountered Piezometer installed to depth 43.5', with 2' slotted interval at bottom.				295

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. ~~14~~ 15

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0							SILTY SAND (Fill)	gray-brown, fine to medium, little gravel, trace wood		moist	medium dense
	1A		7 18 16		9.9						
5							SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, trace to occasional cobbles		moist	very dense
	2A		50/2"		7.5						
10											
	3A		100/4"		7.6						
15											
	4A		75/3"		6.4			with occasional lense of gray, fine to medium sand			
20											
	5A		75/2"		6.2						
25							Refusal at 25.0', restart boring approximately 15' south.				
								very cobbly, 6"-8" diameter			
	6A		75/2"		13.5		SAND (Advance Outwash)	gray, mottled brown and pink, fine to medium, trace gravel & silt, occasional cobble		moist	very dense
30											
	7A		75/3"		11.3			grades to little silt, fine to medium			
35											
	8A		75/5"		11.6		(Continued)				
40											

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No.
82-5169

Drawing No.
V-6

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 2/28/83

SUMMARY: BORING NO. 8A (Cont.) ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40							SAND (Cont.) (Advance Outwash) grades to fine to coarse, trace silt and gravel, occasional cobble		moist	very dense
	9A	■	44 50/5"		9.1					
45										
	10A	■	50/6"		8.8					
50										
	11A	■	50/6"		7.4					
55							Bottom of boring at depth 53.5' No groundwater encountered. Methane visible in boring. Methane standpipe installed to depth 53.5' with 20' slotted interval at bottom; gravel backfill to depth 33.0'; backfilled with cuttings to depth 20.0'; bentonite seal from depth 20.0-19.0'; backfilled to surface with cuttings. Completed 2/28/83			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No.

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED 10/2/82

SUMMARY: BORING NO. 9-62

ELEVATION: 340.2

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.	SAMPLE*	BLOWS 6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF
3–4.5	1A		13 / 9 / 18		15.3	
8	2A		50/5"		6.2	
13	3A		50/5"		10.5	
23	4A		50/6"		9.5	
28	5A		50/6"		7.5	
33	6A		50/4"		7.5	
38	7A		50/4"		10.7	

DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0.2' Asphalt Surface				
SILTY SAND (Fill)	brown, fine to medium, little gravel, wood fragments	SM	very moist	medium dense
SILTY SAND (Glacial Till)	brown, fine to medium, little gravel, trace cobbles (refusal at 9' on boulders, redrilled hole 11' east of original location)	SM	moist	very dense
	gray		very moist	
	large cobbles 16-21' (no sample taken in this interval)			
SILT (Lacustrine)	gray, some fine sand, laminated	ML	moist	very dense
SAND (Advance Outwash)	gray-brown, fine to coarse, some to trace silt, occasional gravel	SP	moist	very dense
Bottom of boring at depth 38.3'				

Depth scale (ft): 0, 5, 10, 15, 20, 25, 30, 35, 40. ELEV: 340, 335, 330, 325, 320, 315, 310, 305.

No groundwater encountered

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 15/16

DATE DRILLED: 10/2/82

SUMMARY: BORING NO. 10 ^62

ELEVATION: 340.6

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						SILTY SAND (Fill)	brown, fine to medium, little gravel, trace wood, organic	SM	very moist	loose	340
	1A	4 4 5		19.0							
5						GRAVELLY SAND (Fill)	gray, fine to medium, trace silt	SW	moist	dense	335
	2A	7 14 45		5.6							
10						(concrete pieces throughout fill based on cuttings)					330
	3X	50/3"				(sample 3 driven on concrete)					
15						CLAYEY SILT (Sanitary Landfill)	gray, mottled brown, some sand, trace glass wire & paper	MH	very moist	medium dense	325
	4A	20 15 12		16.6							
20						SILTY SAND (Sanitary Landfill)	brown, fine to medium, little gravel, wood	SM	very moist	medium dense	320
	5A	7 12 15		25.1							
25						SAND	gray, fine to coarse, trace gravel, trace silt	SP	moist	very dense	315
	6A	50/6"		4.7							
30											310
	7A	50/6"		8.3							
35											305
	8A	23 23 30		12.1			(Continued)		very moist		
40											

*A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No. ~~16~~ 19

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 12/7/82

SUMMARY: BORING NO. 11 -82

ELEVATION: 306.6

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						SILTY SAND (Fill)	dk. brn., f/m, little gravel, trace roots	SM	wet	loose	306.6
											305
	1A	3 7 1		18.6		SAND (Fill)	gray, fine to medium, trace silt, occasional gravel	SP	wet	loose	
5											
	2A	7 8 30		16.6		SILTY TO CLAYEY SAND (Advance Outwash)	brown, fine to coarse trace to occasional gravel	SM	wet	dense	300
10						grades to... SAND	rust-brown, fine to coarse, trace silt, occasional gravel	SP	∇ 12/7/82		INVERT ELEV
											295
	3A	6 28 32		9.2					moist	dense	
15											
						Bottom of boring at depth 14.5' Groundwater encountered during drilling at depth 9.5'					290

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 21

DATE DRILLED 12/7/82

SUMMARY: BORING NO. 12 -82

ELEVATION: 299.1

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						asphalt					299.1
						SAND (Fill)	gray-brown, f/m, little silt	SM	moist	medium dense	
	1A	18 50/3"		12.2		SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, trace clay	SM	moist	very dense	
5											295
	2A	6 16 37		12.0							
10									1/10/83	3/3/83	290
						SAND (Advance Outwash)	gray-brown, fine to coarse, little gravel, trace silt	SP	wet 12/22/82	very dense	
	3A	12 50/4"		11.2						INVERT ELEV	
15											285

Bottom of boring at depth 13.9'
Groundwater encountered during drilling at depth 10.0'
Piezometer installed to depth 13.0' with 1.5' slotted interval at bottom; backfilled with pea gravel to 11.0'; backfilled to surface with cuttings, and bentonite seal at surface.

*A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 22

DATE DRILLED: 4/14/83

SUMMARY: BORING NO. 1-83

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0							SILTY SAND (Fill)	dark greenish-gray, fine to coarse, little gravel	SM	very moist	4/14/83 4/27/83 7/8/83 dense
	1		18 19								
5							SAND (Fill)	light gray, fine to medium, trace silt			
	2		39 18				SILTY GRAVELLY SAND (Fill)	dark gray, fine to coarse, trace organics (landfill debris?)	SM	wet	dense
10											
	3		18 50/6"				SILTY SAND (Landfill Debris)	gray, fine to medium, abundant organics & metal debris	SM	wet	dense
15											

Bottom of boring at depth 14.0'
Piezometer installed (see schematic for details)
Groundwater encountered at depth 7.0' at time of drilling.

*A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

LEACHATE SAMPLING
I-90/Bellevue Business Park
for Cabot, Cabot & Forbes

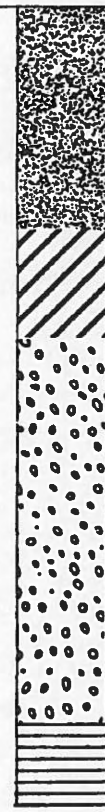
Project No. 81-5216

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 2

Date Drilled: 3/26/83

Elevation: Approx. 349

Depth in Feet	Soil Description		Graphic of Methane Well Installation*	Elev. in Feet
0	FILL			349
	SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, tr. clay, occ. cobbles to 6" dia.; moist, very dense	cuttings/backfill	
10				340
			bentonite/cement seal	
20	SILTY SAND (Advance Outwash)	gray-brown, mottled pink, f/c, some gravel, tr. clay; moist, very dense		330
	grades to...		gravel backfill	
30	GRAVELLY SAND	gray-brown, mottled pink, f/c, some silt, tr. clay; very moist, very dense		320
	grades to...			
40	SAND	fine to medium, trace silt; moist, very dense	slotted interval	310
50				300

Bottom of boring at depth 43.5'
No groundwater encountered
Completed 3/26/83
*Methane well consists of 1½" I.D. PVC pipe

SUMMARY: BORING NO. 207-83

METHANE WELL INSTALLATION
Bellevue/I-90 Business Park
for Boeing Computer Services

Project No
83-5116

Drawing No.
9

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 6/3/85

SUMMARY: BORING NO. B-301 ~~-95~~

ELEVATION Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		6 8 14				SILTY SAND (Fill); mottled black & gray, fine to medium, little gravel, trace wood, concrete	SM	moist	medium dense
5	2C		8 8 43				SILTY SAND (Sanitary Landfill); black, fine to medium, some sanitary refuse: glass, wood, etc., strong organic smell;	SM	moist	medium dense
10	3C		50/3"				grades to debris fill: glass, wood, paper, cans; no soil matrix; visible methane		moist	dense
							Bottom of boring at depth 12.8' 3/4" diameter PVC observation well installed with slotted screen from 7.5' to 12.5', pea gravel backfill from 5.0' to 10.5', backfill with cuttings from 5.0' to 3.0', bentonite seal from 3.0' to surface, and install cast iron monument cover.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 2

DATE DRILLED: 6/3/85

SUMMARY: BORING NO. B-302-05

ELEVATION: Approx. 338

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0–5	1C		50/5"				SILTY SAND (Fill); brown, fine to medium, little gravel, trace wood (sampler driving on rock)	SM	moist	medium dense
5–10	2C		5 3 18				SAND (Fill); gray, fine to medium, trace gravel, wood, & metal debris	SP	moist	medium dense
10–24	3C		50/6"				SANITARY LANDFILL; consists of wood, glass, plastic, rubber, paper and metal; no soil matrix;		moist	dense
	4C		8 20 50/4"				occasional lense of sand		very moist	
									6/21/85 ▽ 6/7/85	
	5C		33 17 21				(possible free water)		very moist	

Bottom of boring at depth 24.0'
3/4" dia. PVC observation well installed with slotted screen from 17.5' to 22.5', pea gravel backfill from 9.0' to 22.5', backfilled with cuttings from 3.0' to 9.0', bentonite seal from 3.0' to surface, and install cast iron monument cover.

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

▽ water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No.
85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No.
3

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303-85

ELEVATION: Approx. 339.9

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0							SILTY SAND (Fill); gray-brown, fine to medium, little gravel, trace wood	SM	moist	medium dense
	1C		4 14 12							
5							grades to black, trace wood, plastic, and metal debris			
	2C		4 8 14							
10							SILTY SAND (Sanitary Landfill); black, fine to medium, trace gravel, wood, plastic, metal, wire, and paper	SM	very moist	medium dense
	3C		8 12 13							
15										
	4C		6 10 12							
20										
	5C		28 29 11							
25							grades to Sanitary Landfill with little silty sand		moist	
	6C		8 13 22							
30										
	7C		11 9 20							
35							SILTY SAND (Old Soil Horizon/Fill); brown, tr. to little gravel, trace wood & glass	SM	very moist	medium dense
	8C		13 19 50/6"							
40										

(Continued)

*A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 4

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303-85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40						SILTY SAND (Cont.);	SM		dense
	9C	68 50/3"							
45						SILTY SAND (Weath. Glacial Till); gray, f/m, trace to little gravel	SM	wet	very dense
	10C	57 50/3"							
50						grades to Unweath. Till, with occ. lense of gravelly silty sand and sandy silt	SM	moist	
	11A	60/6"							
55						SAND (Advance Outwash); brown, fine to medium, trace silt, thinly bedded with sandy silt layers	SP	moist	very dense
	12A	60/6"							
60								wet	
	13A	27 50/6"						6/7/85 6/21/85	
65						SANDY SILT (Lacustrine Sediments); gray, fine sand, thinly laminated with clayey silt and silty fine sand	ML	very moist	very dense
	14A	20 50/6"							
70						SAND; dark gray, very fine, trace to little silt	SM	wet	very dense
	15A	7 13 35							
75						grades fine to medium, thinly bedded to laminated with clayey silt and brown sandy silt		very moist	
	16C	55 50/3"							
80									

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 4 (CONT.)

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303 -85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
80							Bottom of boring at depth 78.2' Groundwater encountered at depth 64' during drilling 2" diameter PVC observation well installed with slotted screen from 55' to 75'; sand backfill from 50' to 71'; grout backfill from 19' to 50'; dry cement backfill from 12' to 19'; backfilled with cuttings from 1' to 12', and cast iron monument cover installed at surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 4 (CONT.)

DATE DRILLED: 4/4/85

SUMMARY: BORING NO. CC-1 -65

ELEVATION: Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1A	6, 6, 8				GRAVELLY SAND (Fill); brown, fine to medium, trace silt & organics; grades to little gravel		slightly moist	medium dense
5	2A	7, 7, 9				SILTY SAND; mottled gray & light brown, fine to medium, trace clay and gravel		moist	medium dense
	3A	28, 48, 50/4"				SILTY SAND; gray, fine to medium, little gravel, trace clay		wet	very dense
10	4X	50/4"							
15	5A	50/4"				SILTY SAND (Unweathered Till); light brown, fine to medium, little gravel, trace clay		slightly moist	very dense
	6C	7, 15, 50/4"							
20	7A	50/4"							
25	8A	4, 22, 50/4"				SAND (Advance Outwash); brown, fine to medium, trace silt		wet	very dense
30	9A	26, 40, 50/5"				SAND (Lacustrine); mottled brown & light brown, fine, trace medium, trace silt with thinly laminated to medium bedded silt and sandy silt		slightly moist	very dense
35	10A	25, 36, 50/4"							
						Bottom of boring at depth 36.5'. Groundwater encountered at depth 9' during drilling. Hole filled with cement/bentonite to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. A

DATE DRILLED: 4/4/85

SUMMARY: BORING NO. CC-2 -85

ELEVATION: Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0						GRAVELLY SAND (Fill); light brown, fine to medium, trace silt		slightly moist	
	1A	17 12 15				GRAVELLY SILTY SAND; mottled brown & light brown, fine to medium		slightly moist	medium dense
5									
	2A	5 7 8				SANDY SILT/CLAYEY SILT (Alluvium); mottled gray-green & light brown, fine, thinly laminated		slightly moist	medium dense
10						CLAYEY SAND (Advance Outwash); gray, fine to medium, trace gravel		moist	very dense
	3A	14 42 29							
15	4A	50/6"				SAND; gray, fine to medium, little silt, trace gravel		moist	very dense
	5A	48 50/5"				grades to trace silt and gravel		▽ 4/17/85	
20	6A	17 26 26				with occ. thin laminations of silty sand		moist to wet	dense
	7A	29 44 50/2"				to mottled gray & light brown		wet	
25	8A	24 37 37				with medium bedded brown silt and thin laminations to thinly bedded silty fine sand		slightly moist	very dense
	9A	34 36 50/5"							
30	10A	14 18 25				SILTY SAND (Lacustrine); dark gray, fine, with thin laminations to thinly bedded silt and fine sand		slightly moist	dense
	11A	21 24 39				SAND; brown, fine to medium, trace silt, with medium bedded fine sandy silt		wet	very dense
35	12A	21 29 43				to gray, fine, med. bedded gray silt, thin lam. of fine sandy silt			
	13A	18 26 42				SILT; dark gray, w/thin laminations to medium bedded sandy silt		wet	very dense
40									

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. B

DATE DRILLED: 4/4/85

SUMMARY: BORING NO. CC-2-85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40						SILT (Lacustrine)(Cont.)			
	14A	12 40 50/4"				SAND; mottled dark gray & light brown, fine, trace to little silt, w/thin laminations of fine sandy silt		slightly moist	very dense
45									
	15A	30 50/6"				dark gray, fine, w/thin laminations of silt & occ. thin lamination of peat			
50						SILT; dark gray, w/thin lam. fine sandy silt & occ. thin lam. of peat		slightly moist	very dense
	16A	27 43 50/5"							
55						with thin lamination of silty fine sand			
	17A	22 37 50/5"							
60						Bottom of boring at depth 59.0' Groundwater encountered at depth 8' Two-inch dia. piezometer installed to depth 41', with 0.010 inch screen section from depth 22' to 27', backfilled to 41', sand placed to 15', cement/bentonite seal placed to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. B (CONT.)

DATE DRILLED: 4/5/85

SUMMARY: BORING NO. CC-3 ~65

ELEVATION: Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0						GRAVELLY SAND (Fill); brown, fine to medium		moist	very dense
	1A	17 34 21				SILTY SAND; mottled brown & light brown, f/m, little gravel, trace fine roots, occasional charcoal		moist	very dense
5	2A	38 50/6"							
						GRAVELLY SAND; gray, fine to coarse, trace silt		moist	very dense
	3C	40 50/2"				GRAVELLY SILTY SAND; mottled gray & brown, fine to coarse, trace clay & scattered organics			
10						SILTY SAND; mottled gray & brown, fine to medium, trace gravel, trace clay		slightly moist	very dense
	4A	38 50/6"							
15						CLAYEY SAND (Adv. Outwash); gray-brown, fine to medium, trace gravel, trace silt, occ. woody fragments		very moist	very dense
	5A	11 20 50/3"							
20						SAND; gray, fine to medium, trace silt		wet	very dense
	6A	20 50/6"							
25									
	7A	25 45 50/4"							
30						mottled gray & light brown, trace silt			
	8A	24 50/5"							
35						grades to gray			
	9A	20 43 50/3"							
40									

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Drawing No. C

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 4/5/85

SUMMARY: BORING NO. CC-3-85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40						SAND (Adv. Outwash) (Cont.);		wet	very dense
	10A	21 50/3"				SAND (Lacustrine); gray, fine, trace silt, with med. bedded silt & thin lam. of fine sandy silt		moist	very
45	11A	26 50/6"				SILT; dark gray, trace fine sand, w/thin beds of mottled gray & light brown, fine to medium sand and silty sand, & thin lam. fine sandy silt, occ. thin lamination of peat		moist	very ~~dense~~ hard
50	12A	25 35 38				w/thin laminations of fine sand		slightly moist	
55	13A	27 47 50/3"				with medium bedded silty fine sand, and thin ~~laminae~~ laminations of fine sand			
60	14A	27 40 53/3"				with thinly bedded silty fine sand, and thin laminations of fine sandy silt			
65	15A	36 50/3"				mottled dark gray & light brown, trace fine sand, with med. bedded fine sand		moist	
70						Bottom of boring at depth 68.5' Groundwater encountered at depth 20' Hole filled with cement/bentonite slurry from 68.5 to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. C (CONT.)

LOG OF TEST PIT NO. 201-85

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

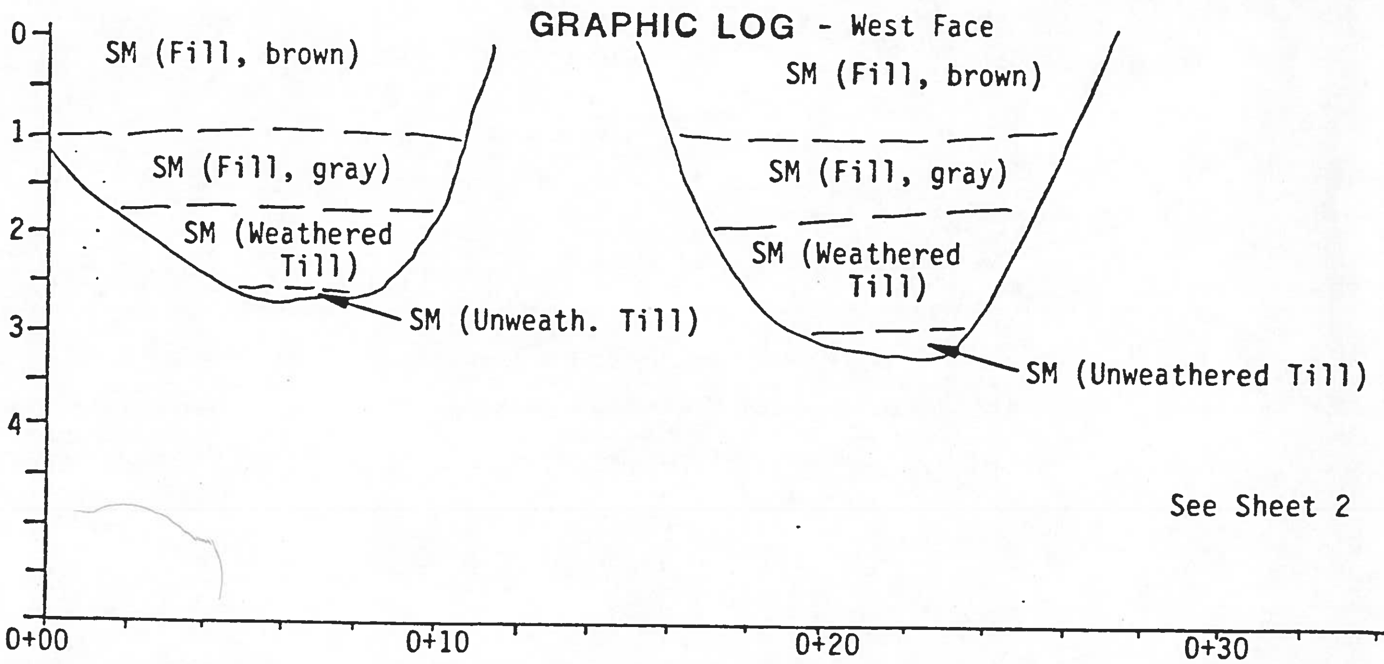
CLIENT: Boeing Computer Services ELEVATION: Approx. 344

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N/A LOGGED BY: D.A.Y.

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–1		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace roots; moist, medium dense	
1–2		SM	SILTY SAND (Fill); gray fine to medium, little gravel, occasional gravel to 4" dia., trace wood; moist, medium dense	
2–3		SM	SILTY SAND (Weath. Till); brown, fine to medium, little gravel, occ. cobbles to 6"; moist, dense	
3–3.5		SM	SILTY SAND (Unweath. Till); gray-brown, fine to medium, little gravel, occ. cobbles; moist, very dense	
			Bottom of test pit at depth 3.5' No groundwater encountered Completed 6/20/85	

GRAPHIC LOG - West Face



See Sheet 2

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No. 1

LOG OF TEST PIT NO. 201-85 (Cont.)

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

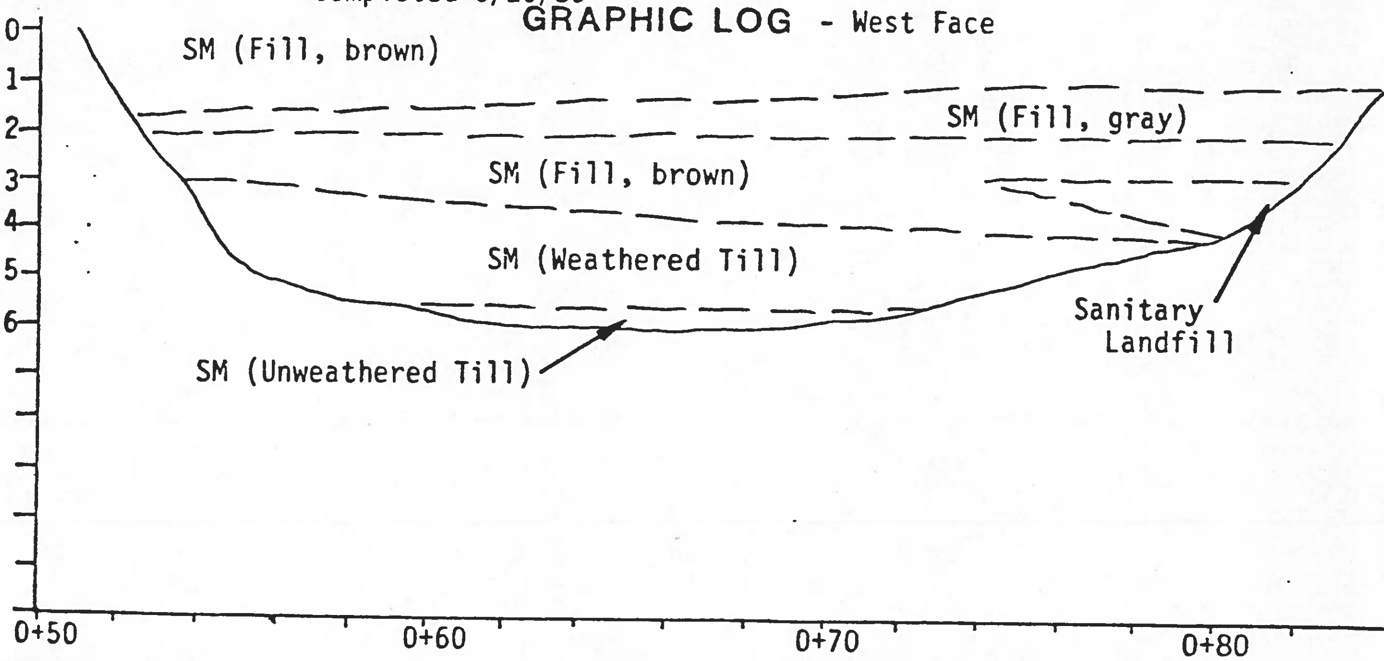
CLIENT: Boeing Computer Services ELEVATION: Approx. 344

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: LOGGED BY: D.A.Y.

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–1		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace roots; moist, medium dense	
2			color changes to gray	
			color changes to brown	
3			SANITARY LANDFILL; black, household garbage, cans, glass, wire; very moist	strong trash odor throughout
4		SM	SILTY SAND (Weath. Till); brown, fine to medium, little gravel, occasional cobbles; moist, dense	
5		SM	(Unweath. Till); gray-brown; moist, very dense	
6			Bottom of test pit at depth 6.0' No groundwater endountered Completed 6/20/85	

GRAPHIC LOG - West Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 1 (CONT.)

LOG OF TEST PIT NO. 202-85

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

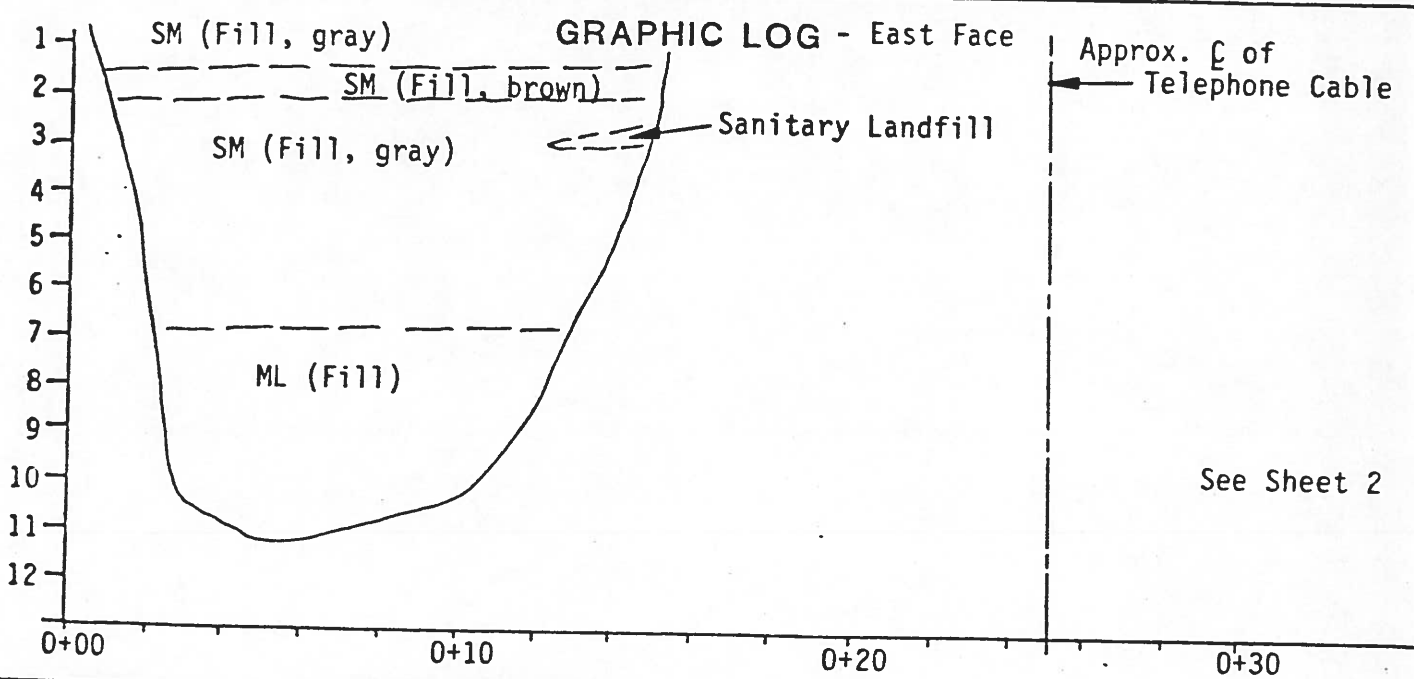
CLIENT: Boeing Computer Services ELEVATION: Approx. 342

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N.A. LOGGED BY: DAY

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–2		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, trace wood; moist, medium dense	
2–3			SANITARY LANDFILL: black, household garbage, paper, rags, cans, glass; moist	strong organic odor throughout
3–7		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, trace wood; moist, medium dense	
7–11		ML	CLAYEY SILT (Fill); gray, little sand and fine to medium gravel; moist, stiff	
11			Bottom of test pit at depth 11.0' No groundwater encountered. Completed 6/20/85	

GRAPHIC LOG - East Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 2

LOG OF TEST PIT NO. 202-85 (Cont.)

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

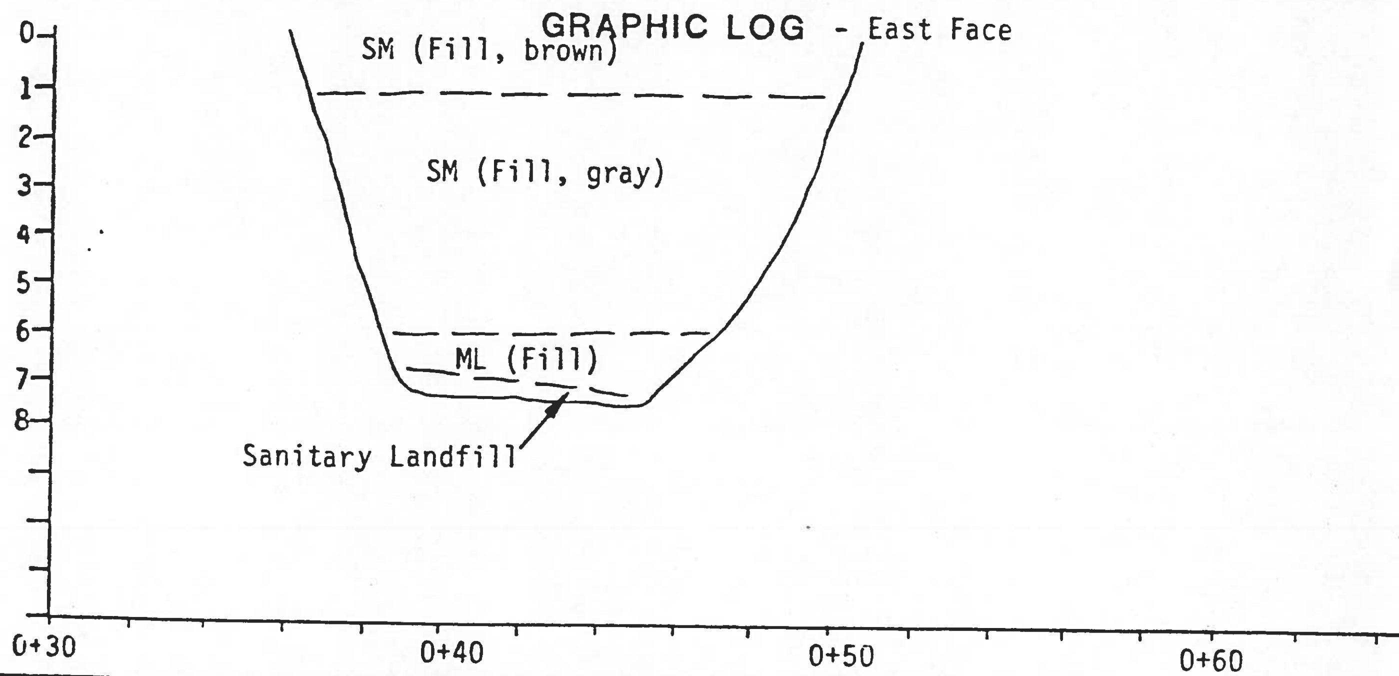
CLIENT: Boeing Computer Services ELEVATION: Approx. 342

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N.A. LOGGED BY: DAY

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace wood; moist, medium dense	
1				
2			grades to gray in color	
3				
4				
5				
6		ML	CLAYEY SILT (Fill); gray, little sand and gravel, trace wood, paper; moist, stiff	strong trash odor throughout
7			SANITRAY LANDFILL; household garbage, paper, rags, cans, glass; moist	
8				
			Bottom of test trench at depth 7.5' No groundwater encountered Completed 6/20/85	

GRAPHIC LOG - East Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 2 (CONT.)

LOG OF TEST PIT NO. 203-85

ROJECT: 27.2 Acre Site JOB NO : 85-5156 DATE: 6/21/85

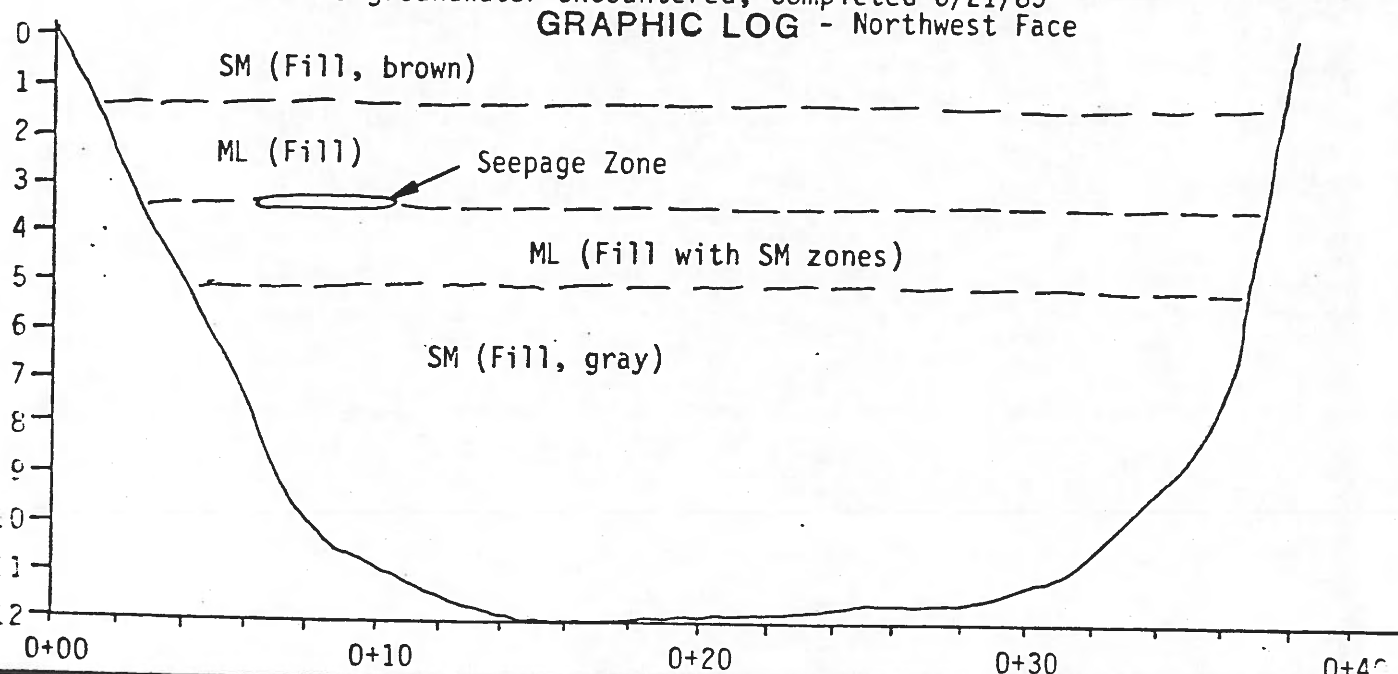
LIENT: Boeing Computer Services ELEVATION: Approx. 342

EATURE: LOCATION: See Drawing

ROUNDWATER LEVEL: N.A. LOGGED BY: RAB

PTH (t)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
1		SM	SILTY SAND (Fill); brown, fine to medium, little gravel , scattered cobbles; moist, medium dense	
2 3 4		ML	CLAYEY SILT (Fill); mottled gray-brown, little fine sand, trace cobbles, scattered household garbage; moist to very moist, stiff	
5			scattered zones of brown, silty sand concrete rubble (to 4' pieces)	seepage zone
6 7 8 9 10 11 12		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, scattered cobbles, scattered household garbage, paper, plastic, and rubber; moist, dense	strong organic odor throughout
			Bottom of test trench at depth 12.0' No groundwater encountered; Completed 6/21/85	

GRAPHIC LOG - Northwest Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 3

LOG OF TEST PIT NO. TP-204-85

Location: See Drawing

Elevation: Approx. 344

Surface Conditions: Flat; sage brush and grass

Depth in feet	Moisture Content-%	Sample	Symbol	DESCRIPTION	REMARKS
0–3			SM	**SILTY SAND** (Fill); brown, fine to coarse, little fine to medium gravel, trace subrounded cobbles, roots and organics; slightly moist, medium dense	
3–5			SM	**SILTY SAND**; brown, fine to medium, trace gravel, trace subrounded cobbles; concrete rubble (to 4'), timbers and wood (to 8"), bicycle tires; moist, dense (Fill)	test pit walls standing vertical
5–12			ML	**CLAYEY SILT**; gray, trace gravel, trace fine to medium sand, scattered small branches, roots, and organics; moist, firm (Fill)	
12				Bottom of test pit at depth 12.0' No groundwater encountered Completed 6/21/85	

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No 85-5156

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No 4

LOG OF TEST PIT NO. TP-213-85

Location: See Drawing Elevation: Approx. 338

Surface Conditions: Flat; some small weeds

Depth, feet	Moisture Content-%	Sample	Symbol	DESCRIPTION	REMARKS
			SM	SILTY SAND (Fill); brown, fine, trace medium to coarse sand, little fine to coarse subrounded gravel; scattered roots, and sticks; moist, medium dense	
3			ML	CLAYEY SILT; gray, trace fine to medium sand, little gravel, scattered small to medium cobbles; concrete rubble to (18"), wood, logs (6"), paper, plastic, and metal scraps; with occasional medium beds of silty sand, brown, fine to medium; moist, firm (Fill)	distinct organic odor
4					
5					
6					
7					
8					
9					
10					
11					
12				Bottom of test pit at depth 12.0' No groundwater encountered Completed 6/21/85	

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No 85-5156

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No 13

(OW-1)

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-1*

Soil Description

Location: North side of Pond A

Approximate ground surface elevation: 305 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Topsoil						
	Loose, moist, tan, fine to medium SAND, some silt (Embankment Fill)						
5				S1			
	Dense, moist, gray, silty fine to medium SAND, some gravel (Alluvium)						
10				S2			
15				S3		50/10"	
20				S4		50/5"	
	Dense, saturated, light brown, medium SAND, trace to some silt (Advance Outwash)				ATD		
25				S5		50/4"	
	Very dense, saturated, light gray, fine to medium SAND, trace silt (Advanced Outwash)						
30							

PENETRATION RESISTANCE: ▲ Standard; [#/#] Blows over inches; △ Other. Blows per foot: 0, 10, 20, 30, 40, 50

Moisture Content scale: 0, 20, 40, 60, 80, 100 — Plastic Limit, Moisture Content, Liquid Limit

LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

OW-1

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-1*

DEPTH (feet)	Soil Description Location: North side of Pond A Approximate ground surface elevation: 305 feet	SAMPLE NUMBER	PENETRATION RESISTANCE (Blows per foot)	TESTING
30	Very dense SAND (as above)	S6	80/11"	
35	Hard, wet, gray, SILT, some fine sand (Glacial-lacustrine Deposit)	S7	50/4"	
40		S8	70	
	Boring terminated at approximately 41.5 feet below ground surface.			
45				
50				
55				
60				

Penetration resistance: ▲ Standard; #/# Blows over inches; △ Other. Scale: 0, 10, 20, 30, 40, 50

Moisture content scale: 0, 20, 40, 60, 80, 100 — Plastic Limit, Moisture Content, Liquid Limit

LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Observation well:
Monument
Bentonite Fill with PVC Pipe
Groundwater Level
Sand Fill with Slotted PVC Pipe
Pipe Cap
Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

A4IN1.GDT 5/28/02 4IN1 B3.C

OW-2

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-2*

DEPTH (feet)	Soil Description	SAMPLE NUMBER	PENETRATION RESISTANCE (Blows per foot)
0	Location: South side of Pond A Approximate ground surface elevation: 308 feet		
0	Grass over topsoil		
	Medium dense, moist, light-orangish brown, silty fine to medium SAND, with some gravel and cobbles (Fill)		
	Medium dense, moist, light gray, silty SAND, with some gravel (Fill)		
5	Hard, moist, gray fine sandy SILT, with some gravel (Fill)	S1	
10		S2	50/6"
	Alluvium (interpreted from cross-section?)		
	Dense, moist, gray, silty fine SAND, with some gravel (Advance Outwash)		
15		S3	50/5"
	Becomes very dense, saturated, gray, fine to medium SAND, trace silt		
20		S4	75"
25	Becomes brown, medium to coarse SAND	S5	75/11"
30			

Penetration resistance: ▲ Standard; ##/## Blows over inches; △ Other. Scale: 0, 10, 20, 30, 40, 50. TESTING. Page 1 of 2

Moisture scale: 0, 20, 40, 60, 80, 100 — Plastic Limit, Moisture Content, Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- 3.00-inch OD split-Spoon sampler
- Observed groundwater level
- ATD Groundwater level at time of drilling

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

amec
11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-2*

Soil Description

Location: South side of Pond A

Approximate ground surface elevation: 308 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
30	Dense, wet to saturated, light brown, fine to medium SAND, with some silt (Advance Outwash)			S6			
35	Hard, moist, gray SILT with some fine sand (Glacio-lacustrine Deposit)			S7		50/5"	
40				T8		50/5"	
	Boring terminated at approximately 40.5 feet below ground surface						
45							
50							
55							
60							

PENETRATION RESISTANCE: ▲ Standard; ##/## Blows over inches; △ Other. Blows per foot: 0, 10, 20, 30, 40, 50

0 20 40 60 80 100

Plastic Limit — Moisture Content — Liquid Limit

LEGEND

2.00-inch OD split-spoon sampler

3.00-inch OD split-Spoon sampler

Observed groundwater level

ATD Groundwater level at time of drilling

Observation well:

Monument

Bentonite Fill with PVC Pipe

Groundwater Level

Sand Fill with Slotted PVC Pipe

Pipe Cap

Slough at Bottom of Hole

amec

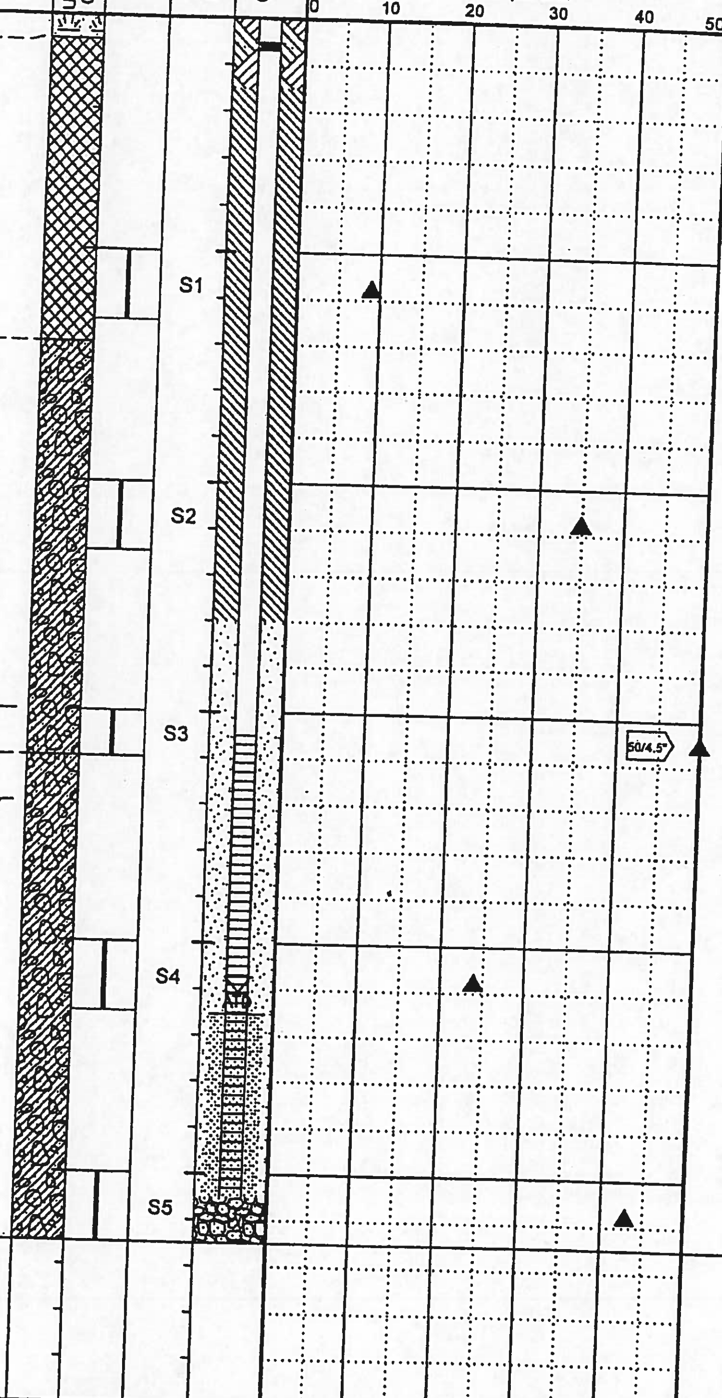
11335 N.E. 122nd Way Suite 100

Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-3*

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE ▲ Standard / Blows over inches / △ Other — Blows per foot (0, 10, 20, 30, 40, 50)	Page 1 of 1 TESTING
	Location: Southeast corner of Pond C Approximate ground surface elevation: 328 feet						
0	Grass over topsoil						
	Loose, moist to wet, brown silty, gravelly, fine to medium SAND, with scattered debris, glass shards (Fill)						
5				S1			
	Dense, moist, reddish-tan with scattered rust mottling, gravelly, fine to medium SAND, with some silt (Glacial Till)						
10				S2			
15	Blowcount overstated, bouncing on rock			S3		50/4.5"	
	Medium dense to dense, wet to saturated, gray, gravelly, silty fine to medium SAND (Glacial Till) Very hard drilling						
20				S4	ATD		
25				S5			
	Boring terminated at approximately 26.5 feet below existing ground surface						
30							



LEGEND

2.00-inch OD split-spoon sampler

Groundwater level at time of drilling (ATD)

Observation well:
Monument
Bentonite Fill with PVC Pipe
Groundwater Level
Sand Fill with Slotted PVC Pipe
Pipe Cap
Slough at Bottom of Hole

0 20 40 60 80 100
Plastic Limit — Moisture Content — Liquid Limit

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

NA4IN1.GDT 5/28/02

4IN1 B3

Drilling Method: HSA Hammer type: Cathead Date drilled: *April 10, 2002* Logged By: *KSS*

TP-1-78

TEST PIT 1 (EL. 332±)

DEPTH, FEET	
0.0 - 1.0	LOOSE BROWN SILTY SAND WITH SOME TO TRACE GRAVEL (MOIST) (FILL)
1.0 - 1.5	LOOSE GRAY SILTY SAND WITH SOME GRAVEL (WET) (FILL)
1.5 - 13.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND WITH SOME GRAVEL AND LIMBS (WET) (MODERATE TO STRONG ODOR)
	NO GROUNDWATER OBSERVED

TP-2-78

TEST PIT 2 (EL. 312±)

DEPTH, FEET	
0.0 - 3.5	LOOSE BROWN SILTY FINE SAND WITH TRACE GRAVEL (MOIST) (FILL) SMALL TREES ON CONTACT
3.5 - 8.0	MEDIUM DENSE TO DENSE GRAY SILTY SAND WITH SOME GRAVEL TO GRAVELLY SILTY SAND (WET) (FILL)
8.0 - 9.5	MEDIUM DENSE GRAY CLEAN GRAVELLY SAND (WET) (FILL)
	STICKS AT CONTACT
9.5 - 12.5	MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL (WET)
12.5- 14.0	FIRM BROWN AND GRAY MOTTLED SILTY FINE SAND (WET) (BADLY WEATHERED TILL?)
	GROUNDWATER SEEPAGE AT 3.0 AND 14.0 FEET LIGHT ODOR

TP-3-78

TEST PIT 3 (EL. 309±)

DEPTH, FEET	
0.0 - 1.5	LOOSE TO VERY LOOSE DARK BROWN SILTY SAND WITH ROOTS (MOIST) (TOPSOIL AND THIN FOREST DUFF LAYER)
1.5 - 4.0	MEDIUM DENSE TO DENSE GRAY AND BROWN MOTTLED SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST WITH SOME WET ZONES) (WEATHERED TILL)
4.0 - 10.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST) (GLACIAL TILL) NEAR- REFUSAL OF EXCAVATING EQUIPMENT AT 10.0 FEET
	NO GROUNDWATER OBSERVED

TP-4-78

TEST PIT 4 (EL. 329±)

DEPTH, FEET	
0.0 - 4.0	VERY SOFT TO SOFT BROWN FINE SANDY SILT TO SILTY FINE SAND WITH TRACE GRAVEL (WET) (FILL)
4.0 - 5.5	LOOSE TO MEDIUM DENSE DARK BROWN TO BLACK SILT AND SAND MIXED WITH CONCRETE AND ASPHALT RUBBLE (WET) (FILL)
5.5 - 7.0	CONCRETE RUBBLE
7.0 - 12.0	LOOSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL AND SCATTERED GARBAGE (WET) (FILL)
	NO GROUNDWATER OBSERVED SLIGHT TO MODERATE ODOR

TP-5-78

TEST PIT 5 (EL. 322±)

DEPTH, FEET	
0.0 - 1.0	LOOSE BROWN SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
1.0 - 12.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND LUMBER AND LIMBS (WET) (NEWSPAPER FROM 1963 STILL READABLE)
	NO GROUNDWATER OBSERVED STRONG ODOR

TP-6-78

TEST PIT 6 (EL. 333±)

DEPTH, FEET	
0.0 - 0.5	LOOSE BROWN SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
0.5 - 1.5	LOOSE GRAY SILTY SAND WITH TRACE GRAVEL (WET) (FILL)
1.5 - 13.0	HOUSEHOLD GARBAGE MIXED WITH SAND, SILT, LIMBS AND LUMBER (WET) (1964 NEWSPAPER AT 3.0 FEET STILL READABLE)
	VERY HEAVY GROUNDWATER FLOW AT 4.0 FEET, WATER DOES NOT POND IN BOTTOM OF TEST PIT
	VERY STRONG ODOR

TEST PIT 7 (EL. 332±)

DEPTH, FEET	
0.0 - 0.2	PEA GRAVEL
0.2 - 5.5	LOOSE TO MEDIUM DENSE BROWN GRAVELLY SAND WITH SOME SILT (MOIST) (FILL)
5.5 - 12.0	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND, LIMBS AND LUMBER (WET) (1962 NEWSPAPER STILL READABLE)
	NO GROUNDWATER OBSERVED STRONG ODOR

TP-8-78

TEST PIT 8 (EL. 329±)

DEPTH, FEET	
0.0 - 7.5	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO SOME GRAVEL (MOIST) (FILL)
7.5 - 12.5	HOUSEHOLD GARBAGE MIXED WITH SILTY SAND, CAR PARTS AND OTHER DEBRIS (WET) (1963 NEWSPAPER STILL READABLE)
	MODERATE GROUNDWATER FLOW AT 8.0 FEET STRONG ODOR

TP-9-78

TEST PIT 9 (EL. 341±)

DEPTH, FEET	
0.0 - 0.2	SOD
0.2 - 2.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND OF SOME GRAVEL (MOIST) (WEATHERED TILL)
2.0 - 6.5	DENSE TO VERY DENSE GRAY WITH MINOR BROWN MOTTLING SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-10-78

TEST PIT 10 (EL. 336±)

DEPTH, FEET	
0.0 - 0.5	FOREST DUFF
0.5 - 3.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND (MOIST)
3.0 - 8.0	LOOSE TO MEDIUM DENSE GRAY SAND WITH SOME LENSES OF HARD GRAY SANDY SILT (MOIST)
8.0 - 10.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL AND TRACE TO OCCASIONAL COBBLES (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-16-78

TEST PIT 16 (EL. 300±)

DEPTH, FEET	
0.0 - 0.4	SOD
0.4 - 2.5	MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL) SLIGHT GROUNDWATER SEEPAGE AT 2.5 FEET
2.5 - 5.0	MEDIUM DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
5.0 - 10.0	VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)

TP-17-78

TEST PIT 17 (EL. 314±)

DEPTH, FEET	
0.0 - 5.5	LOOSE BROWN SILTY SAND WITH SOME GRAVEL (WET) (FILL)
5.5 - 6.5	LOOSE GRAY GRAVELLY SILTY SAND TO GRAVELLY SAND WITH SOME SILT (MOIST) (FILL)
6.5 - 11.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST)
11.0- 14.0	MEDIUM DENSE TO DENSE LIGHT BROWN TO GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)

NO GROUNDWATER OBSERVED

PROPOSED I-90 /BELLEVUE BUSINESS PARK BELLEVUE, WASHINGTON PROJECT 78059	FIGURE 9

78-18-78

TEST PIT 18 (EL. 312±) -78

DEPTH, FEET

0.0 - 0.2	SOD
0.2 - 2.0	LOOSE GRAY AND BROWN LAYERED SILTY SAND WITH SOME GRAVEL (MOIST) (FILL)
2.0 - 3.5	LOOSE BROWN SILTY SAND AND STICKS MIXED WITH HOUSEHOLD GARBAGE (MOIST) (FILL)
3.5 - 5.0	LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
5.0 - 12.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

78-19-78

TEST PIT 19 (EL. 330±) — 78

DEPTH, FEET

0.0 - 1.5	LOOSE BROWN AND GRAY LAYERED SILTY SAND WITH SOME GRAVEL (MOIST) (FILL)
1.5 - 12.0	HOUSEHOLD GARBAGE MIXED WITH BLUE-GRAY SILTY GRAVELLY SAND, LUMBER AND ASH (WET) (STRONG ODOR)
	MODERATE GROUNDWATER FLOW AT 7.0 TO 8.0 FEET

bucknam associates	LOGS OF TEST PITS

PROPOSED I-90/BELLEVUE BUSINESS PARK BELLEVUE, WASHINGTON PROJECT 78059	FIGURE 10

TP-20-78

TEST PIT 20 (EL. 341±) -78

DEPTH, FEET	
0.0 - 0.2	SOD
0.2 - 1.5	LOOSE TO MEDIUM DENSE GRAY SILTY SAND WITH SOME GRAVEL TO GRAVELLY SILTY SAND (MOIST) (FILL)
1.5 - 3.0	HOUSEHOLD GARBAGE AND ASH (WET) (MODERATE ODOR)
3.0 - 4.0	MEDIUM DENSE LIGHT BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
4.0 - 9.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-21-78

TEST PIT 21 (EL, 343±) -78

0.0 - 0.1	LOOSE BROWN SILTY SAND WITH SOME GRAVEL (WET) (WEATHERED TILL)
0.1 - 3.0	VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)
	NO GROUNDWATER OBSERVED

TP-22-78

TEST PIT 22 (EL. 338±) -78

DEPTH, FEET	
0.0 - 2.0	LOOSE TO MEDIUM DENSE BROWN TO GRAY SILTY SAND WITH SOME GRAVEL (WET) (FILL)
2.0 - 12.0	HOUSEHOLD GARBAGE (WET) (STRONG ODOR)
	NO GROUNDWATER OBSERVED

bucknam associates	LOGS OF TEST PITS

TP-23-78

TEST PIT 23 (EL. 340±)

DEPTH, FEET	
0.0 - 0.3	SOD
0.3 - 2.5	LOOSE BROWN SILTY SAND WITH SOME GRAVEL AND "BEDROCK" CHUNKS TO 10 INCHES IN DIAMETER (WET) (FILL)
2.5 - 4.0	LOOSE GRAY SILTY SAND WITH SOME GRAVEL AND STICKS (MOIST) (FILL)
4.0 - 7.0	LOOSE TO MEDIUM DENSE TAN GRADING TO GRAY-BROWN SILTY SAND WITH SOME GRAVEL (MOIST) (WEATHERED TILL)
7.0 - 9.0	VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL) NEAR-REFUSAL AT 9.0 FEET

NO GROUNDWATER OBSERVED

TP-24-78

TEST PIT 24 (EL. 348±)

DEPTH, FEET	
0.0 - 2.5	LOOSE TO MEDIUM DENSE BROWN, SILTY SAND WITH SOME GRAVEL (WET TO MOIST) (WEATHERED TILL)
2.5 - 6.0	DENSE TO VERY DENSE GRAY SILTY SAND WITH SOME GRAVEL (MOIST) (GLACIAL TILL)

NO GROUNDWATER OBSERVED

LOG OF TEST PIT NO. 1 TP-1-80

Location: See Drawing 1 Elevation: Approx. 301'

Surface Conditions:

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1				SILTY GRAVELLY SAND	brown, fine to coarse; moist, loose.	severely weathered Glacial Till.
2						
3				SILT and CLAY	gray-brown, with little sand and scattered gravel; moist, medium stiff.	
4						
5				SILTY SAND	gray-brown, fine to coarse with little gravel, trace clay, scattered cobbles; moist, medium dense to dense.	unweathered Glacial Till.
6						
7						
8						
9				grades to SAND	with trace silt.	
10						
11					wet.	
12						
13				Bottom of test pit at 11.5'. No groundwater encountered. Completed July 22, 1980.		
14						
15						

Approved for publication ______ by ______

PROPOSED POND A
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 80-5188

ConverseWardDavisDixon Geotechnical Consultants

Drawing No. 2

LOG OF TEST PIT NO. TP-3D -81

√81

Location: See Drawing 1.

Elevation: Approx. 343

Surface Conditions: Brush and grass.

Depth In feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1			ML/ CL	SILTY CLAY (Construction Fill)	gray, trace gravel; moist soft.	
2					concrete rubble (up to 4') throughout layer.	
3						
4						Light seepage at 4'.
5					wood debris	
6				SANITARY LANDFILL	silty sand tin cans, bottles, distinct odor.	
7						
8			SM	SAND (Weathered Till)	brown, fine to medium, some silt, little gravel; moist, medium dense.	
9			SM	SAND (Fresh Till)	gray, fine to medium, some silt, little gravel; moist, very dense.	
10						
11						
12					Bottom of test pit at depth 11.0'. Completed March 16, 1981.	
13						
14						
15						

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. TP-4D -81

-81

Location: See Drawing 1. Elevation: Approx. 332

Surface Conditions: Brush and grass.

Depth in Feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
			ML/ CL	SILTY CLAY (Construction Fill)	gray, trace gravel; moist, soft.	
					concrete rubble (up to 4') throughout layer.	
					wood debris	
					silty sand	
				SANITARY LANDFILL	tin cans, bottles, distinct odor.	
					Bottom of test pit at depth 12.0'. Completed March 16, 1981.	

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No.

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. 5 TP-5-81

Location: See Site Plan

Elevation: Approx. 338

Surface Conditions: Wooded Area

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
0–1			SM	SILTY SAND (Forest Duff)	brown, fine to medium, roots; moist, loose	
1–2.5			SM/SW	SILTY SAND (Weathered Till)	brown, medium to coarse, some gravel; moist, medium dense	roots to 2½' depth
2.5–6				SILTY SAND (Fresh Till)	gray, medium to coarse, some gravel; moist, very dense	
5					cobbles	
6				Bottom of test pit at depth 6.0' No groundwater encountered Completed 10/29/81		

Depth scale: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Approved for publication by

BUILDING SITE 1 - I-90 BELLEVUE BUSINESS PARK
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5194

ConverseWardDavisDixon Geotechnical Consultants

Drawing No. 6

V-81

LOG OF TEST PIT NO. TP-103D -81

Location: See Drawing 1. **Elevation:** Approx. 318

Surface Conditions: Brush and grass.

Depth In feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
0–2			SM	SILTY SAND (Construction Fill)	brown, fine to medium, little gravel; moist, loose. wood debris	
2				grades to		Slight seepage at 2.5'.
2.5–5				SAND	gray, little gravel, trace silt; moist, medium dense.	
5–10				SANITARY LANDFILL	silty sand, tin cans, paper, and bottles.	

Bottom of test pit at depth 10.0'.
Completed April 21, 1981.

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No. 81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

LOG OF TEST PIT NO. TP-110 -81

Location: See Drawing 1.

Elevation: Approx. 334

Surface Conditions: Brush and grass.

Depth in feet	Moisture %	Sample	Symbol	DESCRIPTION		REMARKS
1			SM	SILTY SAND (Weathered Till)	reddish brown, little gravel, trace roots; moist, loose.	
2						
3			SM	SILTY SAND (Fresh Till)	gray, fine to medium, little gravel; moist, very dense.	Difficult to excavate below 2½'.
4						
5						
6				Bottom of test pit at depth 5.0'. Completed April 21, 1981.		
7						
8						
9						
10						
11						
12						
13						
14						
15						

I-90/BELLEVUE BUSINESS PARK, BUILDING 5
Bellevue, Washington
for Cabot, Cabot & Forbes

Project No
81-5135

Drawing No

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-1-81

ELEVATION: Approx. 336

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0						LANDFILL sand, silt, tin cans, plastic bags, cloth, garbage odor		moist	
5	1A	7 4 2							loose
10	XA	2 11 10							m.dense
15	2A	19 20 20							dense
20	3A	12 4 8							loose to m.dense
25	XA	8 6 8							m.dense
30	4A	14 19 26				sand layer, some wood		11/2/81 wet	dense
35	5A	28 28 20				intact wood, smell of creosote			dense
40									

* A. 2' split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 2

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-1 (Cont.) ELEVATION: Approx. 336

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
	6A	12 18 18				SAND (Till)	gray, mottled brown, medium to coarse, trace silt, fine gravel		wet	dense
45	7A	14 35 66					to brownish gray			v.dense
50	8A	70								

Bottom of boring at depth 50.5'
Groundwater encountered at depth 31.5'
Piezometer installed to 50.5'
Completed 11/2/81

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 2a

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-2-81

ELEVATION: Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0							GRAVELLY SAND (Fill)	brown, medium to coarse		moist	loose to m. dense
							LANDFILL	paper, tin cans, cloth		moist	loose
5							SAND (Till)	brown, medium to coarse, trace of gravel		moist	v.dense
10	1A		29 50								
							Bottom of boring at depth 11.0' No groundwater encountered Piezometer installed to 11.0' Completed 11/2/81				
15											

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D 3-1/2" O.D split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No 81-5186

Drawing No 3

ConverseWardDavisDixon Geotechnical Consultants

[redacted]RILLED: 11/2/81

SUMMARY: BORING NO. B-3-81

ELEVATION: Approx. 338

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	DEPTH IN FEET
						LANDFILL	paper, glass, sand, silt, cloth, garbage odor		moist	dense	
		5 11 31								m.dense	
		10 11 3									
		15 30 50/4"					sand layer, coarse, some gravel			v.dense	
		9 6 5					intact wood			m.dense	
		30 50				SAND (Till)	gray, mottled brown, coarse, some gravel		moist	v.dense	
5A		50					to gray				

Bottom of boring at depth 30.5'
No groundwater encountered
Piezometer installed to 30.5'
Completed 11/2/81

split-spoon sampler
O.D. thin-wall sampler
" O.D. split barrel sampler
C. 3-1/4" O.D. x 2-1/2" liner
X. sample not recovered
**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 4

ConverseWardDavisDixon Geotechnical Consultants

SUMMARY: BORING NO. B-4-81

ELEVATION: Approx.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE		CONSISTENCY
						SAND (Fill)	brown, medium, trace silt, some gravel		moist		m.dense
						Bottom of boring at depth 5.0' No groundwater encountered Piezometer installed to 5.0' Completed 11/2/81					

split-spoon sampler
O.D. thin-wall sampler
2" O.D. split barrel sampler
C. 3-1/4" O.D. x 2-1/2" liner
X. sample not recovered

**A - Atterberg, C* - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No 81-5186

Drawing No 5

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED: 11/2/81

SUMMARY: BORING NO. B-5-81

ELEVATION: Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	DEPTH IN FEET
							SAND (Fill)	brown, medium, trace silt, some gravel		moist	m.dense	
							Bottom of boring at depth 5.0' No groundwater encountered Piezometer installed to 5.0' Completed 11/2/81					

A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

BOEING METHANE STUDY
Bellevue, Washington
for The Boeing Company

Project No. 81-5186

Drawing No. 6

ConverseWardDavisDixon Geotechnical Consultants

DATE DRILLED 10/1/82

SUMMARY: BORING NO. 6 -82

ELEVATION 332.3

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						GRAVELLY SAND	brown, fine to coarse, some silt	SW	moist	very dense	
											330
	1A	8 25 40		8.1							
5											
											325
	2A	14 50/6"					occasional cobbles		wet	very dense	
10											
						SILTY SAND (Glacial Till)	gray, fine to medium, little gravel, trace cobbles	SM	moist	very dense	
											320
	3A	16 18 35		7.3							
15											
											315
	4A	50/4"		6.4							
20											
											310
	5A	50/5"		10.2			little to some gravel		very moist		
25											
											305
	6A	50/5"		5.5					moist		
30											
						GRAVELLY SAND (Advance Outwash)	brown, fine to coarse, clayey silt matrix	SW	moist	very dense	
											300
	7A	25 50/3"		7.7							
35											
							grades cleaner with less silt, occ. cobbles				
											295
	8A	50/4"		5.8							
						Bottom of boring at depth 38.3'					
40											

No groundwater encountered

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No.
82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No.
~~11~~ 12

DATE DRILLED 10/2/82

SUMMARY: BORING NO. 7-82

ELEVATION: 333.9

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV.
0–4	1A	4 6 7		15.6		SILTY SAND (Fill)	brown, fine to medium, some gravel	SM	very moist	medium dense	330
8–10	2A	1 8 17		15.5		SILTY SAND (Sanitary Landfill)	brown, fine to medium, some gravel, trace wood & debris (metal, plastic, cloth), organic odor		very moist	medium dense	325
13–15	3A	5 3 9		21.4			wood fragments (from drill action, occasional pieces of concrete 5.5-16.5' depth)				320
18	4A	50/3"		5.7		SAND (Glacial Till)	blue-gray, fine to coarse, some silt and gravel, occasional cobbles	SM	slightly moist	very dense	315
23	5A	50/4"		6.1			grades slightly coarser				310
28	6A	50/5"		6.1		GRAVELLY SAND (Advance Outwash)	gray, fine to coarse, trace silt, zones of clayey silt matrix	SW	moist	very dense	305
33	7A	50/6"		9.2							
33.5						Bottom of boring at depth 33.5' No groundwater encountered					300

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No 82-5169

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 12-15

DATE DRILLED: 10/2/82

SUMMARY: BORING NO. 8-82

ELEVATION 340.4

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF
1A	6 12 10		10.8	
2A	4 5 8		25.9	
3A	5 17 13		14.1	
4A	50/5"		5.5	
5A	50/3"		4.2	
6A	18 50/5"		9.8	
7A	50/6"		10.1	
8A	25 50/5"		7.8	

DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
SILTY SAND (Fill)	brown, organic, little gravel, trace roots	SM	very moist	medium dense
SILTY SAND (Sanitary Landfill)	black, fine to medium, with paper, wood, plastic, metal & wire, organic odor (from drill action, concrete pieces 5-16.5' depth) grades finer with clayey silt, fabric fragments	ML		
SILTY SAND (Glacial Till)	blue-gray, fine to coarse, some gravel, occasional cobbles boulder 20-21' depth (refusal on boulder at 25' depth; redrilled hole 6' north of original location)	SM	moist	very dense
SILT (Lacustrine Deposit)	gray, some fine sand, trace gravel, laminated occasional layer of coarse sand	ML	slightly moist	very dense
SAND (Advance Outwash)	brown, fine to coarse, some silt, trace clayey silt, occasional gravel grades cleaner with less silt	SP	moist	very dense

(Continued)

DEPTH IN FEET: 0, 5, 10, .5, 20, 25, 0, 5, 10

ELEV: 340, 335, 330, 325, 320, 315, 310, 305

A. 2" split-spoon sampler
B 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. ~~13~~ 14

DATE DRILLED: 10/2/82

SUMMARY: BORING NO. 8 (Cont.) ELEVATION

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY	ELEV
40							SAND (Cont.) brown, fine to coarse, silt matrix, trace gravel		moist ~~dry~~	very dense	300
	9A	■	50/5"		4.8						
45							Bottom of boring at depth 43.5' No groundwater encountered Piezometer installed to depth 43.5', with 2' slotted interval at bottom.				295

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No
82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No.
~~14~~ 15

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0						SILTY SAND (Fill)	gray-brown, fine to medium, little gravel, trace wood		moist	medium dense
	1A	7 18 16		9.9						
5						SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, trace to occasional cobbles		moist	very dense
	2A	50/2"		7.5						
10										
	3A	100/4"		7.6						
15										
	4A	75/3"		6.4			with occasional lense of gray, fine to medium sand			
20										
	5A	75/2"		6.2						
25						Refusal at 25.0', restart boring approximately 15' south.				
							very cobbly, 6"-8" diameter			
	6A	75/2"		13.5		SAND (Advance Outwash)	gray, mottled brown and pink, fine to medium, trace gravel & silt, occasional cobble		moist	very dense
30										
	7A	75/3"		11.3			grades to little silt, fine to medium			
35										
	8A	75/5"		11.6						
40						(Continued)				

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear,
G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No.
82-5169

Drawing No.
V-6

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 2/28/83

SUMMARY: BORING NO. 8A (Cont.) ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40						SAND (Cont.) (Advance Outwash) grades to fine to coarse, trace silt and gravel, occasional cobble		moist	very dense
	9A	44 50/5"		9.1					
45									
	10A	50/6"		8.8					
50									
	11A	50/6"		7.4					
55						Bottom of boring at depth 53.5' No groundwater encountered. Methane visible in boring. Methane standpipe installed to depth 53.5' with 20' slotted interval at bottom; gravel backfill to depth 33.0'; backfilled with cuttings to depth 20.0'; bentonite seal from depth 20.0-19.0'; backfilled to surface with cuttings. Completed 2/28/83			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No. 17

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED 10/2/82

SUMMARY: BORING NO. 9-62

ELEVATION: 340.2

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						0.2' Asphalt Surface				340
						SILTY SAND (Fill) brown, fine to medium, little gravel, wood fragments	SM	very moist	medium dense	
	1A	13 / 9 / 18		15.3						
5						SILTY SAND (Glacial Till) brown, fine to medium, little gravel, trace cobbles	SM	moist	very dense	335
	2A	50/5"		6.2		(refusal at 9' on boulders, redrilled hole 11' east of original location)				
10										330
	3A	50/5"		10.5		gray		very moist		
15						large cobbles 16-21' (no sample taken in this interval)				325
20										320
	4A	50/6"		9.5						
						SILT (Lacustrine) gray, some fine sand, laminated	ML	moist	very dense	
25						SAND (Advance Outwash) gray-brown, fine to coarse, some to trace silt, occasional gravel	SP	moist	very dense	315
	5A	50/6"		7.5						
30										310
	6A	50/4"		7.5						
35										305
	7A	50/4"		10.7						
40						Bottom of boring at depth 38.3'				

No groundwater encountered

* A. 2" split-spoon sampler B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level / impervious seal / piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No 82-5169

Drawing No. ~~15~~ ~~16~~

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED. 10/2/82

SUMMARY: BORING NO. 10

ELEVATION. 340.6

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF
	1A	4 4 5		19.0	
	2A	7 14 45		5.6	
	3X	50/3"			
	4A	20 15 12		16.6	
	5A	7 12 15		25.1	
	6A	50/6"		4.7	
	7A	50/6"		8.3	
	8A	23 23 30		12.1	

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40

DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
SILTY SAND (Fill)	brown, fine to medium, little gravel, trace wood, organic	SM	very moist	loose
GRAVELLY SAND (Fill)	gray, fine to medium, trace silt	SW	moist	dense
(concrete pieces throughout fill based on cuttings)				
(sample 3 driven on concrete)				
CLAYEY SILT (Sanitary Landfill)	gray, mottled brown, some sand, trace glass wire & paper	MH	very moist	medium dense
SILTY SAND (Sanitary Landfill)	brown, fine to medium, little gravel, wood	SM	very moist	medium dense
SAND	gray, fine to coarse, trace gravel, trace silt	SP	moist	very dense
	(Continued)		very moist	

ELEV: 340, 335, 330, 325, 320, 315, 310, 305

*A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No. ~~16~~ 19

Converse Consultants Geotechnical Engineering and Applied Sciences

DATE DRILLED: 12/7/82

SUMMARY: BORING NO. 11 -82

ELEVATION: 306.6

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						SILTY SAND (Fill)	dk. brn., f/m, little gravel, trace roots	SM	wet	loose	306.6 / 305
5	1A	3 7 1		18.6		SAND (Fill)	gray, fine to medium, trace silt, occasional gravel	SP	wet	loose	
10	2A	7 8 30		16.6		SILTY TO CLAYEY SAND (Advance Outwash)	brown, fine to coarse, trace to occasional gravel	SM	wet	dense	300
						grades to... SAND	rust-brown, fine to coarse, trace silt, occasional gravel	SP	12/7/82 (water level)		INVERT ELEV / 295
15	3A	6 28 32		9.2					moist	dense	
						Bottom of boring at depth 14.5' Groundwater encountered during drilling at depth 9.5'					290

* A. 2" split-spoon sampler B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner D. 3-1/2" O.D. split barrel sampler X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 21

DATE DRILLED 12/7/82

SUMMARY: BORING NO. 12-82

ELEVATION: 299.1

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY	ELEV
0						asphalt					299.1
						SAND (Fill)	gray-brown, f/m, little silt	SM	moist	medium dense	
	1A	18 50/3"		12.2		SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, trace clay	SM	moist	very dense	
5											295
	2A	6 16 37		12.0							
10									1/10/83	3/3/83	290
						SAND (Advance Outwash)	gray-brown, fine to coarse, little gravel, trace silt	SP	wet 12/22/82	very dense	
	3A	12 50/4"		11.2						INVERT ELEV	
15											285

Bottom of boring at depth 13.9'
Groundwater encountered during drilling at depth 10.0'
Piezometer installed to depth 13.0' with 1.5' slotted interval at bottom; backfilled with pea gravel to 11.0'; backfilled to surface with cuttings, and bentonite seal at surface.

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE TRUNK SEWER
Bellevue, Washington
for Brown and Caldwell

Project No. 82-5169

Drawing No. 22

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 4/14/83

SUMMARY: BORING NO. 1-83

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION		SYMBOL	MOISTURE	CONSISTENCY
0	1	18 19				SILTY SAND (Fill)	dark greenish-gray, fine to coarse, little gravel	SM	very moist	dense
5						SAND (Fill)	light gray, fine to medium, trace silt			
10	2	39 18				SILTY GRAVELLY SAND (Fill)	dark gray, fine to coarse, trace organics (landfill debris?)	SM	wet	dense
15	3	18 50/6"				SILTY SAND (Landfill Debris)	gray, fine to medium, abundant organics & metal debris	SM	wet	dense

Water levels: ∇ 4/14/83; ∇ 4/27/83; ∇ 7/8/83

Bottom of boring at depth 14.0'
Piezometer installed (see schematic for details)
Groundwater encountered at depth 7.0' at time of drilling.

*. 2" split-spoon sampler
J. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

**A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

LEACHATE SAMPLING
I-90/Bellevue Business Park
for Cabot, Cabot & Forbes

Project No. 81-5216

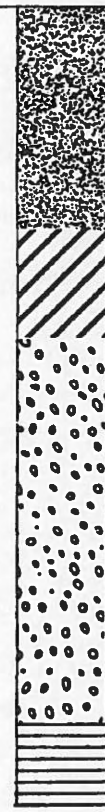
Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 2

Date Drilled: 3/26/83

Elevation: Approx. 349

Depth in Feet	Soil Description		Graphic of Methane Well Installation*	Elev. in Feet
0	FILL			349
	SILTY SAND (Glacial Till)	gray-brown, fine to medium, little gravel, tr. clay, occ. cobbles to 6" dia.; moist, very dense	cuttings/backfill	
10				340
			bentonite/cement seal	
20	SILTY SAND (Advance Outwash)	gray-brown, mottled pink, f/c, some gravel, tr. clay; moist, very dense		330
	grades to...		gravel backfill	
30	GRAVELLY SAND	gray-brown, mottled pink, f/c, some silt, tr. clay; very moist, very dense		320
	grades to...			
40	SAND	fine to medium, trace silt; moist, very dense	slotted interval	310
50				300



Bottom of boring at depth 43.5'
No groundwater encountered
Completed 3/26/83
*Methane well consists of 1½" I.D. PVC pipe

SUMMARY: BORING NO. 207-83

METHANE WELL INSTALLATION
Bellevue/I-90 Business Park
for Boeing Computer Services

Project No
83-5116

Drawing No.
9

Converse Consultants
Geotechnical Engineering and Applied Sciences

DATE DRILLED: 6/3/85

SUMMARY: BORING NO. B-301 ~~-95~~

ELEVATION Approx. 342

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C		6 8 14				SILTY SAND (Fill); mottled black & gray, fine to medium, little gravel, trace wood, concrete	SM	moist	medium dense
5	2C		8 8 43				SILTY SAND (Sanitary Landfill); black, fine to medium, some sanitary refuse: glass, wood, etc., strong organic smell;	SM	moist	medium dense
10	3C		50/3"				grades to debris fill: glass, wood, paper, cans; no soil matrix; visible methane		moist	dense
							Bottom of boring at depth 12.8' 3/4" diameter PVC observation well installed with slotted screen from 7.5' to 12.5', pea gravel backfill from 5.0' to 10.5', backfill with cuttings from 5.0' to 3.0', bentonite seal from 3.0' to surface, and install cast iron monument cover.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 2

DATE DRILLED: 6/3/85

SUMMARY: BORING NO. B-302-05

ELEVATION: Approx. 338

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1C	50/5"				SILTY SAND (Fill); brown, fine to medium, little gravel, trace wood (sampler driving on rock)	SM	moist	medium dense
5	2C	5 3 18				SAND (Fill); gray, fine to medium, trace gravel, wood, & metal debris	SP	moist	medium dense
10	3C	50/6"				SANITARY LANDFILL; consists of wood, glass, plastic, rubber, paper and metal; no soil matrix;		moist	dense
15	4C	8 20 50/4"				occasional lense of sand		very moist	
20	5C	33 17 21				(possible free water)		6/21/85 ▽ 6/7/85 very moist	
25						Bottom of boring at depth 24.0' 3/4" dia. PVC observation well installed with slotted screen from 17.5' to 22.5', pea gravel backfill from 9.0' to 22.5', backfilled with cuttings from 3.0' to 9.0', bentonite seal from 3.0' to surface, and install cast iron monument cover.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

▽ water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 3

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303-85

ELEVATION: Approx. 339.9

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0–5	1C	4 14 12				**SILTY SAND** (Fill); gray-brown, fine to medium, little gravel, trace wood	SM	moist	medium dense
5–10	2C	4 8 14				grades to black, trace wood, plastic, and metal debris			
10–15	3C	8 12 13				**SILTY SAND** (Sanitary Landfill); black, fine to medium, trace gravel, wood, plastic, metal, wire, and paper	SM	very moist	medium dense
15–20	4C	6 10 12							
20–25	5C	28 29 11							
25–30	6C	8 13 22				grades to Sanitary Landfill with little silty sand		moist	
30–35	7C	11 9 20							
35–40	8C	13 19 50/6"				**SILTY SAND** (Old Soil Horizon/Fill); brown, tr. to little gravel, trace wood & glass	SM	very moist	medium dense

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 4

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303-85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40							SILTY SAND (Cont.);	SM		dense
	9C		68 50/3"							
45							SILTY SAND (Weath. Glacial Till); gray, f/m, trace to little gravel	SM	wet	very dense
	10C		57 50/3"							
50							grades to Unweath. Till, with occ. lense of gravelly silty sand and sandy silt	SM	moist	
	11A		60/6"							
55							SAND (Advance Outwash); brown, fine to medium, trace silt, thinly bedded with sandy silt layers	SP	moist	very dense
	12A		60/6"							
60									wet	
	13A		27 50/6"						6/7/85 6/21/85 ▽	
65							SANDY SILT (Lacustrine Sediments); gray, fine sand, thinly laminated with clayey silt and silty fine sand	ML	very moist	very dense
	14A		20 50/6"							
70							SAND; dark gray, very fine, trace to little silt	SM	wet	very dense
	15A		7 13 35							
75							grades fine to medium, thinly bedded to laminated with clayey silt and brown sandy silt		very moist	
	16C		55 50/3"							
80										

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear,
G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 4 (CONT.)

DATE DRILLED: 6/4/85

SUMMARY: BORING NO. B-303 ~~85~~ (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
80							Bottom of boring at depth 78.2' Groundwater encountered at depth 64' during drilling 2" diameter PVC observation well installed with slotted screen from 55' to 75'; sand backfill from 50' to 71'; grout backfill from 19' to 50'; dry cement backfill from 12' to 19'; backfilled with cuttings from 1' to 12', and cast iron monument cover installed at surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

EASTGATE LANDFILL WATER SAMPLING
Bellevue, Washington
for Boeing Computer Services

Project No.
85-5104-02

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No.
4 (CONT.)

DATE DRILLED: 4/4/85

SUMMARY: BORING NO. CC-1 -65

ELEVATION: Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0	1A		6 6 8				GRAVELLY SAND (Fill); brown, fine to medium, trace silt & organics grades to little gravel		slightly moist	medium dense
5	2A		7 7 9				SILTY SAND; mottled gray & light brown, fine to medium, trace clay and gravel		moist	medium dense
10	3A 4X		28 48 50/4" 50/4"				SILTY SAND; gray, fine to medium, little gravel, trace clay		wet	very dense
15 20	5A 6C 7A		50/4" 7 15 50/4" 50/4"				SILTY SAND (Unweathered Till); light brown, fine to medium, little gravel, trace clay		slightly moist	very dense
25	8A		4 22 50/4"				SAND (Advance Outwash); brown, fine to medium, trace silt		wet	very dense
30 35	9A 10A		26 40 50/5" 25 36 50/4"				SAND (Lacustrine); mottled brown & light brown, fine, trace medium, trace silt with thinly laminated to medium bedded silt and sandy silt		slightly moist	very dense
							Bottom of boring at depth 36.5' Groundwater encountered at depth 9' during drilling. Hole filled with cement/bentonite to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. A

DATE DRILLED 4/4/85

SUMMARY: BORING NO. CC-2 -85

ELEVATION. Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF
0					
	1A	17, 12, 15			
5					
	2A	5, 7, 8			
10					
	3A	14, 42, 29			
15	4A	50/6"			
	5A	48, 50/5"			
20	6A	17, 26, 26			
	7A	29, 44, 50/2"			
25	8A	24, 37, 37			
	9A	34, 36, 50/5"			
30	10A	14, 18, 25			
	11A	21, 24, 39			
35	12A	21, 29, 43			
	13A	18, 26, 42			
40					

DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
GRAVELLY SAND (Fill); light brown, fine to medium, trace silt		slightly moist	
GRAVELLY SILTY SAND; mottled brown & light brown, fine to medium		slightly moist	medium dense
SANDY SILT/CLAYEY SILT (Alluvium); mottled gray-green & light brown, fine, thinly laminated		slightly moist	medium dense
CLAYEY SAND (Advance Outwash); gray, fine to medium, trace gravel		moist	very dense
SAND; gray, fine to medium, little silt, trace gravel		moist	very dense
grades to trace silt and gravel		▽ 4/17/85	
with occ. thin laminations of silty sand		moist to wet	dense
to mottled gray & light brown		wet	
with medium bedded brown silt and thin laminations to thinly bedded silty fine sand		slightly moist	very dense
SILTY SAND (Lacustrine); dark gray, fine, with thin laminations to thinly bedded silt and fine sand		slightly moist	dense
SAND; brown, fine to medium, trace silt, with medium bedded fine sandy silt		wet	very dense
to gray, fine, med. bedded gray silt, thin lam. of fine sandy silt			
SILT; dark gray, w/thin laminations to medium bedded sandy silt		wet	very dense

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler
C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler
X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. B

DATE DRILLED: 4/4/85

SUMMARY: BORING NO. CC-2 ~85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	SAMPLE	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40							SILT (Lacustrine)(Cont.)			
	14A		12 40 50/4"				SAND; mottled dark gray & light brown, fine, trace to little silt, w/thin laminations of fine sandy silt		slightly moist	very dense
45										
	15A		30 50/6"				dark gray, fine, w/thin laminations of silt & occ. thin lamination of peat			
50							SILT; dark gray, w/thin lam. fine sandy silt & occ. thin lam. of peat		slightly moist	very dense
	16A		27 43 50/5"							
55										
	17A		22 37 50/5"				with thin lamination of silty fine sand			
60							Bottom of boring at depth 59.0' Groundwater encountered at depth 8' Two-inch dia. piezometer installed to depth 41', with 0.010 inch screen section from depth 22' to 27', backfilled to 41', sand placed to 15', cement/bentonite seal placed to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. B (CONT.)

DATE DRILLED: 4/5/85

SUMMARY: BORING NO. CC-3 ~65

ELEVATION: Approx. 302

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
0						GRAVELLY SAND (Fill); brown, fine to medium		moist	very dense
	1A	17 34 21				SILTY SAND; mottled brown & light brown, f/m, little gravel, trace fine roots, occasional charcoal		moist	very dense
5	2A	38 50/6"				GRAVELLY SAND; gray, fine to coarse, trace silt		moist	very dense
	3C	40 50/2"				GRAVELLY SILTY SAND; mottled gray & brown, fine to coarse, trace clay & scattered organics			
10	4A	38 50/6"				SILTY SAND; mottled gray & brown, fine to medium, trace gravel, trace clay		slightly moist	very dense
15	5A	11 20 50/3"				CLAYEY SAND (Adv. Outwash); gray-brown, fine to medium, trace gravel, trace silt, occ. woody fragments		very moist	very dense
20	6A	20 50/6"				SAND; gray, fine to medium, trace silt		wet	very dense
25	7A	25 45 50/4"							
30	8A	24 50/5"				mottled gray & light brown, trace silt			
35	9A	20 43 50/3"				grades to gray			
40									

(Continued)

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Drawing No. C

Converse Consultants — Geotechnical Engineering and Applied Sciences

DATE DRILLED: 4/5/85

SUMMARY: BORING NO. CC-3 -85 (Cont.)

ELEVATION:

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF ACTUAL CONDITIONS ENCOUNTERED.

DEPTH IN FEET	SAMPLE NO.*	BLOWS/6"	OTHER TESTS**	FIELD MOISTURE % OF DRY WEIGHT	DRY DENSITY PCF	DESCRIPTION	SYMBOL	MOISTURE	CONSISTENCY
40						SAND (Adv. Outwash) (Cont.);		wet	very dense
	10A	21 50/3"				SAND (Lacustrine); gray, fine, trace silt, with med. bedded silt & thin lam. of fine sandy silt		moist	very
45									
	11A	26 50/6"				SILT; dark gray, trace fine sand, w/thin beds of mottled gray & light brown, fine to medium sand and silty sand, & thin lam. fine sandy silt, occ. thin lamination of peat		moist	very ~~dense~~ hard
50									
	12A	25 35 38				w/thin laminations of fine sand		slightly moist	
55						with medium bedded silty fine sand, and thin laminations of fine sand			
	13A	27 47 50/3"							
60						with thinly bedded silty fine sand, and thin laminations of fine sandy silt			
	14A	27 40 53/3"							
65						mottled dark gray & light brown, trace fine sand, with med. bedded fine sand			
	15A	36 50/3"						moist	
70						Bottom of boring at depth 68.5' Groundwater encountered at depth 20' Hole filled with cement/bentonite slurry from 68.5 to surface.			

* A. 2" split-spoon sampler
B. 3" O.D. thin-wall sampler C. 3-1/4" O.D. x 2-1/2" liner
D. 3-1/2" O.D. split barrel sampler X. sample not recovered

** A - Atterberg, C - consolidation, DS - direct shear, G - grain size, T - triaxial, P - permeability

water level
impervious seal
piezometer tip

SLURRY TRENCH FEASIBILITY STUDY
Boeing Computer Services
Bellevue, Washington

Project No. 85-5104

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. C (CONT.)

LOG OF TEST PIT NO. 201-85

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

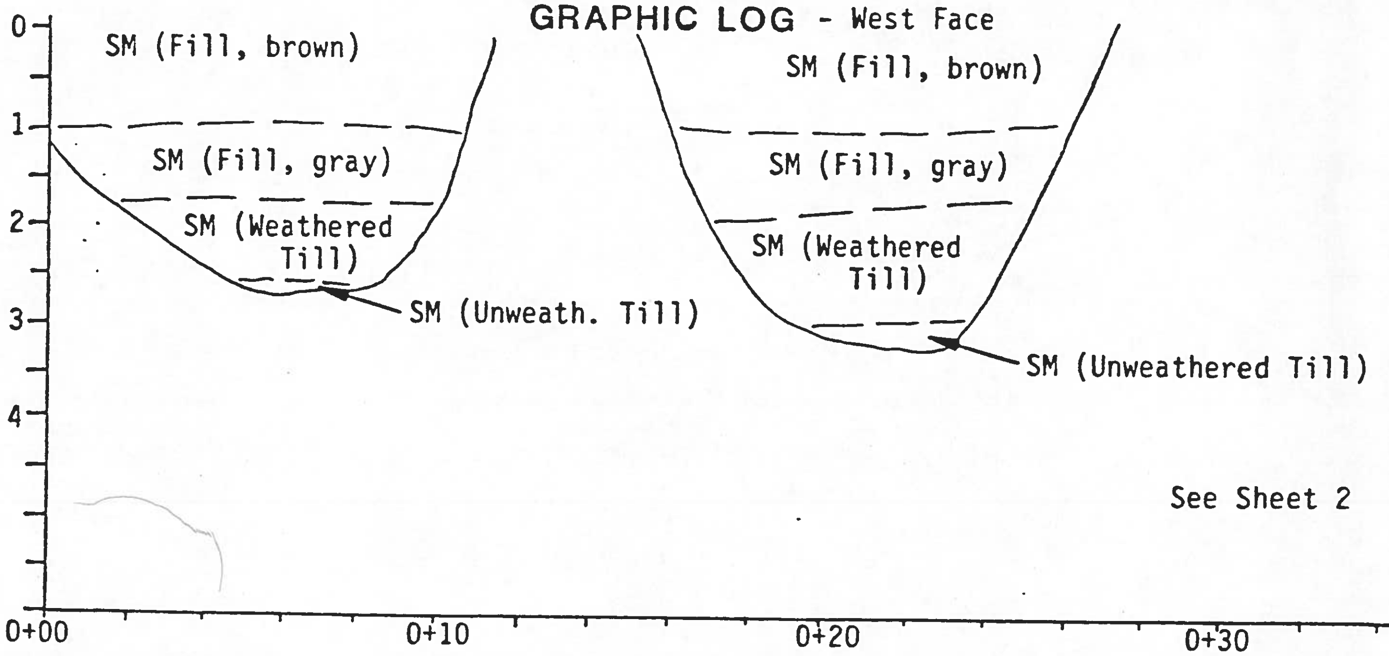
CLIENT: Boeing Computer Services ELEVATION: Approx. 344

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N/A LOGGED BY: D.A.Y.

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–1		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace roots; moist, medium dense	
1–2		SM	SILTY SAND (Fill); gray fine to medium, little gravel, occasional gravel to 4" dia., trace wood; moist, medium dense	
2–3		SM	SILTY SAND (Weath. Till); brown, fine to medium, little gravel, occ. cobbles to 6"; moist, dense	
3–3.5		SM	SILTY SAND (Unweath. Till); gray-brown, fine to medium, little gravel, occ. cobbles; moist, very dense	
			Bottom of test pit at depth 3.5' No groundwater encountered Completed 6/20/85	

GRAPHIC LOG - West Face



See Sheet 2

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 1

LOG OF TEST PIT NO. 201-85 (Cont.)

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

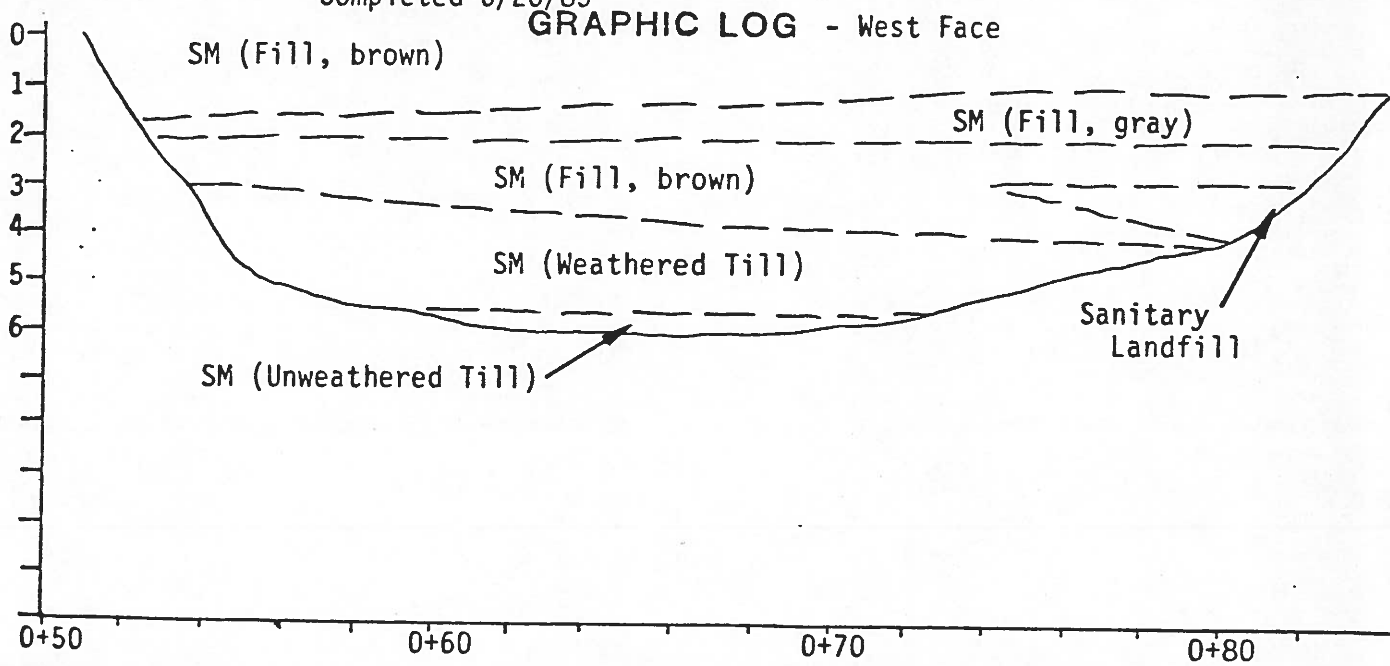
CLIENT: Boeing Computer Services ELEVATION: Approx. 344

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: LOGGED BY: D.A.Y.

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–2		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace roots; moist, medium dense	
2			color changes to gray	
2.5			color changes to brown	
3–4			SANITARY LANDFILL; black, household garbage, cans, glass, wire; very moist	strong trash odor throughout
4–5.5		SM	SILTY SAND (Weath. Till); brown, fine to medium, little gravel, occasional cobbles; moist, dense	
5.5–6		SM	(Unweath. Till); gray-brown; moist, very dense	
6			Bottom of test pit at depth 6.0' No groundwater endountered Completed 6/20/85	

GRAPHIC LOG - West Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 1 (CONT.)

LOG OF TEST PIT NO. 202-85

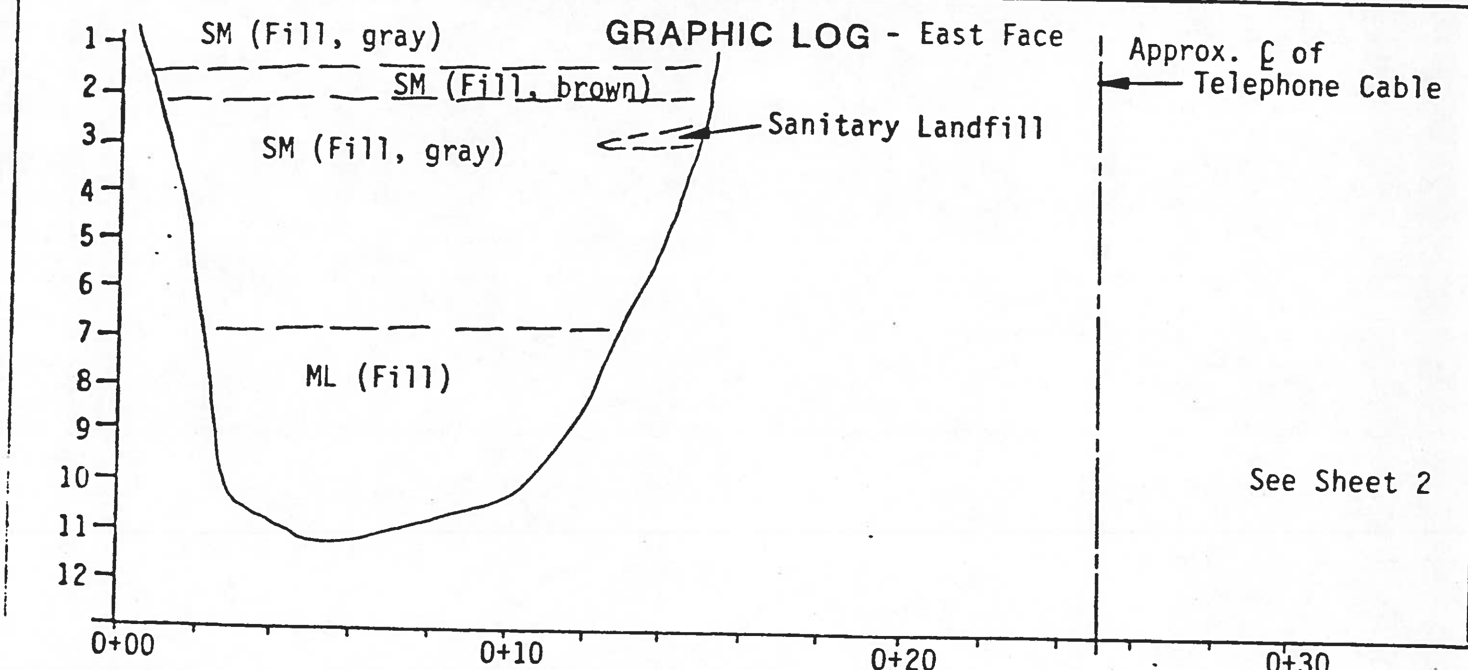
PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

CLIENT: Boeing Computer Services ELEVATION: Approx. 342

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N.A. LOGGED BY: DAY

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
0–2		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, trace wood; moist, medium dense	
2–3			SANITARY LANDFILL: black, household garbage, paper, rags, cans, glass; moist	strong organic odor throughout
3–7		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, trace wood; moist, medium dense	
7–11		ML	CLAYEY SILT (Fill); gray, little sand and fine to medium gravel; moist, stiff	
11			Bottom of test pit at depth 11.0' No groundwater encountered. Completed 6/20/85	



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants
Geotechnical Engineering and Applied Sciences

Drawing No. 2

LOG OF TEST PIT NO. 202-85 (Cont.)

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/20/85

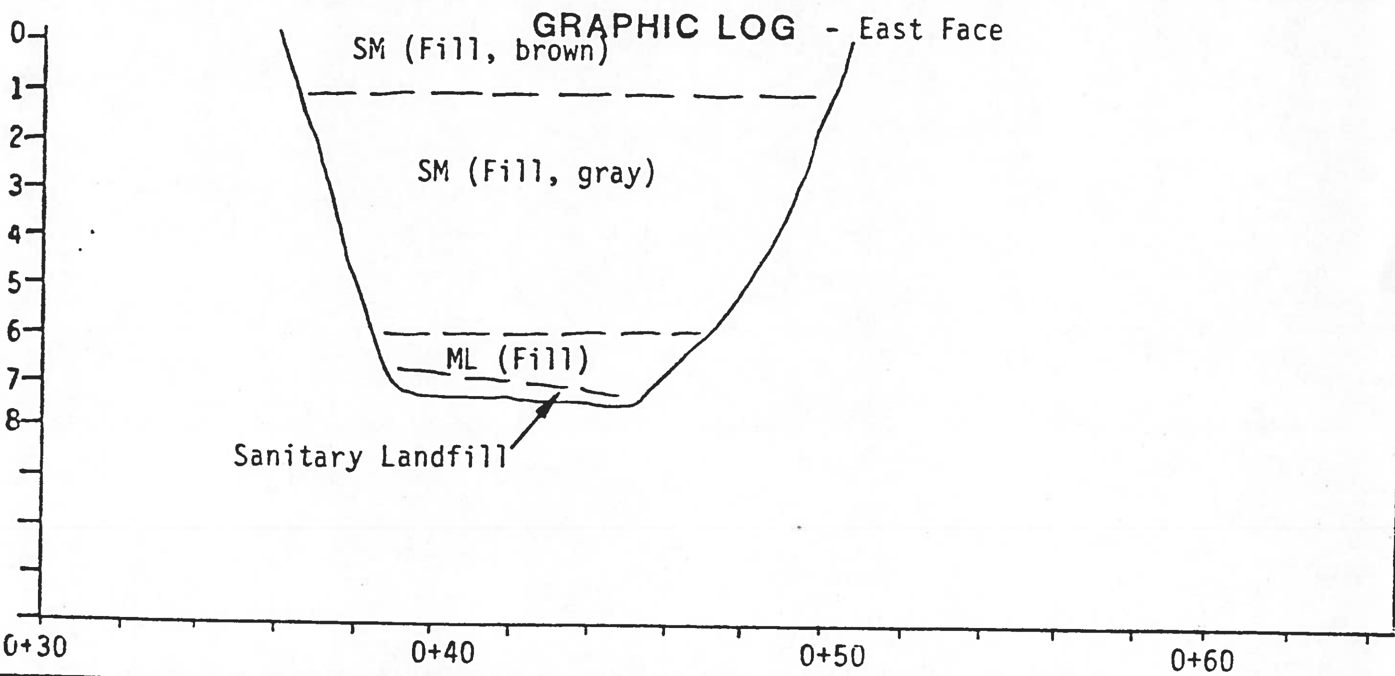
CLIENT: Boeing Computer Services ELEVATION: Approx. 342

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N.A. LOGGED BY: DAY

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
		SM	SILTY SAND (Fill); brown, fine to medium, little gravel, trace wood; moist, medium dense	
1				
2			grades to gray in color	
3				
4				
5				
6		ML	CLAYEY SILT (Fill); gray, little sand and gravel, trace wood, paper; moist, stiff	strong trash odor throughout
7			SANITRAY LANDFILL; household garbage, paper, rags, cans, glass; moist	
8				
			Bottom of test trench at depth 7.5' No groundwater encountered Completed 6/20/85	

GRAPHIC LOG - East Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 2 (CONT.)

LOG OF TEST PIT NO. 203-85

PROJECT: 27.2 Acre Site JOB NO: 85-5156 DATE: 6/21/85

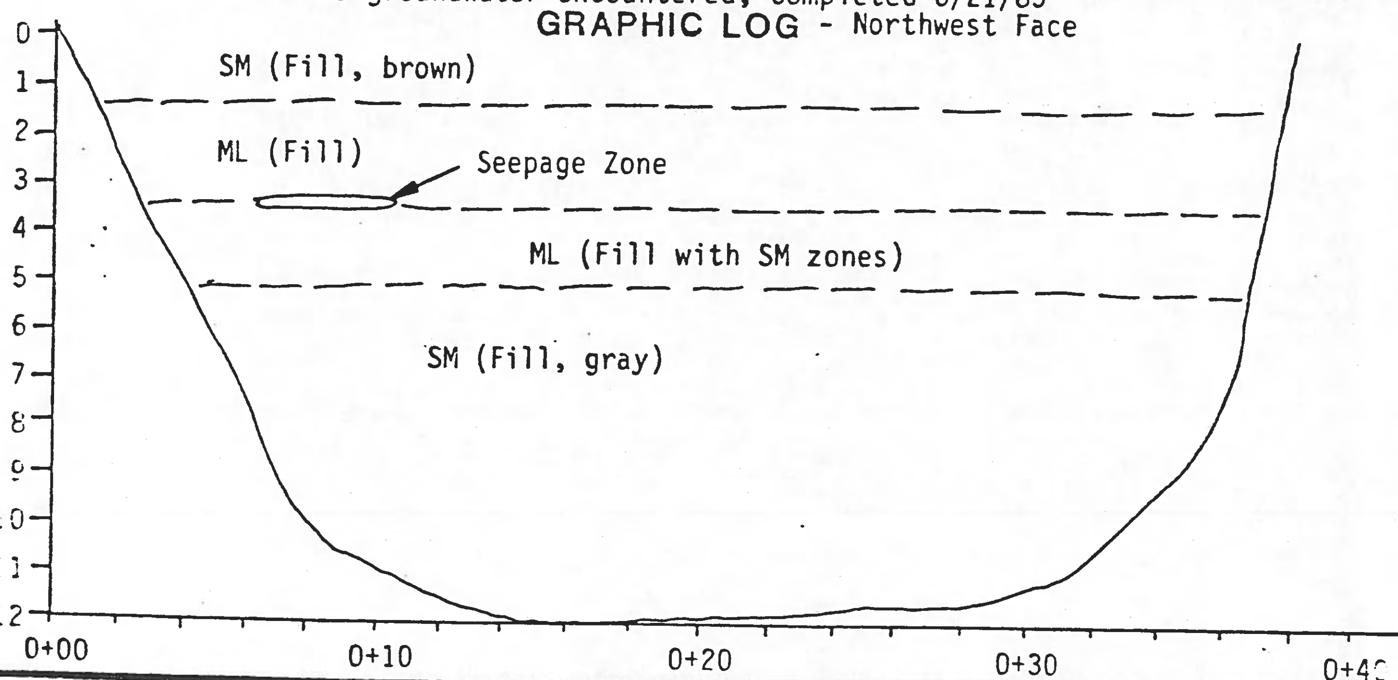
CLIENT: Boeing Computer Services ELEVATION: Approx. 342

FEATURE: LOCATION: See Drawing

GROUNDWATER LEVEL: N.A. LOGGED BY: RAB

DEPTH (ft)	SAMPLE NO.	SOIL SYM.	DESCRIPTION	REMARKS
1		SM	SILTY SAND (Fill); brown, fine to medium, little gravel , scattered cobbles; moist, medium dense	
2–4		ML	CLAYEY SILT (Fill); mottled gray-brown, little fine sand, trace cobbles, scattered household garbage; moist to very moist, stiff	
5			scattered zones of brown, silty sand concrete rubble (to 4' pieces)	seepage zone
6–12		SM	SILTY SAND (Fill); gray, fine to medium, little gravel, scattered cobbles, scattered household garbage, paper, plastic, and rubber; moist, dense	strong organic odor through-out
			Bottom of test trench at depth 12.0' No groundwater encountered; Completed 6/21/85	

GRAPHIC LOG - Northwest Face



PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No. 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No. 3

LOG OF TEST PIT NO. TP-204-85

Location: See Drawing

Elevation: Approx. 344

Surface Conditions: Flat; sage brush and grass

Depth in feet	Moisture Content-%	Sample	Symbol	DESCRIPTION	REMARKS
0–3			SM	**SILTY SAND** (Fill); brown, fine to coarse, little fine to medium gravel, trace subrounded cobbles, roots and organics; slightly moist, medium dense	
3–5			SM	**SILTY SAND**; brown, fine to medium, trace gravel, trace subrounded cobbles; concrete rubble (to 4'), timbers and wood (to 8"), bicycle tires; moist, dense (Fill)	test pit walls standing vertical
5–12			ML	**CLAYEY SILT**; gray, trace gravel, trace fine to medium sand, scattered small branches, roots, and organics; moist, firm (Fill)	
12				Bottom of test pit at depth 12.0' No groundwater encountered Completed 6/21/85	

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No 85-5156

Converse Consultants Geotechnical Engineering and Applied Sciences

Drawing No 4

LOG OF TEST PIT NO. TP-213-85

Location: See Drawing

Elevation: Approx. 338

Surface Conditions: Flat; some small weeds

Depth, feet	Moisture Content-%	Sample	Symbol	DESCRIPTION	REMARKS
			SM	**SILTY SAND** (Fill); brown, fine, trace medium to coarse sand, little fine to coarse subrounded gravel; scattered roots, and sticks; moist, medium dense	
3			ML	**CLAYEY SILT**; gray, trace fine to medium sand, little gravel, scattered small to medium cobbles; concrete rubble to (18"), wood, logs (6"), paper, plastic, and metal scraps; with occasional medium beds of silty sand, brown, fine to medium; moist, firm (Fill)	distinct organic odor
4					
5					
6					
7					
8					
9					
10					
11					
12				Bottom of test pit at depth 12.0' No groundwater encountered Completed 6/21/85	

PROPOSED 27.2 ACRE SITE
Bellevue, Washington
for Boeing Computer Services

Project No 85-5156

Converse Consultants — Geotechnical Engineering and Applied Sciences

Drawing No 13

(OW-1)

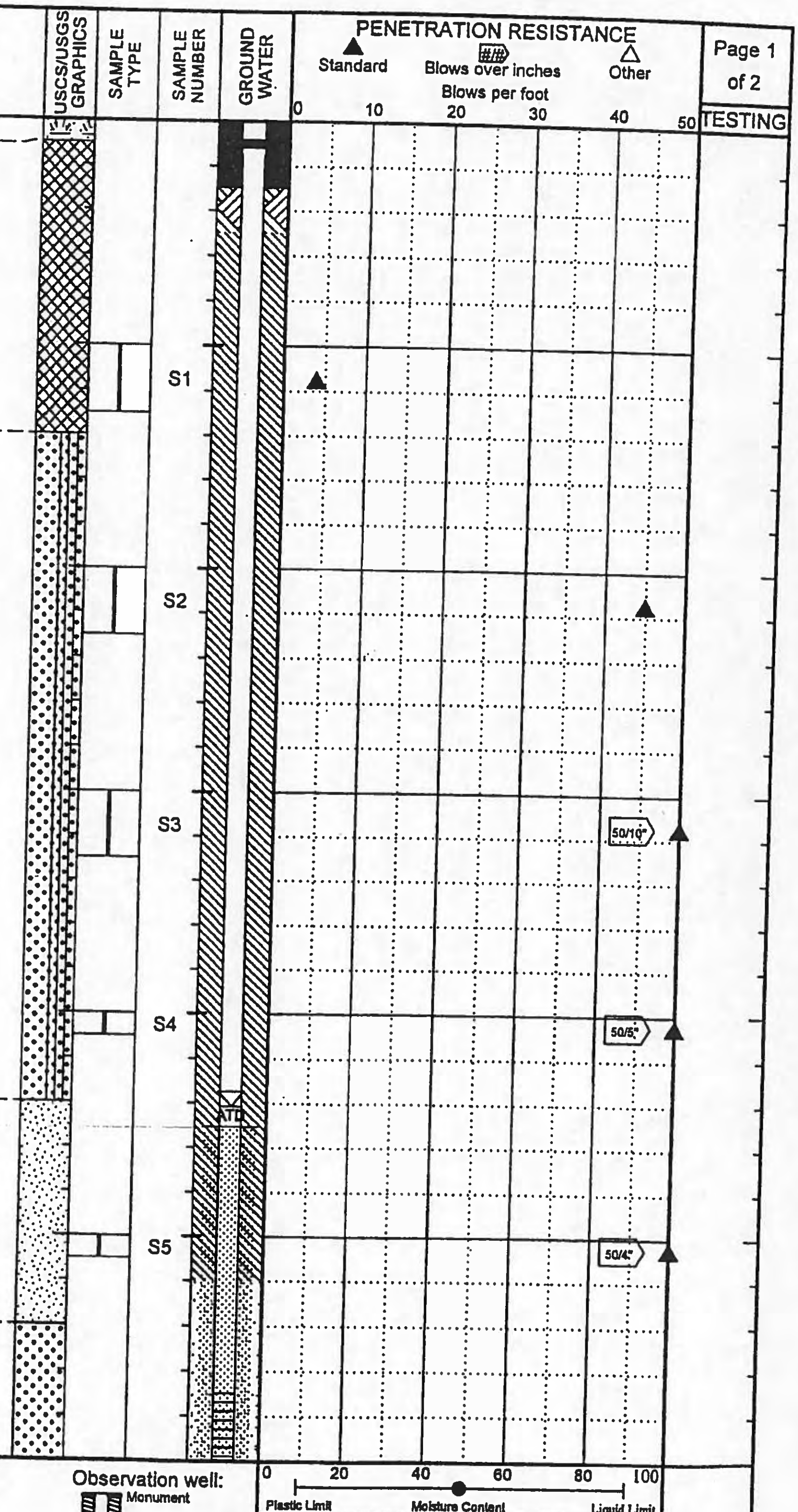
PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-1*

Soil Description

Location: North side of Pond A

Approximate ground surface elevation: 305 feet

DEPTH (feet)	Soil Description
0	Topsoil
	Loose, moist, tan, fine to medium SAND, some silt (Embankment Fill)
~7	Dense, moist, gray, silty fine to medium SAND, some gravel (Alluvium)
~22	Dense, saturated, light brown, medium SAND, trace to some silt (Advance Outwash)
~27	Very dense, saturated, light gray, fine to medium SAND, trace silt (Advanced Outwash)
30	



LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Observation well:
Monument
Bentonite Fill with PVC Pipe
Groundwater Level
Sand Fill with Slotted PVC Pipe
Pipe Cap
Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

A4IN1.GDT 5/28/02

4IN1 B3.G

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

OW-1

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-1*

DEPTH (feet)	Soil Description Location: North side of Pond A Approximate ground surface elevation: 305 feet	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Standard / Blows over inches / Other; Blows per foot 0–50)	Page 2 of 2 TESTING
30	Very dense SAND (as above)			S6		80/11"	
35	Hard, wet, gray, SILT, some fine sand (Glacial-lacustrine Deposit)			S7		50/4"	
40				S8		70	
	Boring terminated at approximately 41.5 feet below ground surface.						
45							
50							
55							
60							

A4IN1.GDT 5/28/02

4IN1 B3.C

LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Observation well:
Monument
Bentonite Fill with PVC Pipe
Groundwater Level
Sand Fill with Slotted PVC Pipe
Pipe Cap
Slough at Bottom of Hole

0 20 40 60 80 100
Plastic Limit — Moisture Content — Liquid Limit

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

OW-2

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-2*

Page 1 of 2

Location: South side of Pond A
Approximate ground surface elevation: 308 feet

DEPTH (feet)	Soil Description	Sample Number	Penetration Resistance (Blows per foot)
0	Grass over topsoil		
	Medium dense, moist, light-orangish brown, silty fine to medium SAND, with some gravel and cobbles (Fill)		
	Medium dense, moist, light gray, silty SAND, with some gravel (Fill)		
5	Hard, moist, gray fine sandy SILT, with some gravel (Fill)	S1	
10		S2	50/6"
	Alluvium (interpreted from cross-section?)		
	Dense, moist, gray, silty fine SAND, with some gravel (Advance Outwash)		
15		S3	50/5"
	Becomes very dense, saturated, gray, fine to medium SAND, trace silt		
20		S4	75"
25	Becomes brown, medium to coarse SAND	S5	75/11"
30			

PENETRATION RESISTANCE: ▲ Standard; ##/## Blows over inches; Blows per foot; △ Other. Scale 0, 10, 20, 30, 40, 50. TESTING

Moisture content scale: 0, 20, 40, 60, 80, 100 — Plastic Limit, Moisture Content, Liquid Limit

LEGEND
- 2.00-inch OD split-spoon sampler
- 3.00-inch OD split-Spoon sampler
- ▼ Observed groundwater level
- ▽ ATD Groundwater level at time of drilling

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

4IN1 B3. JA4IN1.GDT 5/28/02

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-2*

Soil Description

Location: South side of Pond A

Approximate ground surface elevation: 308 feet

DEPTH (feet)	Soil Description	SAMPLE NUMBER	PENETRATION RESISTANCE (Blows per foot)
30–36	Dense, wet to saturated, light brown, fine to medium SAND, with some silt (Advance Outwash)	S6	
36–40.5	Hard, moist, gray SILT with some fine sand (Glacio-lacustrine Deposit)	S7	50/5"
40.5	Boring terminated at approximately 40.5 feet below ground surface	T8	50/5"

Column headings: USCS/USGS GRAPHICS; SAMPLE TYPE; SAMPLE NUMBER; GROUND WATER; PENETRATION RESISTANCE — ▲ Standard, ### Blows over inches, △ Other; Blows per foot 0 10 20 30 40 50; TESTING

Depth scale: 30, 35, 40, 45, 50, 55, 60

Moisture content scale: 0 20 40 60 80 100 — Plastic Limit, Moisture Content, Liquid Limit

LEGEND

- 2.00-inch OD split-spoon sampler
- 3.00-inch OD split-Spoon sampler
- ▼ Observed groundwater level
- ▽ ATD Groundwater level at time of drilling

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Winch Date drilled: *March 27, 2002* Logged By: *KSS*

PROJECT: *Bellevue Airport / Eastgate Landfill* W.O. *1-91M-14173-0* BORING No. *B-3*

Location: Southeast corner of Pond C
Approximate ground surface elevation: 328 feet

DEPTH (feet)	Soil Description	USCS/USGS GRAPHICS	SAMPLE TYPE	SAMPLE NUMBER	GROUND WATER	PENETRATION RESISTANCE (Blows per foot)	TESTING
0	Grass over topsoil						
	Loose, moist to wet, brown silty, gravelly, fine to medium SAND, with scattered debris, glass shards (Fill)						
5				S1			
	Dense, moist, reddish-tan with scattered rust mottling, gravelly, fine to medium SAND, with some silt (Glacial Till)						
10				S2			
15	Blowcount overstated, bouncing on rock			S3		50/4.5"	
	Medium dense to dense, wet to saturated, gray, gravelly, silty fine to medium SAND (Glacial Till)						
	Very hard drilling						
20				S4	ATD		
25				S5			
	Boring terminated at approximately 26.5 feet below existing ground surface						
30							

PENETRATION RESISTANCE: ▲ Standard; Blows over inches; △ Other. Blows per foot: 0, 10, 20, 30, 40, 50

Page 1 of 1

Plastic Limit — Moisture Content — Liquid Limit: 0, 20, 40, 60, 80, 100

LEGEND

2.00-inch OD split-spoon sampler

ATD Groundwater level at time of drilling

Observation well:
- Monument
- Bentonite Fill with PVC Pipe
- Groundwater Level
- Sand Fill with Slotted PVC Pipe
- Pipe Cap
- Slough at Bottom of Hole

amec

11335 N.E. 122nd Way Suite 100
Kirkland, Washington 98034-6913

Drilling Method: HSA Hammer type: Cathead Date drilled: *April 10, 2002* Logged By: *KSS*

4IN1 B3 NA4IN1.GDT 5/28/02

APPENDIX D

Report on the Geophysical Surveys at the Eastgate Landfill, Bellevue, Washington by Global Geophysics

Global Geophysics

P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4321
Fax: 360-805-0259

March 1, 2016 Our Ref.: 105-0904.000

Landau Associates, Inc.
130 2nd Avenue S
Edmonds, WA 98020

Attention: Mr. Kent Wiken

RE: REPORT ON THE GEOPHYSICAL SURVEYS AT THE EASTGATE LANDFILL, BELLEVUE, WA

Dear Mr. Wiken:

Global Geophysics conducted electrical resistivity tomography (ERT), induced polarization tomography (IPT), EM61 and ground penetration radar (GPR) surveys across the Eastgate landfill in Bellevue, WA. The proposed objective of the geophysical investigation is to assist in delineating the vertical and lateral extents of the landfill materials.

METHODOLOGY AND INSTRUMENTATION

Electrical resistivity tomography and induced polarization tomography (IPT) were used for this study. The following paragraphs describe the methods and field procedures.

Electrical Resistivity Tomography (ERT)

The electrical resistivity tomography technique maps differences in the electrical properties of geologic materials. These differences can result from variations in lithology, water content, and pore-water chemistry. The method involves transmitting an electric current into the ground between two electrodes and measuring the voltage between two other electrodes. The direct measurement is an apparent resistivity of the area beneath the electrodes that includes deeper layers as the electrode spacing is increased. Recent advances in technology permit rapid collection of multiple soundings, using up to 56 electrodes for each spread. The data are modeled to create a 2-D geo-electric cross-section that is useful for mapping both vertical and horizontal variations of the subsurface strata.

The data were acquired with an AGI SuperSting R8 using up to 112 electrodes spaced at a 5-7 feet interval. Once the electrode array was installed in the ground, multiple soundings were automatically carried out by the control unit. Downloading and routine modeling of the data was done on-site to provide preliminary analysis and QA/QC of the data. These results were displayed on a color monitor as cross-section that highlight changes in resistivity with depths along the transects.

Induced Polarization Tomography (IPT)

The IPI method studies the decaying potential difference as a function of time. In this method the geophysicist looks for portions of the earth where current flow is maintained for a short time after the applied current is terminated.

When a metal electrode is immersed in a solution of ions of a certain concentration and valence, a potential difference is established between the metal and the solution sides of the interface. This difference in potential is an explicit function of the ion concentration, valence, etc. When an external voltage is applied across the interface, a current is caused to flow and the potential drop across the interface changes from its initial value. The change in interface voltage is called the "over voltage" or "polarization" potential of the electrode. Over voltages are due to an accumulation of ions on the electrolyte side of the interface. The time constant of buildup and decay is typically several tenths of a second.

The IP data were collected at the same time as the resistivity data.

Time Domain Electromagnetic (EM61)

The time-domain electromagnetic system is capable of detecting buried metal objects. It transmits a pulsed electromagnetic field into the ground, which induces eddy currents in buried metallic objects. These eddy currents generate secondary electromagnetic fields that are detected by the system. The time duration or decay rate, of the secondary EM field is related to the electrical conductivity characteristics of the buried object.

A four-channel (gate) high sensitivity metal detector, Geonics EM61 Mk2, was used to collect the data along the traverses at a 20 ft interval. The low channel number (1) represents anomalies produced by shallow objects and the high channel number (4) represents anomalies produced by deeper objects. The subsurface depth range is from approximately 1 to 15 feet. The data was stored digitally and downloaded after the survey for analysis and mapping

Ground Penetrating Radar

The GPR method uses electromagnetic pulses, emitted at regular intervals by an antenna to map subsurface features. The electromagnetic pulses are reflected where changes in electrical properties of materials occur such as changes in lithology or where underground utilities are present. The reflected electromagnetic energy is received by an antenna, converted into an electrical signal, and recorded on the GPR unit. The data is recorded and viewed in real time on a graphical display that depicts a continuous profile or cross-section image of the subsurface directly beneath the path of the antenna.

The depth of penetration of the GPR signal varies according to antenna frequency and the conductivity of the subsurface material. The depth of subsurface penetration with GPR decreases with an increase in the frequency of the antenna and an increase in soil conductivity. Low frequency antennas (50 to 500 MHz) provide the best compromise between obtaining good subsurface penetration and resolution.

The data were collected along the same EM transects at a 20 foot interval using Geophysical Survey Systems, Inc. (GSSI) SIR 2000 GPR system with antennas having a center frequency of 80, 100 and 200 MHz. The data was digitally recorded for post processing.

RESULTS

The ERT and IPT data were collected along 11 transects. The locations of these lines are shown in Figure 1. The interpreted resistivity and IP profiles are shown in Figures 2-3. The borehole logs and test pit logs were used to calibrate the interpretation.

The landfill materials are inhomogeneous comparing to native soil. The interpreted bottom of the landfill material is based on the borehole logs and IP responses of the landfill materials.

- The bottom of the interpreted cover layer is represented by the dashed pink line. And the bottom of the interpreted landfill is presented by the dashed blue line. The thickness of this landfill varies between 0 and 60 ft.
- The zones with resistivity less than 28 ohm-m are interpreted as leachate saturated soil.
- The EM61 data contour plan with interpreted boundary (in dashed res line) is presented in Figure 4.

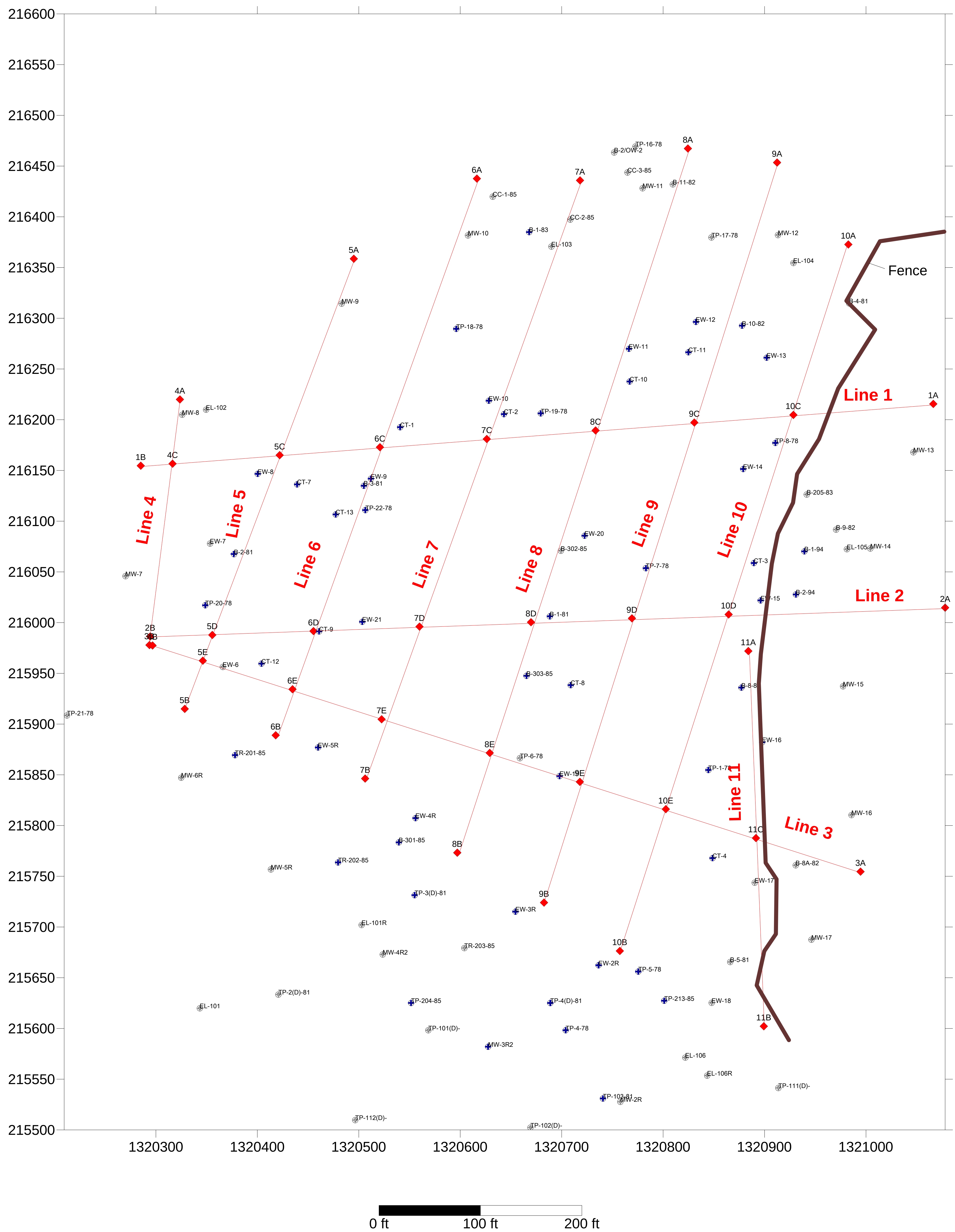
LIMITATIONS OF THE GEOPHYSICAL METHOD

Global geophysics services are conducted in a manner consistent with the level of care and skill ordinarily exercised by other members of the geophysical community currently practicing under similar conditions subject to the time limits and financial and physical constraints applicable to the services. ERT, IPT, EM61 and GPR are remote sensing geophysical methods that may not detect all subsurface conditions due to the limitations of the methods and soil conditions. In general, the errors in the interpreted depths, dependent on the resolution of the technique, are estimated to be approximately ±10 % of the true depths.

Sincerely,

Global Geophysics

John Liu, Ph.D., R.G.
Principal Geophysicist

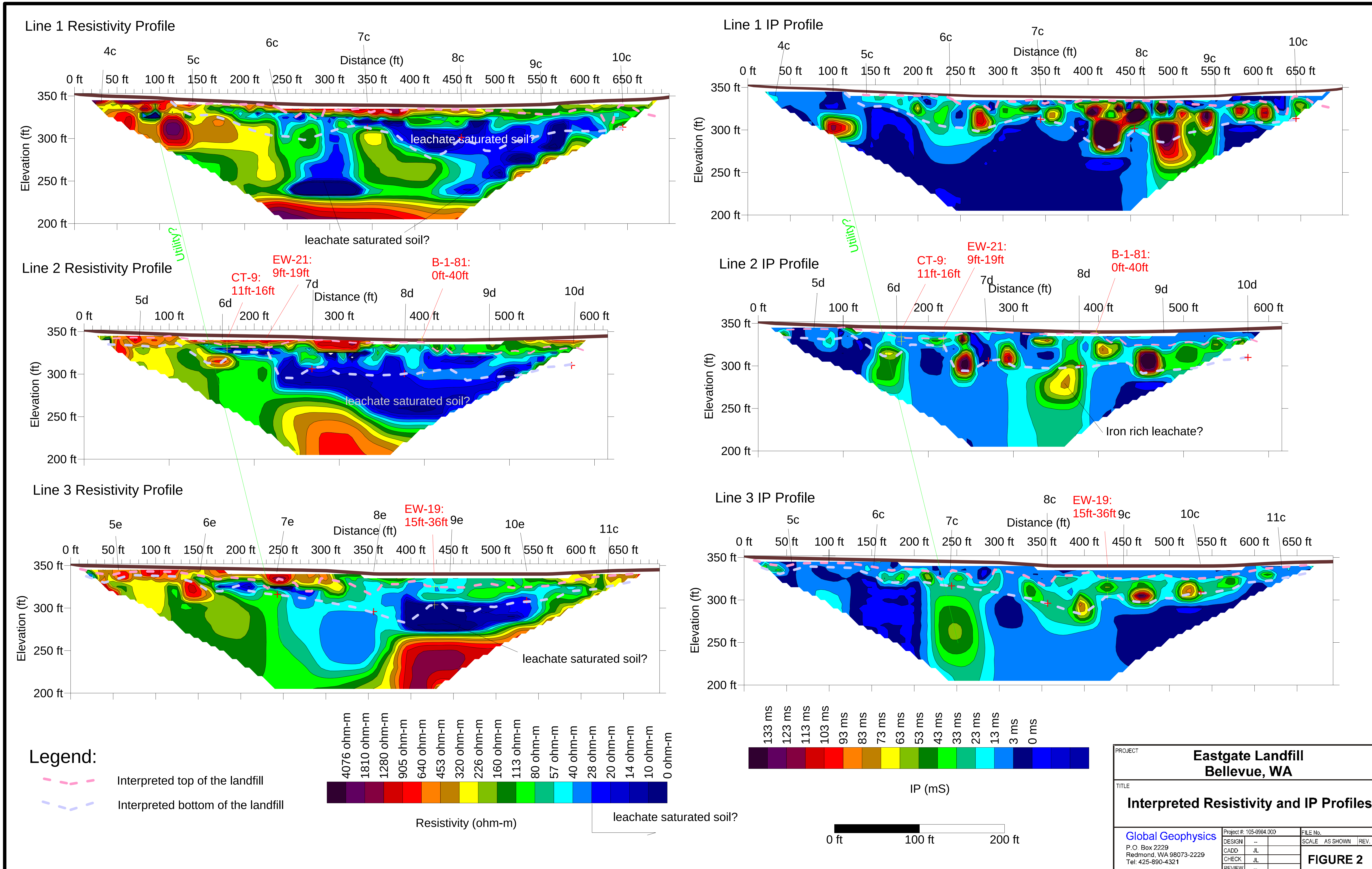


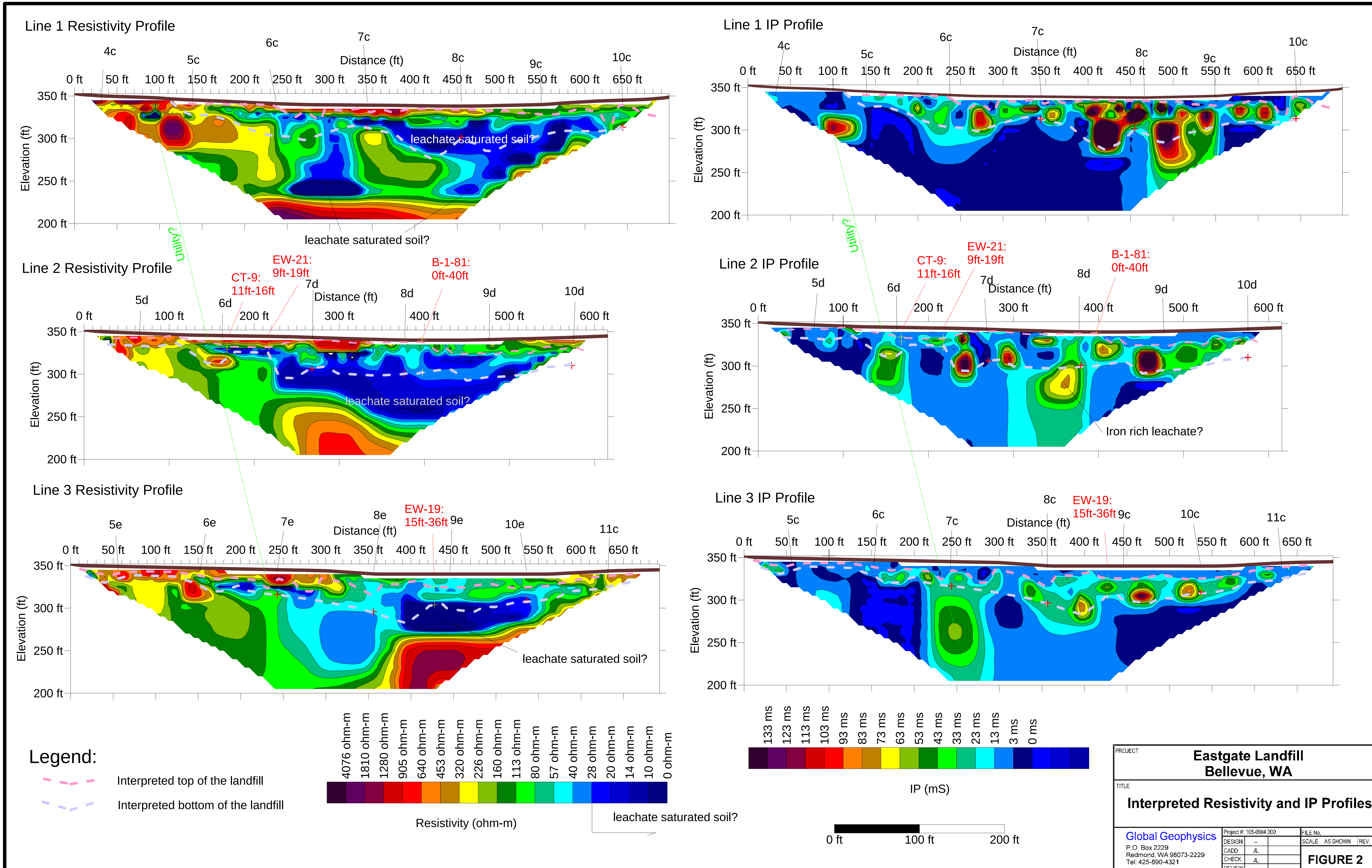
PROJECT
Eastgate Landfill
Bellevue, WA

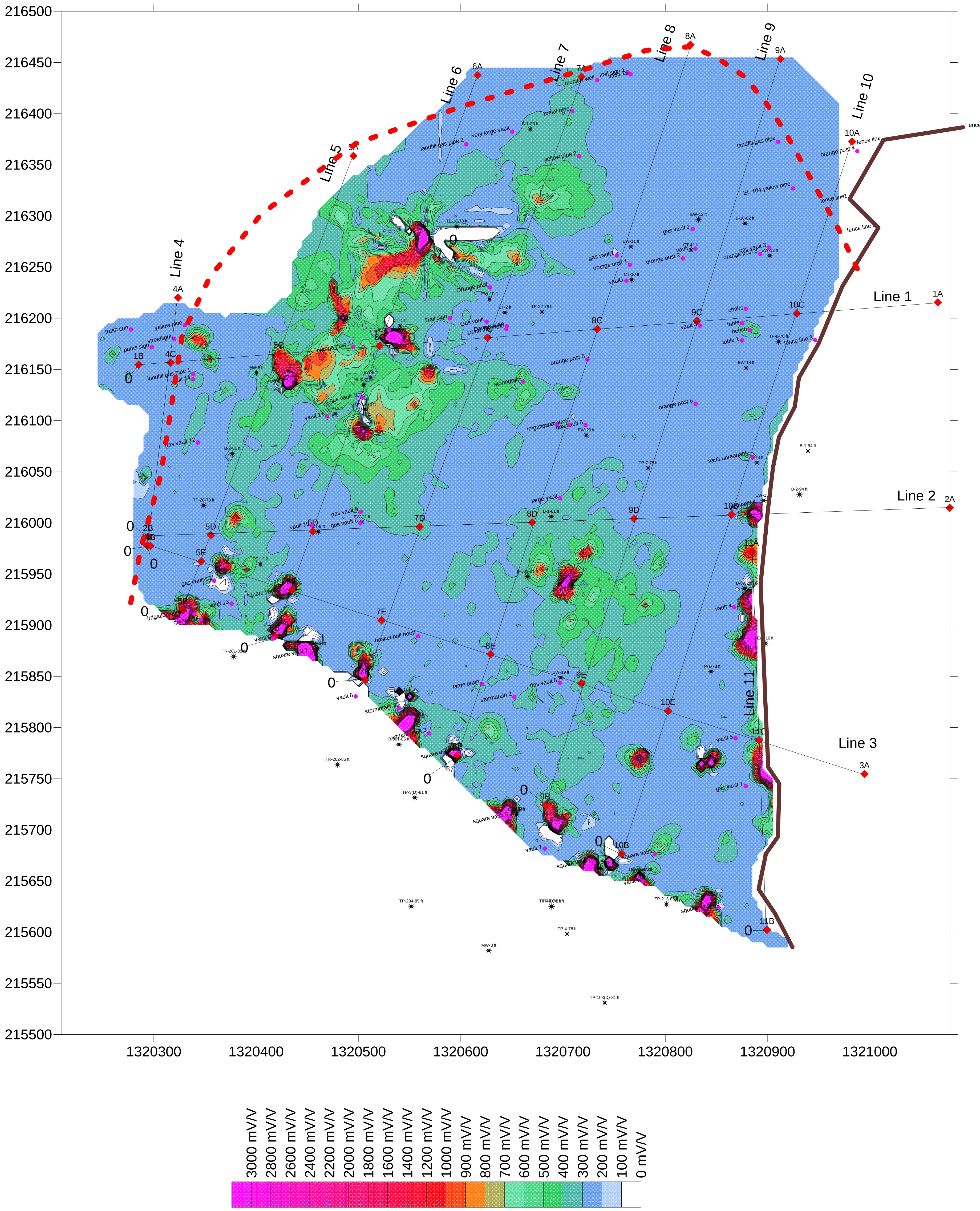
TITLE
Site Plan
Line Locations

Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4321

Project #: 105-0904.000		FILE No. GPR EW
DESIGN	--	SCALE AS SHOWN REV.
CADD	JL	
CHECK	JL	**FIGURE 1**
REVIEW	--	


Line 1 Resistivity Profile
Line 1 IP Profile
Line 2 Resistivity Profile
Line 2 IP Profile
Line 3 Resistivity Profile
Line 3 IP Profile
Distance (ft)
Elevation (ft)
350 ft
300 ft
250 ft
200 ft
leachate saturated soil?
Utility?
CT-9: 11ft-16ft
EW-21: 9ft-19ft
B-1-81: 0ft-40ft
EW-19: 15ft-36ft
Iron rich leachate?
Legend:
Interpreted top of the landfill
Interpreted bottom of the landfill
4076 ohm-m
1810 ohm-m
1280 ohm-m
905 ohm-m
640 ohm-m
453 ohm-m
320 ohm-m
226 ohm-m
160 ohm-m
113 ohm-m
80 ohm-m
57 ohm-m
40 ohm-m
28 ohm-m
20 ohm-m
14 ohm-m
10 ohm-m
0 ohm-m
Resistivity (ohm-m)
133 ms
123 ms
113 ms
103 ms
93 ms
83 ms
73 ms
63 ms
53 ms
43 ms
33 ms
23 ms
13 ms
3 ms
0 ms
IP (mS)
0 ft
100 ft
200 ft
PROJECT
Eastgate Landfill
Bellevue, WA
TITLE
Interpreted Resistivity and IP Profiles
Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4321
DESIGN --
CADD JL
CHECK JL
REVIEW --
FILE No.
SCALE AS SHOWN
REV.
FIGURE 2


Line 1 Resistivity Profile
Line 1 IP Profile
Line 2 Resistivity Profile
Line 2 IP Profile
Line 3 Resistivity Profile
Line 3 IP Profile
Distance (ft)
Elevation (ft)
350 ft
300 ft
250 ft
200 ft
leachate saturated soil?
Iron rich leachate?
Utility?
CT-9: 11ft-16ft
EW-21: 9ft-19ft
B-1-81: 0ft-40ft
EW-19: 15ft-36ft
4c
5c
6c
7c
8c
9c
10c
11c
5d
6d
7d
8d
9d
10d
5e
6e
7e
8e
9e
10e
Legend:
Interpreted top of the landfill
Interpreted bottom of the landfill
4076 ohm-m
1810 ohm-m
1280 ohm-m
905 ohm-m
640 ohm-m
453 ohm-m
320 ohm-m
226 ohm-m
160 ohm-m
113 ohm-m
80 ohm-m
57 ohm-m
40 ohm-m
28 ohm-m
20 ohm-m
14 ohm-m
10 ohm-m
0 ohm-m
Resistivity (ohm-m)
133 ms
123 ms
113 ms
103 ms
93 ms
83 ms
73 ms
63 ms
53 ms
43 ms
33 ms
23 ms
13 ms
3 ms
0 ms
IP (mS)
0 ft
100 ft
200 ft
PROJECT
Eastgate Landfill
Bellevue, WA
TITLE
Interpreted Resistivity and IP Profiles
Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4321
Project #: 105-0904.000
DESIGN --
CADD JL
CHECK JL
REVIEW --
FILE No.
SCALE AS SHOWN
REV.
FIGURE 2



0 ft 100 ft 200 ft

Legend:

Interpreted landfill lateral boundary

PROJECT	**Eastgate Landfill Bellevue, WA**
TITLE	**EM-61 Data Contour Plan Channel 1**

Global Geophysics
P.O. Box 2229
Redmond, WA 98073-2229
Tel: 425-890-4321

Project #: 105-0904.000		FILE No. GPR EW	
DESIGN	--	SCALE AS SHOWN	REV.
CADD	JL	**FIGURE 4**	
CHECK	JL		
REVIEW	--		

DRAFT

HABITAT ASSESSMENT

Bellevue Airfield Park

Prepared for:

Pam Fehrman
City of Bellevue Parks & Community Services
450 110th Avenue NE
Bellevue, WA 98009
(425) 452-4326
PFehrman@bellevuewa.gov

Prepared by:

The Watershed Company

750 Sixth Street South
Kirkland, WA 98033
p 425.822.5242
f 425.827.8136
watershedco.com

August 25, 2016

The Watershed Company Contacts:
Katy Crandall, Ecologist / Arborist
Jennifer Creveling, Senior Biologist

The Watershed Company Reference Number:
130213

Cite this document as:
The Watershed Company. August 2016.
Draft Bellevue Airfield Park Habitat Assessment.
Prepared for Bellevue Parks & Community Services.

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Appendices

DRAFT

HABITAT ASSESSMENT

BELLEVUE AIRFIELD PARK

1 INTRODUCTION

This report addresses wildlife habitat on the Bellevue Airfield Park properties (formerly known as the Eastgate Area Properties) owned by City of Bellevue Parks & Community Services Department. The site and study area for this assessment is approximately 27.5 acres in size and is located at 2997 160th Avenue SE in the City of Bellevue; it includes three parcels (parcel numbers 112405 -9123, -9105, and -9060; Figure 1).

The City of Bellevue is currently working to permit, design, and develop the first phase of Bellevue Airfield Park per the City Council-adopted Master Plan (The Portico Group 2012). An Urban Wildlife Habitat Functional Assessment Model is required for both the State Environmental Policy Act (SEPA) Determination of Non-Significance as well as the Critical Areas Land Use permit application as documented in the City of Bellevue's Pre-application Letter dated May 9, 2016 (Reference number 16-126048-DB).

The purpose of this report is to assess the wildlife habitat available at the Bellevue Airfield Park site using the Bellevue Urban Wildlife Habitat Functional Assessment Model (FAM). This report discusses potential impacts to wildlife habitat that may result from the implementation of the park master plan as well as recommendations on ways to reduce potential habitat impacts.

2 METHODS

2.1 Existing Documentation Review

Publicly available sensitive areas and habitat documentation for the study area were reviewed for this report. Sources include aerial photographs of the site and surrounding area, the King County public GIS database (iMap), the Washington Department of Fish and Wildlife (WDFW) Priority Habitat and Species online data (PHS), City of Bellevue drainage basins maps, and general information on habitat types from Johnson and O'Neil (2001).

2.2 Fieldwork

A wildlife biologist visited the site on August 10, 2016, to evaluate habitat on the property. Vegetative structure and composition, special habitat features, presence of wildlife species and sign, and human disturbance were assessed. A functional assessment form was completed based on both field and office investigations.

3 Existing Conditions

3.1 Site Description

The Bellevue Airfield Park site is located at 2997 160th Avenue SE in the City of Bellevue; it includes three parcels (parcel numbers 112405 -9123, -9105, and -9060; Figure 1). The site is located in the Eastgate area of Bellevue (Figure 2), in Section 11 of Township 24N, Range 05E of the Public Land Survey System (PLSS). The properties are undeveloped; they include forested areas, an open field, detention ponds, and walking trails. One small wetland was identified on-site just south of the detention ponds, described in the *Draft Project Startup Summary Report: Bellevue Airfield Park Development* (Landau Associated 2015).

The southern parcel of the study site historically functioned as a municipal landfill from 1951 to 1964 (The Portico Group 2012). After the landfill was covered in 1964, it was operated as part of the Bellevue Airfield until 1983 (The Portico Group 2012, Landau Associates 2015). The southern parcel currently contains utility system easements, a landfill gas migration system, ground water monitoring wells, storm water systems, and a major sewer line.

3.1.1 Landscape Setting

The Bellevue Airfield Park site is situated in Bellevue's Phantom Creek watershed; this sub-basin is located within the West Lake Sammamish drainage basin of the Cedar-Sammamish Watershed (Water Resource Inventory Area [WRIA] 8).

The landscape surrounding the study site is typical of an urban setting. Office parks are present immediately adjacent to the Bellevue Airfield Park site; a Boeing office facility is located to the east and the Microsoft Advanta campus is located to the south. Single family residences are also present to the northwest and generally dominate the greater vicinity. Parks and natural open spaces are present in the vicinity as well. Phantom Lake is located approximately 1,200 feet north of the study area; Lake Sammamish is located about 4,100 feet to the east. Robinswood Park, Spiritridge Park, Lake Hills Greenbelt Park, and Weowna Beach Park are all within one half mile of the site (Figure 2).

Figure 1. Bellevue Airfield Park properties; study area delineated in red (Imagery source: King County iMap, 2015 aerial).

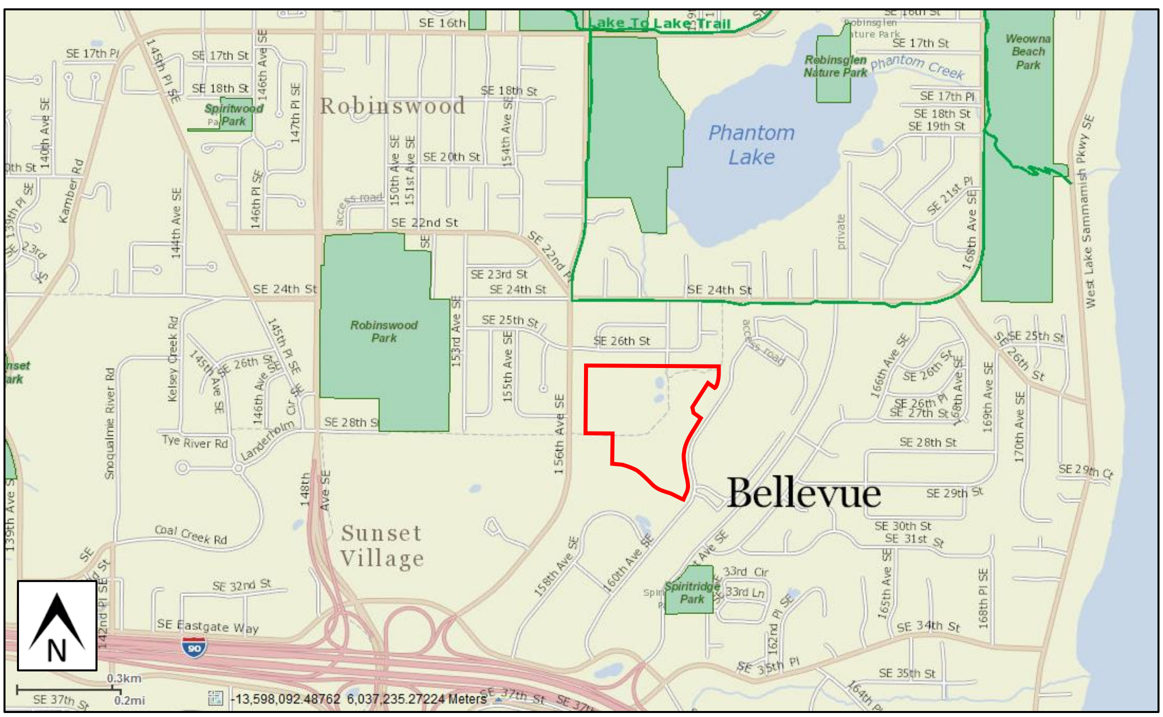

Figure 2. Bellevue Airfield Park properties study area vicinity (Imagery source: King County iMap, Standard Basemap).

4 HABITAT ASSESSMENT

The general habitat type used to categorize the study area vicinity is Urban and Mixed Environs in the Medium-density Zone (Johnson and O'Neil 2001). This habitat type contains light industry mixed with dense residential development and some natural open spaces. The 27.5-acre Bellevue Airfield Park site is set apart from the surrounding landscape; the study site is undeveloped and is more representative of isolated natural open spaces that are interspersed within this habitat type.

4.1 On-site Habitat

Habitat patches present in the study area, as defined in *Guidance: Using the Bellevue Urban Wildlife Habitat Functional Assessment Model* (Guidance) (The Watershed Company 2010), include coniferous forest, deciduous forest, scrub-shrub, the detention ponds, and meadow (Appendix A – Habitat Sketch). The largest and arguably the most valuable habitat patch comprises mature coniferous forest on the north side of the study area. The open meadow is the second largest habitat patch in the southern portion of the site. Two deciduous forest patches are located adjacent to conifer forests. Weedy, scrub-shrub vegetation is located in the north-central portion of the study area and localized near walking trails. Finally, the detention pond area represents a unique habitat patch, also located in the north-central portion of the site.

Currently, the subject parcels experience regular use by people and likely their dogs as observed during the August 10, 2016 site visit. Vegetation on-site is diverse; a list of plant species identified on-site is provided in Table 1.

Table 1. List of plants identified during habitat assessment site visit at the Bellevue Airfield Park site on August 10, 2016.

	Plant Name	
Tree	Bigleaf maple (*Acer macrophyllum*)	Red alder (*Alnus rubra*)
	Bitter cherry (*Prunus emarginata*)	Red oak (*Quercus rubra*)
	Black cottonwood (*Populus balsamifera*)	Scots pine (*Pinus sylvestrus*)
	Cascara (*Rhamnus purshiana*)	Sitka spruce (*Picea sitchensis*)
	Douglas-fir (*Pseudotsuga menziesii*)	Sitka willow (*Salix sitchensis*)
	English hawthorn (*Crataegus monogyna*)	Norway maple (*Acer platanoides*)
	European mountain ash (*Sorbus aucuparia*)	Western hemlock (*Tsuga heterophylla*)
	Pacific madrone (*Arbutus menziesii*)	Western red cedar (*Thuja plicata*)
	Pacific willow (*Salix lucida*)	
Shrub	Beaked hazelnut (*Corylus cornuta*)	Red huckleberry (*Vaccinium parvifolium*)
	English laurel (*Prunus laurocerasus*)	Salal (*Gautheria shallon*)

	Plant Name	
Shrub (cont'd)	English holly (*Ilex aquifolium*)	Salmonberry (*Rubus spectabilis*)
	Evergreen blackberry (*Rubus laciniatus*)	Scotch broom (*Cytisus scoparius*)
	Himalayan blackberry (*Rubus armeniacus*)	Serviceberry (*Amelancier alnifolia*)
	Indian plum (*Oemelaria cerasiformis*)	Snowberry (*Symphoricarpus albus*)
	Low Oregon grape (*Mahonia nervosa*)	Tall Oregon grape (*Mahonia aquifolium*)
	Oceanspray (*Holodiscus discolor*)	Thimbleberry (*Rubus parviflorus*)
	Rose (*Rosa* sp.)	Trailing blackberry (*Rubus ursinus*)
	Red-twig dogwood (*Cornus sericea*)	Vine maple (*Acer circinatum*)
	Red elderberry (*Sambucus racemosa)*	
Herbaceous	Birdsfoot trefoil (*Lotus corniculatus*)	Reed canarygrass (*Phalaris arundinacea)*
	Bracken fern (*Pteridium aquilinum*)	Rush (*Juncus* sp.)
	Common plantain (*Plantago major*)	Sword fern (*Polystichum munitum)*
	Creeping buttercup (*Ranunculus repens)*	Water lily (Unknown)
	Dandelion (*Taraxacum* sp.)	Wild carrot (*Daucus carota*)
	English ivy (*Helix hedera)*	Yellow flag iris (*Iris pseudacorus)*
	Herb robert (*Geranium robertianum)*	Multiple field/lawn grasses (Unknown)
	Large-leaf avens (*Geum macrophyllum*)	

4.1.1 Mature Coniferous Forest

The largest and most valuable patches of intact habitat consists of upland second-growth conifer forest located in the northern portion of the study area totaling approximately 12 acres (Appendix A – Habitat Sketch).

Douglas-fir is the dominant tree species in the forest. Tree size ranges from medium (15 to 19 inches diameter at breast height [DBH]) to large trees (20 to 29 inches DBH), with some very large trees (30 inches DBH and greater) also present (Tree Solutions, Inc. 2015). This forested patch generally contains a single canopy layer, although some western hemlock and western red cedar are present in the understory. The canopy cover is considered closed, estimated at 70 percent cover on average.

Understory vegetation varies somewhat throughout the conifer forest patches; it is open with dense groundcover in the portions of the larger northwest patch (Appendix B, Photo 1) and contains more dense shrubs in the northeast patch. Common understory vegetation includes Indian plum, trailing blackberry, Himalayan blackberry, sword fern, and herb robert. Special habitat features present in these patches include large downed wood, standing snags, and cavities in live and dead trees.

4.1.2 Deciduous Forest

Patches of deciduous forest on-site are dominated by black cottonwood, red alder, and some Pacific madrone in the canopy. The average tree size is medium (15 to 19 inch DBH). Canopy cover is considered moderately closed, estimated at 65 percent cover on average. The understory is dominated by a variety of native shrubs; fewer groundcover plants are present in these patches as the shrub and canopy layers are relatively dense.

4.1.3 Scrub-shrub

Small patches of scrub-shrub vegetation are present throughout the study area, typically localized near trails. The northern-most patches consist of plants that have been recently installed (Appendix B, Photo 3); these patches likely receive regular maintenance and are expected to become forested over time. The scrub-shrub patches located in the central portion of the study area are dominated by invasive Himalayan blackberry thickets (Appendix B, Photo 4).

4.1.4 Meadow

The second largest patch of habitat on-site is the open meadow area at the southern end of the study area. It is approximately 7 acres in size and consists of dense grass and forb vegetation (Appendix B, Photo 5). Common plants observed include a variety of grasses, wild carrot (also known as Queen Anne's lace), dandelion, common plantain, and birdsfoot trefoil. This patch appears to be mowed regularly during the early growing season. It also contains several foot-paths and walking trails.

4.1.5 Detention Ponds

The detention ponds habitat patch is surrounded by well-used walking trails. It consists of three constructed detention ponds surrounded by dense scrub-shrub vegetation with a few trees also present. Vegetation is dominated by Pacific and Sitka willow species. Shrubs are tall (over 6.5 feet) and shrub cover is considered closed, estimated at 80 percent cover. The detention ponds, while human-made are a valuable habitat element because they provide a year-round water source to wildlife. The dense shrub cover surrounding the ponds provides cover for wildlife potentially using the ponds as a water resource.

4.2 Landscape Habitat Considerations

The presence or absence of habitat patches in the landscape surrounding the Bellevue Airfield Park site is considered in this habitat assessment, as the ability of the study parcel itself to provide habitat is dependent upon the potential for the greater vicinity to act as a source for wildlife.

As mentioned previously, while the greater vicinity is dominated by dense residential development, it also includes parks and open spaces (separated from the subject properties by roads and residences). Phantom Lake and Lake Sammamish are both located within a mile of the site. Robinswood Park, Spiritridge Park, Lake Hills

Greenbelt Park, and Weowna Beach Park are all within one half mile of the site. These isolated parks and open spaces presumably provide a variety of habitat for wildlife species living in this urban environment. While their connections to on-site habitat areas are disturbed, the proximity of these nearby patches to the study area increases the likelihood that offsite wildlife utilize the habitat available on-site.

4.3 Habitat Assessment Form Score

The site was rated using the Bellevue Urban Wildlife Habitat Functional Assessment Model (FAM) for Upland Habitat. The designation for the subject properties is Zone D (0 to 20 percent existing impervious surface). The site scores a high 48 points overall (Appendix C).

According to the Guidance (The Watershed Company 2010), sites that score over 40 are more indicative of high value exurban areas where species of local importance could be expected on-site and in the surrounding area. The site does contain relatively large habitat patches, the qualities of which helped generate this high score. However, it is not considered a high value exurban area; on the contrary, it is quite urban. The FAM score for this site appears to be exaggerated based on a comparison of the landscape parameter scores to the actual condition of the surrounding landscape. This may have been caused by having such a large assessment area (based on the site's low existing impervious surface percentage) in a very urban environment which is typically uncommon.

Landscape parameters that generated the relatively high score include the presence of a variety of habitat patch types located within the assessment area and contiguousness with a critical area (wetland). It appears to be inflated when the numerous small, isolated habitat patches located off-site are totaled to determine "patch size," and when these same patches are considered in terms of interspersion. Habitat connectivity is relatively poor. The FAM landscape score is 19.

The site scores relatively high for local parameters as expected, with a score of 29. The presence of large conifer trees, amount of vegetation coverage, high structural diversity, high species richness, proximity to year-round water, and presence of snags all contributed to this high score.

As the distribution of points suggests, the forested conifer patches are particularly valuable habitat patches. To preserve the habitat value of the site, these patches should be retained to the extent feasible. Assessed parameters that could be improved on-site include the site's connectivity to other habitat areas, the invasive species coverage, number of snags present, and number of other habitat features present (i.e. rock piles, large stumps, active raptor perches).

5 WILDLIFE

5.1 Findings

A review of PHS data shows no priority habitats or species are documented in the study area. Wildlife observations were recorded during the Bellevue Airfield Park site visit on August 10, 2016, and are presented in Table 2, below. In addition to the site visit observations in Table 2, neighbors have shared their personal wildlife observations with City of Bellevue staff over the years; some of these specific reported wildlife observations detected on or near the study site are listed in Table 3.

Wildlife not listed in Tables 2 or 3 but that can be reasonably expected to regularly use the site consist of common urban wildlife species that include but are not limited to a variety of birds species and small mammals like rats, mice, raccoons, and opossums.

Table 2. Wildlife species and sign observed during the Bellevue Airfield Park site visit on August 10, 2016.

	Common Name	Scientific Name	Detection Method
Birds	American crow	*Corvus brachyrhynchos*	Visual
	Mallard	*Anas platyrhynchos*	Visual / Aural
	Song sparrow	*Melospiza melodia*	Visual / Aural
	Black-capped chickadee	*Poecile atricapillus*	Visual / Aural
	Spotted towhee	*Pipilo maculatus*	Visual / Aural
	Red-breasted nuthatch	*Sitta canadensis*	Aural
	Steller's jay	*Cyanocitta stelleri*	Aural
	Anna's hummingbird	*Calypte anna*	Visual / Aural
	Western wood pewee	*Contopus sordidulus*	Aural
	Pine siskin	*Carduelis pinus*	Aural
	Brown creeper	*Certhia americana*	Visual / Aural
Amphibians	American bullfrog	*Lithobates catesbeianus*	Visual / Aural
Insects	Dragonflies	Unknown	Visual
Mammals	Mountain beaver	*Aplodontia rufa*	Sign (holes)
	Coyote	*Canis latrans*	Sign (scat)

Table 3. Wildlife species reported by neighbors as being present on or nearby the Bellevue Airfield Park site.

	Common Name	Scientific Name	Detection Method
Birds	Great horned owl	*Bubo virginianus*	Reported visual (with photo)
Mammals	Columbian black-tailed deer	*Odocoileus hemionus columbianus*	Reported visual (with photo)
	Cougar	*Puma concolor*	Reported
	Bobcat	*Lynx rufus*	Reported visual (with photo)

5.2 Species of Local Importance

The City of Bellevue designates habitat associated with species of local importance as a critical area (LUC 20.25H.150.B). None of the species listed as species of local importance (LUC 20.25H.150.A) are closely associated with urban and mixed environs (O'Neil 2001). According to the Bellevue Urban Wildlife Habitat Literature Review (The Watershed Company 2009), 10 of the 19 listed species of local importance can reasonably be expected to occur within City of Bellevue limits, and include the following: bald eagle, peregrine falcon, merlin, red-tailed hawk, osprey, pileated woodpecker, Vaux's swift, purple martin, great blue heron, and green heron.

No species of local importance were observed on-site during the site visit; and none are documented as being present on or near the property. Suitable habitat does exists for certain species of local importance at the Bellevue Airfield Park site. Merlin, red-tailed hawk, pileated woodpecker, and Vaux's swift could be expected to use the forested areas of the properties. Additionally, great blue heron and green heron may forage in the detention ponds.

6 Local Regulations

As stated previously, the City of Bellevue designates habitat associated with species of local importance as critical area (LUC 20.25H.150.B). According to LUC 20.25H.160, "if habitat associated with species of local importance will be impacted by a proposal, the proposal shall implement the wildlife management plan developed by the Department of Fish and Wildlife for such species."

Of the species of local importance listed previously, none are known to have a primary association (either documented or observed) with the habitat in the study area. However, habitat exists on-site that has the potential to support species of local importance including merlin, red-tailed hawk, pileated woodpecker, Vaux's swift, great blue heron, and green heron. No habitats associated with species of local importance have been designated on the property as critical areas.

7 Project Description

The City of Bellevue plans to implement the preferred master site plan presented in the Bellevue Airfield Park Master Plan (Figure 3; The Protico Group 2012). This preferred plan includes two sports fields, two on-site parking areas, a water play area, the "Park Core" (a central park connector with rain garden), walking trails, garden terraces, and forested picnic and play areas.

Preferred Master Site Plan (Alternative A) *– The Master Site Plan provides for universal all season lighted fields totaling three baseball/softball fields and two soccer/lacrosse field overlays. Tournaments, extended season sports, and multiple sports (e.g. spring season lacrosse and baseball) can be accommodated at the same time. The configuration of splitting the fields allows for the most universal and flexible use of this community park.*

The Preferred Plan also supports a new park entry, parking, family picnic areas, several play areas, rain garden, trails, overlooks and terrace gardens.

Figure 3. Preferred Bellevue Airfield Park Master Plan (The Portico Group 2012).

Implementation of the park master plan will follow a phased approach beginning with Phase 1 which includes overall site preparation, street/entry improvements, park entry and parking improvements, the "Park Core," the upper sports field, and trail extensions (The Portico Group 2012).

7.1.1 Mitigation Sequencing

The City of Bellevue's Land Use Code (LUC 20.25H.215) requires that impacts to sensitive areas first be avoided, then minimized, and finally mitigated. While no habitats associated with species of local importance have been specifically designated on-site, mitigation sequencing should be employed to avoid and minimize disturbance to general habitat areas.

Avoid

Several site layout alternatives were explored prior to selection of the preferred master plan as outlined in the Bellevue Airfield Park Master Plan report (The Portico Group 2012). The selected alternative proposes fewer impacts to habitat areas than other options. Impacts to high-value habitat areas in the northern portion of the property have been avoided by focusing site improvements at the south end of the site where historic and existing disturbance is greatest. Under the preferred Bellevue Airfield Park Master Plan, existing conifer forest stands will be largely retained with exceptions noted below.

Minimize

To minimize impacts to habitat, tree removal should be limited to those necessary for the new park facilities and road improvements, all temporarily disturbed areas should be revegetated, and landscaping throughout the site should incorporate the use of many native species.

Mitigate

No mitigation is necessary at this time, as there are no critical areas designated as habitat associated with species of local importance present on-site. Mitigation may be required if other critical area impacts are proposed or for significant tree removal.

8 Potential Impacts

At this stage of the project, site plans are largely conceptual and specific impacts related to habitat (i.e. square footage of impact, number of trees to be removed) are not available. Impacts to habitat will be discussed generally and based upon the preferred Bellevue Airfield Park Master Plan (Figure 3).

8.1 Direct Impacts

Expected direct, permanent impacts of the proposal to on-site habitat include the removal of large trees and dense native vegetation. The most significant impact will be to the conifer forested patch in the northwest portion of the property; the proposed site layout depicts parking, lawn, and play areas where conifer forest currently exists. Additionally, the proposed plans appear to show the detention ponds re-configured with trail access between each of the three ponds requiring removal of dense scrub-shrub vegetation next to these ponded areas.

Any loss or alteration of habitat has the potential to impact wildlife species that utilize the area during some phase of their lifecycle. The loss of forest area will by definition remove potential foraging and nesting sites for species using the habitat, although the majority of forest will remain. The on-site forest stand is an important urban refuge for urban wildlife communities. Maintaining the intact section of forest on the site and incorporating native vegetation in landscaping will work toward preserving the site's refuge value.

The intrusion of new facilities and fragmentation often caused by development are ways in which new construction can negatively impact habitat. The new facilities proposed in this case will disrupt existing habitat patches to a certain extent and will likely lead to an increase in disturbance due to increased site use. Habitat fragmentation is somewhat avoided by maintaining a strip of native forest north of proposed parking, picnic, and play areas in the northwest portion of the property; however, the proposed improvements in this area represent a fairly significant intrusion into the conifer forest patch. In addition, the creation of new edges creates the opportunity for invasive vegetation and wildlife to potentially become problematic.

Construction noise and the presence of machinery and crews on the site will cause temporary disturbance to wildlife using the area. New construction can also increase the proliferation of non-native and invasive plant species into an area.

9 Discussion and Recommendations

The proposed habitat loss on the site can be summarized as an expansion of existing urban development. The study site vicinity is almost entirely built out with commercial and residential development. While some remodeling and home expansion can be expected, the overall character of the neighborhood and business park area is not likely to change substantially. Habitat tends to degrade over time in developing and developed areas. The study site is somewhat indicative of such change.

While many impacts to habitat have been avoided, the following provides some general recommendations to further preserve and improve the habitat value of the site:

- Consider minimizing impacts to the northwest conifer patch by locating proposed improvements (parking, picnic area, play area) close to each other and near the forest perimeter as opposed to the center of the patch.
- Consider minimizing disturbance to stormwater ponds and associated vegetation and limit the number of trails bisecting the individual ponds. Alternatively, document the need for the proposed improvements.
- Increase the number of snags on-site by snagging trees as opposed to removing them completely, if possible.

- Manage invasive weeds currently present and incorporate the use of native plants into the site's landscaping. Also include management of invasive weeds on an annual basis in on-going park management plan.

10 CONCLUSION

Intact and fragmented forest stands in urban settings provide travel and roosting corridors and locations that support nearly all species of local importance (The Watershed Company 2009). The forested habitat patches on the Bellevue Airfield Park site are of value when considered in the urban landscape context. While primary use by species of local importance is not documented an, use by these species is possible; some may travel through the site while foraging or use it for roosting, resting, or refuge. Furthermore, the site provides habitat for small mammals and songbirds that species of local importance may rely upon as a food source (The Watershed Company 2009). Protecting the site's habitat areas while implementing improvements depicted in the master plan will help to preserve the site's habitat functions and value as an urban refuge for local wildlife species while allowing for public use and enjoyment of the site. Recommendations geared towards minimizing impacts and improving existing habitat should be considered and addressed as the project moves forward.

REFERENCES

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The Portico Group. April 2012. Bellevue Airfield Park: Eastgate Area Properties Master Plan. Prepared for City of Bellevue Parks and Community Services Department.

The Watershed Company. May 21, 2009. Bellevue Urban Wildlife Habitat Literature Review. Reference Number 080913. Prepared for City of Bellevue Planning and Community Development.

The Watershed Company. Revised February 2010. Guidance: Using the Bellevue Urban Wildlife Functional Assessment Model. Reference Number 080913. Prepared for City of Bellevue Development Services Department.

Tree Solutions, Inc. October 28, 2015. Arborist Report for Bellevue Airfield Park. Reference number TS – 5069. Prepared for Walker Macy.

APPENDIX A

Habitat Sketch

THE WATERSHED COMPANY

750 Sixth Street South | Kirkland | WA 98033
p 425.822.5242 f 425.827.8136

Habitat Sketch
Bellevue Airfield Park
2997 160th Avenue SE
Bellevue, WA 98008

Prepared for Pam Fehrman
Assessment date: August 10, 2016
TWC Ref. No. 130213

Note: Areas depicted are approximate and not to scale. Some trails and heavily managed or disturbed vegetation within the project area were not included in approximate habitat patches.

Legend:

1	Conifer forest
2	Deciduous forest
3	Scrub-shrub
4	Detention Pond Area
5	Meadow
	Project area boundary

APPENDIX B

Photographs

Photo 1: Northwest conifer forest patch understory (photo taken 8/10/2016).

Photo 2: View of black cottonwood-dominant forest patch near the central portion of the study area with weedy scrub-shrub vegetation visible in foreground (photo taken 8/10/2016).

Photo 3: View of scrub-shrub patch that has presumably been cleared and re-planted with small native trees and shrubs (photo taken 8/10/2016).

Photo 4. Invasive scrub-shrub vegetation located near trails in the central portion of the study area (photo taken 8/10/2016).

Photo 5. View of meadow patch located in the southern portion of the study area (photo taken 8/10/2016).

Photo 6. View of northern detention pond and surrounding vegetation (photo taken 8/10/2016).

APPENDIX C

Functional Assessment Forms

City of Bellevue

DRAFT FUNCTIONAL ASSESSMENT TOOL
for Upland Habitat

Property address: 2997 160th Avenue SE, Bellevue, WA 98008

Location: Range 05E,Township 24N, Section 11

Parcel number: 112405 -9123, -9105, -9060

Property owner: City of Bellevue – Parks

Telephone number: (425) 452-6885

Project name: Bellevue Airfield Park

Project contact: Pam Fehrman

Telephone number: (425) 452-4326

Address: 450 110th Ave NE, Bellevue, WA 98004

Staff: Katy Crandall, Jennifer Creveling

Date(s) of site visit(s): August 10, 2016

Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) data obtained? Y/N: Yes

1.0	**PROPERTY DESIGNATION**	**Zone A**	**Zone B**	**Zone C**	**Zone D**		**Zone**
1.1	**Existing impervious surface**	>90%	50-90%	20-50%	0-20%		**D**
2.0	**LANDSCAPE PARAMETERS**	**No points**	**1 point**	**2 points**	**3 points**	**Additional points**	**Total**
2.1	**Land use/development density**	Zone A	Zone B	Zone C	Zone D		3
2.2	***Occurrence (number) of habitat types**	0	1	2	3+		3
2.3	****Proximity of known critical areas (distance to edge)**	>2,500 ft	<2,500 ft	<1,200 ft	<100 ft	+1 point if contiguous with critical area	4
2.4	**Habitat connectivity and corridors**	No connection to other habitat areas	≥50-foot-wide connection to vegetated areas of at least 1 acre	≥50-foot-wide connection to vegetated areas of at least 50 acres but not listed parks***	≥50-foot-wide connection King County wildlife network or listed parks***	+1 point for ≥150-foot-wide connection King County wildlife network or listed parks***	1
2.5	**Patch size**	<0.-1.0 ac	1.0-5.0 ac	>5-10 ac	10-42 acres	>42 acres = 4 points	5[1]

City of Bellevue

DRAFT FUNCTIONAL ASSESSMENT TOOL

for upland habitat

2.0	LANDSCAPE PARAMETERS	No points	1 point	2 points	3 points	Additional points	Total
2.6	***Interspersion of habitat patches (excluding patches <1 ac in area)**	No or isolated patch (no others within 0.5-ac circle)	Low	Moderate	High	+1 point if wildlife network or listed park is included	3
3.0	**LOCAL PARAMETERS**	**No points**	**1 point**	**2 points**	**3 points**	**Additional points**	**Total**
3.1	**Size of native trees on site**	No significant trees on site	6-12” dbh tree(s) present	12-20” dbh tree(s) present	>20” dbh tree(s) present	+1 point if tree(s) >30” dbh are present	4
3.2	**Coniferous component**	No conifers on site	Conifers very sparse or present in understory only	Conifers co- or sub-dominant in overstory	Conifers dominant	+1 point if conifers >30” dbh are present	4
3.3	**Percent cover (sample vegetated areas only)**						
	Ground layer (0-2.3 ft) (5-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%; -1 point if mowed grass is >50%	3[2]
	Shrub layer (2.3-25 ft) (10-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%	2[2]
	Canopy (>25 ft) (30-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%	2[2]
3.4	**Vegetative vertical structural diversity (foliage height diversity)**	FHD = 0	FHD < 0.70	FHD = 0.70-0.90	FHD > 0.90		3[2]
3.5	**Vegetative species richness**	0-1 species	2-5 species	6-19 species	20+ species		3
3.6	**Invasive species component**	>75% cover	25-75% cover	10-25%cover	<10% cover		2

3.0	LOCAL PARAMETERS	No points	1 point	2 points	3 points	Additional points	Total
3.7	**Proximity to year-round water**	>1.0 mi or artificial feature with maintained /invasive buffer present within 0.3-1 mi	0.3-1.0 mi or artificial feature with maintained/ invasive buffer present within <0.3 mi	<0.3 mi or artificial feature with maintained/ invasive buffer present within patch	Natural water feature present within patch with native buffer		2
3.8	**Snags (≥4 in dbh)**	No snags on site	1/ac or fewer	2-6/ac	>7/ac	Add 0.5 point for each >20 in dbh and 1 point for each >30 in dbh	2
3.9	**Other habitat features**	None	1	2-4	5 or more		2
Landscape parameters points							19
Local parameters points							29
TOTAL POINTS							48

* Use circle of the appropriate size for the property's zone:

Zone A – 0.5 ac

Zone B – 5.0 ac

Zone C – 100 ac

Zone D – 250 ac

** PHS data required for sites in Zone D

***Parks: Mercer Slough, Phantom Lake wetland complex, Larson Lake wetland complex, Cougar Mountain Regional Wildland Park, Weowna Park; King County wildlife network

[1]Five small habitat patches (1-5 acres in size) were identified in the assessment area, all of which receive one point based on size. Based on the Guidance, each patch is scored individually and then the total points allotted. Therefore, 5 points are awarded for this question.

[2]Percent aerial cover of ground, shrub, and canopy was estimated in a representative location of each habitat patch identified onsite. The weighted average of these coverages was used to determine appropriate points for percent cover for each stratum across the site. The FDH was calculated using the weighted averages cover percentages.

LANDFILL TECHNICAL MEMORANDUM
URS

2.1 INTRODUCTION

The City of Bellevue is considering using the Eastgate Area Properties for a park or other recreational facilities. URS Corporation, a member of The Portico Group project team, evaluated the former Boeing-Eastgate Landfill which underlies a portion of the Eastgate property. The evaluation was based in part on site visits and a review of documents written by other companies, including the following:

- Landfill Issues Report, SCS Engineers. July, 2 2002.
- Geotechnical and Environmental Studies. AMEC Earth and Environmental Inc. May, 28 2002.
- RS Means, Heavy Construction Cost Data. (31 23 23.18).2008
- Boeing-Eastgate Landfill Drawings, CH2MHILL. 1987.
- Geotechnical Engineering Services Duct Bank Relocation Boeing Eastgate Landfill, June 28, 2004 for Puget Sound Energy, Geo Engineers
- Cedar Hills Regional Landfill, Bid Comparison. Scarsella. 2008.
- Rabanco Waste Management. Waste Management Personal Communications for Disposal Costs. June 6, 2008.

While active the landfill accepted both Construction/Demolition waste (C&D) and Municipal solid waste (MSW) from 1951 through 1964. Waste was placed in a former drainage channel that collected water from the Eastgate area, and directed water north to Phantom Lake, a half mile north of the landfill site. Waste material was placed and spread with a small bulldozer. It is reported waste was placed in layers six to eight feet thick and periodically covered with soil. The landfill area encompassed approximately 9.6 acres. When the landfill stopped receiving waste in 1964 a soil cap was placed. Over the years a significant amount of soil fill has been placed above the old landfill. In 1974 additional soil mixed with construction debris (including concrete) was placed over the southern portion of the site. Subsequently, the site has been graded to encourage run-off to a storm drainage system that empties into a two pond water quality treatment system north of the landfill. In 1986 a landfill gas collection system was installed in the waste mass by the Boeing Company. The system includes extraction wells, collection and conveyance piping, condensate traps, vacuum blowers and a flare to burn the methane. In addition, some surface grading was performed, and monitoring wells were installed. The maximum thickness of waste has been reported to be 42 feet. In conjunction with decomposition of organic wastes, the area has settled with reports of closed depressions on the order of three to four feet, cracks and swales in the north end of the old runway pavement, Boeing parking lot settlements of one to two feet, etc.

Over the years a number of utilities have been installed in, through, and across the landfill. These include storm & sanitary sewers, PSE power ducts (now abandoned), the landfill gas collection & conveyance system and the road & utilities associated with the Advanta development on the southern portion of the landfill. Currently the landfill is used as a low impact recreation area used for walking jogging, dog park with wide trails and an open gently sloping field covered with shrubs, grasses & blackberry bushes.

2.2 ASSESSMENT AND CONCLUSIONS

The landfill portion of the area has been covered with a soil cap for approximately 44 years. While grading and storm drains provide a means for surface water to drain to the storm system, it is clear a significant amount of precipitation is, and has been, able to percolate through the soil cover to the waste. As such the organic portions of the waste deposited have mostly decomposed. This is evidenced by the very low quantities of landfill gas currently being collected and the need to significantly augment the flare with propane when the system is energized. However, the site will continue to generate landfill gas in small quantities. Landfill gas is composed of methane, carbon dioxide, other trace elements and water, therefore; any excavation, vault, or structure placed in or near the landfill should be considered a confined space.

The landfill cover soils are described as silty sand with gravel and cobbles. These soils are susceptible to disturbance, erosion and are difficult to work or compact when wet. The waste in the landfilled area is a very poor material for use in construction. It was placed in layers and likely has multiple zones of perched water. It is composed up of heterogeneous materials including large chunks of concrete, logs, stumps, tires, and other non-decomposable garbage. It is compressible and subject to differential, uneven, settlement from loading.

Therefore and development of the site should include consideration of engineered measures to address the life safety, environmental and construction risks associated with building on or near an old landfill. This includes the following:

- For structures; Either remove portions of the waste around the structure(s), use piles or other means to support the structure(s) or perform ground improvement to address compressible soils, water and gas barriers to prevent landfill gas intrusion.
- For sport field(s); perform installation of water and gas barriers to collect precipitation/irrigation prior to it reaching the waste and generating more leachate or landfill gas, and protect the surface features from landfill gas.
- For any development provide monitoring to verify performance of the protection systems installed.

2.3 CALCULATION OF SOLID WASTE VOLUME

2.3.1 Introduction

The vast majority of organic waste has decomposed during the intervening 44 years. The volume of the waste material was estimated for two purposes: 1) to estimate the cost of its removal, if this option is chosen; and 2) to estimate the amount of methane gas that is still being generated by the remaining waste. A cover layer of soil (called the "cap") was placed over the waste as part of the closure of the landfill in 1964. This soil cap covers the entire landfill. There are several landfill gas extraction wells located near the edge of the landfill that extend through the soil cap to the bottom of the waste installed to capture the methane gas produced by the waste.

2.3.2 Surface Area of Waste

Based on the Boeing-Eastgate Landfill Drawings (drawings) the volume of refuse in the Eastgate Landfill was calculated by scaling out the area. There is an outline of the landfill on the outer edge of the extraction wells, from this the area can be measured. The remaining area of the entire landfill was calculated to be approximately 380,000 square feet (8.6 Acres). The area within the extraction wells was also calculated based on scaled drawings (Figure 1). The area within the extraction wells was calculated to be 260,000 sf (6 Acres). The original size was estimated to encompass 9.6 acres, but portions have been removed or are now capped by the Advanta property (Figure 2).

2.3.3 Volume of Waste

After the area is established the average depth of the soil cap and the average depth of the refuse material were determined. The average soil cap depth was found to be 10 feet stated in the Geotechnical and Environmental Studies Report. The depth of the refuse material was estimated based on the depth of the extraction wells. A table on the drawings contains the drilled depths of the 21 extraction wells. The average was taken of those depths to be used as the average depth of the refuse material, 38 feet. The volume of the landfill within the extraction wells was calculated by multiplying the area within the extraction wells by the difference between the average depth of refuse and the average depth of the soil cap. The volume was 270,000 cubic yards(yd^3). The edge of the landfill sloped downward to the bottom of the extraction wells. This volume was assumed to be geometrically a triangle. To calculate the volume outside the extraction wells the difference between the total landfill area and the area within the extraction wells is multiplied by the difference between the average depth of refuse and the average depth of the soil cap then multiplied by ½. The volume for sides outside the extraction wells was 40,000 yd^3. The two volumes were then added together to get the total volume of waste in the Eastgate landfill, 310,000 yd^3.

In the Landfill Issues Report, calculations of the volume of refuse in the Eastgate Landfill have reported similar quantities.

2.4 LANDFILL GAS

2.4.1 Gas Generation Status

The base of Eastgate Landfill appears to be located above the water table (based on data from groundwater monitoring wells). The waste mass is likely to be wet or moist because of soil cover. Since it has been forty years since the landfill closure, gas generation of the refuse has decreased drastically. A graphical representation is seen in Appendix A. Eastgate landfill closed in 1964, and the landfill gas production probably peaked in 1965. By 2005 the landfill gas system was only turned on and burned three times a week by the City. Three years later the landfill gas system is turned on three times a week, but requires augmentation with propane to maintain combustion in the flare.

2.4.2 Gas Generation Volume

A graphical representation was made of the gas generation from the landfill. Under the curve represents the amount of gas that is generated. There were extraction wells installed in 1986. They worked sufficiently but now they no longer can burn the gas produced by the landfill. Propane needs to be added in order to burn the gas that is generated by the Eastgate landfill.

The amount of gas that is produced by the landfill was calculated using the volume of waste under the soil cap and the weight of the waste. From the total volume of waste it is assumed that only 80% is refuse. That would make 248,000 yd^3 of refuse. Of that only 75% generates gas, assuming that 25% of the refuse is inert. It was assumed that waste in place is somewhat dense at 1800 pounds per cubic yard. The weight of waste and the volume of the waste were multiplied together to come up with the pounds of waste that resides in the Eastgate landfill, 335,000,000 lbs.

The potential methane generation capacity of refuse is 120 cubic meters per tonne of refuse. The pounds of refuse was converted to tonne and then multiplied by the capacity. The theoretical amount of methane generation is 18,000,000 m^3 for the Eastgate Landfill.

2.5 SOIL REMOVAL

2.5.1 Reason for Soil Removal

To determine the cost of excavating and removing refuse material from the landfill site, the volume of the refuse and the surrounding contaminated soil was estimated using standard engineering techniques. The estimate was performed assuming 2.5 feet of soil above and below would need to be removed in addition to the refuse in place. URS also assumed the area excavated would need to be covered with a 2.5 foot layer of clean soil and vegetated. This would leave the old landfill site clean and ready for new development.

2.5.2 Volume of Soil Removal

Refuse material to be removed is the volume of the total landfill, 310,000 yd^3, and surrounding material that may contain or be in contact with refuse. An additional two and a half feet from the top and bottom of the landfill would also need to be removed. Only 2.5 feet of the soil cap can be saved and reused to help fill in the excavated portions of the old landfill, which is approximately 35,000 yd^3. The remainder of the soil cap will need to be removed and disposed to remove any waste that may be touching the soil cap. The soil cap that needs to be removed has a volume of 103,000 yd^3. Adding the volumes of the soil cap, the volume of refuse, and the volume of the additional soil the total amount of material that will need to be excavated will be 565,000 yd^3.

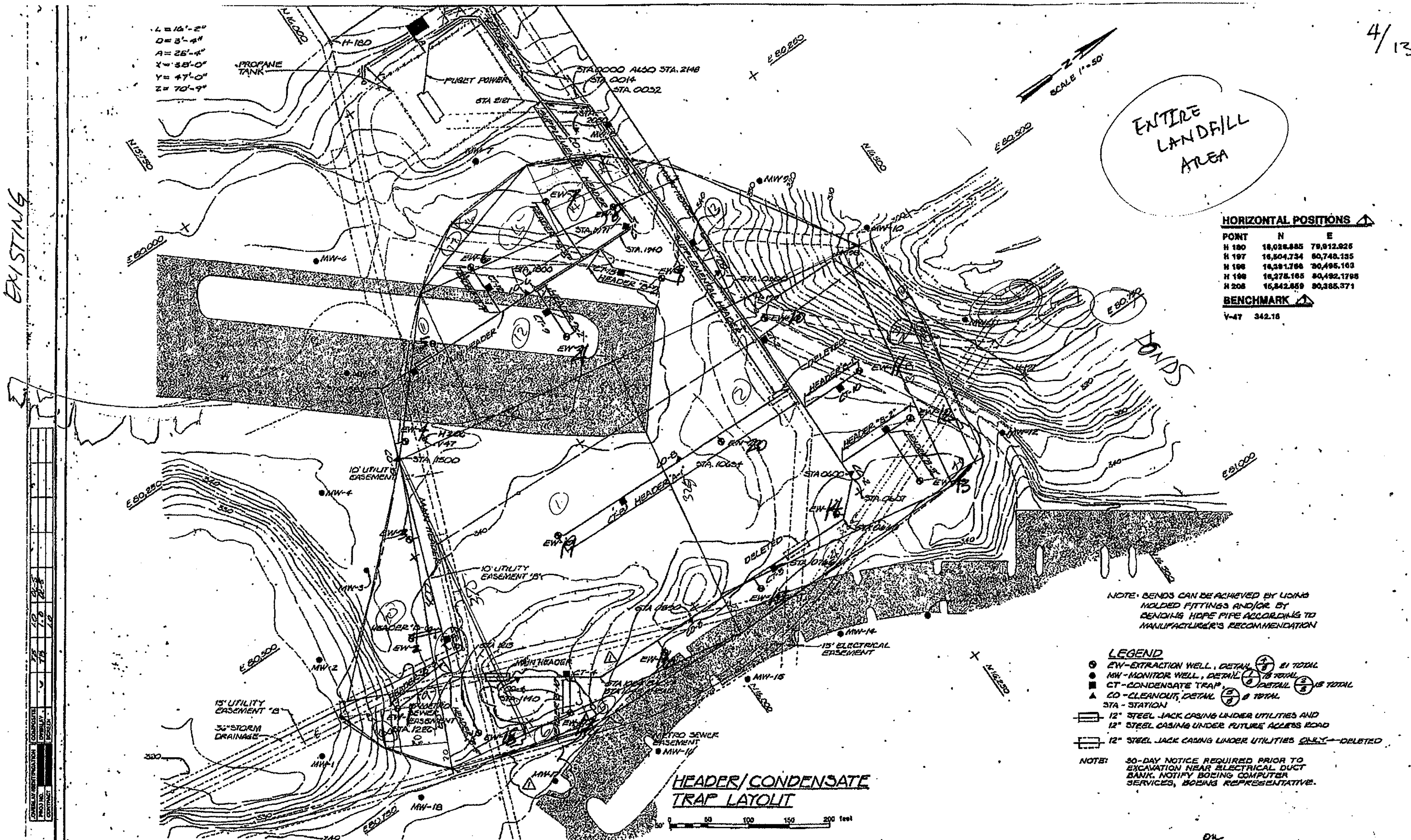
2.5.3 Cost of Soil Removal

The top 2.5 feet of the soil cap can be moved to the side with a scraper, this cost is estimated to be $104,000. Based on the volume of the total amount of material that will need to be excavated, 565,000 yd^3, the estimated cost to excavate it would be $8,800,000. This cost estimate is from RS Means, Heavy Construction Cost Data 2008. There will be an additional cost to dispose of the refuse. This cost is includes hauling it off and dumping it at the Rabanco Recycling Center and Transfer Station. This total cost is estimated to be $32,000,000. The total cost to excavate and remove the refuse from the Eastgate Landfill is estimated to be $41,000,000, see Appendix B.

2.6 RECOMMENDATIONS

Development of the site should include consideration of engineered measures to address the life safety, environmental and construction risks associated with building on or near an old landfill. For structures, this will require either remove portions of the waste around the structure(s), using piles or other means to support the structure(s) or perform ground improvement to address compressible soils, water and gas barriers to prevent landfill gas intrusion. For sport field(s); this will require installation of water and gas barriers to collect precipitation/irrigation prior to it reaching the waste and generating more leachate or landfill gas, and protect the surface features from landfill gas. Any development would require installation of monitoring systems to verify performance of the protection systems installed.

Figure 1



SYM	REVISION	BY	APPROVED	DATE
1	RELOCATIONS PER BOEING	TNT		
2	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT
BELLEVUE, WA. 98004

AUBURN, WA. 98002
EVERETT, WA. 98201
KENT, WA. 98031
PORTLAND, OR. 97220
RENTON, WA. 98055
SEATTLE, WA. 98124

CH2M HILL

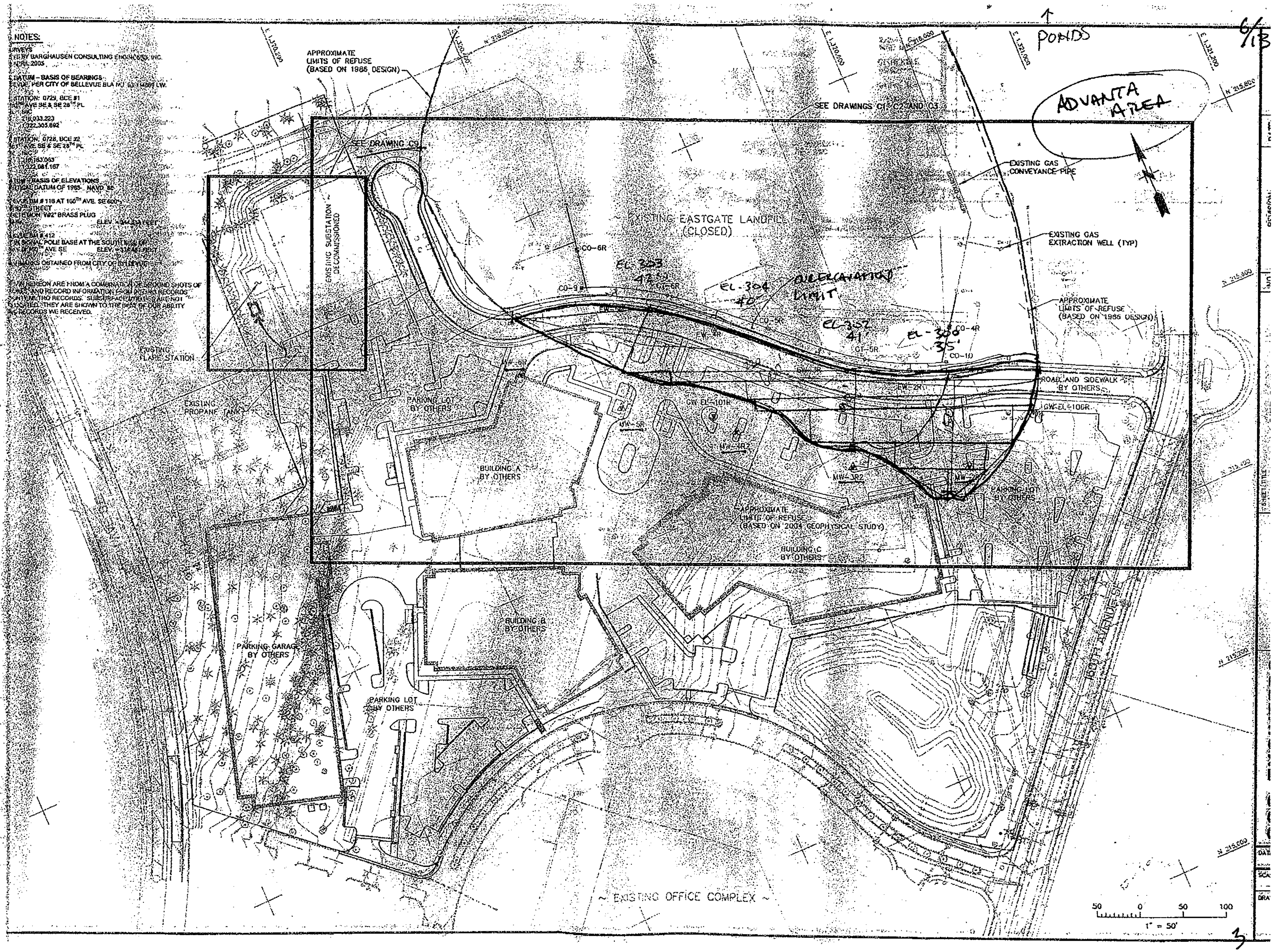
HEADER/CONDENSATE TRAP LAYOUT

BOEING-EASTGATE LANDFILL
LFG MIGRATION CONTROL SYSTEM

C-5

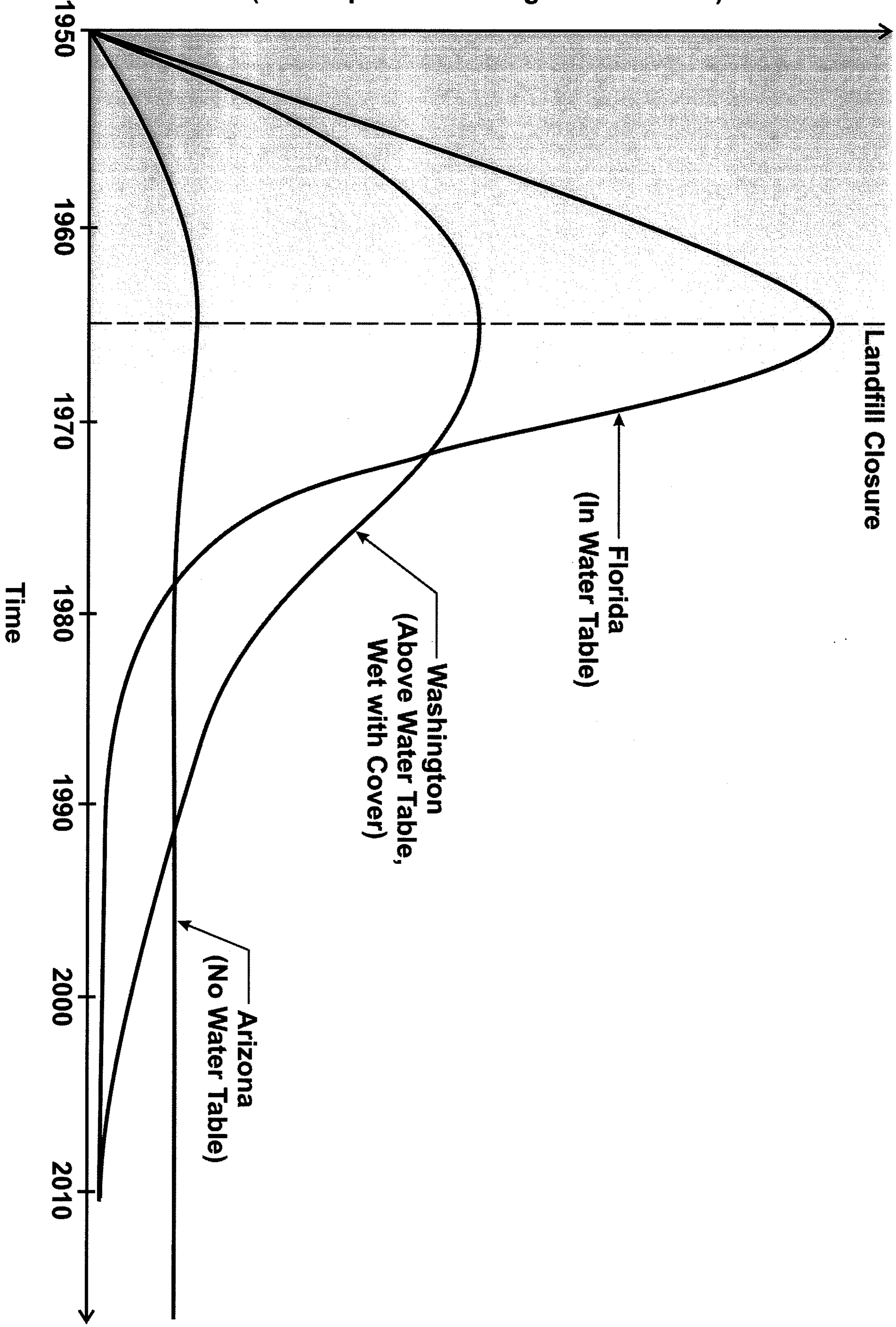
Figure 2

E - NEW


NOTES:
APPROXIMATE LIMITS OF REFUSE (BASED ON 1986 DESIGN)
SEE DRAWINGS C1, C2 AND C3
SEE DRAWING C3
EXISTING SUBSTATION ~ DECOMMISSIONED
EXISTING FLARE STATION
EXISTING PROPANE TANK
~ EXISTING EASTGATE LANDFILL ~ (CLOSED)
EXISTING GAS CONVEYANCE PIPE
EXISTING GAS EXTRACTION WELL (TYP)
APPROXIMATE LIMITS OF REFUSE (BASED ON 1986 DESIGN)
ROAD AND SIDEWALK BY OTHERS
PARKING LOT BY OTHERS
BUILDING A BY OTHERS
APPROXIMATE LIMITS OF REFUSE (BASED ON 2004 GEOPHYSICAL STUDY)
BUILDING C BY OTHERS
BUILDING B BY OTHERS
PARKING GARAGE BY OTHERS
PARKING LOT BY OTHERS
~ EXISTING OFFICE COMPLEX ~
160TH AVENUE SE
1" = 50'
EL-303 42'
EL-304 40'
OVEREXCAVATION LIMIT
EL-357 41
EL-308 35'
PONDS
ADVANTA AREA
6/13
3

Appendix A

Landfill Gas Production
(Decomposition of Organic Materials)



Appendix B

Fee	Units	Quantity	Unit Price	Amount
Tipping	TON	565280	$43.00	$24,307,040.00
Hauling	CY	565280	$13.00	$7,348,640.00
Excavation	CY	565280	$15.60	$8,818,368.00
Moving top of Soil Cap	YD	34718	$3.00	$104,154.00
Total				$40,578,202.00

Environmental Consultants
and Contractors

2405 140th Avenue, NE
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Bellevue, WA 98005-1877

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FAX 425 746-6747
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SCS ENGINEERS

November 17, 2015
Project No. 04215047.00

Ms. Chelsea McCann
Principal
Walker Macy
111 S.W. Oak Street, Suite 200
Portland, OR 97204

Subject: Assessment of Existing Landfill Gas Control System, Bellevue Airfield Park (former Eastgate Landfill), Bellevue, WA

Dear Chelsea:

This letter presents SCS Engineers' (SCS') assessment of the existing landfill gas (LFG) control system at the former Eastgate Landfill located within the proposed Bellevue Airfield Park in Bellevue, Washington.

PROJECT BACKGROUND

The Bellevue Airfield Park is a 27 acre site with historical uses as both an airfield and a landfill. The City of Bellevue (City) plans to redevelop the site based on a previously completed master plan. The master plan includes synthetic athletic fields, a concession and restroom facility, play area, picnic area, pedestrian trails, parking, a spray deck, landscaping, and upgrades to the existing drainage ponds. Figure 1 shows the proposed master plan for the park.

A portion of the project will include development over an old closed landfill referred to as the Eastgate Landfill. The Eastgate Landfill operated from approximately 1951 to 1964. The landfill occupies approximately 9 acres of the 27 acre site. Development of the site will require modifications, upgrades, and/or replacement of the environmental monitoring networks for groundwater, stormwater, and subsurface LFG. Development will also need to include modifications, upgrades, and/or replacement of the environmental control systems for LFG and stormwater management.

The LFG control system was originally installed in 1986 in response to subsurface LFG migration into soils adjacent to the landfill. The LFG control system was designed, constructed, and operated to extract LFG from the waste mass and dispose of it by thermal oxidation (i.e., flaring). Ongoing, routine, operations and maintenance has controlled and prevented subsurface migration of landfill gas. Like all municipal solid waste landfills, the buried waste (in the absence of oxygen) creates an anaerobic decomposition process that generates LFG, which consists primarily of methane and carbon dioxide. When left uncontrolled, the LFG can migrate laterally out of the waste into surrounding soils. Uncontrolled migration of subsurface LFG is a concern due to the combustion hazard of methane and the asphyxiation hazard of both carbon dioxide and methane.

DESCRIPTION OF EXISTING LFG CONTROL SYSTEM

The existing LFG control system is designed to extract LFG from the refuse mass to minimize emissions to the atmosphere and migration into the soils surrounding the landfill. The existing LFG control system at the site has the following components:

- An extraction network consisting of gas extraction wells.
- A conveyance system consisting of branch pipes, lateral pipes, sub-header pipes, and perimeter header pipe to convey the collected LFG from the extraction network to the LFG extraction plant (blower station).
- A condensate disposal system consisting of condensate dropout tees, condensate drain pipes and condensate drain traps to remove condensate from the conveyance pipe and discharge it into the refuse.
- A LFG extraction plant (i.e., blower station, gas mover equipment or gas handling facility) consisting of blowers, ancillary equipment, associated piping and controls.
- LFG disposal equipment consisting of activated carbon vessels to treat the LFG prior to discharging to the atmosphere.

The LFG system consists of collection points (wells) located throughout the landfill. The gas extraction wells are installed in the refuse mass and connected to the conveyance pipe system, which are connected to the blowers. The blowers induce a vacuum on the pipeline, which pulls LFG from the extraction wells through the pipeline to the blowers. The blowers push the LFG through the activated carbon vessels for treatment before discharging the LFG to the atmosphere. The activated carbon vessels absorb (remove) harmful trace compounds from the LFG.

There have been minor modifications to the LFG system since initial installation with the most notable modifications occurring in 2006/2007 and 2011. In the fall of 2006 and spring of 2007, there were modifications made to replace gas wells, gas probes, and gas conveyance pipe on the south end of the landfill to accommodate a new access road (30th Place SE) and property development to the south (Advanta Business Complex). In 2011, the blower flare station was modified to abandon the flare and install LFG treatment equipment consisting of activated carbon vessels. The existing LFG collection system is shown on Figure 2 and consists of the following:

- A blower station with two (2) blowers (vacuum pumps), associated piping, controls, electrical service, and two (2) activated carbon vessels (for treatment of LFG prior to discharge to atmosphere)
- Approximately 4,300 feet of buried gas conveyance pipe (8″, 6″, and 4″ diameter high density polyethylene [HDPE] pipe)
- 20 gas extraction wells with an average depth of 35 feet (EW-2 through EW-21)
- 13 condensate drain traps (CT-1 through CT-13)
- Eight (8) dual cleanout access ports with isolation valves (CO-1 through CO-8)

- Two (2) single cleanout access ports (C0-9 and C0-10)
- Two (2) isolation valves (IV-9 and IV-10)
- 14 subsurface gas detection wells or “gas probes” (MW-2 through MW-6, MW-8 through MW-10, and MW- 12 through MW-17)

The record drawings for the LFG control system can be found in Exhibits 1, 2 and 3. The record drawings are from the initial construction in 1986 (Exhibit 1) and subsequent modifications in 2007 (Exhibit 2) and 2011 (Exhibit 3). Subsequent surveys conducted in 2002 and 2009 have been used to update the LFG system site plan as shown in Figure 2. These surveys are provided in Exhibits 4 and 5, respectively.

GENERAL LFG CONTROL SYSTEM OPERATIONS

Operation of the LFG extraction plant, LFG disposal equipment, conveyance system, extraction network, and condensate disposal system consists of monitoring and maintaining the equipment on a routine basis to provide reliable and consistent extraction, conveyance, and treatment/disposal of LFG and condensate.

Objectives for the LFG extraction network are as follows:

- Prevent and/or minimize emissions of LFG to the atmosphere.
- Prevent and/or minimize emission of LFG into native soils surrounding the landfill.
- Maintain an anaerobic (i.e., methane producing) environment within each extraction zone (as indicated by low residual nitrogen with well temperatures generally less than 55 degrees Celsius [°C] or 131 degrees Fahrenheit [°F]).
- Maintain methane concentrations below 5 percent by volume at the perimeter gas probes.

Operation of the gas probes requires vigilant monitoring to assess the performance of the extraction network in order to meet the control objectives and be compliant with applicable regulations.

Achieving the objectives described above is accomplished by carefully monitoring and controlling the flow and/or vacuum from each extraction well. Ideally, for the LFG extraction, the wells would be operated by extracting LFG at the same rate of production. However, there are many factors that do not allow this ideal condition to develop. Operation of the LFG extraction wells is very dynamic. The effectiveness of each LFG extraction well is influenced by.

- The heterogeneous and anisotropic nature of the waste mass.
- The limited number of wells in the landfill.
- Well location and design.
- The absence or presence of a bottom liner system in the landfill.

- Varied air infiltration potential due to a condition and variation of the soil cover system between wet and dry seasons.
- Varied air infiltration potential due to landfill geometry.
- Permeable geologic strata around the site.
- The varying age of refuse in the landfill.
- The influence of fluctuating barometric pressure.
- The nature of changing gas composition dependent on the anaerobic/aerobic state.

The characteristics listed above make the LFG extraction wells at the landfill sensitive to operations. This makes it is necessary to continually adjust the system on a routine basis to match gas production levels and control objectives.

CURRENT OPERATING CONDITIONS

The following presents SCS's findings based on review of the past 10 months of system monitoring results, LFG System Design, and historical operations of the LFG system.

Findings from review of the past 10 months of system monitoring results are as follows:

- Gas probes show the presence of LFG (i.e., methane) at gas probes MW-2, MW-3 and MW-4.
- The methane content at these gas probe locations is below the regulatory threshold limit of 5 percent by volume.

Findings from review of the LFG system design and historical operations are as follows:

- The design of the original 1986 well head control assemblies provide no device for measuring flow. This inhibits the ability to adequately assess the extraction performance of an individual well.
- The location/orientation of the flow meters at the blower station do not allow for accurate flow measurement due to the lack of sufficient straight run of pipe to develop a velocity profile through the measurement device. This makes it difficult to assess the overall performance of the system.
- The original 1986 condensate drain traps are prone to damage and malfunction due to the type of pipe connections.
- The condensate drain traps are prone to flooding during the wet season due to seasonal high water levels. This can cause partial or complete blockage of the gas pipes (and gas extraction) during the wet season.

Note that the gas extraction well monitoring results showed vacuum being applied to all gas extraction wells during 2015. This is a result of experiencing very low precipitation throughout 2015. Historically, the vacuum has been disrupted at some of the gas wells. This was due to flooding of the condensate drain traps. Continued operations of the LFG system should focus on correcting this issue to increase the consistency of operations.

The condition of the gas conveyance pipe is not known at this time. It should be noted that differential settlement has occurred over a long period of time at the landfill. This can potentially cause problems as subsidence of the gas pipe can cause condensate to accumulate at low points or "bellies" in the conveyance pipe. This can lead to partial or complete blockage of the gas pipes (and gas extraction) in the future.

FUTURE LANDFILL GAS MANAGEMENT

LFG generation from waste decay occurs over a long period of time. The peak gas generation generally occurs a year or two after cessation of landfilling. It then slowly declines exponentially over time. Previous site estimates show a peak LFG generation of approximately 330 standard cubic feet per minute (scfm) occurring in 1987. The LFG generation rate then declines exponentially to approximately 30 scfm in 2000; 20 scfm in 2010; and 10 scfm in 2015. The exact amount of gas generation is unknown. Operation of the LFG system confirms that gas is still being generated in small amounts. Monitoring results of the perimeter gas probes indicate that operation of the LFG control system is still necessary to prevent off-site migration of LFG. SCS believes that operations of the LFG system will need to be continued into the future. This will require operations during any work associated with future development. This will also require upgrades, and or replacement, to the LFG control system infrastructure impacted by future development.

CONSIDERATIONS FOR DEVELOPMENT OF MASTER PLAN

The proposed master plan layout indicates development will occur over the majority of the LFG control system area (see Exhibit 6). Installation of the sports field, and other features will require relocation of gas wells, gas conveyance pipe and condensate drain traps. Access to LFG system components will need to be installed at locations that do not interfere with other site features. The LFG system access points will also need to be concealed below ground in secured vaults. Upgrades to the LFG system should also address the deficiencies identified during review of the LFG system design and historical operations findings presented above. Specific deficiencies and items for consideration during site development include:

- Continue to operate the LFG control system on a routine basis to maintain methane concentrations in the gas probes below the regulatory threshold limit of 5 percent by volume.
- Upgrades and/or replacement of well head control assemblies should include a monitoring device for measuring flow at each gas well.
- The flow meters at the blower station should be replaced to allow for accurate flow measurement. This will better flow data for assessing the overall performance of the system.

- The condensate drain traps should be replaced with condensate pump stations to eliminate the possibility of flooding, which can occur in the existing condensate drain traps.
- The gas conveyance pipe should be replaced using pipe slopes greater than 3 percent to accommodate for long term differential settlement.
- One of the two blowers should be replaced due to the age and capacity beyond the expected service life. A variable frequency drive (VFD) should be included with the new blower.
- The blower controls should be replaced due to age, serviceability, advances in technology, and integration of both VFD operated blowers.
- Remove and recycle the abandoned LFG flare at the blower station compound.

The proposed development is anticipated to consolidate the waste to reduce the potential for significant differential settlement after installation of the new facilities. Currently a pre-load or surcharge load plan is being developed to address this. Preloading areas with LFG system components will likely damage the LFG system in that area. There will need to be considerations for allowing continued LFG system operations during the preloading process and during the subsequent construction of the new facilities. Interim, ongoing operations of the LFG system should focus on maintaining operations of the gas wells in the southern and south eastern perimeter. It is likely that the LFG system components along the southern perimeter and west of the landfill will not require preloading and can be incorporated into the schematic design for site development.

For future site development and upgrades to the LFG system, additional plans, permits, testing may be required including the following:

- Solid waste permit plan review
- Waste testing/designation and handling of solid waste
- Environmental Monitoring Plan
- Notice of Intent to Construct wells
- Variance request to construct wells
- Testing of LFG condensate
- Permit to discharge LFG condensate to sewer
- Revision to Restrictive Covenant

CLOSING

We trust you find this information of value. If you have any questions or desire any additional information, please contact Mr. Sonsthagen at (425) 289-5441, or Mr. Massart at (425) 289-5457.

Sincerely,

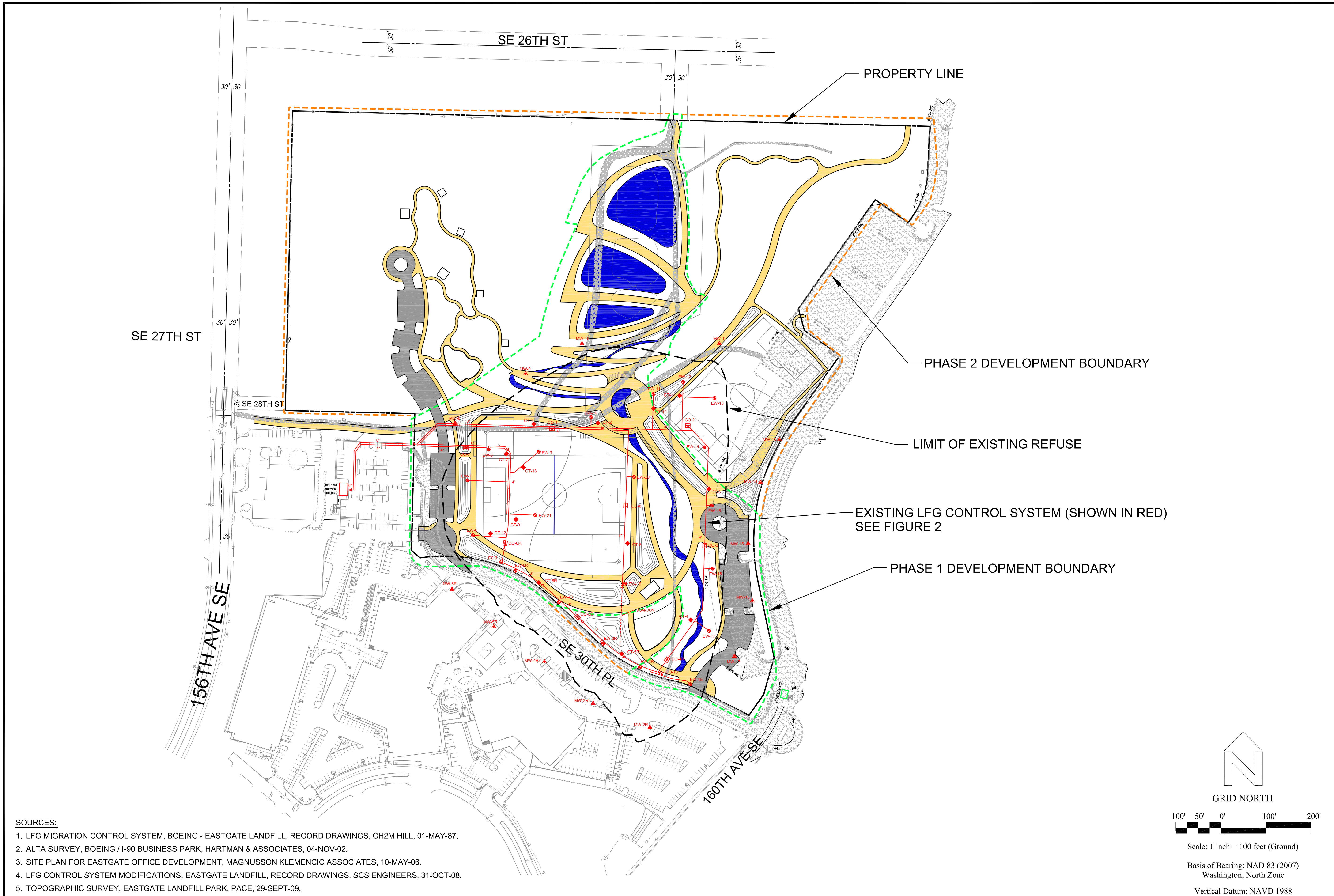
Ted Massart
Senior Project Engineer
SCS ENGINEERS

Eric M. Sonsthagen, P.E.
Senior Project Engineer
SCS ENGINEERS

Attachments:

Figures 1 and 2
Exhibits 1 through 6

FIGURES



SOURCES:

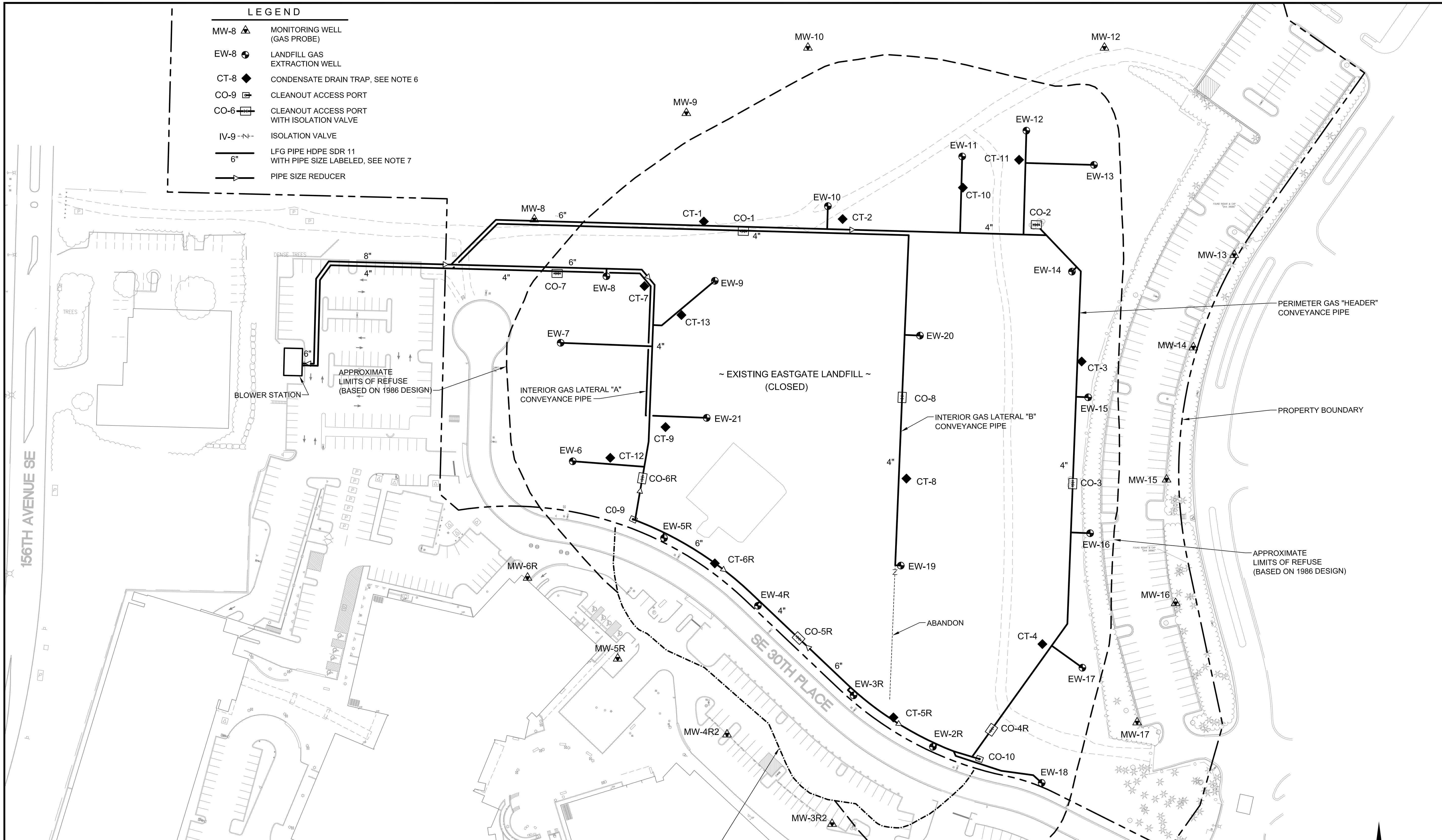
1. LFG MIGRATION CONTROL SYSTEM, BOEING - EASTGATE LANDFILL, RECORD DRAWINGS, CH2M HILL, 01-MAY-87.
2. ALTA SURVEY, BOEING / I-90 BUSINESS PARK, HARTMAN & ASSOCIATES, 04-NOV-02.
3. SITE PLAN FOR EASTGATE OFFICE DEVELOPMENT, MAGNUSSON KLEMENCIC ASSOCIATES, 10-MAY-06.
4. LFG CONTROL SYSTEM MODIFICATIONS, EASTGATE LANDFILL, RECORD DRAWINGS, SCS ENGINEERS, 31-OCT-08.
5. TOPOGRAPHIC SURVEY, EASTGATE LANDFILL PARK, PACE, 29-SEPT-09.
6. MASTER PLAN, BELLEVUE AIRFIELD PARK, WALKER MACY, 2012.

PROPOSED MASTER PLAN
WITH EXISTING LFG CONTROL SYSTEM
BELLEVUE AIRFIELD PARK (EASTGATE LANDFILL)
BELLEVUE, WASHINGTON

DATE OCTOBER 2015
FIGURE 1

PROJECT NO. 04215047.00
SCALE AS SHOWN
CAD FILE FIGURE 1
DES BY TAM
CHK BY EMS
APP BY EMS

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747



NOTES:

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5. TOPOGRAPHIC SURVEY, EASTGATE LANDFILL PARK, PACE, 29-SEPT-09.
6. CONDENSATE DRAIN TRAPS CT-1, CT-2, & CT-7 ARE CONNECTED TO BOTH PERIMETER GAS HEADER PIPE AND INTERIOR GAS LATERAL PIPES "A" & "B".
7. LOCATION / ALIGNMENT OF LFG PIPE IS APPROXIMATE, NO AS-BUILT SURVEY AVAILABLE.

DATE OCTOBER 2015

FIGURE 2

EXISTING LFG CONTROL SYSTEM
BELLEVUE AIRFIELD PARK (EASTGATE LANDFILL)
BELLEVUE, WASHINGTON

PROJECT NO. 04215047.00	DES BY TAM
SCALE AS SHOWN	CHK BY EMS
CAD FILE FIGURE 2	APP BY EMS

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

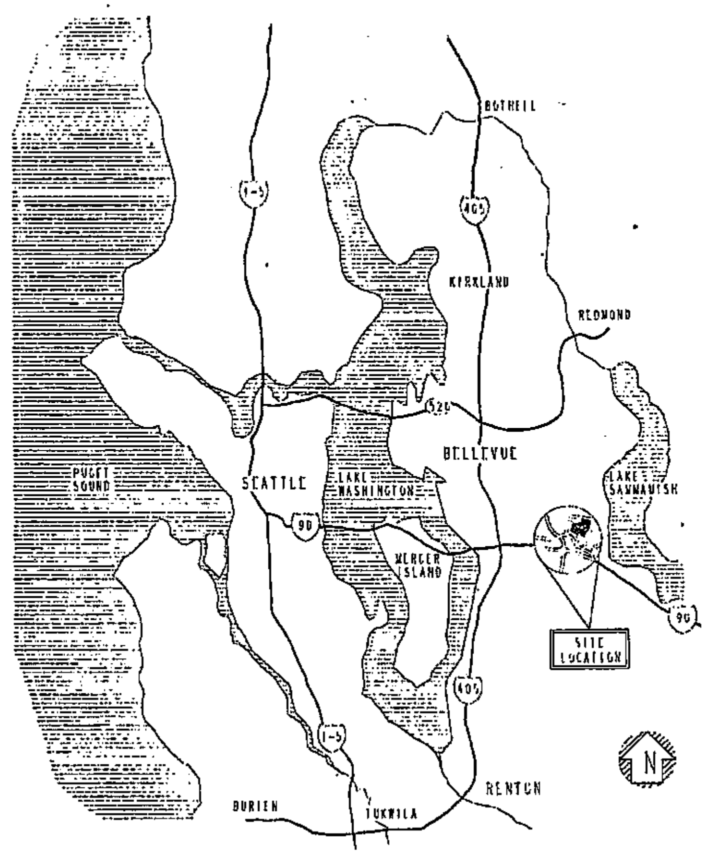
EXHIBITS

Exhibit 1

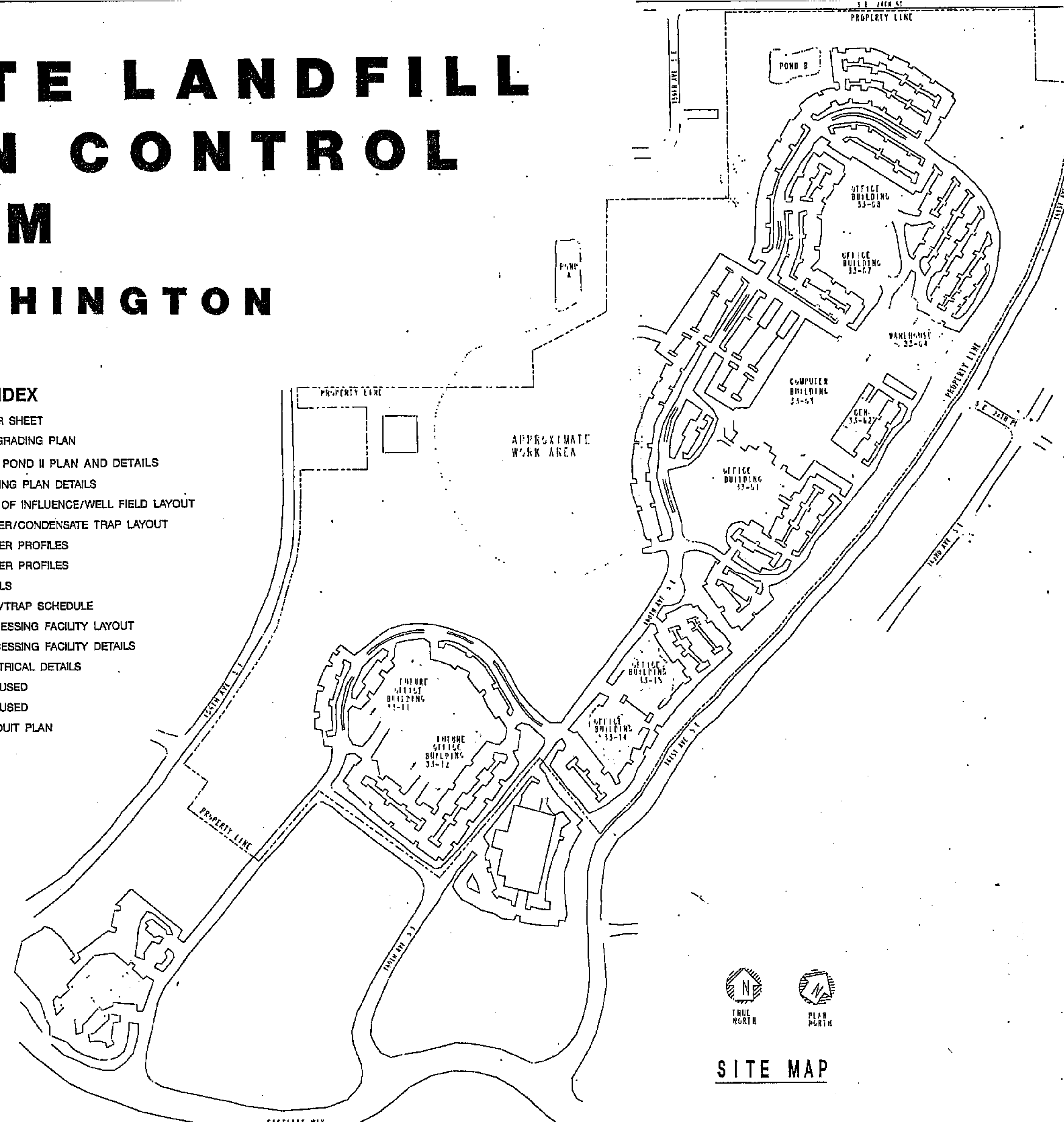
BOEING-EASTGATE LANDFILL
LFG MIGRATION CONTROL SYSTEM

BELLEVUE, WASHINGTON

SHEET INDEX



VICINITY MAP



SITE MAP

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
1	AS-BUILTS PER BOEING			5-1-87					

BOEING
FACILITIES DEPARTMENT

☐ AUBURN, WA. 98002
☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124
■ BELLEVUE, WA. 98004

STARR J. DENN — PROFESSIONAL ENGINEER

CH2M HILL

DRAWN BY: G. BELRIO — DATE: 5/16/86
ENGR.: E. CONRAD — 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: COVER SHEET

TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

LAST REVISION | SYMBOL | DATE

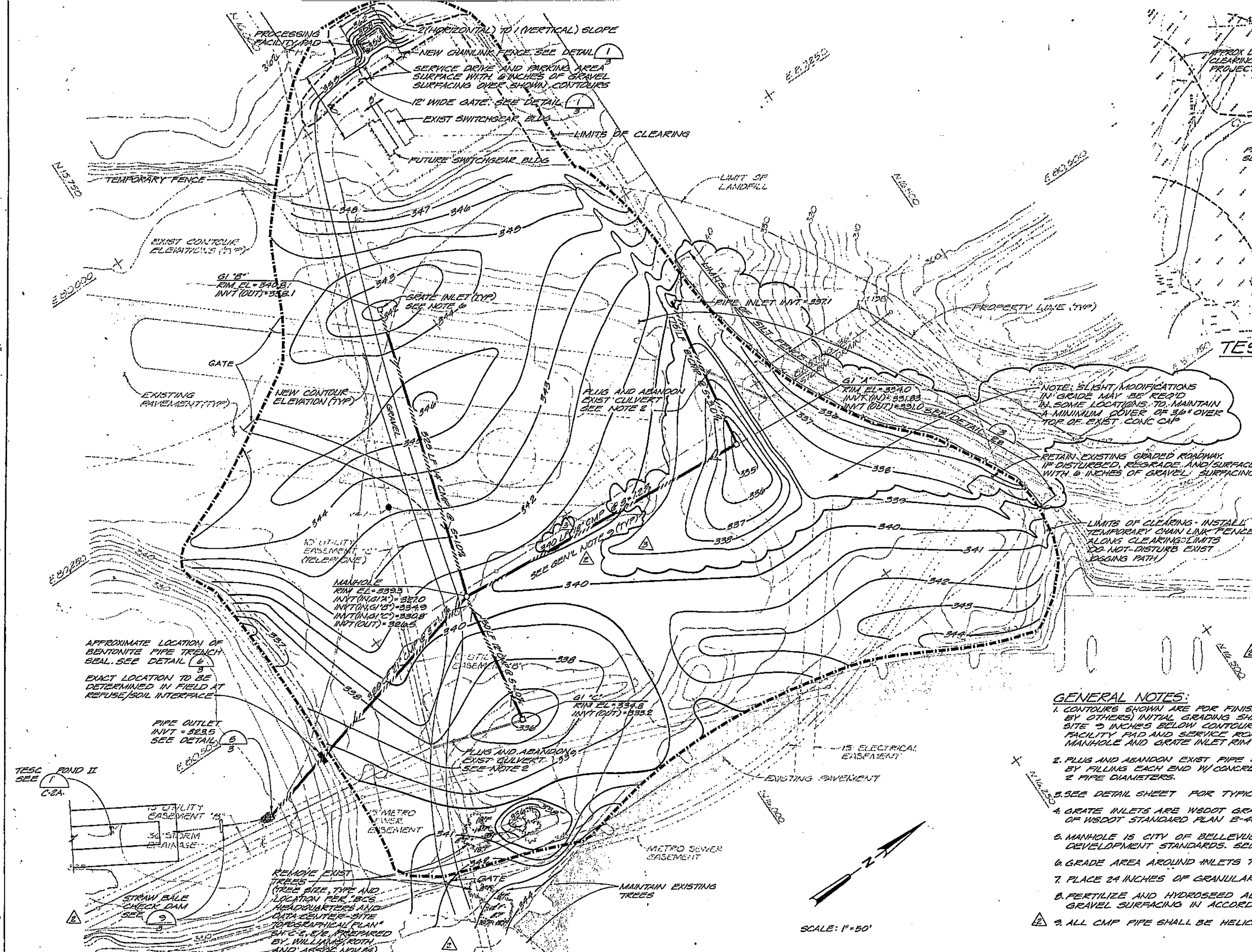
SHEET C-1 OF

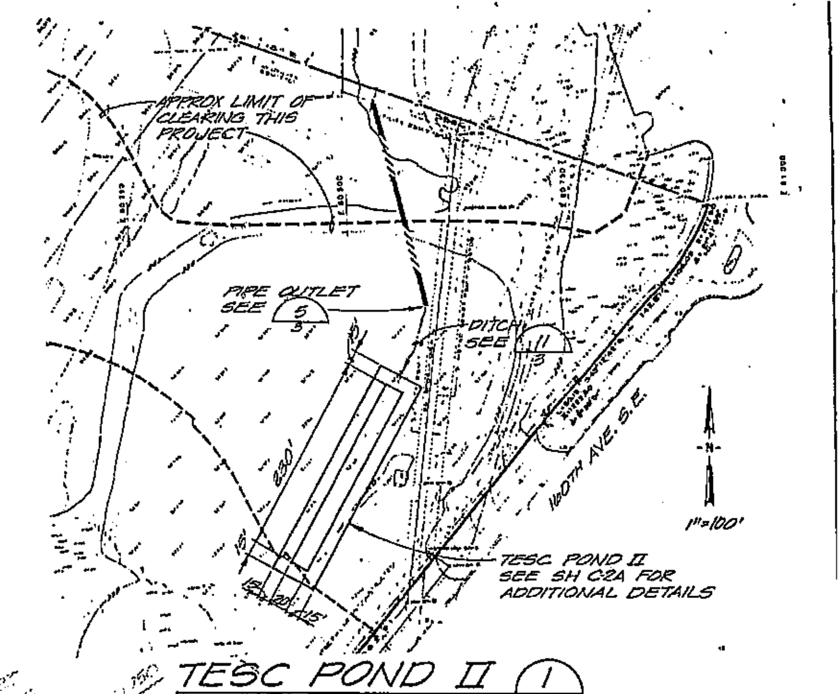
JOB NO.

DWG NO. 33-00-YD-1012-C1

DS 5009 4076 REV. 7/83

K&E





TESC POND II (1)

CONSTRUCTION SEQUENCE

1. CALL 455-6937 48 HOURS PRIOR TO ANY WORK FOR REQUIRED PRECONSTRUCTION MEETING.
2. INSTALL TEMPORARY CHAIN LINK FENCE.
3. INSTALL TEMPORARY EROSION CONTROL SYSTEM
   A. CONSTRUCT SEDIMENTATION POND.
   B. CONSTRUCT DITCH WITH STRAW BALE CHECK DAMS TO POND. SEE 11/3
   C. PERFORM GRADING REQUIRED TO INSTALL STORM DRAINAGE SYSTEM.
   D. INSTALL STORM DRAINAGE SYSTEM.
   E. PLACE STRAW BALES AROUND PIPE INLETS AND GRATE INLETS TO MINIMIZE SILT MIGRATION. REMOVE AFTER HYROSEEDED VEGETATION IS ESTABLISHED. SEE 10/3
4. PERFORM REMAINING SITE GRADING AND INSTALL NEW PROCESS FACILITY PAD.
5. INSTALL LFG COLLECTION SYSTEM.
6. HYDROSEED SITE.
7. INSTALL PERMANENT CHAIN LINK FENCES. (2)

GENERAL NOTES:

1. CONTOURS SHOWN ARE FOR FINISHED GRADES (TOP OF PAVEMENT, TO BE DONE LATER BY OTHERS) INITIAL GRADING SHALL BE PERFORMED BY CONTRACTOR TO BRING SITE 9 INCHES BELOW CONTOURS SHOWN (-0.75 FEET) EXCEPT FOR PROCESSING FACILITY PAD AND SERVICE ROAD CONTOURS. MAINTAIN PIPE INVERTS, MANHOLE AND GRATE INLET RIM ELEVATIONS AS SHOWN.
2. PLUG AND ABANDON EXIST PIPE SECTIONS WHERE SHOWN ON PLAN. PLUG LINES BY FILLING EACH END W/ CONCRETE TO A MINIMUM DEPTH INTO THE PIPE OF 2 PIPE DIAMETERS.
3. SEE DETAIL SHEET FOR TYPICAL PIPE BACKFILL SECTION.
4. GRATE INLETS ARE WSDOT GRATE INLETS-TYPE 2. CONFORM TO ALL REQUIREMENTS OF WSDOT STANDARD PLAN B-4C AND WSDOT STANDARD SPECIFICATIONS. SEE 8/3
5. MANHOLE IS CITY OF BELLEVUE TYPE I 48". CONFORM TO CITY OF BELLEVUE DEVELOPMENT STANDARDS. SEE 7/3.
6. GRADE AREA AROUND INLETS TO DRAIN TOWARD INLETS.
7. PLACE 24 INCHES OF GRANULAR FILL UNDER ALL GRATE INLETS AND MANHOLE
8. FERTILIZE AND HYDROSEED ALL GRADED AREAS NOT RECEIVING CRUSHED GRAVEL SURFACING IN ACCORDANCE WITH SPECIFICATIONS.
9. (2) ALL CMP PIPE SHALL BE HELICALLY CORRUGATED WITH ANNULAR ENDS.

SYM	REVISION	BY	APPROVED	DATE
1	REV. PER CITY OF BELLEVUE REVIEW			7-3-86
2	RAISED GRADE OVER UTILITY DUCT	TNT		9-2-86
3	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT
BELLEVUE, WA. 98004

AUBURN, WA. 98002
EVERETT, WA. 98201
KENT, WA. 98031
PORTLAND, OR. 97220
RENTON, WA. 98055
SEATTLE, WA. 98124

CH2M HILL

SUBTITLE: SITE GRADING AND TEMPORARY EROSION AND SEDIMENTATION CONTROL PLAN

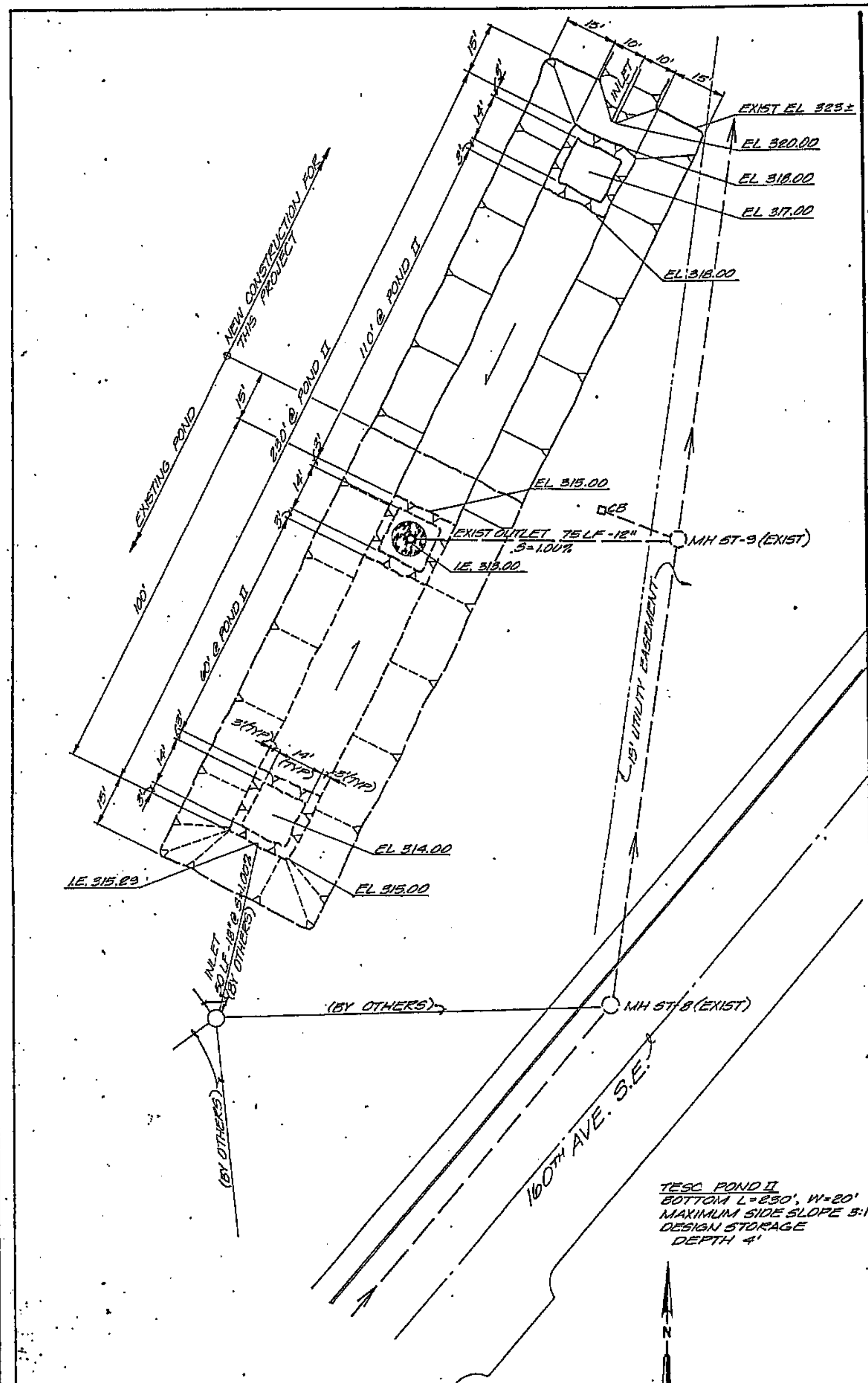
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

RESPOND TO SUBMITTAL REQM'TS

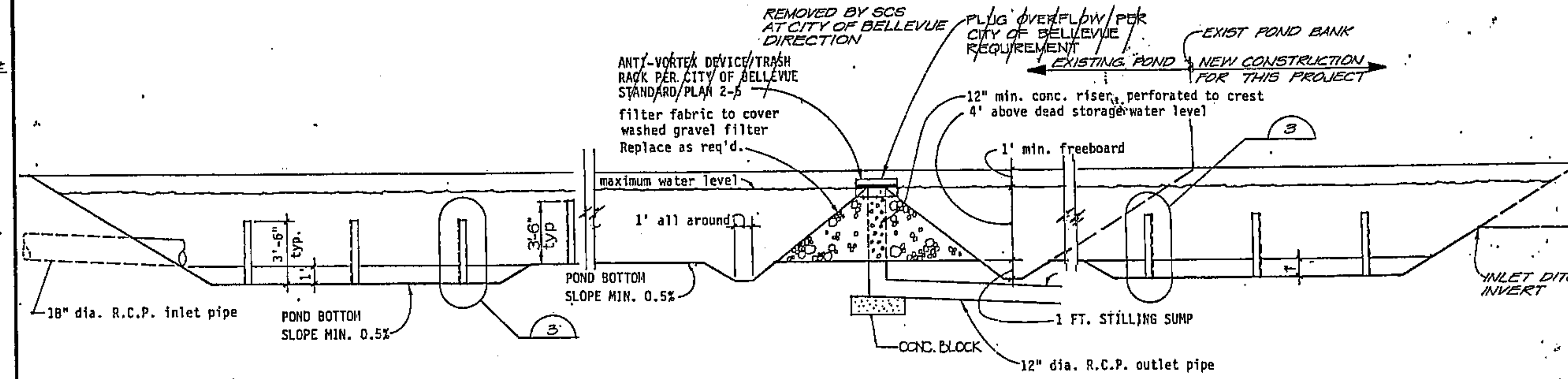
SHEET C-2

DWG NO. 33-00-YD-1012-C2

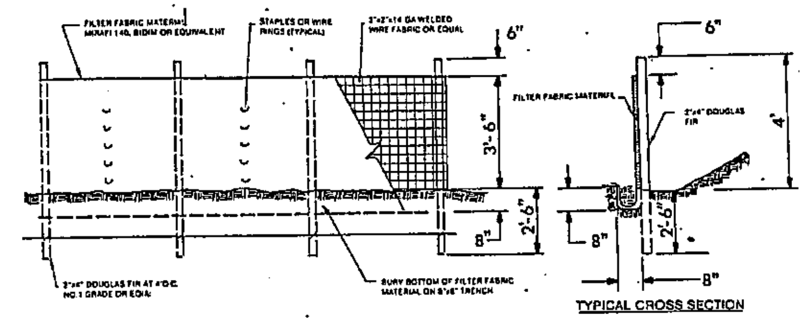
DG 6000 4075 REV. 7/83



TESC POND II PLAN (1)
NTS



TESC POND II SECTION (2)
NTS



SILT FENCE DETAIL (3)
NTS

TESC POND II NOTES

1. AS CONSTRUCTION PROGRESSES AND SEASONAL CONDITIONS DICTATE, MORE SILTATION CONTROL FACILITIES MAY BE REQUIRED TO ENSURE COMPLETE SILTATION CONTROL. THEREFORE, DURING THE COURSE OF CONSTRUCTION IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES OVER AND ABOVE THE MINIMUM REQUIREMENTS AS MAY BE NEEDED.
2. TOTAL TEMPORARY SEDIMENTATION CONTROL POND VOLUME PROVIDED 31,400 CU.FT. AND 31,300 CU.FT. IS THE TOTAL REQUIRED.
3. AT CONSTRUCTION VEHICLE ENTRANCE/EXIT POINTS, CONSTRUCT 4" TO 6" QUARRY SPALLS, 1' DEEP, 35' WIDE BY 100' LONG AT LOCATION AS DIRECTED BY ENGINEER.
4. THIS STRUCTURE SHALL BE PART OF THE PERMANENT STORM SYSTEM BUT WILL REMAIN PLUGGED UNTIL THE DRAINAGE FACILITIES ARE OPERATIONAL AND THE NEED FOR EROSION CONTROL HAS PASSED.

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
1	AS-BUILTS PER BOEING			5-1-87					

BOEING
FACILITIES DEPARTMENT
■ BELLEVUE, WA. 98004

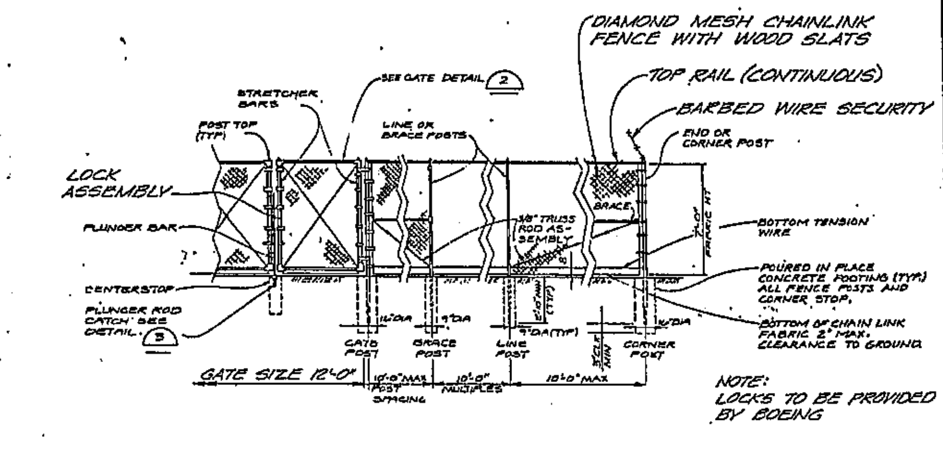
☐ AUBURN, WA. 98002
☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

CH2M HILL

DRAWN BY G. DEL RIO	DATE 5/16/86	SUBTITLE TESC POND II PLAN AND DETAILS
ENGR. D. CONRAD	5/16/86	TITLE BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM
CHECKED		
APPROVED		
APPROVED		

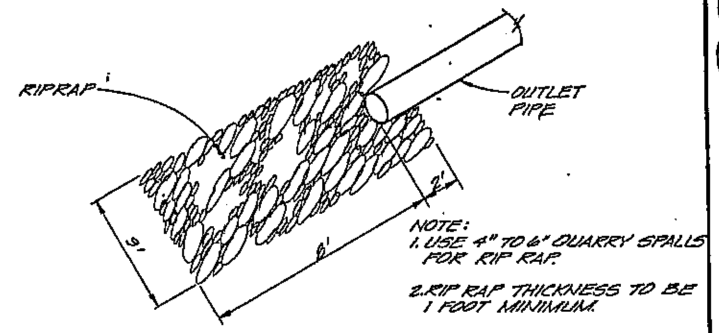
LAST REVISION | SYMBOL | DATE
SHEET C-2A
DWG NO. 33-00-YD-1012-C2A

D6 6000 4070 REV. 7/83



NOTE: LOCKS TO BE PROVIDED BY BOEING

TYPICAL FENCE DETAIL 1
NO SCALE

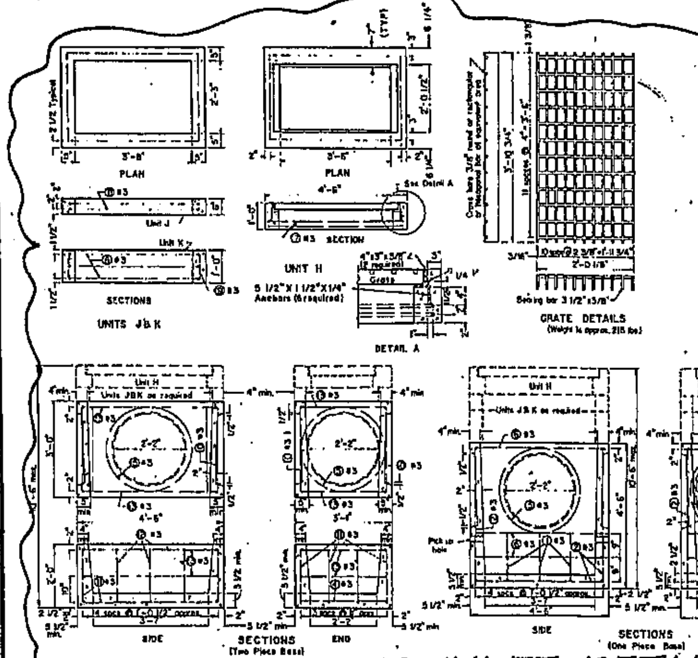


NOTE:
1. USE 4" TO 6" QUARRY SPALLS FOR RIP RAP.
2. RIP RAP THICKNESS TO BE 1 FOOT MINIMUM.

OUTFALL DETAIL 5
NO SCALE

BAR LIST
(All dimensions are out to out)

MARK	LOCATION	NO.	SIZE	LENGTH		BENDING DIAGRAM
1	Bottom slab & side wall	3	3	5'-9"		
2	Bottom slab & side wall	2		12'-5"		
3	Bottom slab & side wall	2		7'-2"		
4	Bottom slab & side wall	2		2'-8"	Str.	
5	Wall	4		9'-1"	Hoop	
6	Side wall	3		14'-6"	Hoop	
7	Unit H	2		14'-2"	Hoop	
8	Unit J	2		14'-2"	Hoop	
8	Unit K	3		14'-2"	Hoop	
9	Unit K	4		0'-9"	Str.	
10	Side wall	8		2'-8"	Str.	
11	Bottom slab & side wall	4		7'-5"		
12	Bottom slab & side wall	3		6'-0"		
13	Side wall	4		14'-6"	Hoop	



NOTES:

Angles shall be set so that each bearing bar or prefabricated grate shall have full bearing on both ends. The finished top of concrete shall be even with the grate surface.

Top of inlet grate shall be placed at ground level to present an unobstructed ditch or median section.

All exposed concrete edges shall be finished with a one-half inch radius edger tool.

Pipes may enter through the knockouts on any side at any reasonable angle, provided the outside of the pipe can be contained between two opposite walls.

The flow line of the outlet pipe shall be 1'-6" minimum above the inside bottom of the inlet structure.

The grade line of the top inside of any inlet pipe shall enter at a point no lower than the grade line of the top inside of the outlet pipe.

Unit H and optional extension units J and K shall be grouted in place to the satisfaction of the Engineer.

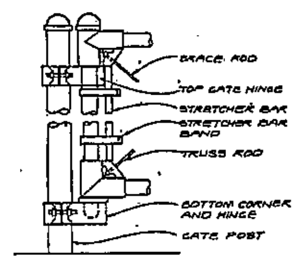
All pickup holes shall be grouted full after the basin has been placed.

Base units may be either precast or cast-in-place.

All reinforced cast-in-place concrete shall be Class A. All precast concrete shall be Class AX.

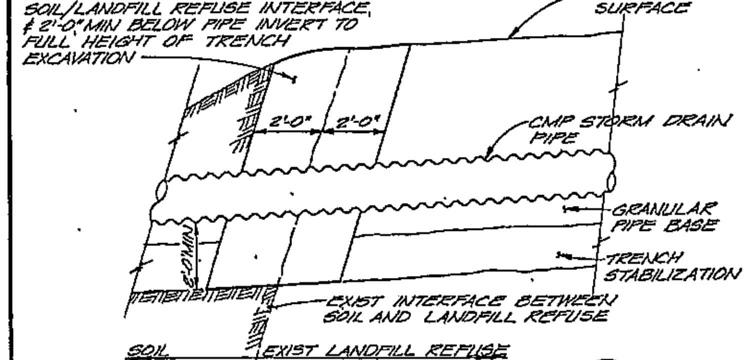
Reinforcing steel shall be Grade 40 or Grade 60.

GRATE INLET DETAIL 8 2

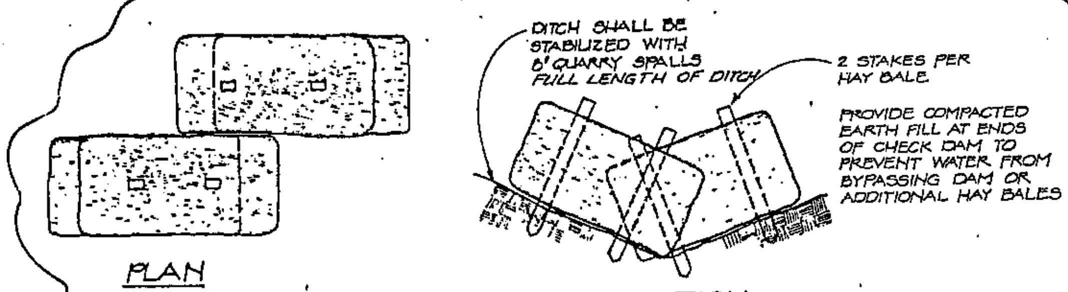


GATE DETAIL 2
NO SCALE

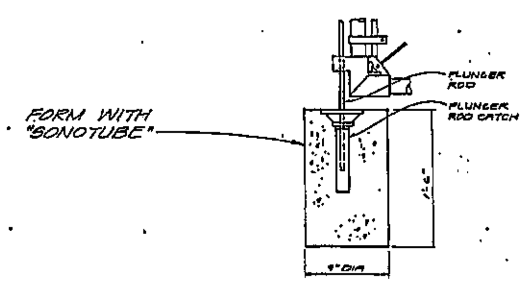
INSTALL BENTONITE TRENCH SEAL. LIMITS OF SEAL SHALL BE 2'-0" MIN ON BOTH SIDES OF EXIST SOIL/LANDFILL REFUSE INTERFACE, & 2'-0" MIN BELOW PIPE INVERT TO FULL HEIGHT OF TRENCH EXCAVATION



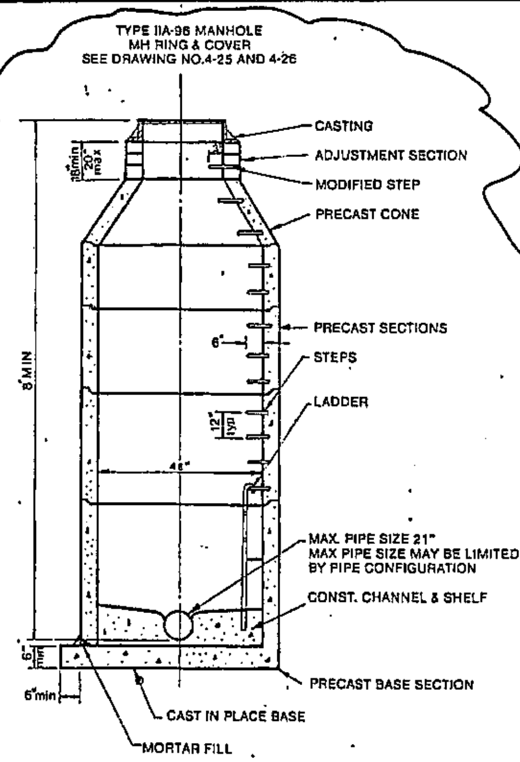
BENTONITE TRENCH SEAL 6
NTS



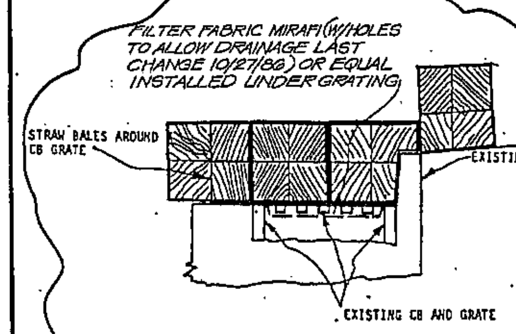
CHECK DAM DETAIL 9 2
NO SCALE



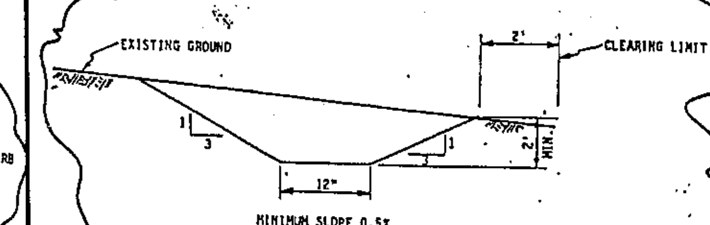
PLUNGER ROD DETAIL 3
NO SCALE



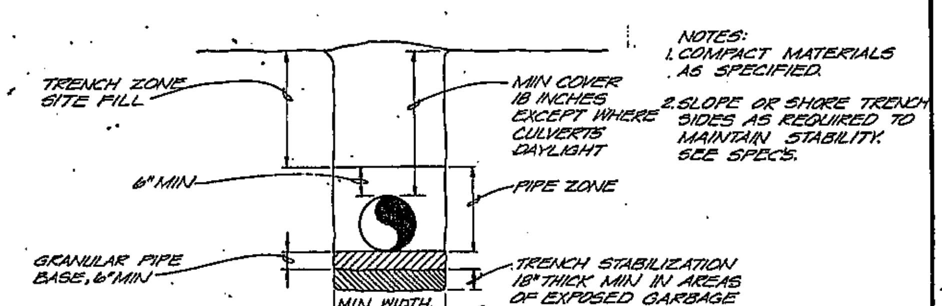
MANHOLE DETAIL 7 2
NTS



HAY BALES AT GRATE INLET DETAIL 10 2



TYPICAL DITCH DETAIL 11 2



NOTES:
1. COMPACT MATERIALS AS SPECIFIED.
2. SLOPE OR SHORE TRENCH SIDES AS REQUIRED TO MAINTAIN STABILITY. SEE SPECS.

TYPICAL STORMDRAIN TRENCH DETAIL 4
NTS

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
1	REV PER CITY OF BELLEVUE REVIEW			7-3-86					
2	AS-BUILTS PER BOEING			5-1-87					

BOEING FACILITIES DEPARTMENT
■ BELLEVUE, WA. 98004

☐ AUBURN, WA. 98002
☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

DANIEL L. ... REGISTERED PROFESSIONAL ENGINEER

CH2M HILL

DRAWN BY / CHECKED / ENGR. / CHECKED / APPROVED / APPROVED

SUBTITLE: GRADING PLAN DETAILS.

TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

RESPOND TO SUBMITTAL REQM'TS

LAST REVISION | SYMBOL | DATE

SHEET C-3 OF

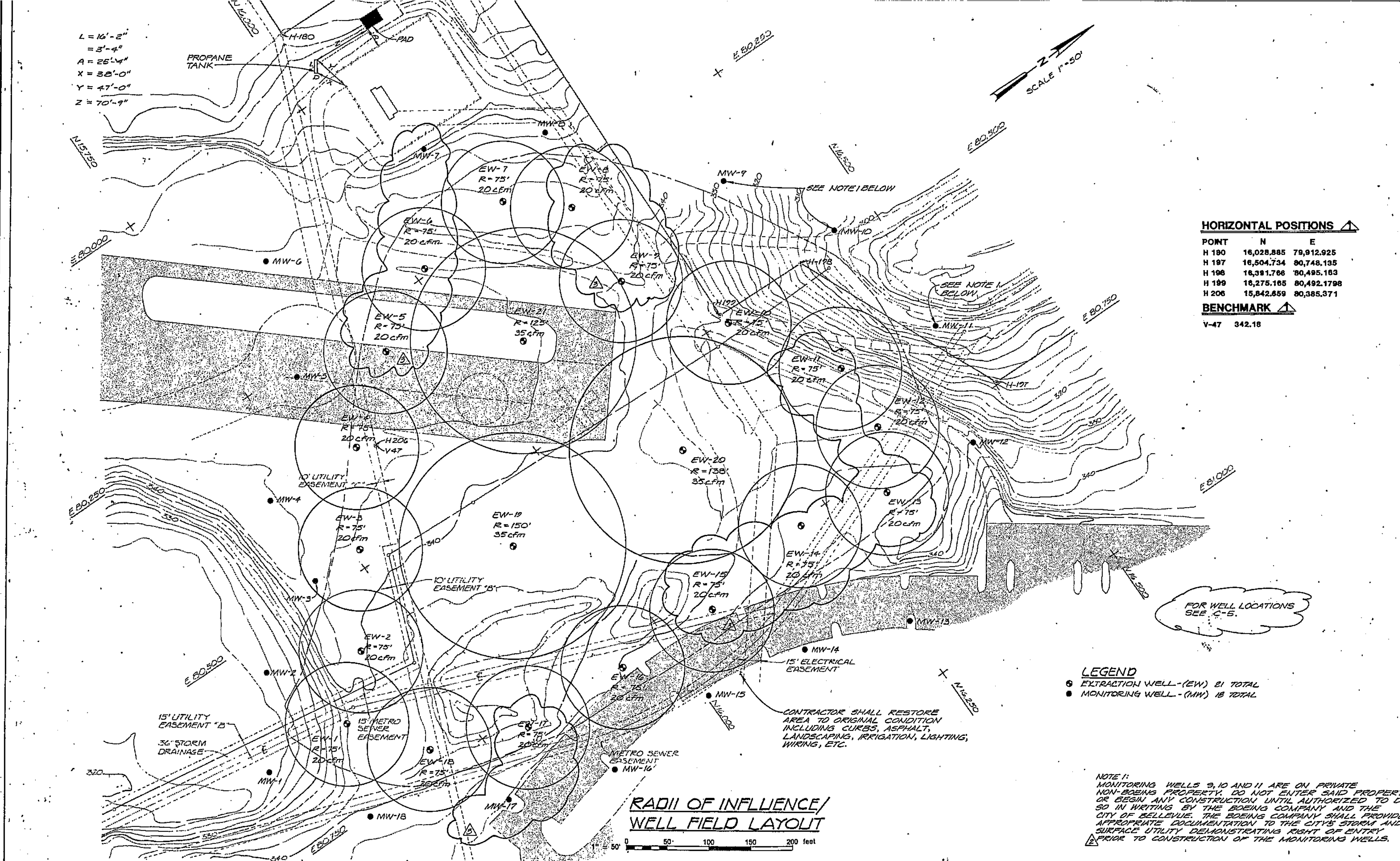
JOB NO.

DWG NO. 33-00-YD-1012-C3

OVERLAY IDENTIFICATION | COMPOSITE | OVERLAY | SCREEN | PRELIM. | CONTRACT

K&E

D6 6009 4678 REV. 7/83



SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
2	REV. PER CITY OF BELLEVUE REVIEW	TNT		7-3-86					
3	RELOCATED WELLS	TNT		8-29-86					
4	AS-BUILTS PER BOEING			5-1-87					

DO 6000 4075 REV. 7/83

K&E

BOEING
FACILITIES DEPARTMENT
■ BELLEVUE, WA. 98004

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☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

STARR J. DEHN — PROFESSIONAL ENGINEER

CH2M HILL

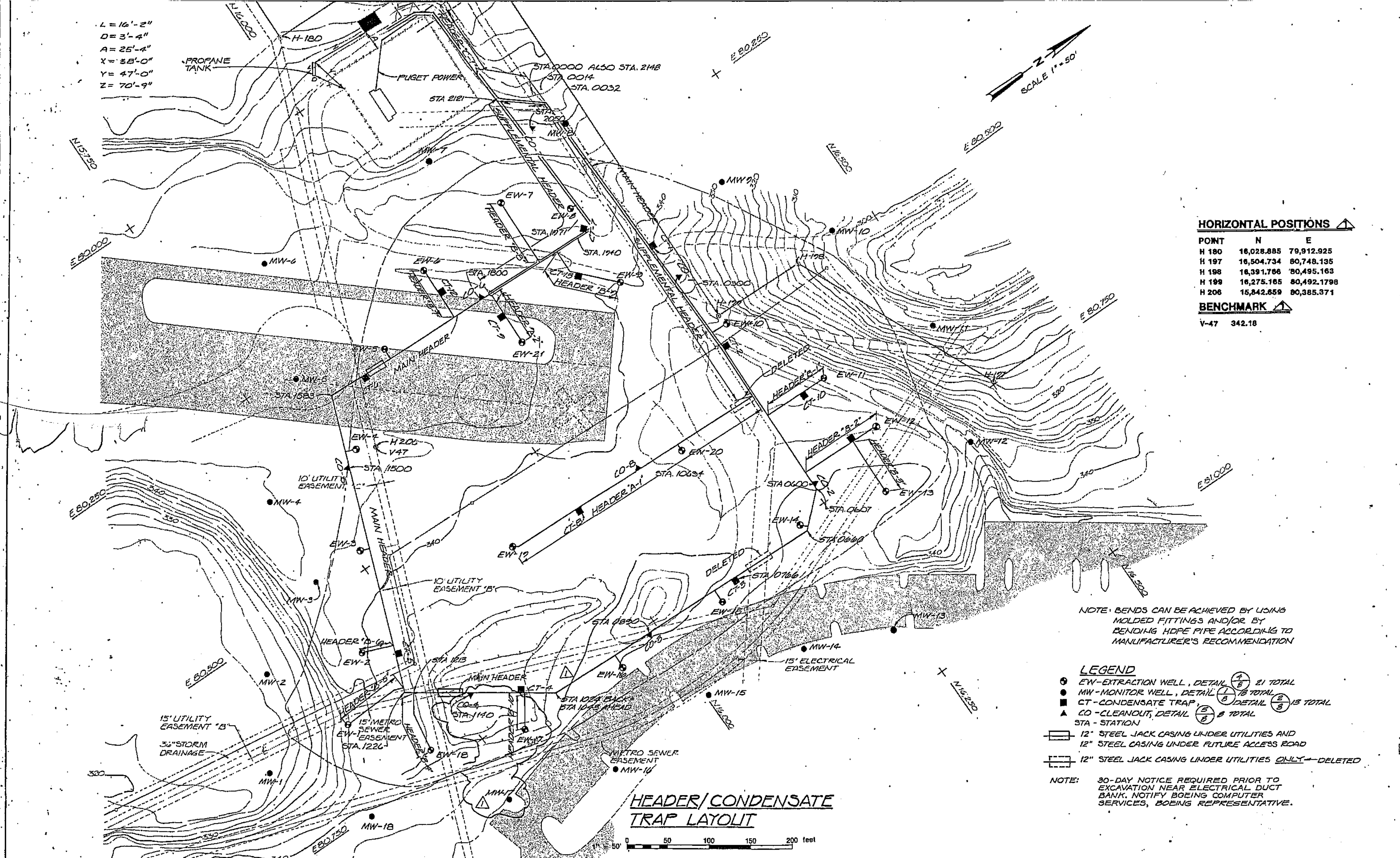
DRAWN BY G. VELRIO 5/16/86
ENGR D. CONRAD 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: RADII OF INFLUENCE/WELL FIELD LAYOUT

TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

SHEET C-4

DWG NO. 33-00-YD-1012-C4



HORIZONTAL POSITIONS

POINT	N	E
H 180	16,028.885	79,912.925
H 197	16,504.734	80,748.135
H 198	16,391.766	80,495.163
H 199	16,275.165	80,492.1798
H 206	15,842.659	80,385.371

BENCHMARK

V-47 342.18

NOTE: BENDS CAN BE ACHIEVED BY USING MOLDED FITTINGS AND/OR BY BENDING HDPE PIPE ACCORDING TO MANUFACTURER'S RECOMMENDATION

LEGEND

- EW - EXTRACTION WELL, DETAIL 4/8 21 TOTAL
- MW - MONITOR WELL, DETAIL 1/8 18 TOTAL
- CT - CONDENSATE TRAP, DETAIL 2/8 13 TOTAL
- CO - CLEANOUT, DETAIL 5/8 8 TOTAL
- STA - STATION
- 12" STEEL JACK CASING UNDER UTILITIES AND 12" STEEL CASING UNDER FUTURE ACCESS ROAD
- 12" STEEL JACK CASING UNDER UTILITIES ONLY — DELETED

NOTE: 30-DAY NOTICE REQUIRED PRIOR TO EXCAVATION NEAR ELECTRICAL DUCT BANK. NOTIFY BOEING COMPUTER SERVICES, BOEING REPRESENTATIVE.

SYM	REVISION	BY	APPROVED	DATE
1	RELOCATIONS PER BOEING	TNT		8-29-86
2	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT
■ BELLEVUE, WA. 98004
☐ AUBURN, WA. 98002
☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

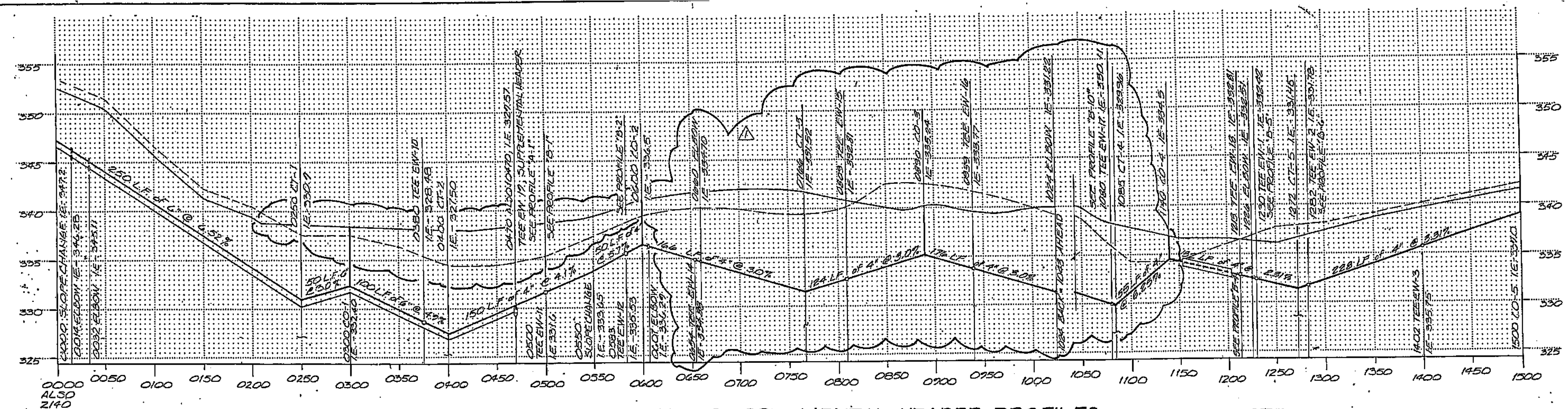
STARR J. DEHN PROFESSIONAL ENGINEER

CH2M HILL

DRAWN BY G. DELRIO DATE 5/16/86
ENGR. D. CONRAD 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: HEADER/CONDENSATE TRAP LAYOUT
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM
SHEET C-5
DWG NO. 33-00-YD-1012-C5

K&E



MAIN HEADER AND SUPPLEMENTAL HEADER PROFILES

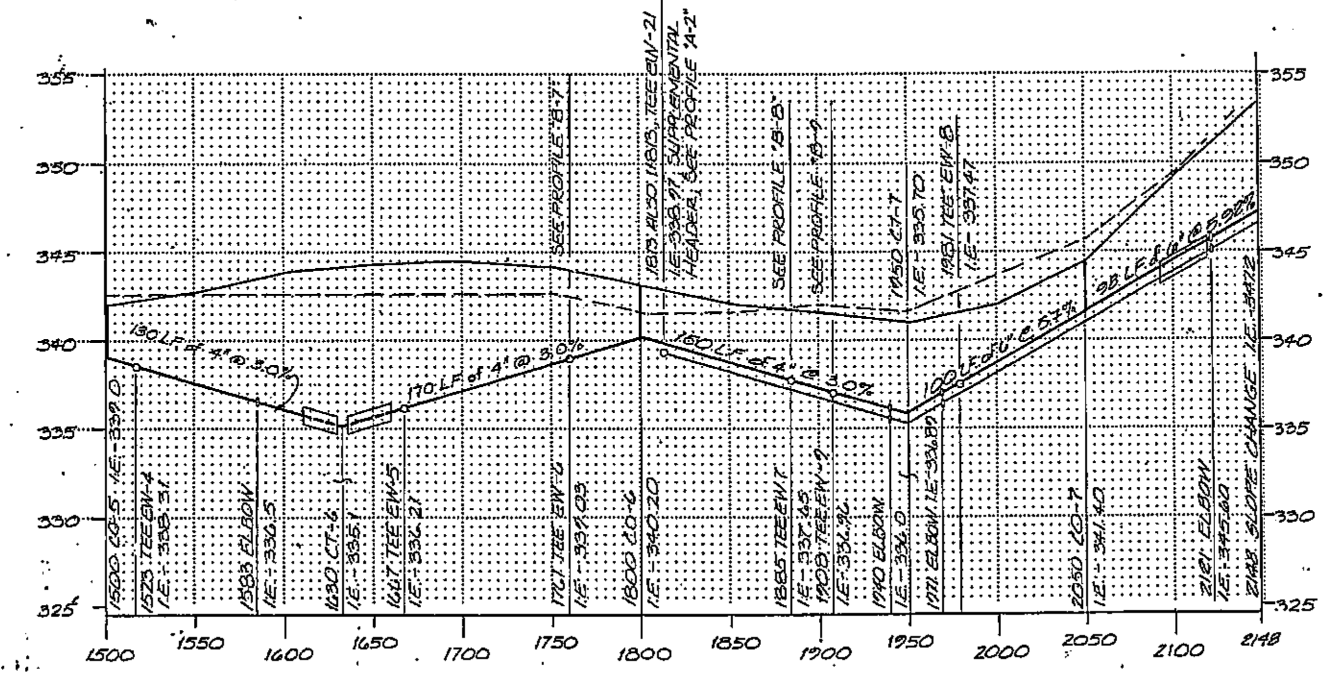
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

NOTE: INVERT ELEVATIONS AND PIPE SIZES CORRESPOND TO MAIN HEADER ONLY. INVERT ELEVATIONS FOR SUPPLEMENTAL HEADER ARE 10" BELOW MAIN HEADER. ALL SUPPLEMENTAL HEADER PIPE SIZE IS 4" DIAMETER. SEE DETAIL #6 FOR CLARIFICATION.

NOTE: CHECK EACH PROFILE FOR HORIZONTAL AND VERTICAL SCALE (MAY VARY)

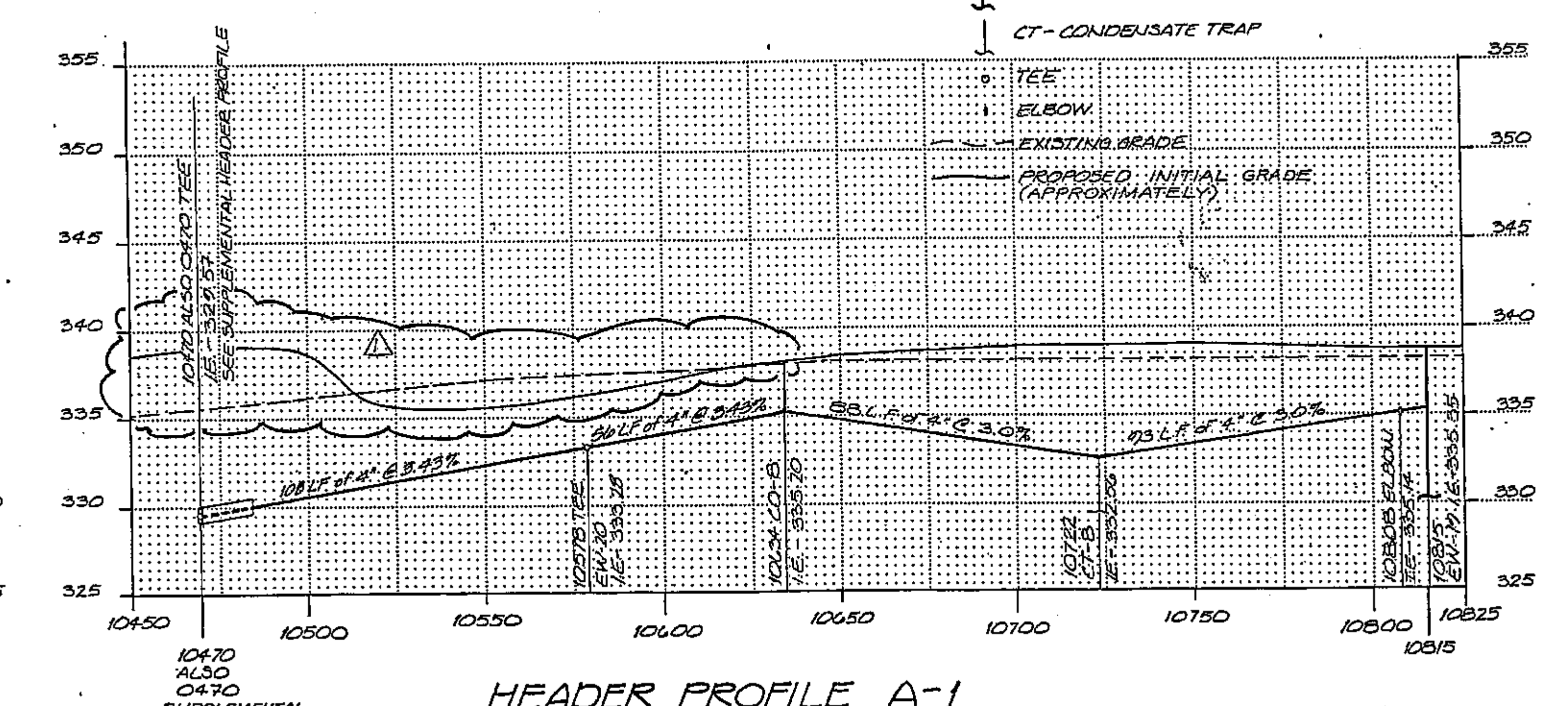
LEGEND:

- CO - CLEANOUT/MANHOLE
- EW - EXTRACTION WELL
- CT - CONDENSATE TRAP
- TEE
- ELBOW
- EXISTING GRADE
- PROPOSED INITIAL GRADE (APPROXIMATELY)



HEADER PROFILES (CONTINUED)

SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



HEADER PROFILE A-1

SCALE: HORIZONTAL 1" = 25'
VERTICAL 1" = 5

NOTE: INVERT ELEVATIONS CORRESPOND TO SUPPLEMENTAL HEADER. SEE DETAIL #7

SYM	REVISION	BY	APPROVED	DATE
1	RELOCATED EWs PER BOEING & RAISED GRADE OVER UTILITY DUCT	TNT		9-2-86
2	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT

■ BELLEVUE, WA. 98004

☐ AUBURN, WA. 98002
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☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

STARR J. DEHN — PROFESSIONAL ENGINEER

CH2M HILL

DRAWN BY: G. DELRIO — DATE 5/16/86
ENGR: D. CONRAD — 5/16/86
CHECKED
APPROVED
APPROVED

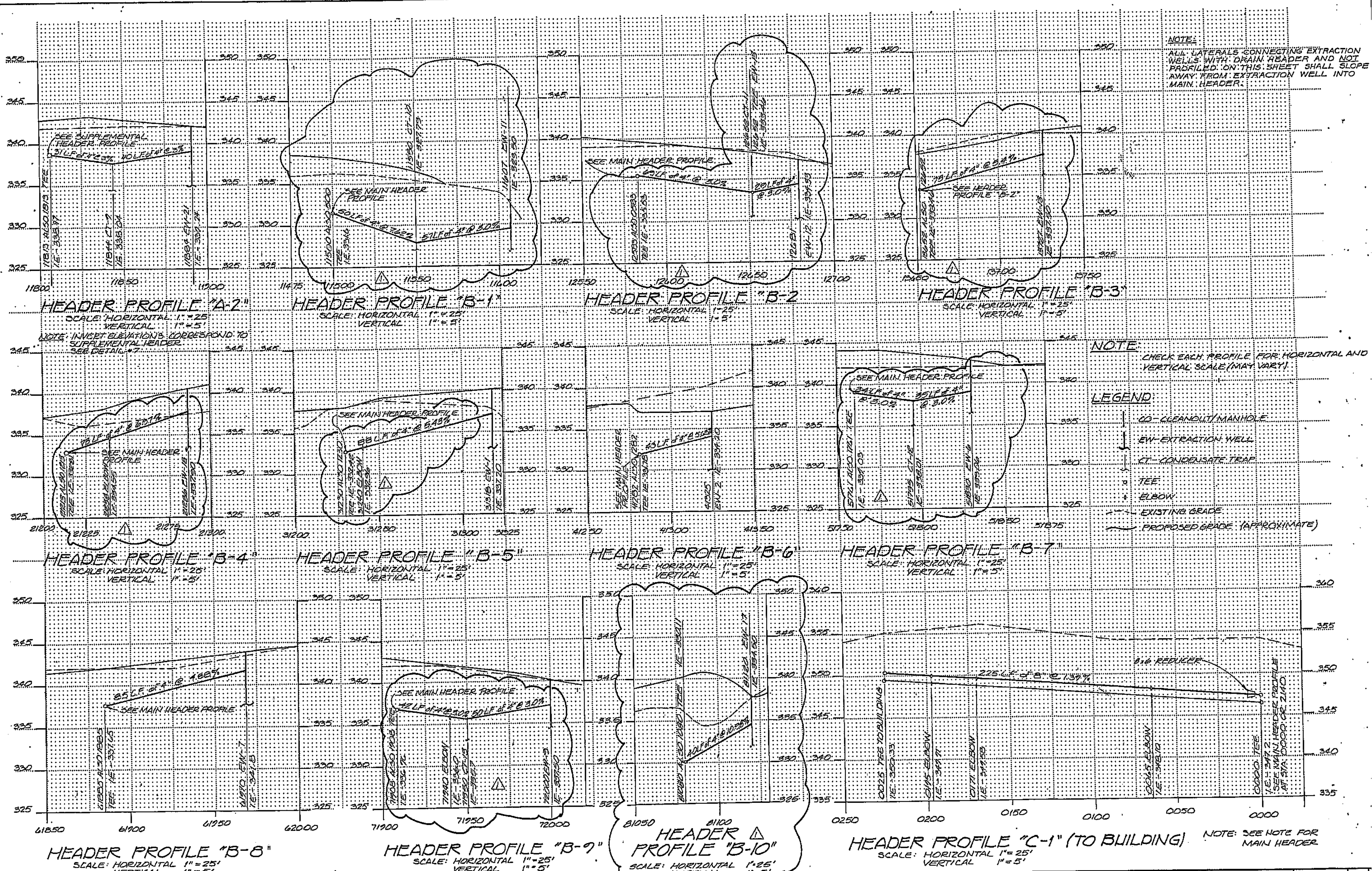
SUBTITLE: HEADER PROFILES

TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

SHEET: C-6

DWG NO. 33-00-YD-1012-C6

K&E



SYM	REVISION	BY	APPROVED	DATE
1	RELOCATED EWS PER BOEING & RAISED GRADE OVER UTILITY DUCT	TNT		9-2-86
2	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT

■ BELLEVUE, WA. 98004

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☐ SEATTLE, WA. 98124

STARR J. DEHN — PROFESSIONAL ENGINEER

CH2M HILL

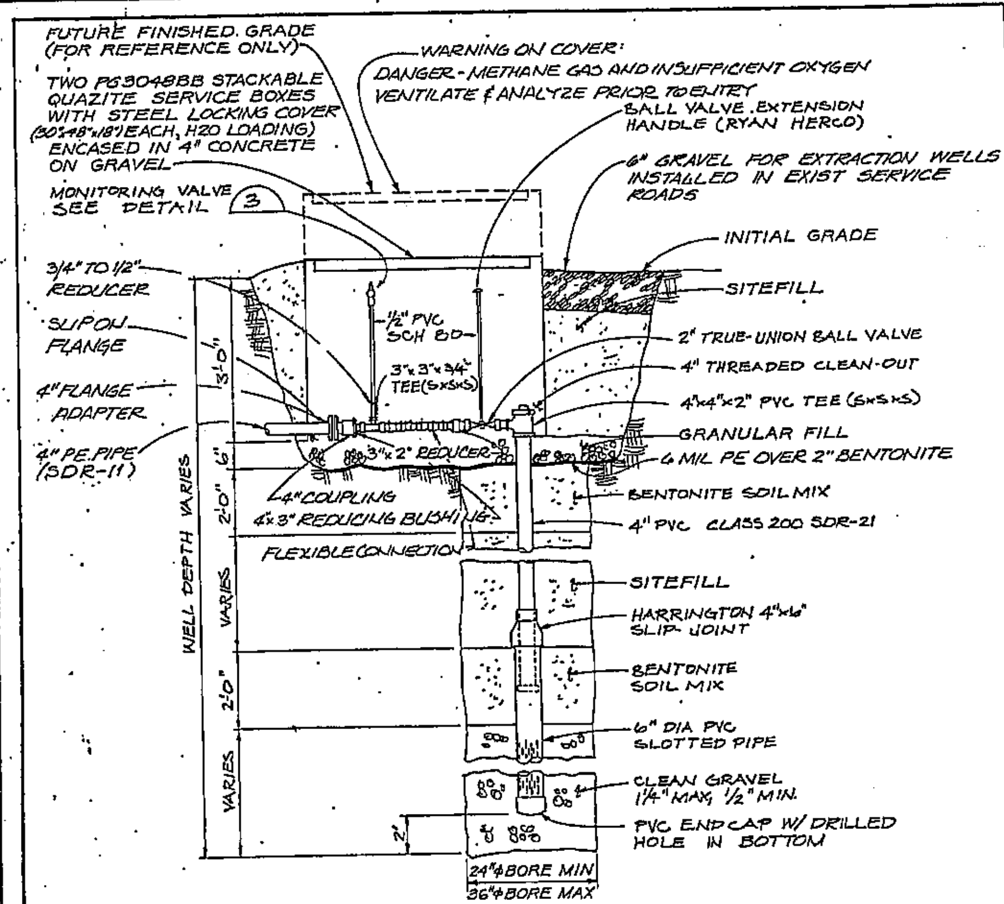
DRAWN BY: G. DELRIO 5/16/86
ENGR: D. CONRAD 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: HEADER PROFILES

TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

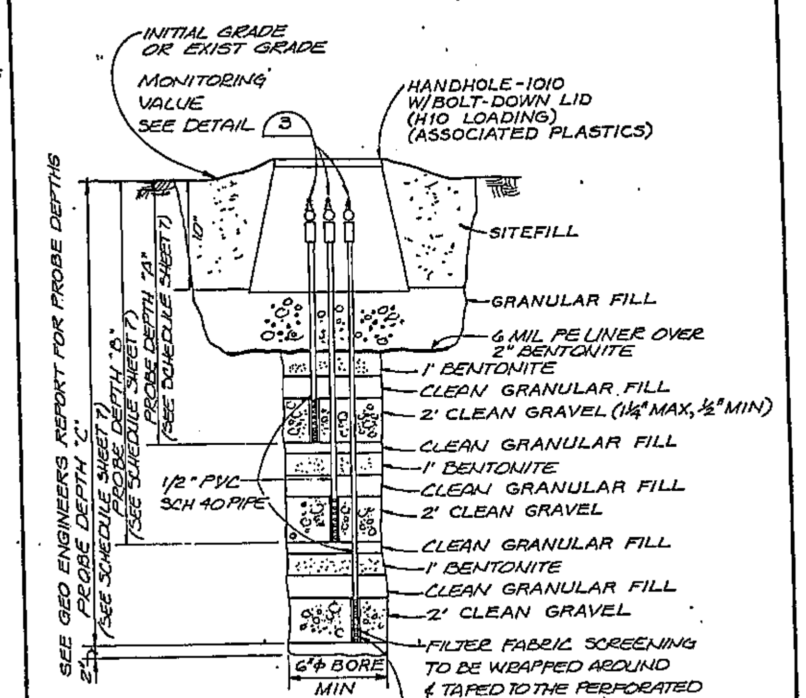
SHEET: C-7

DWG NO. 33-00-YD-1012-C



SECTION (A)

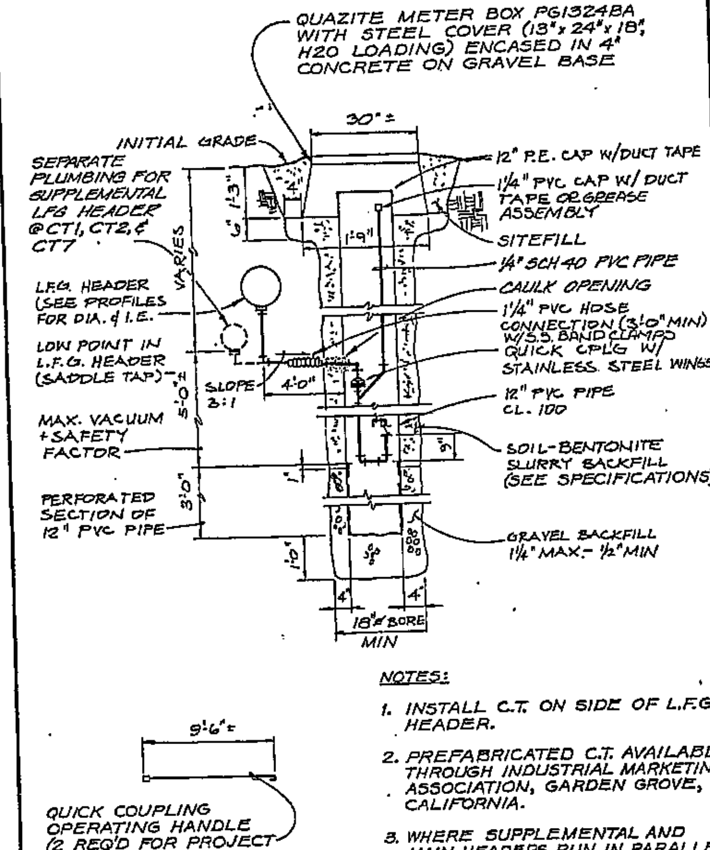
NTS



NOTE:
PEA GRAVEL CAN BE USED FOR CLEAN GRAVEL.

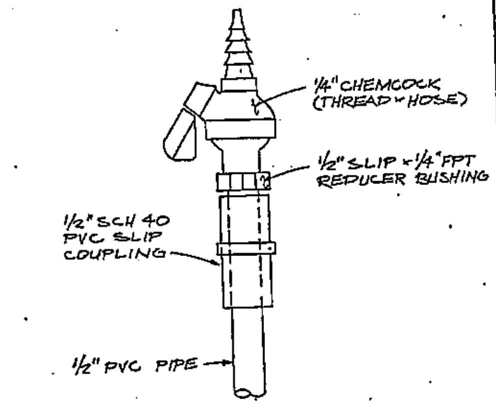
MONITORING WELL DETAIL (1)

NTS



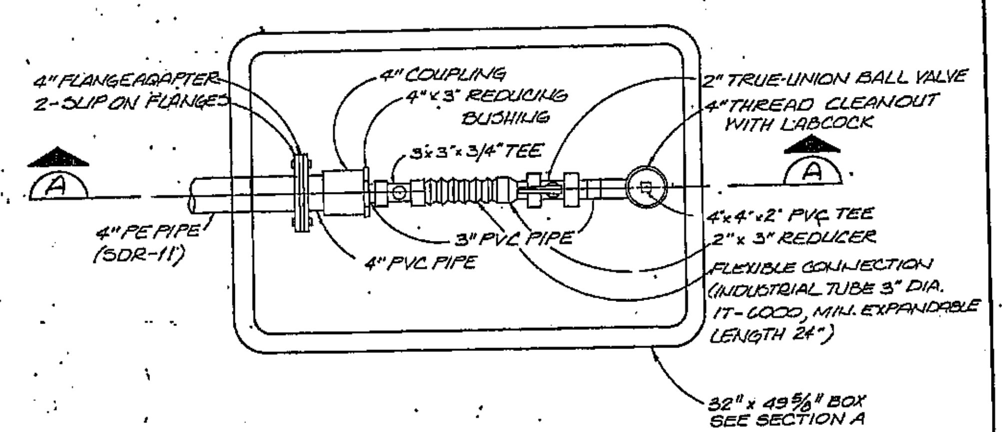
NOTES:
1. INSTALL C.T. ON SIDE OF L.F.G. HEADER.
2. PREFABRICATED C.T. AVAILABLE THROUGH INDUSTRIAL MARKETING ASSOCIATION, GARDEN GROVE, CALIFORNIA.
3. WHERE SUPPLEMENTAL AND MAIN HEADERS RUN IN PARALLEL, CONDENSATE TRAP WILL SERVE BOTH HEADERS.

CONDENSATE TRAP DETAIL (2)



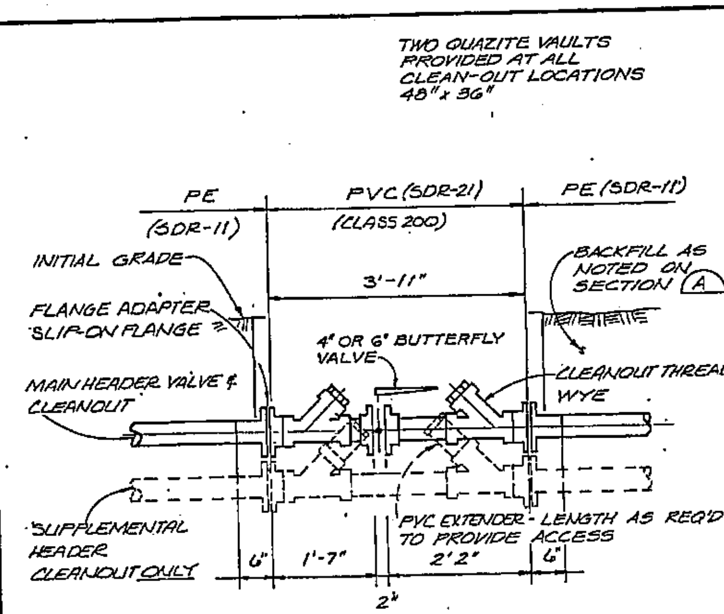
MONITORING VALVE DETAIL (3)

NTS



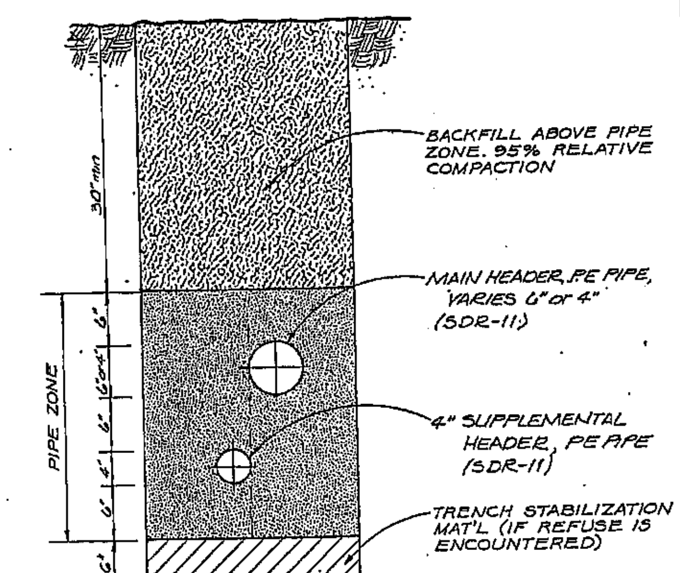
EXTRACTION WELL DETAIL (4)

NTS



VALVE AND CLEANOUT DETAIL (5)

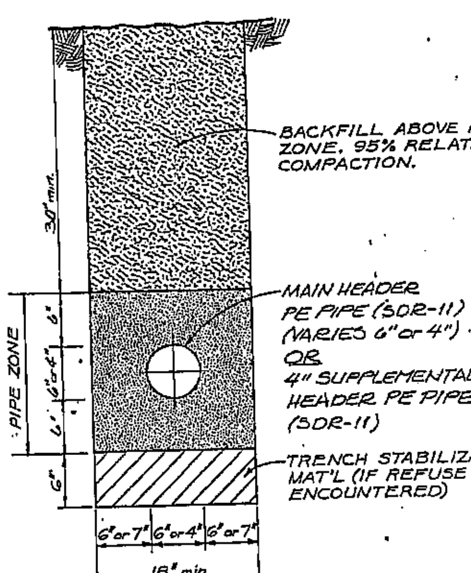
NTS



NOTES:
SLOPE OR SHORE SIDES AS REQUIRED (SEE SPECIFICATIONS)

DUAL PIPING DETAIL (6)

NTS



NOTES:
SLOPE OR SHORE SI AS REQUIRED (SEE SPECIFICATIONS)

SINGLE PIPING DETAIL (7

NTS

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
△	AS-BUILTS PER BOEING			5-1-87					

BOEING
FACILITIES DEPARTMENT
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☐ KENT, WA. 98031
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☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

STARR J. DEHN PROFESSIONAL ENGINEER

CH2M HILL

DRAWN BY: G. DELRIO DATE: 5/16/86
CHECKED
ENGR: D. CONRAD 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: DETAILS
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

LAST REVISION | SYMBOL
SHEET: C-8
JOB NO.
DWG NO. 33-00-YD-1012-C8

K&E

EXTRACTION WELL SCHEDULE:

WELL DESIGNATION	COORDINATES N	COORDINATES E	DRILLED DEPTH (ft)	SLOTTED DEPTH (ft)	SLIP-JOINT DEPTH (ft)
EW-1	15615	80645	38	15	12
EW-2	15680	80583	35	15	12
EW-3	15749	80480	41	18	14
EW-4	15817	80375	40	18	14
EW-5	15921	80295	42	18	14
2 EW-6	16014	80242	40	18	14
EW-7	16136	80229	42	18	14
EW-8	16203	80278	40	16	12
2 EW-9	16201	80390	37	15	12
EW-10	16278	80506	31	15	12
EW-11 2	16337	80620	36	19	16
EW-12	16356	80711	35	15	12
EW-13 2	16319	80782	38	15	12
EW-14	16210	80756	39	15	12
EW-15	16080	80778	38	15	12
EW-16	15940	80778	37	15	12
2 EW-17	15800	80770	39	15	12
EW-18	15681	80727	38	15	12
EW-19	15906	80581	36	20	14
EW-20	16144	80602	33	18	12
EW-21	16059	80383	40	20	14

SEE EXTRACTION WELL DETAIL 4 ON SHEET 8

MONITORING WELL SCHEDULE:

WELL DESIGNATION	COORDINATES N	COORDINATES E	DRILLED DEPTH (ft)	PROBE DEPTHS (ft) A	PROBE DEPTHS (ft) B	PROBE DEPTHS (ft) C
MW-1	15503	80641	34	8	16	31
MW-2	15569	80539	35	6	13	26
MW-3	15684	80478	43½	11	19	41
MW-4	15693	80369	44½	8	21	36
MW-5	15805	80264	31	6	15	24
MW-6	15854	80127	45	6	15	24
MW-7 2	16096	80122	41½	6	15	30
MW-8	16257	80195	48	10	25	40
MW-9	16373	80361	27.	6	16	24
MW-10	16440	80486	12½	5	10	—
MW-11	16484	80651	12	5	10	—
MW-12	16440	80792	41	6	17	32
MW-13	16232	80927	48	15	30	45
MW-14	16126	80883	45	12	27	42
MW-15	15998	80864	41	8	20	33
MW-16	15852	80873	46½	14	29	44
2 MW-17	15735	80829	44½	12	27	42
MW-18	15574	80754	41½	9	24	39

SEE MONITORING WELL DETAIL 1 ON SHEET 8

CONDENSATE TRAP SCHEDULE:

TRAP DESIGNATION	COORDINATES N	COORDINATES E	BORE DEPTH (ft)
CT-1	16262	80376	18
CT-2	16257	80528	15
2 CT-3	16110	80765	20
CT-4	15811	80733	20
CT-5	15712	80606	17
CT-6	15876	80307	21
CT-7	16198	80308	16
CT-8	15997	80587	18
CT-9	16061	80344	16
CT-10	16305	80626	17
CT-11	16321	80705	16
2 CT-12	16017	80278	18
CT-13	16163	80355	17

SEE CONDENSATE TRAP DETAIL 2 ON SHEET 8

PROCESSING FACILITY PAD:

COORDINATE LOCATION	COORDINATES N	COORDINATES E
NW CORNER	16130	79950
SW CORNER	16105	79950
NE CORNER	16130	79965
SE CORNER	16105	79965

STORM DRAINAGE SCHEDULE:

STRUCTURE DESIGNATION	COORDINATES N	COORDINATES E
2 GI "A"	16196	80542
GI "B"	15955	80207
MANHOLE	15856	80517
GI "C"	15828	80664
OUTLET	15544	80590
INLET	16230	80370

SYM	REVISION	BY	APPROVED	DATE
1	RELOCATED STRUCTURES PER BOEING	TNT		8-29-86
2	AS-BUILTS PER BOEING			5-1-87

SYM	REVISION	BY	APPROVED	DATE

BOEING
FACILITIES DEPARTMENT
■ BELLEVUE, WA. 98004

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☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

STARR J. DEHN · STATE OF WASHINGTON · PROFESSIONAL ENGINEER

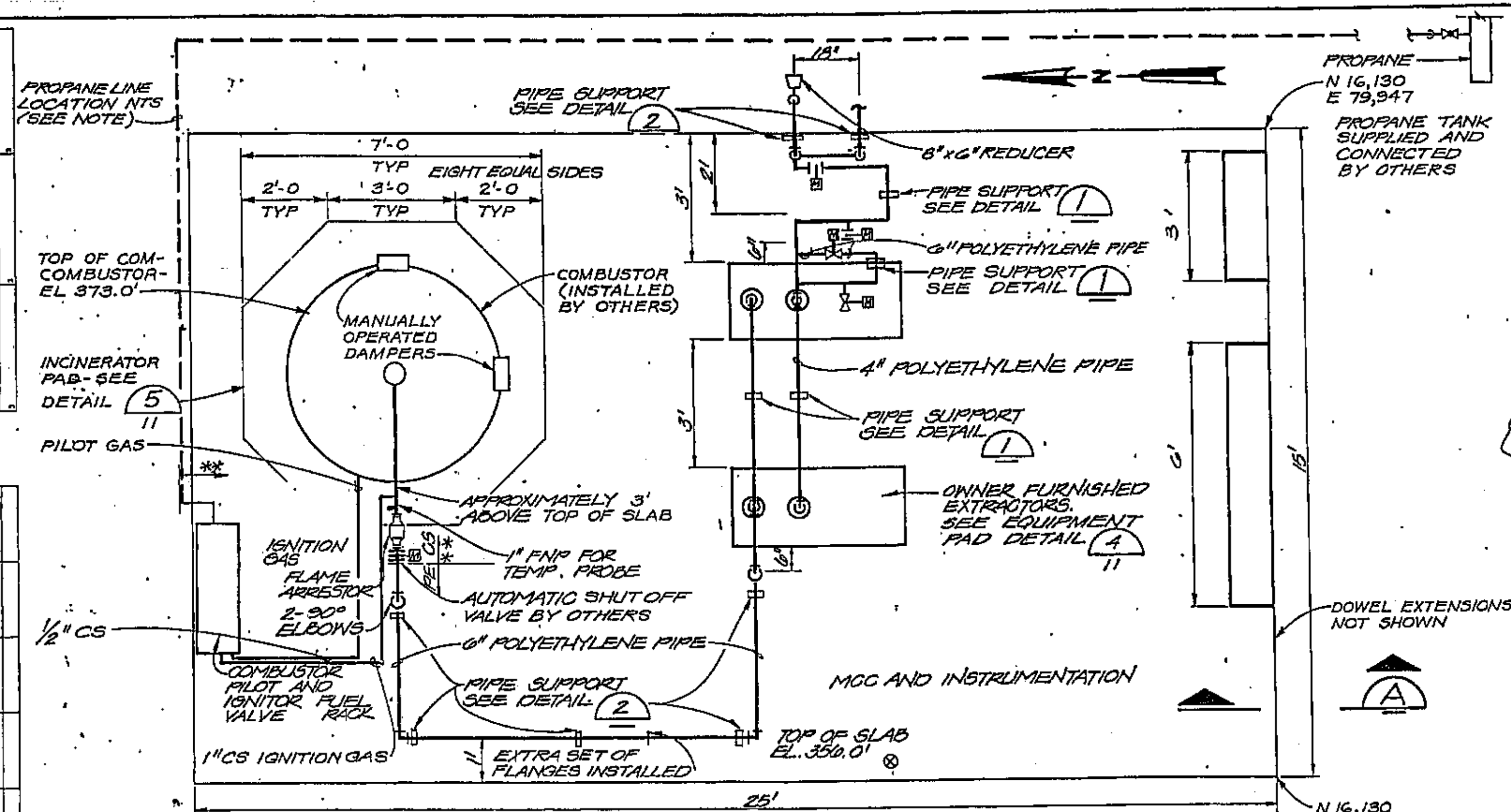
CH2M HILL

DRAWN BY G. DEL RIO · DATE 5/16/86
CHECKED
ENGR. D. CONRAD · 5/16/86
CHECKED
APPROVED
APPROVED

SUBTITLE: WELL/TRAP SCHEDULE
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

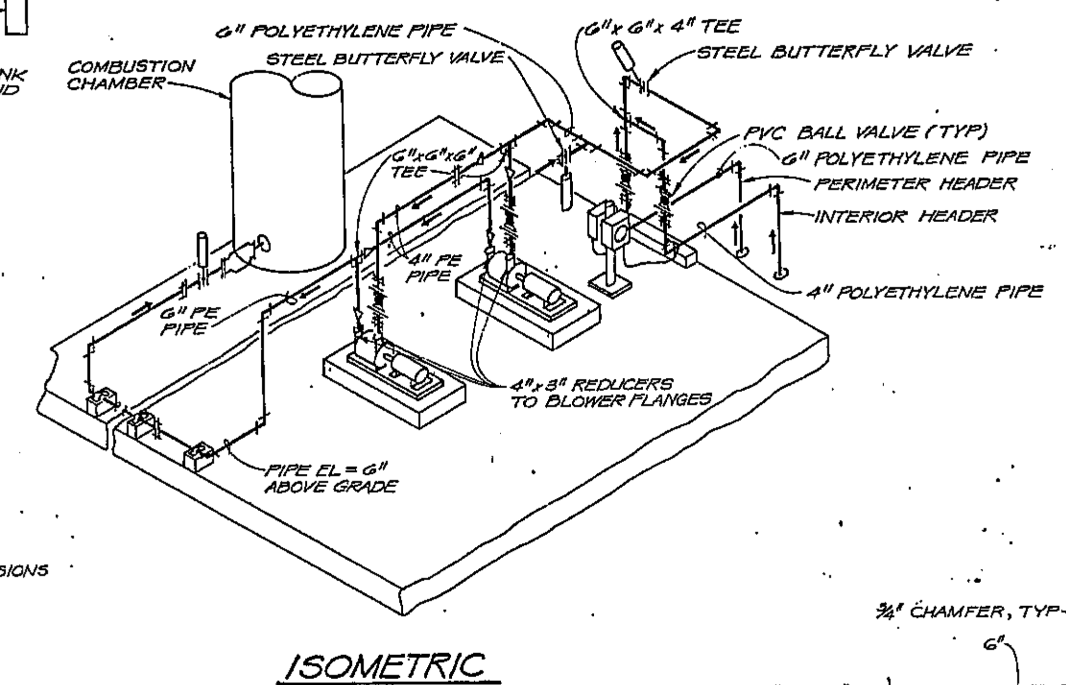
RESPOND TO SUBMITTAL REQM'TS · LAST REVISION · SYMBOL 2
SHEET C-9
JOB NO.
DWG NO. 33-00-YD-101

K&E

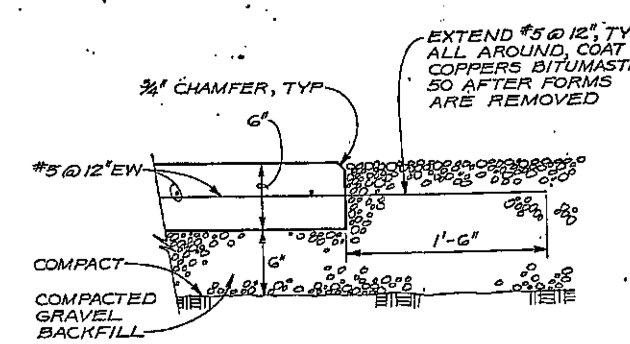


** INSTALLED BY COMBUSTOR SUPPLIER

PLAN
1/2" = 1'-0"



ISOMETRIC
NTS

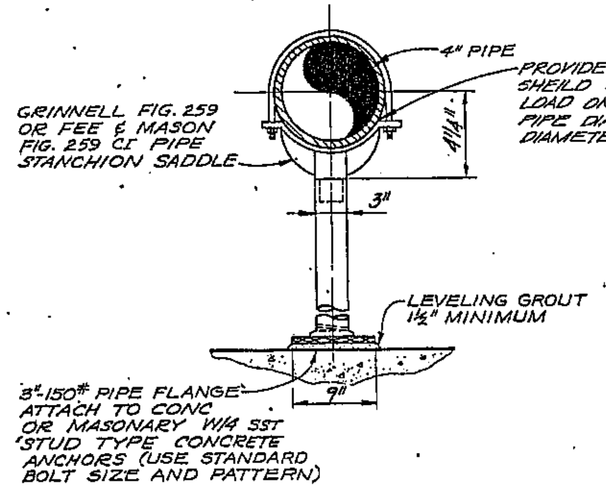


SECTION A
1 1/2" = 1'-0

EXTRACTOR INSTALLATION
THE SYSTEM COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE SUPPLIERS WRITTEN INSTALLATION INSTRUCTIONS, AS APPROVED BY THE CONSTRUCTION MANAGER.

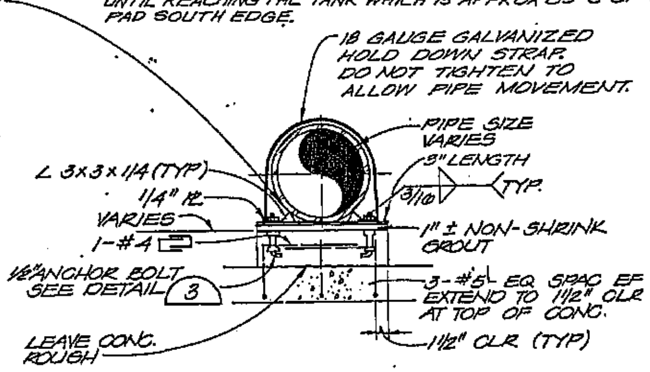
INSTALLED TESTS
PRIOR TO PLANT STARTUP, ALL EQUIPMENT SHALL BE INSPECTED FOR PROPER INSTALLATION. THE MANUFACTURER'S REPRESENTATIVE SHALL PROVIDE WRITTEN CERTIFICATION THAT THE EQUIPMENT HAS BEEN INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S APPROVED METHOD AND IS READY FOR OPERATION.

PROPANE LINE PROPANE LINE INSTALLED UNDERGROUND AT AN APPROX DEPTH OF 6" TO 12". LINE LOCATED APPROX 3' N OF EXST PAD EDGE AND 8' E OF EXST PAD EDGE. LINE REMAINS BELOWGRADE UNTIL REACHING THE TANK WHICH IS APPROX 85' S OF THE EXST PAD SOUTH EDGE.



NOTE:
1. PROVIDE NEOPRENE WAFFLE INSULATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND KORPAD 40 UNDER SUPPORT FOOT.
2. PREPARE METAL SURFACE FOR PAINTING USING ABRASIVE OR CENTRIFUGAL WHEEL (SP-6); APPLY ONE COAT RUST-INHIBITIVE PRIMER AT 2 MILS MINIMUM DRY FILM THICKNESS (MDFT); APPLY 2 COATS ALKYD ENAMEL AT 4 MILS TOTAL MDFT.

PIPE SUPPORT 1
NTS



PIPE SUPPORT 2
NTS

CONCRETE AND REINFORCING STEEL

1. CONCRETE
READY MIX CONFORMING TO ASTM C 94, ALTERNATE 2 AND THESE SPECIFICATIONS. PORTLAND CEMENT TYPE I. AGITATE CONCRETE MINIMUM OF 70 REVOLUTIONS OF MIXING DRUM, NOT TO EXCEED 270 REVOLUTIONS. NON-AGITATING EQUIPMENT WILL NOT BE ALLOWED. PLACE CONCRETE WITHIN 1-1/2 HOURS AFTER ADDITION OF CEMENT TO MIX. MINIMUM ALLOWABLE 28-DAY COMPRESSIVE FIELD STRENGTH TO BE 3000 PSI, TEST IN CONFORMANCE WITH ASTM C31 AND C39. SIZE OF COURSE AGGREGATE TO BE 1-1/2". SLUMP RANGE TO BE 2 TO 4 INCHES.

2. REINFORCING STEEL
DEFORMED BARS OF SIZES SHOWN, CONFORMING TO ASTM A 615, GRADE 40. PLACE IN ACCORDANCE WITH DRAWINGS AND RECOMMENDED CRSI PRACTICE FOR INSTALLATION OF REINFORCING BARS.

3. PLACING CONCRETE
PRIOR TO PLACEMENT, MAKE SURE ALL DEBRIS AND FOREIGN MATTER ARE REMOVED AND WATER IS NOT TRAPPED IN THE FORMS. PLACE CONCRETE TO LINES AND GRADES AS SHOWN. PROTECT FRESH CONCRETE FROM DIRECT RAYS OF THE SUN, DRYING WINDS, AND WASH BY RAIN.

4. CURING COMPOUND
CURING COMPOUND TO CONFORM TO THE REQUIREMENTS OF ASTM C 309 WITH THE ADDITIONAL REQUIREMENT THAT PERMEABILITY NOT EXCEED 0.039 GM/SQ CM/72 HRS MASTERSEAL, MANUFACTURED BY MASTER BUILDERS CO., CLEVELAND, OH; EUCO FLOOR COAT, MANUFACTURED BY EUCLID CHEMICAL CO., CLEVELAND, OH; OR EQUAL. THE MANUFACTURER SHALL SUBMIT CERTIFICATION THAT THE PRODUCT MEETS ASTM C 309 AND THE ADDITIONAL PERMEABILITY REQUIREMENT, AND SHALL SPECIFICALLY STATE THE COVERAGE REQUIRED TO MEET THESE REQUIREMENTS.

5. DEPRESSIONS IN THE SLAB SHALL NOT BE MORE THAN 1/4 INCH WHEN A 10 FOOT STRAIGHT EDGE IS PLACED UPON THE HIGH POINTS IN ANY DIRECTION.

6. GIVE THE SLAB SURFACE A STEEL TROWEL FINISH TO PRODUCE A SMOOTH IMPERVIOUS SURFACE, FREE FROM TROWEL MARKS.

SYM	REVISION	BY	APPROVED	DATE
1	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT
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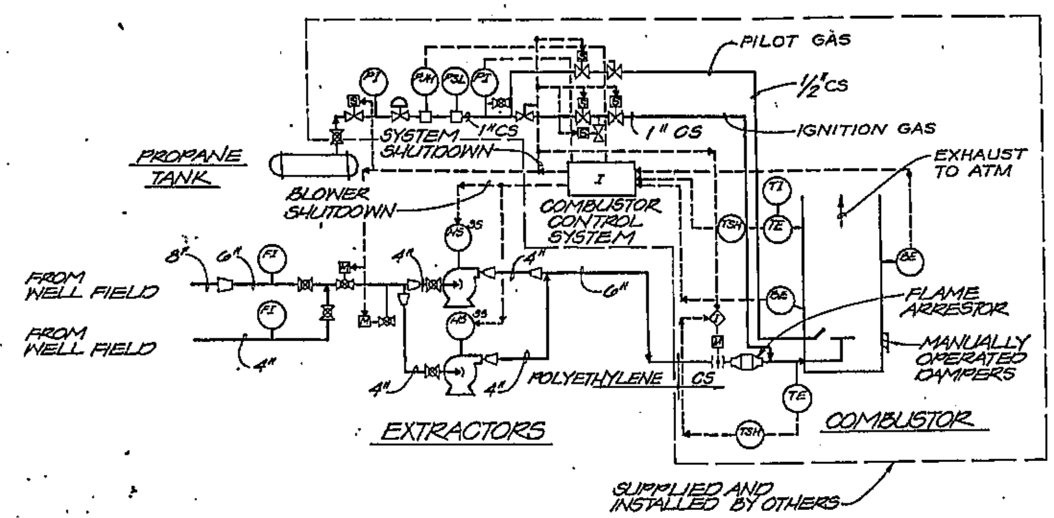
☐ EVERETT, WA. 98201
☐ KENT, WA. 98031
☐ PORTLAND, OR. 97220
☐ RENTON, WA. 98055
☐ SEATTLE, WA. 98124

CH2M HILL

DRAWN BY	D. BICKER	6/4/86
ENGR.	M. DAVIS	6/4/86
CHECKED		
APPROVED		

SUBTITLE: PROCESSING FACILITY LAYOUT
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM
SHEET C-10
DWG NO. 33-00-YD-1012-C10

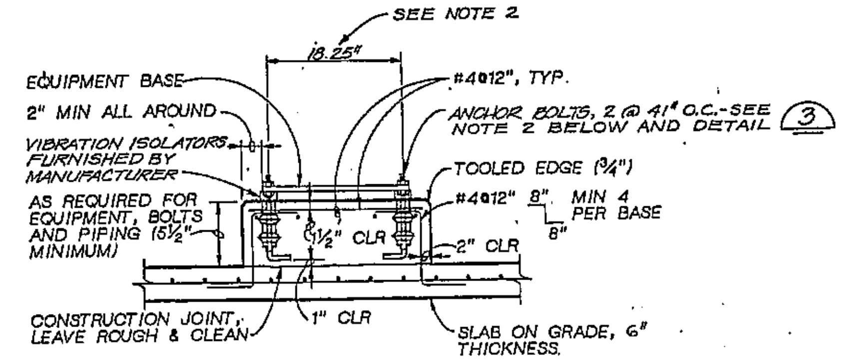
K&E
DS 5009 4075 REV. 7/83



PIPING AND INSTRUMENTATION DIAGRAM
NTS

LEGEND

- (FI) FLOW INDICATOR
- (HS) HAND SWITCH, START/STOP
- (PCV) PRESSURE CONTROL VALVE
- (PI) PRESSURE INDICATOR
- (TI) TEMPERATURE INDICATOR
- (BE) BURNER EYE
- (TSH) HIGH TEMPERATURE SWITCH
- (PSH) HIGH PRESSURE SWITCH
- (PSL) LOW PRESSURE SWITCH
- (TE) TEMPERATURE ELEMENT (THERMOCOUPLE)



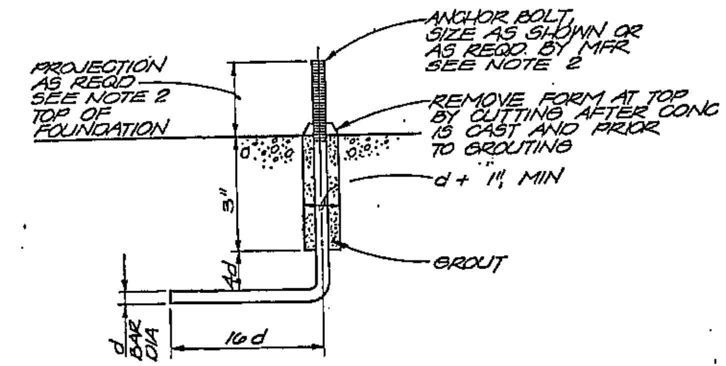
NOTE:
SEE EQUIPMENT BASE NOTES.

TYPE A

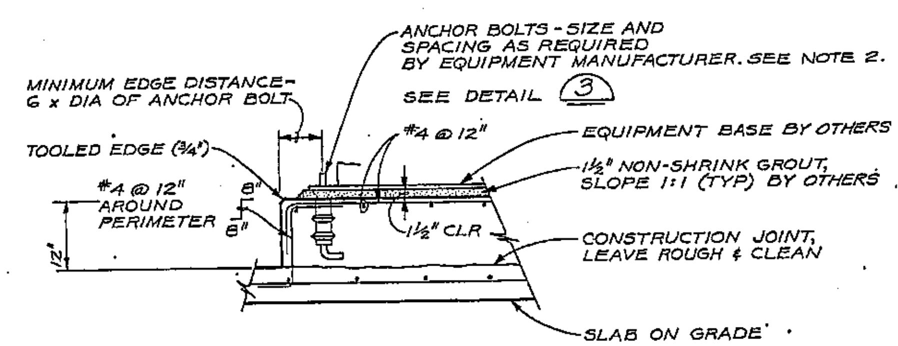
EQUIPMENT PAD (4)
NTS

EQUIPMENT BASE NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS DETERMINED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE ENGINEER.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE VERIFIED BY THE EQUIPMENT MANUFACTURER, AND SHALL BE AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE WHILE PAD IS BEING POURED. (TEMPLATE WAS NOT FURNISHED. BOLTS SET TO JOHN ZINK DRAWING.)
3. A.B. SLEEVES SHALL BE USED TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF 1/2" IN ALL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. A.B. SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS SPECIFIED OTHERWISE.
6. WEDGES OR SHIMS SHALL BE USED TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. IF LEFT IN, THE WEDGES OR SHIMS SHALL NOT BE EXPOSED TO VIEW.
7. VERIFY PAD ELEVATIONS WITH EQUIPMENT MFR.
8. NON-SHRINK GROUT SHALL BE "SET NON-SHRINK GROUT" BY MASTER BUILDER CO., CLEVELAND, OHIO.



ANCHOR BOLT DETAIL (3)
NTS



NOTE:
SEE EQUIPMENT BASE NOTES.

INCINERATOR PAD (5)
3/4" = 1'-0

SYM	REVISION	BY	APPROVED	DATE
1	AS-BUILTS PER BOEING			5-1-87

BOEING
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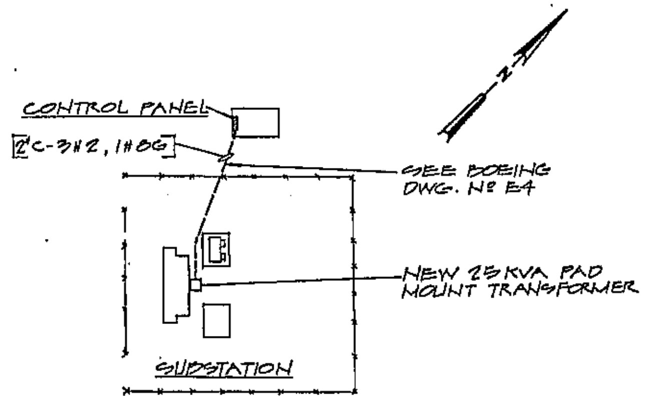
CH2M HILL

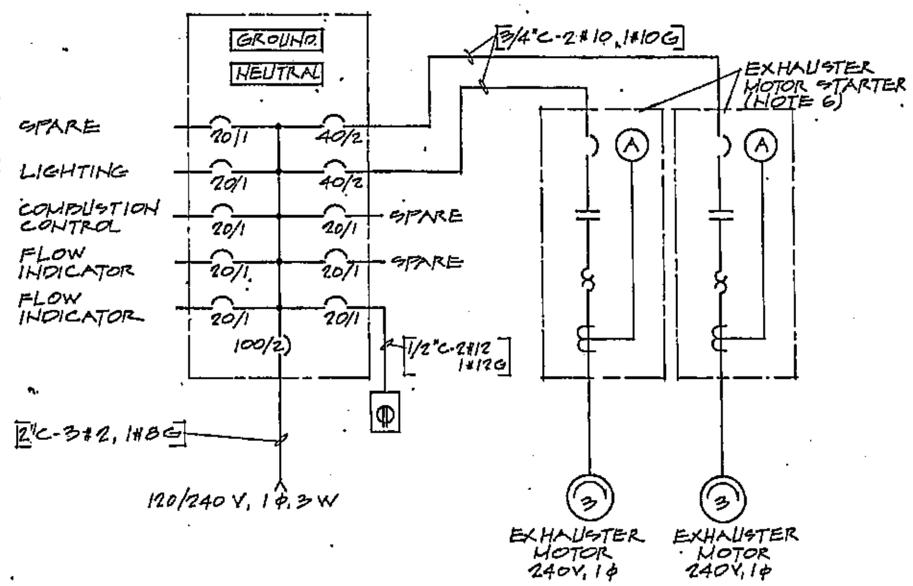
DRAWN BY D. BIEKER 6/4/86
ENGR. M. DAVIS 6/4/86

SUBTITLE: PROCESSING FACILITY DETAILS
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

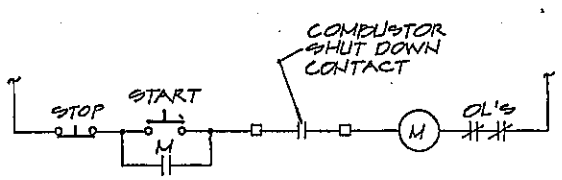
SHEET C-11
DWG NO. 33-00-YD-1012-C11



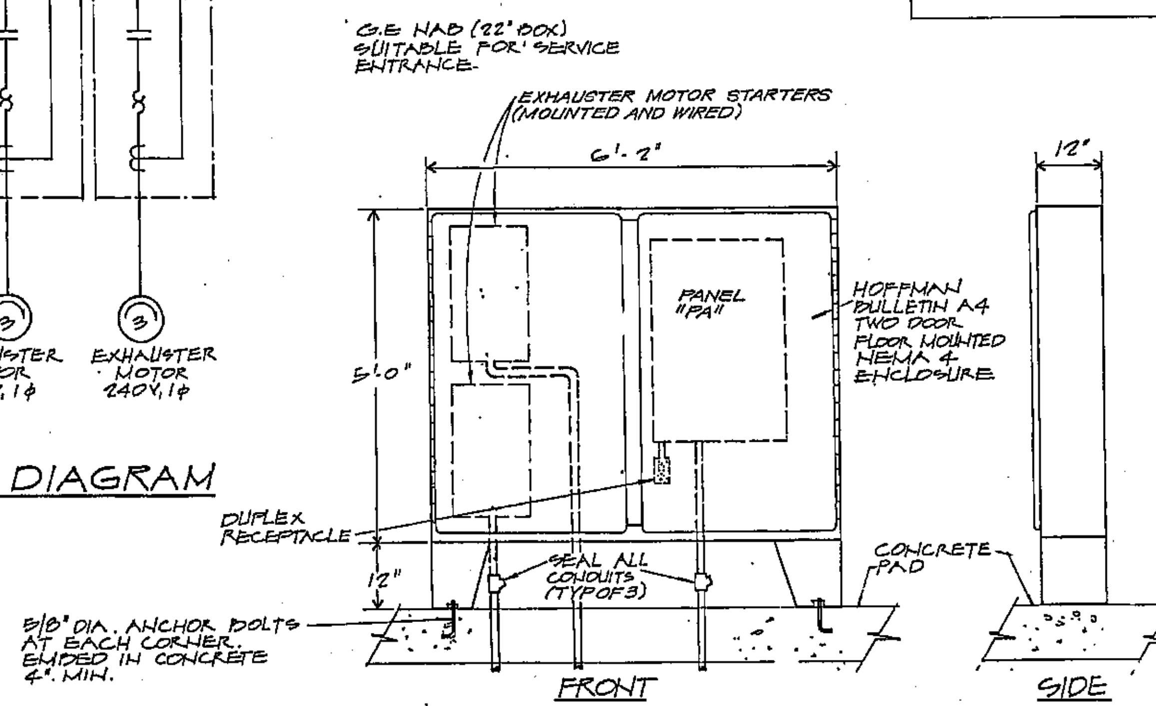
SITE PLAN
1" = 50'



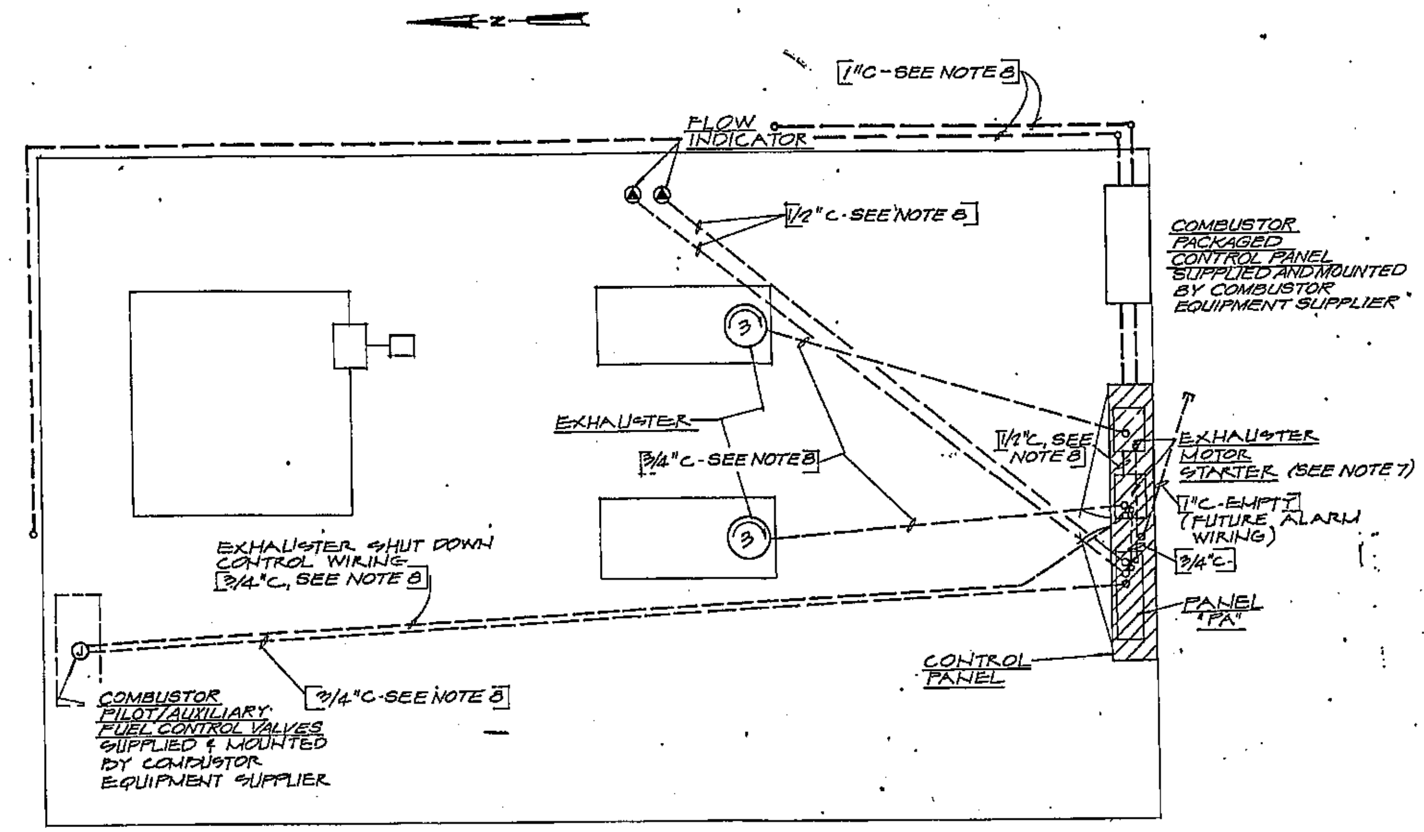
ELECTRICAL RISER DIAGRAM



EXHAUSTER MOTOR STARTER CONTROL DIAGRAM



CONTROL PANEL ELEVATION
NTS



PLAN
1/2" = 1'-0"

NOTES:

1. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED AND SHALL MEET THE NEC AND OTHER STATE AND LOCAL CODES.
2. ALL CONDUITS SHALL BE GALVANIZED RIGID STEEL W/CAST STEEL BOXES. PAINT ALL BURIED GRS CONDUITS WITH A MINIMUM OF 2 COATS OF BITUMASTIC CORROSION RESISTANT PAINT.
3. ALL CONDUCTORS SHALL BE THW OR THWN.
4. RECEPTACLES SHALL BE GFI NEMA CONFIGURATION 5-20R MEETING FEDERAL SPECIFICATION W-C-596.
5. ALL CIRCUIT BREAKERS SHALL HAVE MINIMUM INTERRUPTING RATING OF 10,000 RMS SYMMETRICAL AMPERES.
6. EXHAUSTER MOTOR STARTERS WILL BE SUPPLIED WITH THE EXHAUSTER EQUIPMENT.
7. EXHAUSTER MOTOR STARTERS INSTALLED VERTICALLY RELATIVE TO EACH OTHER.
8. WIRING INSTALLED BY OTHERS. SEE DETAILS PROVIDED BY JOHN ZINK CO AND HOLMES ELECTRIC.

SYM	REVISION	BY	APPROVED	DATE
1	AS-BUILTS PER BOEING			5-1-87

BOEING FACILITIES DEPARTMENT
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☐ SEATTLE, WA. 98124

CH2M HILL

DRAWN BY: BENDSNEYDER 6/4/86
ENGR. B. TOOLE 6/4/86

SUBTITLE: ELECTRICAL DETAILS
TITLE: BOEING-EASTGATE LANDFILL LFG MIGRATION CONTROL SYSTEM

SHEET E-1
DWG NO. 33-00-YD-2003-E1

K&E

Exhibit 2

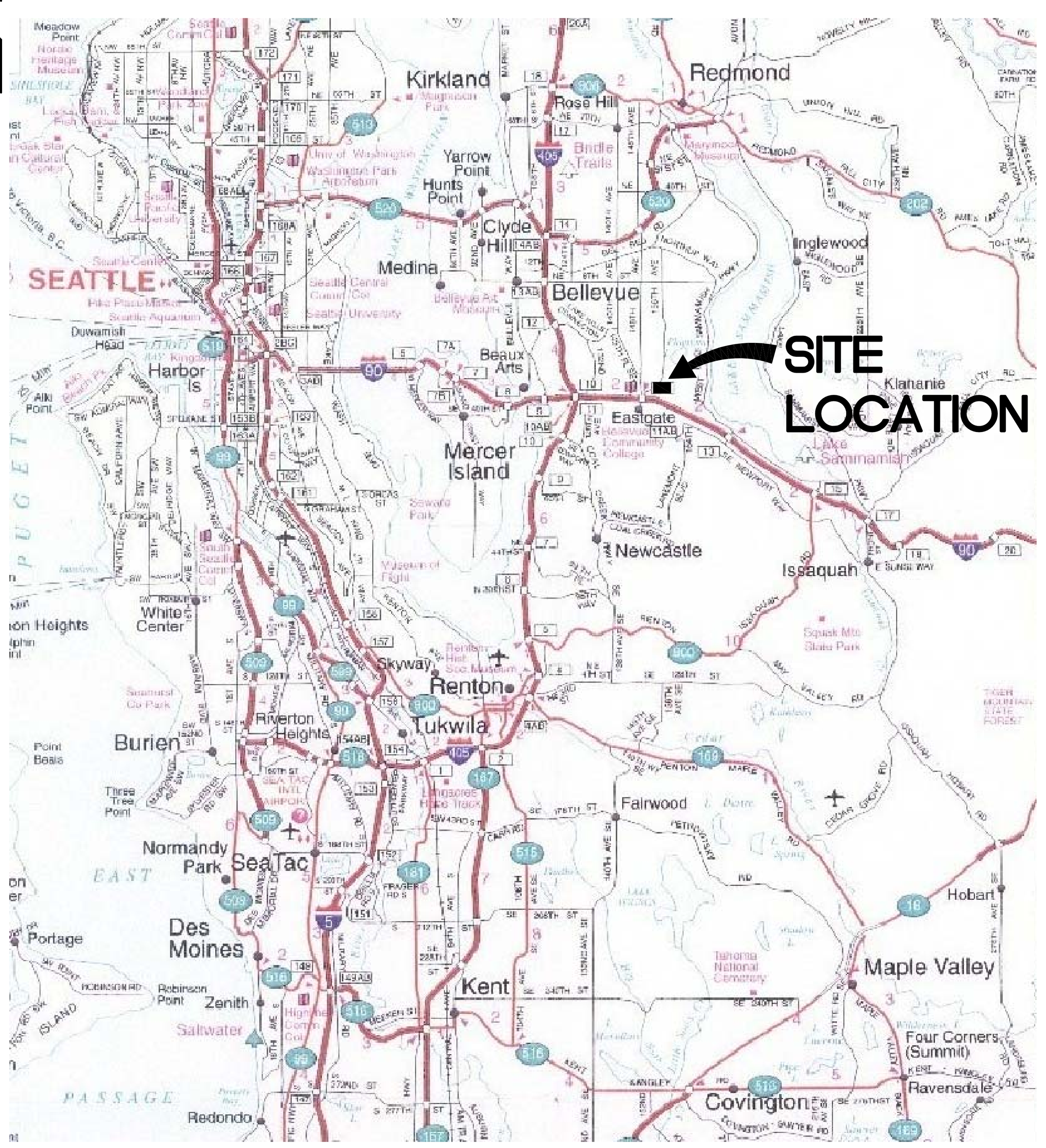
LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

BOEING

RECORD DRAWING

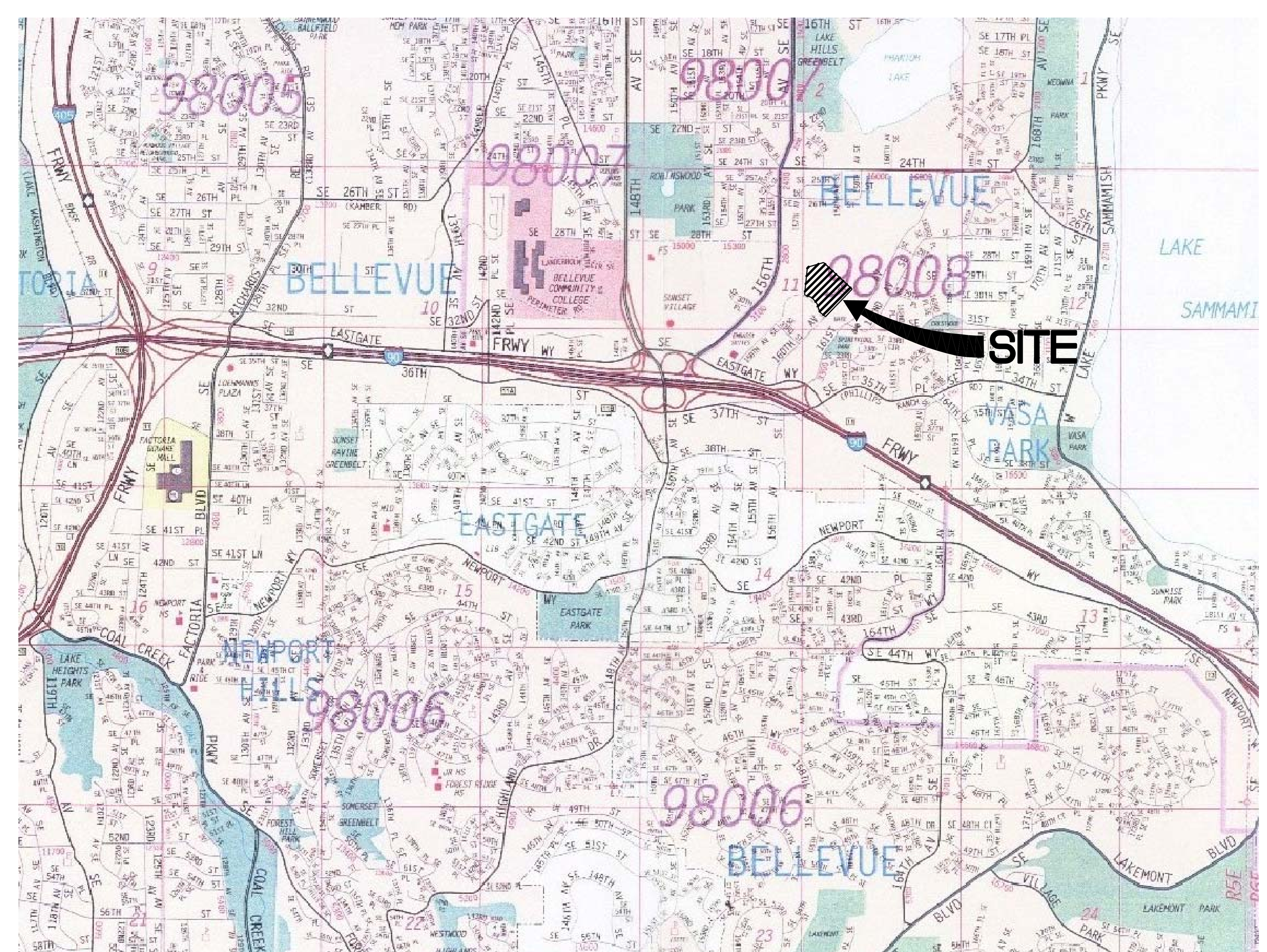
THIS DRAWING IS A RECORD COMPILING THE DESIGN INFORMATION, FIELD CHANGES, AND SURVEY INFORMATION USED DURING CONSTRUCTION OF THE FACILITY. THE INTENT IS TO PROVIDE THE OWNER WITH A DOCUMENT TO FACILITATE THE OPERATION, MAINTENANCE, AND POSSIBLE FUTURE MODIFICATIONS DURING THE LIFE OF THE FACILITY. THIS RECORD DRAWING MAY NOT BE AN EXACT AND PRECISE DEPICTION OF THE FACILITY. NEITHER SCS NOR THE PROFESSIONAL ENGINEER ASSUMES LIABILITY OR RESPONSIBILITY FOR ANY ACTION OR ACTIVITY BASED UPON THIS DRAWING. IF NECESSARY, FIELD VERIFY THE FEATURES ON THIS DRAWING.

LOCATION MAP



0 1 2 3 4
APPROXIMATE SCALE IN MILES

VICINITY MAP



0 1/4 1/2
APPROXIMATE SCALE IN MILES

DRAWING INDEX

G1	COVER SHEET
G2	LEGEND
G3	SITE PLAN
C1	TEMPORARY EROSION AND SEDIMENT CONTROL PLAN
C2	DEMOLITION PLAN
C3	GAS EXTRACTION NETWORK AND PIPING PLAN (BY PACE)
C3	GAS EXTRACTION NETWORK AND PIPING PLAN
C4	WELL PROFILES
C5	GAS AND CONDENSATE CONVEYANCE PIPE PROFILES
C6	WELL DETAILS
C7	WELL HEAD DETAILS
C8	GAS AND CONDENSATE CONVEYANCE PIPE DETAILS
C9	PROPANE TANK RELOCATION PLAN AND DETAILS

NO.	REVISION	DATE
A	ISSUED FOR REVIEW	5/22/06
B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE: COVER SHEET

PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00 | DSN. BY: TAM | DWN. BY: LEL | CHK. BY: TAM | ACAD FILE: G1 | APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. G1

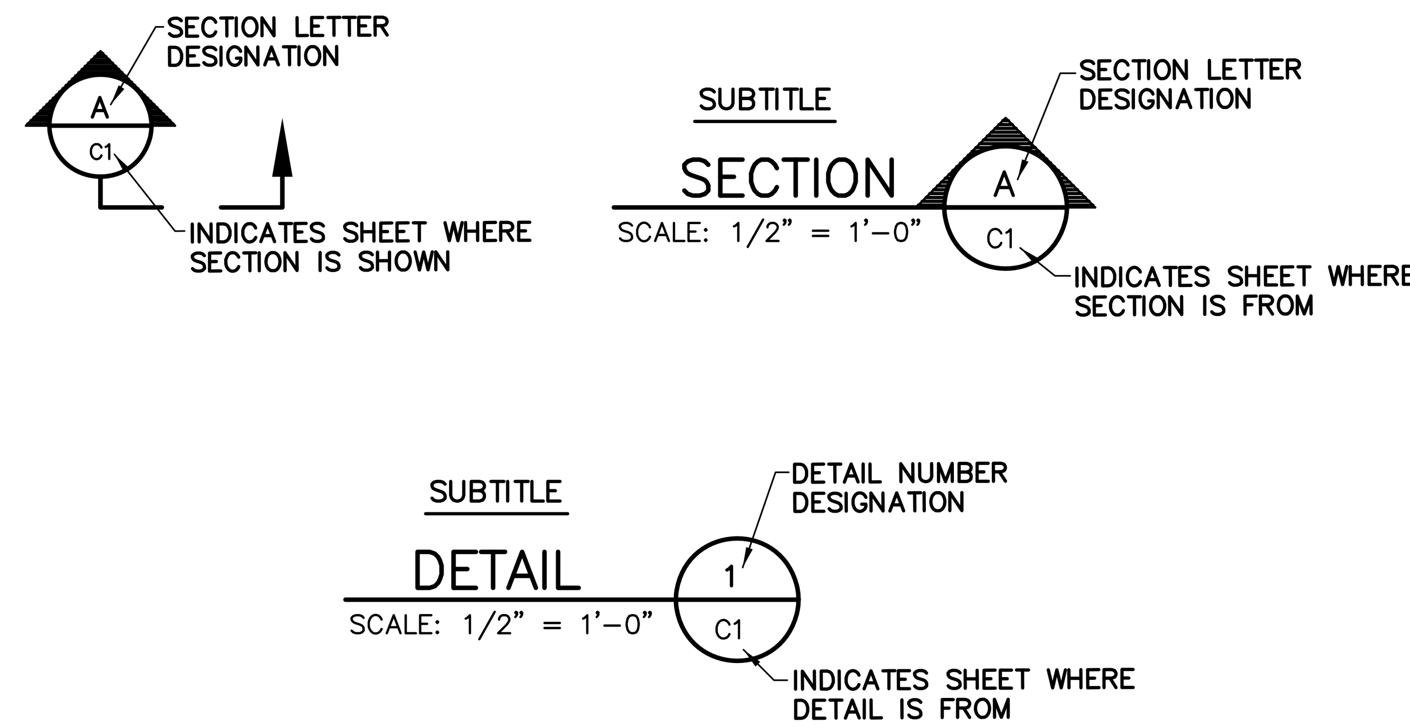
TOPOGRAPHIC SYMBOLS

PROPOSED	EXISTING	
		CENTERLINE
		GRAVEL ROAD
		PAVED ROAD
		DITCH
		APPROXIMATE LIMITS OF DENSE TREES
		PROPERTY LINE
		CULVERT
		FENCE
	R/W	RIGHT OF WAY
		POWER LINE / POLE
		HIGH VOLTAGE POWER LINE / POLE
250	250	CONTOUR ELEVATION
	250	APPROXIMATE CONTOUR ELEVATION IN DENSE TREES
4:1	4:1	EMBANKMENT SLOPE INDICATOR 4 HORIZONTAL TO 1 VERTICAL
	MH-2	MANHOLE MH-2
	20 201.67	CONTROL POINT WITH NUMBER / ELEVATION
	165.7	SPOT ELEVATION
		1/4 CORNER NOT FOUND
	9 16	1/4 CORNER FOUND
EW-2		GAS EXTRACTION WELL (IN-REFUSE)
CT-6R		CONDENSATE DRAIN TRAP
CO-9		CLEANOUT ACCESS PORT
	MW-12	SOIL/GAS MONITORING WELL (GAS PROBE)
	GW EL-106	GROUNDWATER MONITORING WELL
2		POINT LOCATION REFERENCE DESIGNATION

SOIL/AGGREGATE SYMBOLS

EMBEDMENT MATERIAL	PREPARED SUBGRADE
AGGREGATE SURFACE COURSE	EXISTING GRADE
FOUNDATION MATERIAL	CONCRETE
BENTONITE	SAND
BENTONITE GROUT	POROUS ROUND ROCK

SECTION AND DETAIL DESIGNATIONS



GEOSYNTHETIC SYMBOLS

	MEMBRANE
	TEXTILE

PIPING SYMBOLS

	FLANGE CONNECTION
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BUTTERFLY VALVE
4"ø - HDPE - LFG	PIPE LINE DESIGNATION SIZE-MATERIAL-SERVICE
	PIPE CAP
	PIPE PLUG
	SLOTTED PIPE
	ELBOW DOWN
	ELBOW UP
	LINE SIZE REDUCTION

ABBREVIATIONS

&	AND
@	AT
℄	CENTERLINE
CLR	CLEARANCE
CPVC	CHLORINATE POLYVINYL CHLORIDE
CONC	CONCRETE
COND	CONDENSATE
CPE	CORRUGATE POLYETHYLENE
CPS	COPPER PIPE SIZE
CS	CARBON STEEL
DEG OR °	DEGREES
D, DIA OR Ø	DIAMETER
DWG	DRAWING
E	EAST
EL OR ELEV	ELEVATION
EQ	EQUAL
EXIST	EXISTING
EW	EACH WAY
FPT	FEMALE PIPE THREAD
FT OR '	FEET
GALV	GALVANIZED
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
IPS	IRON PIPE SIZE
IE	INVERT ELEVATION
IN OR "	INCH
LFG	LANDFILL GAS
MAX	MAXIMUM
MSL	MEAN SEA LEVEL
MIL	1/1000
MFR	MANUFACTURER
MIN	MINIMUM
MPT	MALE PIPE THREAD
MSW	MUNICIPAL SOLID WASTE
N	NORTH
# OR NO.	NUMBER
NTS	NOT TO SCALE
NW	NON WOVEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OZ	OUNCE
%	PERCENT
PE	POLYETHYLENE
PERF	PERFORATED
PI	POINT OF INTERSECTION
PP	POLYPROPYLENE
PT	POINT OF TANGENCY OR POINT
PVC	POLYVINYL CHLORIDE
ℙ	PROPERTY LINE
R	RADIUS
SCH	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SFFJT	SQUARE FORM FLUSH JOINT THREAD
SIM	SIMILAR
SOC	SOCKET
SPG	SPIGOT
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
SY	SQUARE YARD
TEL	TELEPHONE/COMMUNICATIONS
THK	THICK
TOC	TOP OF CONCRETE
TYP	TYPICAL
TOG	TOP OF GRATE
VERT	VERTICAL
W/	WITH

RECORD DRAWING

THIS DRAWING IS A RECORD COMPILING THE DESIGN INFORMATION, FIELD CHANGES, AND SURVEY INFORMATION USED DURING CONSTRUCTION OF THE FACILITY. THE INTENT IS TO PROVIDE THE OWNER WITH A DOCUMENT TO FACILITATE THE OPERATION, MAINTENANCE, AND POSSIBLE FUTURE MODIFICATIONS DURING THE LIFE OF THE FACILITY. THIS RECORD DRAWING MAY NOT BE AN EXACT AND PRECISE DEPICTION OF THE FACILITY. NEITHER SCS NOR THE PROFESSIONAL ENGINEER ASSUMES LIABILITY OR RESPONSIBILITY FOR ANY ACTION OR ACTIVITY BASED UPON THIS DRAWING. IF NECESSARY, FIELD VERIFY THE FEATURES ON THIS DRAWING.

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A	ISSUED FOR REVIEW	5/22/06
B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE: **LEGEND**

PROJECT TITLE: **LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL**

THE BOEING COMPANY

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: G2
DSN. BY: TAM	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. **G2**

GENERAL NOTES:

DATES OF SURVEYS
FIELD SURVEYS BY BARGHAUSEN CONSULTING ENGINEERS, INC.
CONDUCTED APRIL 2005

HORIZONTAL DATUM – BASIS OF BEARINGS
CITY OF BELLEVUE, PER CITY OF BELLEVUE BLA NO. 03-114869 LW.

HORIZONTAL STATION: 0729, BCE #1
LOCATION: 162ND AVE SE & SE 28TH PL
DESCRIPTION: MIC
NORTHING: 216,033.223
EASTING: 1,322,305.892

HORIZONTAL STATION: 0728, BCE #2
LOCATION: 161ST AVE SE & SE 28TH PL
DESCRIPTION: MIC
NORTHING: 216,183.063
EASTING: 1,322,081.167

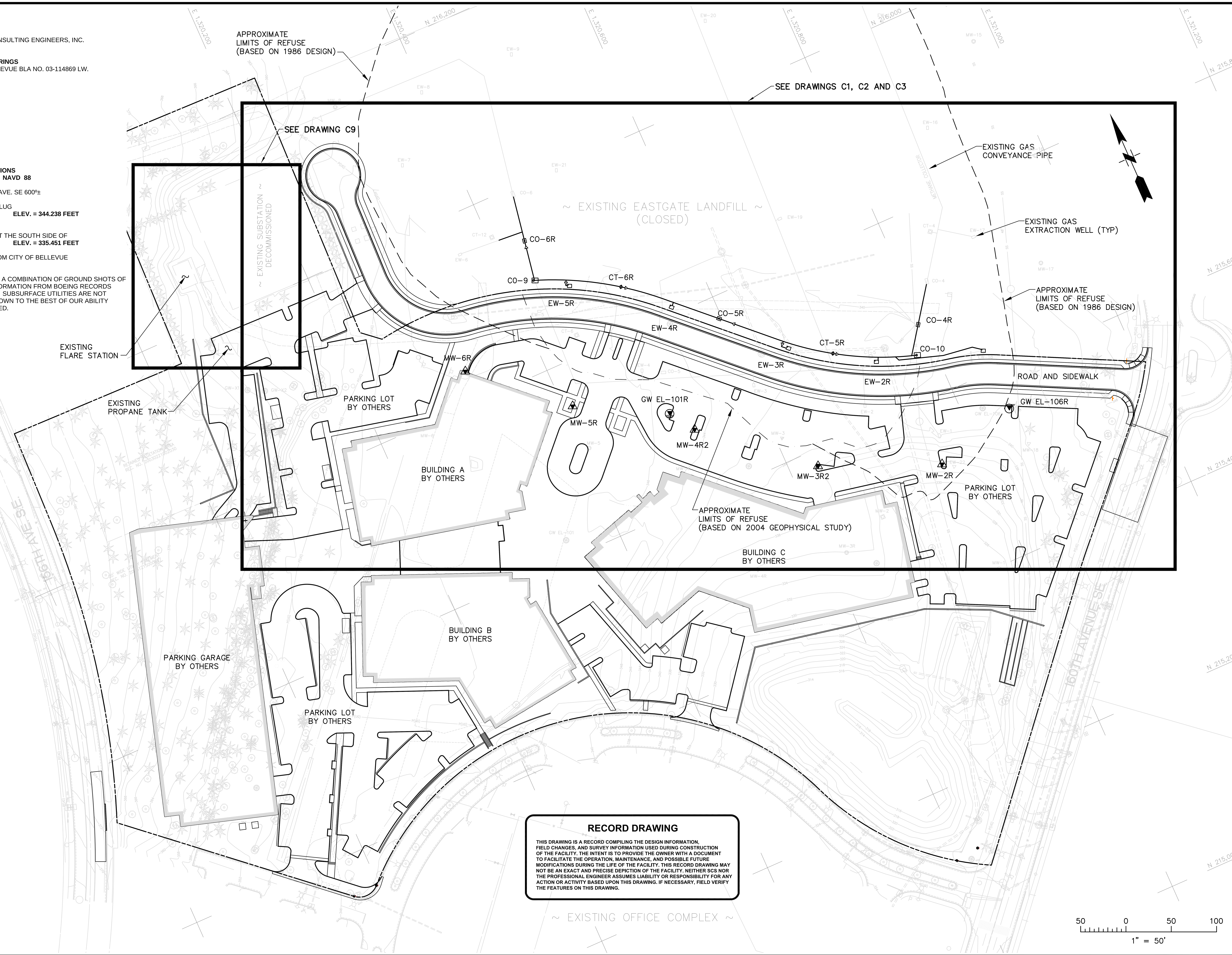
VERTICAL DATUM – BASIS OF ELEVATIONS
NATIONAL VERTICAL DATUM OF 1988- **NAVD 88**

CITY OF BELLEVUE BM # 116 AT 160TH AVE. SE 600º±
NORTH OF SE 33RD STREET
4" X 4" CONCRETE MON. W/2" BRASS PLUG
W / PUNCH MARK **ELEV. = 344.238 FEET**

CITY OF BELLEVUE BM # 412
TOP NE BOLT IN SIGNAL POLE BASE AT THE SOUTH SIDE OF
EASTGATE WAY @ 160TH AVE SE **ELEV. = 335.451 FEET**

SURVEY BENCHMARKS OBTAINED FROM CITY OF BELLEVUE

NOTE:
UTILITIES SHOWN HEREON ARE FROM A COMBINATION OF GROUND SHOTS OF VISIBLE FEATURES, AND RECORD INFORMATION FROM BOEING RECORDS AND KING COUNTY METRO RECORDS. SUBSURFACE UTILITIES ARE NOT PHYSICALLY LOCATED. THEY ARE SHOWN TO THE BEST OF OUR ABILITY BASED ON THE RECORDS WE RECEIVED.



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D	RECORD DRAWING	10/31/08

SHEET TITLE: **SITE PLAN**

PROJECT TITLE: **LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL**

THE BOEING COMPANY

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: G3
DSN. BY: TAM	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. **G3**

NOTES:

1. SEE NOTES ON DRAWING G3.
2. MULCH ALL DISTURBED SLOPES WITHIN SEVEN DAYS OF REACHING FINAL GRADE.
3. CONTOURS SHOWN ARE FINISHED GRADES.
4. GRADE BETWEEN CONTOUR LINES SLOPES CONTINUOUSLY.
5. SEQUENCE OF MAJOR ACTIVITIES:

   Construction activities are to occur in the following order:

   1. Construction of temporary erosion and sedimentation devices.
   2. Demolition/abandonment of gas extraction wells, gas monitoring wells and groundwater monitoring well.
   3. Installation of landfill gas conveyance pipe, condensate drain traps and propane tank relocation.
   4. Installation of access road and utilities.
   5. Installation of gas extraction wells and connection to new gas pipe.
   6. Schnitzer NW Office Park construction (by others).
   7. Installation of gas monitoring wells and groundwater monitoring wells.

6. MAINTENANCE AND INSPECTION:

   1. Rock dams and earthen berms shall be inspected daily during storm events and weekly otherwise. Repairs shall be affected within eight hours of finding damage.
   2. Material storage enclosures/containment shall be inspected weekly for condition. Necessary repairs shall be effected within eight hours of identification.
   3. Inspection forms shall be filled out following each inspection and retained in a file on-site for a three year period from the date construction is completed. The forms shall include:

      * Components and scope of inspection
      * Names and qualifications of the inspectors
      * Date of inspection
      * Observations made
      * Actions taken
      * Incidents of non-compliance with the TESC PLAN noted

7. DUST CONTROL:

   The generation of dust shall be minimized by the spraying water to keep soils moist, minimizing drop height during earthwork, limiting driving speed on-site to 15 MPH, and avoiding work during high wind periods.

8. UPON COMPLETION OF CONSTRUCTION AND ADEQUATE HYDROSEED GROWTH, REMOVE ROCK DAMS, CB FILTER FABRIC INSERTS, FILTER FABRIC FENCE, AND CONSTRUCTION FENCE.

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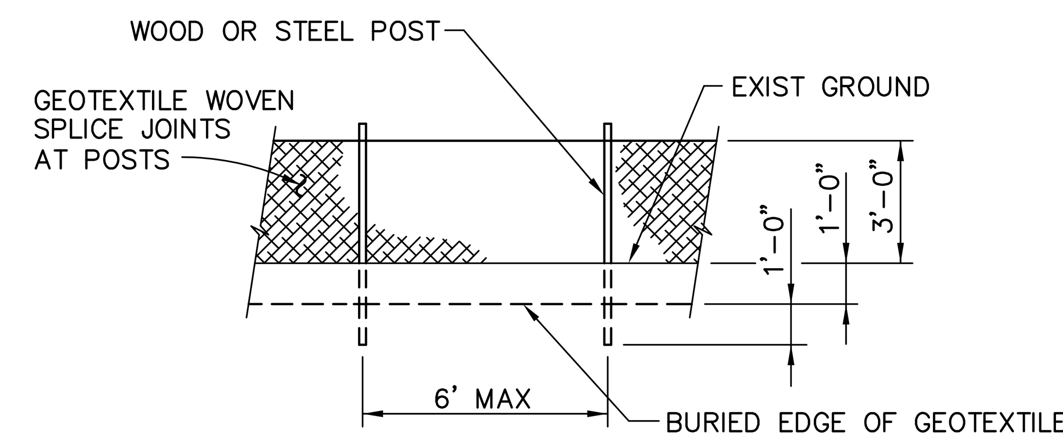
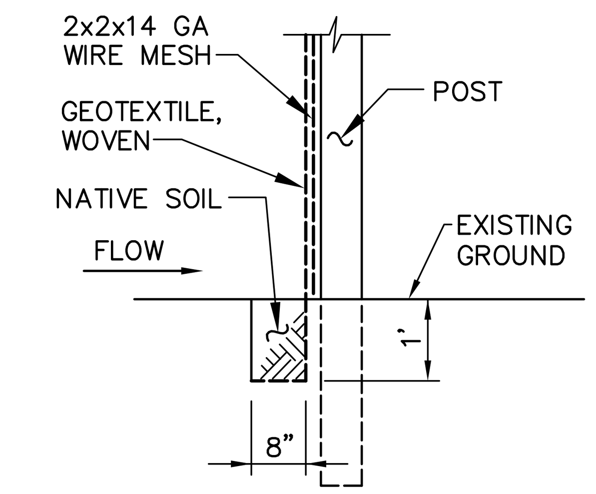
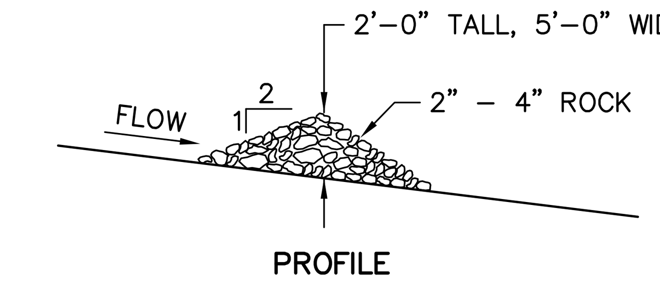


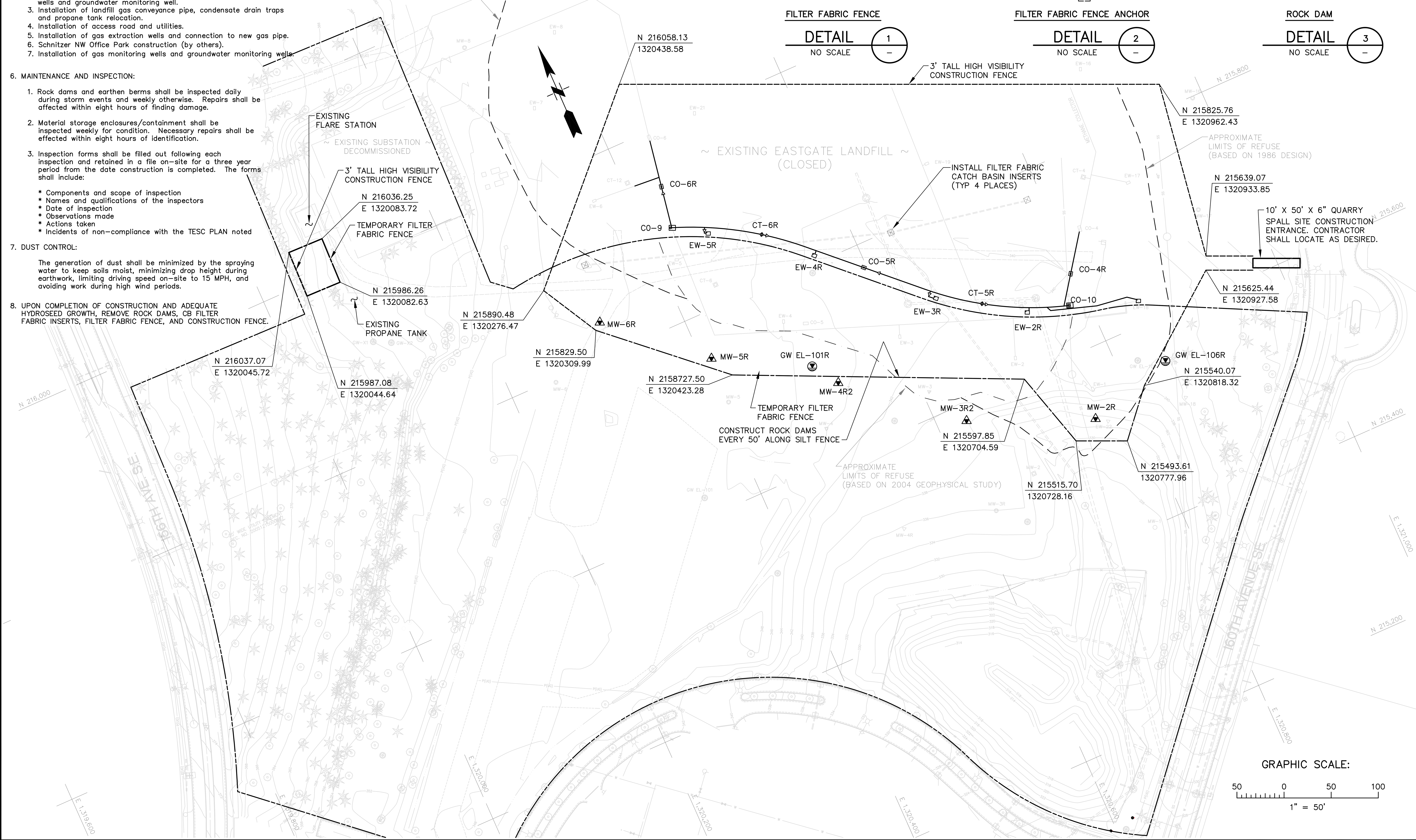
FILTER FABRIC FENCE
DETAIL 1
NO SCALE



FILTER FABRIC FENCE ANCHOR
DETAIL 2
NO SCALE



ROCK DAM
DETAIL 3
NO SCALE



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4	RECORD DRAWING	10/31/08

SHEET TITLE: TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: C1
DSN. BY: JEH	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

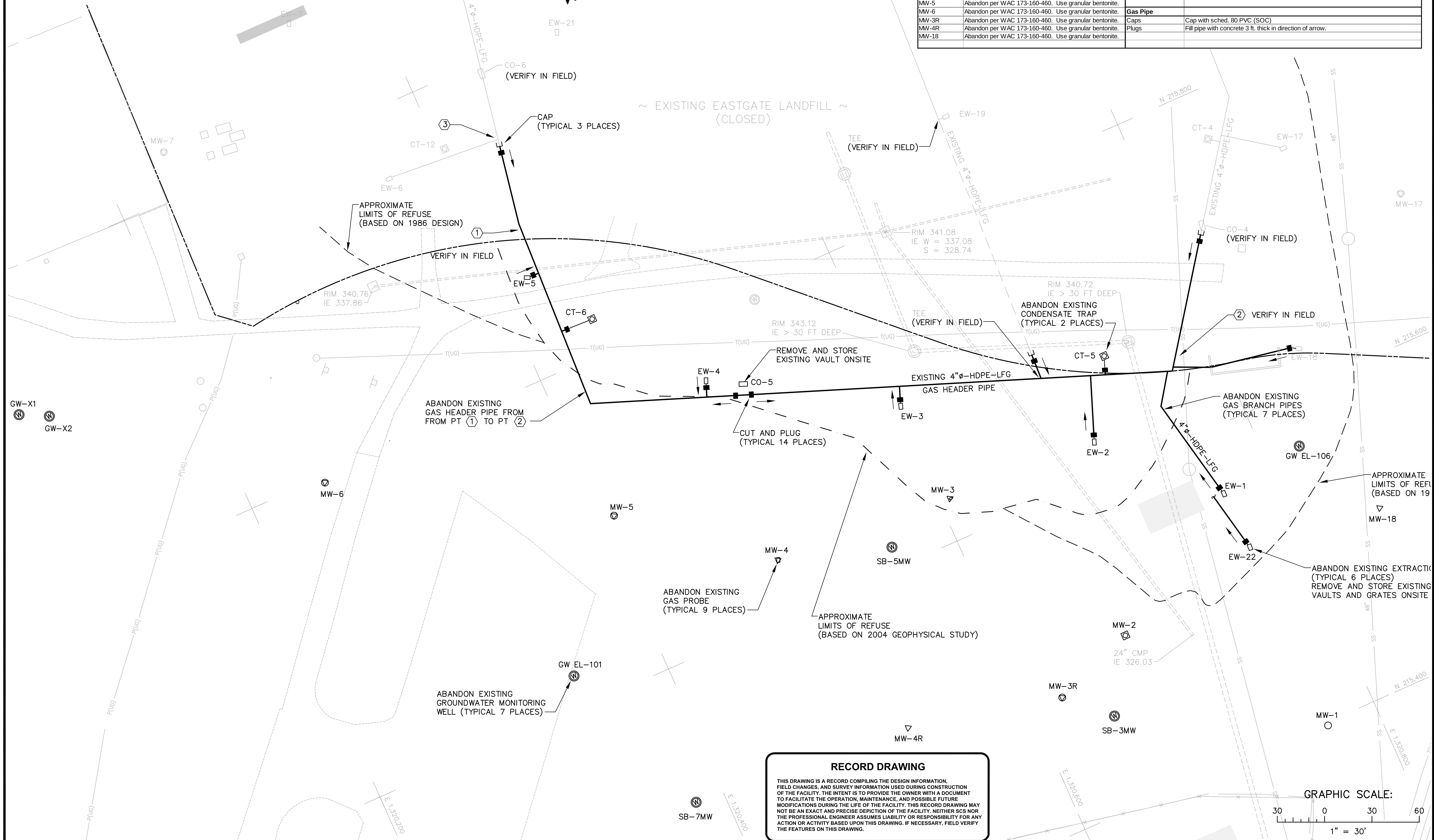
SCALE: AS SHOWN

DRAWING NO. C1

NOTES:

1. SEE NOTES ON DRAWING G3.
2. GAS PIPE ALIGNMENT FOR EXISTING 4 IN. DIA. HDPE PIPE IS APPROXIMATE BASED ON ORIGINAL DESIGN DRAWINGS.
3. LOCATION OF EXPOSED VAULTS AND WELLS IS BASED ON APRIL 2005 SURVEY. SEE NOTES ON DRAWING G3.
4. CONTRACTOR SHALL LOCATE AND SURVEY ACTUAL LOCATIONS OF POINTS 1, 2, 3, CO-4, CO-6, AND TEES AT EW-19. SURVEY SHALL INCLUDE BOTH HORIZONTAL AND VERTICAL LOCATION OF PIPE INVERTS.

To Be Aban	To Be Abandoned	To Be Abandoned	
Well ID	**Description**	**Well ID**	**Description**
Groundwater		**Extraction Wells**	
EL-101	Abandon per WAC 173-160-460	EW-1	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
EL-106	Abandon per WAC 173-160-460	EW-2	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
SB-3MW	Abandon per WAC 173-160-460	EW-3	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
SB-5MW	Abandon per WAC 173-160-460	EW-4	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
SB-7MW	Abandon per WAC 173-160-460	EW-5	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
GW-X1	Abandon per WAC 173-160-460	EW-22	Abandon per WAC 173-160-460. Remove and store vault, grate and flexhose onsite.
GW-X2	Abandon per WAC 173-160-460		
		Condensate Traps	
Gas Probes		CT-5	Abandon per WAC 173-160-460.
MW-1	Abandon per WAC 173-160-460. Use granular bentonite.	CT-6	Abandon per WAC 173-160-460.
MW-2	Abandon per WAC 173-160-460. Use granular bentonite.		
MW-3	Abandon per WAC 173-160-460. Use granular bentonite.	**Cleanouts**	
MW-4	Abandon per WAC 173-160-460. Use granular bentonite.	CO-5	Remove and store vault and valve onsite.
MW-5	Abandon per WAC 173-160-460. Use granular bentonite.		
MW-6	Abandon per WAC 173-160-460. Use granular bentonite.	**Gas Pipe**	
MW-3R	Abandon per WAC 173-160-460. Use granular bentonite.	Caps	Cap with sched. 80 PVC (SOC)
MW-4R	Abandon per WAC 173-160-460. Use granular bentonite.	Plugs	Fill pipe with concrete 3 ft. thick in direction of arrow.
MW-18	Abandon per WAC 173-160-460. Use granular bentonite.		



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SHEET TITLE
DEMOLITION PLAN

PROJECT TITLE
LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

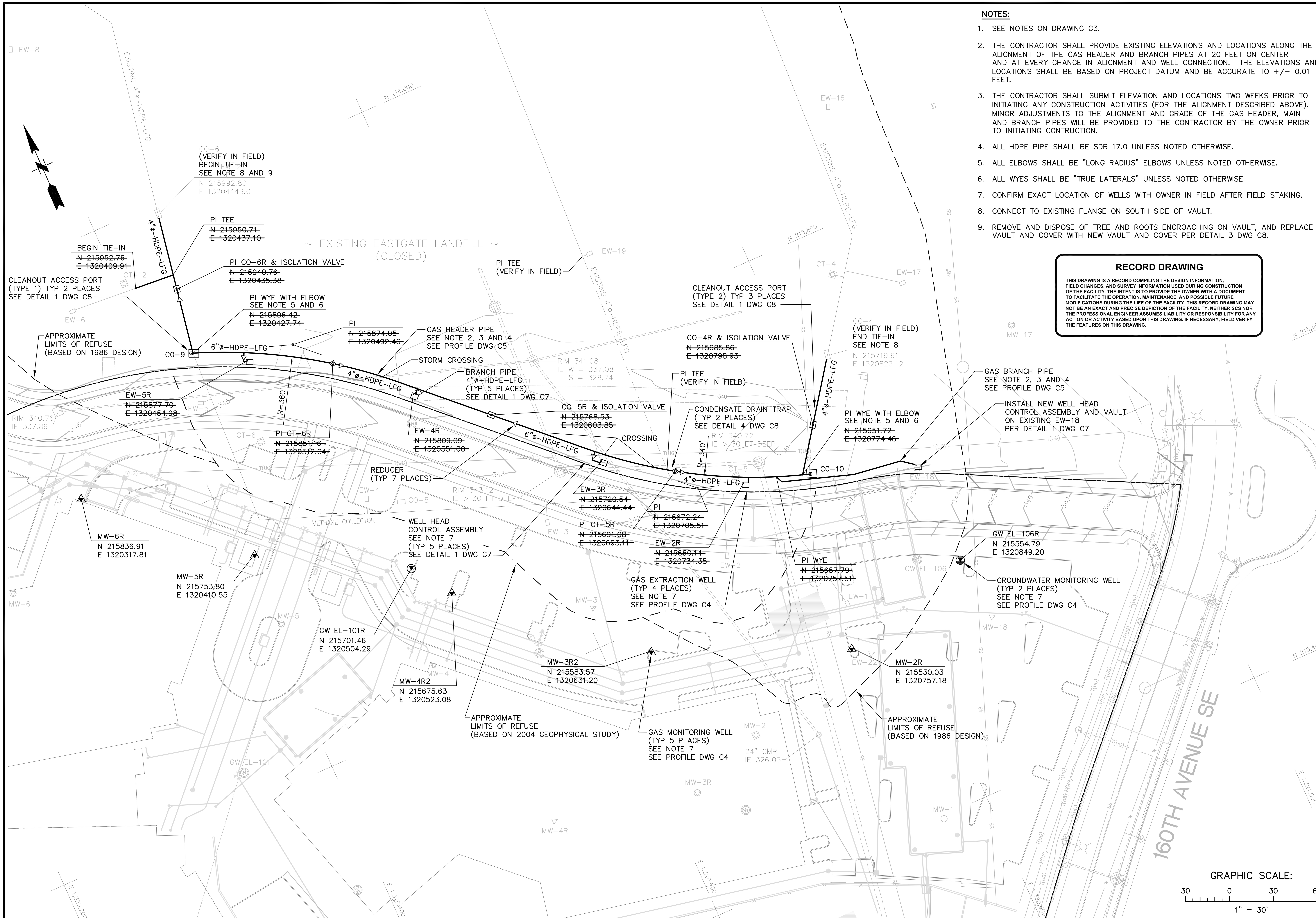
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO.	04206007.00	DWN. BY:	LEL	ACAD FILE:	C2
DSN. BY:	TAM	CHK. BY:	TAM	APP. BY:	EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. **C2**



NOTES:

1. SEE NOTES ON DRAWING G3.
2. THE CONTRACTOR SHALL PROVIDE EXISTING ELEVATIONS AND LOCATIONS ALONG THE ALIGNMENT OF THE GAS HEADER AND BRANCH PIPES AT 20 FEET ON CENTER AND AT EVERY CHANGE IN ALIGNMENT AND WELL CONNECTION. THE ELEVATIONS AND LOCATIONS SHALL BE BASED ON PROJECT DATUM AND BE ACCURATE TO +/- 0.01 FEET.
3. THE CONTRACTOR SHALL SUBMIT ELEVATION AND LOCATIONS TWO WEEKS PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITIES (FOR THE ALIGNMENT DESCRIBED ABOVE). MINOR ADJUSTMENTS TO THE ALIGNMENT AND GRADE OF THE GAS HEADER, MAIN AND BRANCH PIPES WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER PRIOR TO INITIATING CONTRUCTION.
4. ALL HDPE PIPE SHALL BE SDR 17.0 UNLESS NOTED OTHERWISE.
5. ALL ELBOWS SHALL BE "LONG RADIUS" ELBOWS UNLESS NOTED OTHERWISE.
6. ALL WYES SHALL BE "TRUE LATERALS" UNLESS NOTED OTHERWISE.
7. CONFIRM EXACT LOCATION OF WELLS WITH OWNER IN FIELD AFTER FIELD STAKING.
8. CONNECT TO EXISTING FLANGE ON SOUTH SIDE OF VAULT.
9. REMOVE AND DISPOSE OF TREE AND ROOTS ENCROACHING ON VAULT, AND REPLACE VAULT AND COVER WITH NEW VAULT AND COVER PER DETAIL 3 DWG C8.

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SHEET TITLE: GAS EXTRACTION NETWORK AND PIPING PLAN

PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

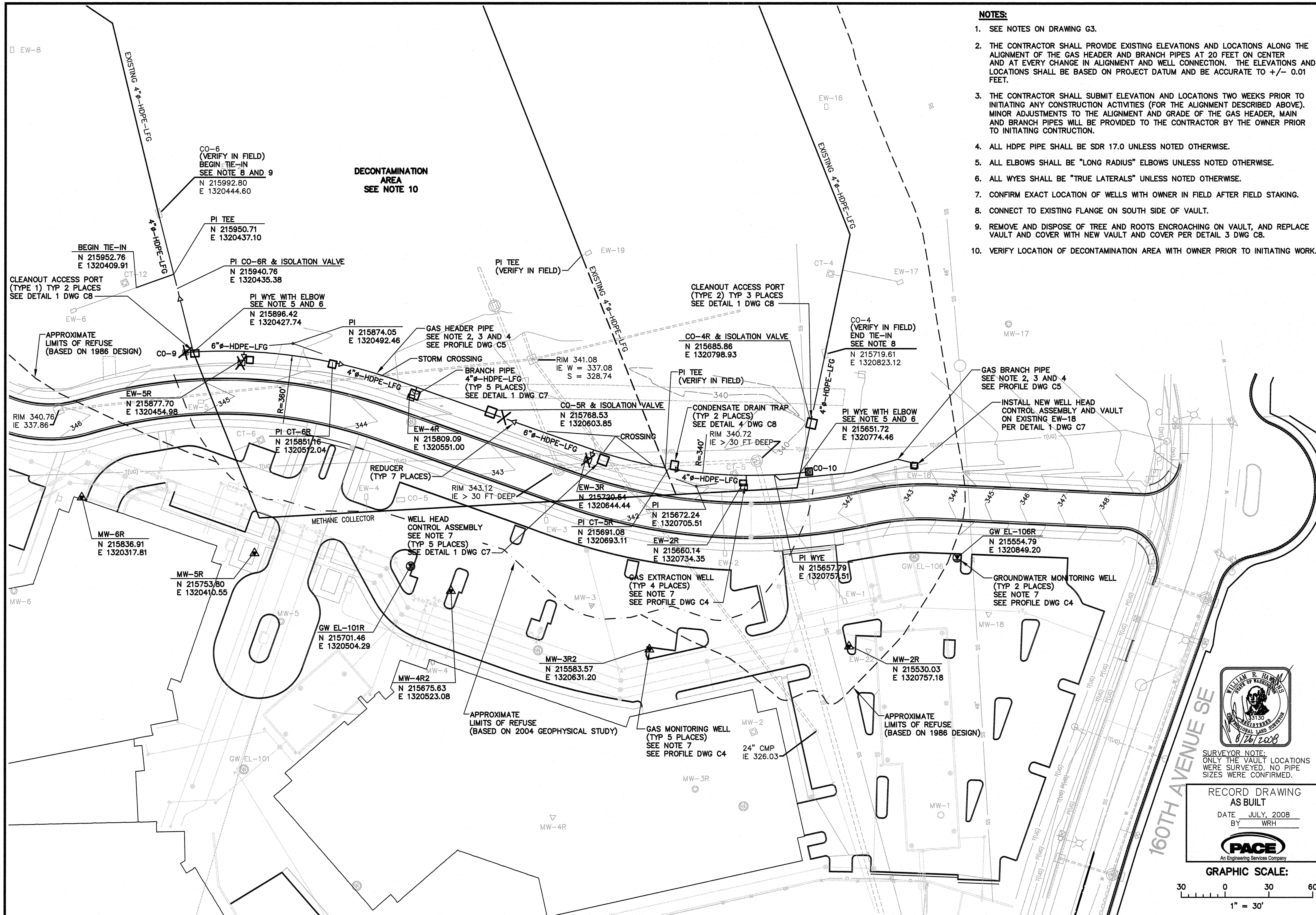
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: C3
DSN. BY: TAM	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. C3



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5. ALL ELBOWS SHALL BE "LONG RADIUS" ELBOWS UNLESS NOTED OTHERWISE.
6. ALL WYES SHALL BE "TRUE LATERALS" UNLESS NOTED OTHERWISE.
7. CONFIRM EXACT LOCATION OF WELLS WITH OWNER IN FIELD AFTER FIELD STAKING.
8. CONNECT TO EXISTING FLANGE ON SOUTH SIDE OF VAULT.
9. REMOVE AND DISPOSE OF TREE AND ROOTS ENCROACHING ON VAULT, AND REPLACE VAULT AND COVER WITH NEW VAULT AND COVER PER DETAIL 3 DWG C8.
10. VERIFY LOCATION OF DECONTAMINATION AREA WITH OWNER PRIOR TO INITIATING WORK.

SURVEYOR NOTE:
ONLY THE VAULT LOCATIONS WERE SURVEYED. NO PIPE SIZES WERE CONFIRMED.

RECORD DRAWING
AS BUILT
DATE JULY, 2008
BY WRH

PACE
An Engineering Services Company

GRAPHIC SCALE:
30 0 30 60
1" = 30'

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PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

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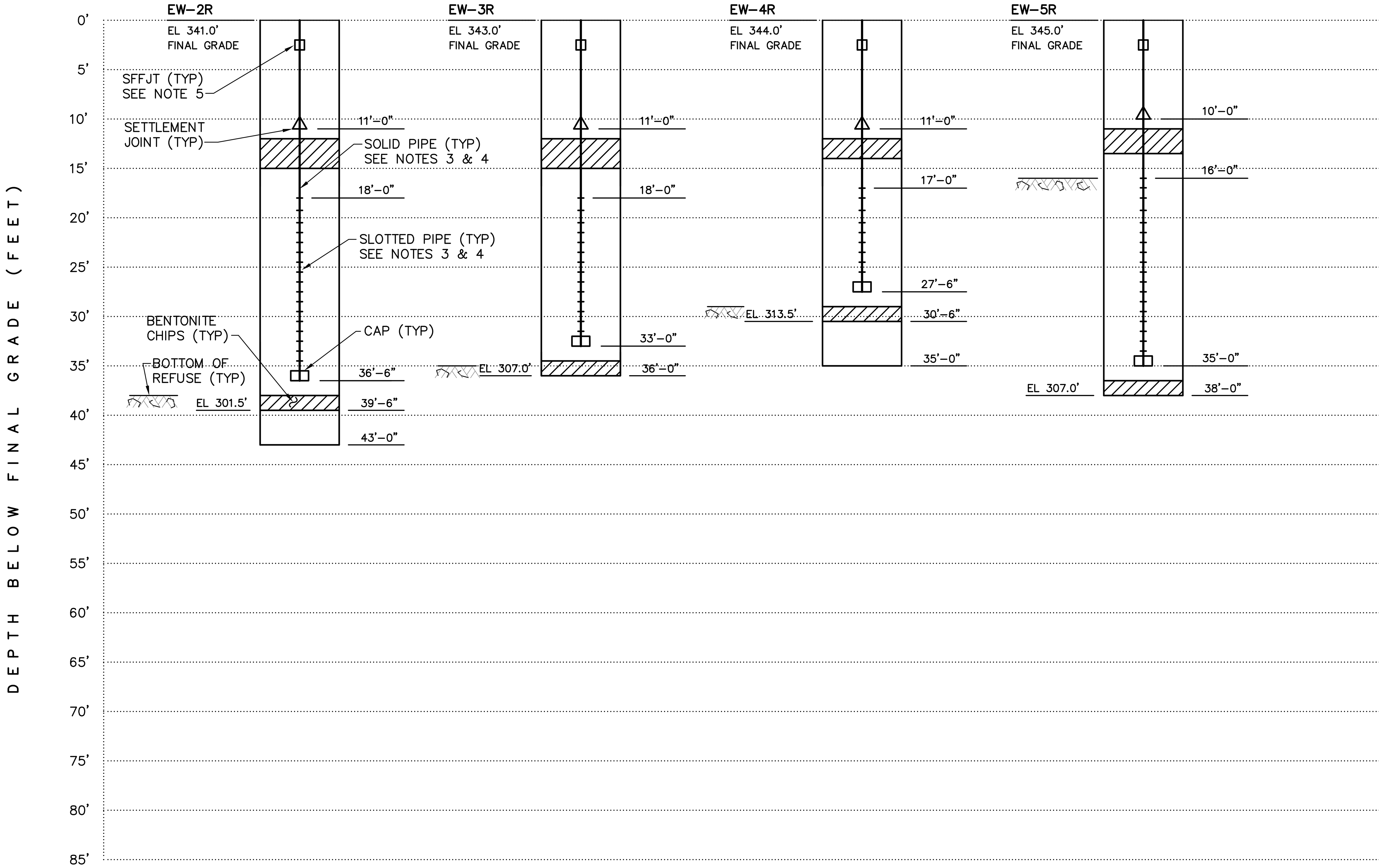
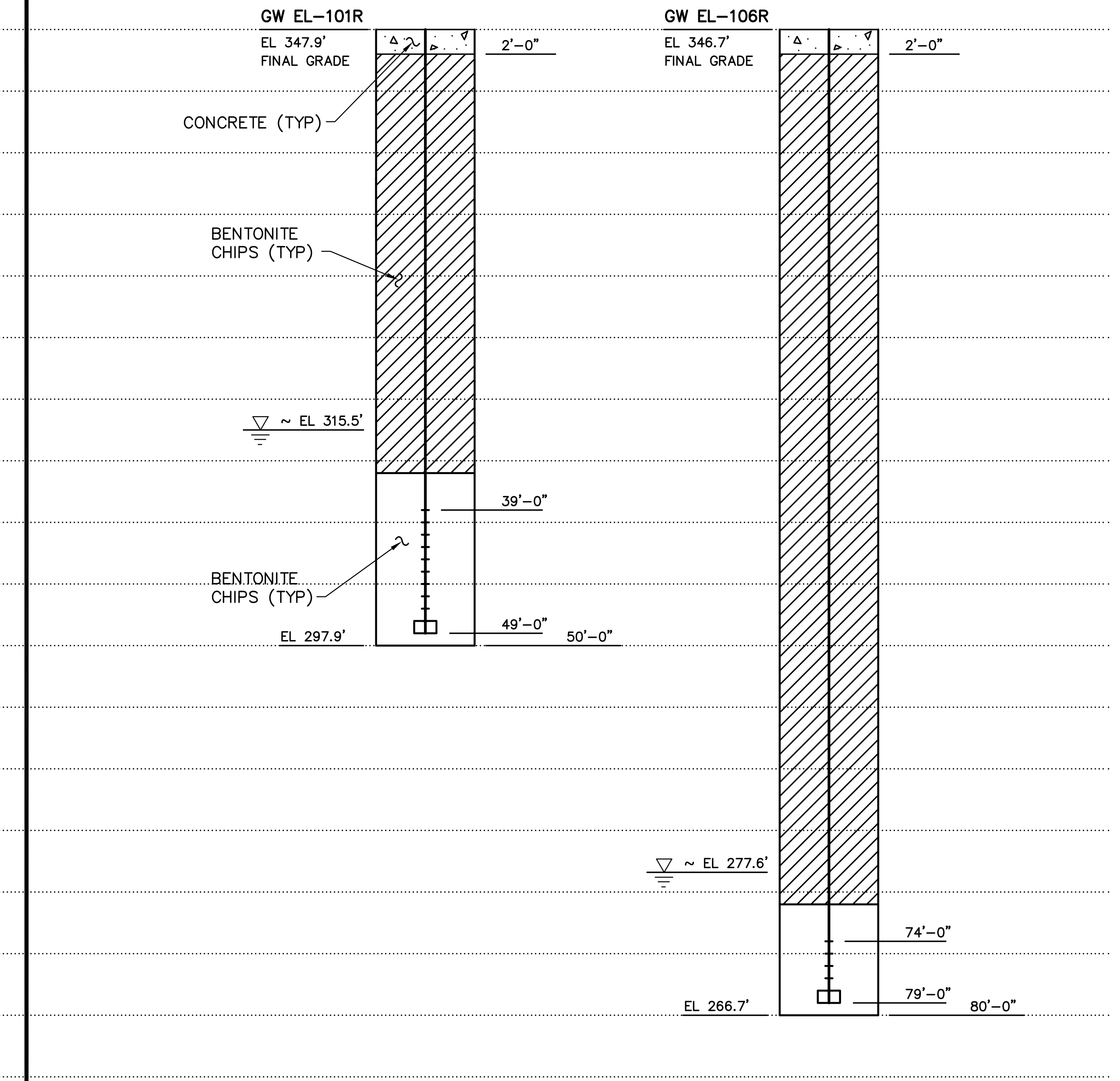


IN-REFUSE GAS EXTRACTION WELLS



GROUNDWATER MONITORING WELLS

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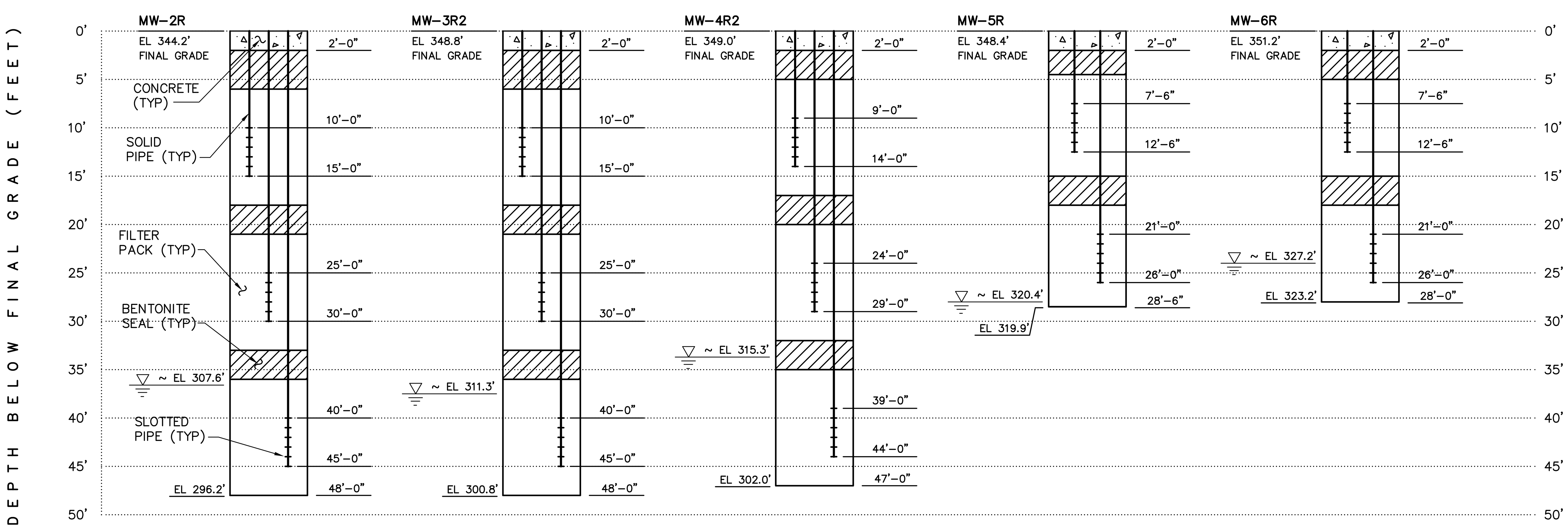

SUBSURFACE GAS MONITORING WELLS

NOTES:

1. FOR ADDITIONAL WELL DETAILS SEE DRAWING C6.
2. BORING DEPTHS SHOWN ARE APPROXIMATE AND INTENDED ONLY FOR BIDDING PURPOSES. CONTRACTOR SHALL INSTALL ALL WELLS TO DEPTH DIRECTED BY OWNER.
3. SOLID AND SLOTTED PIPE SHALL BE SUPPLIED IN STANDARD LENGTHS OF 5'-0", 10'-0" AND 20'-0".
4. FIELD ADJUSTMENTS IN PIPE LENGTH SHALL BE DONE ONLY BY CUTTING OFF THE LOWEST PORTION OF THE LOWEST SECTION OF SLOTTED PIPE.
5. PROVIDE PIPE JOINT (SFFJT) IN THIS SEGMENT OF PIPE USING 5'-0" AND 10'-0" SECTIONS.

GRAPHIC SCALE:

5 0 5 10 15 20

1/8" = 1'-0"

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SHEET TITLE: WELL PROFILES

PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

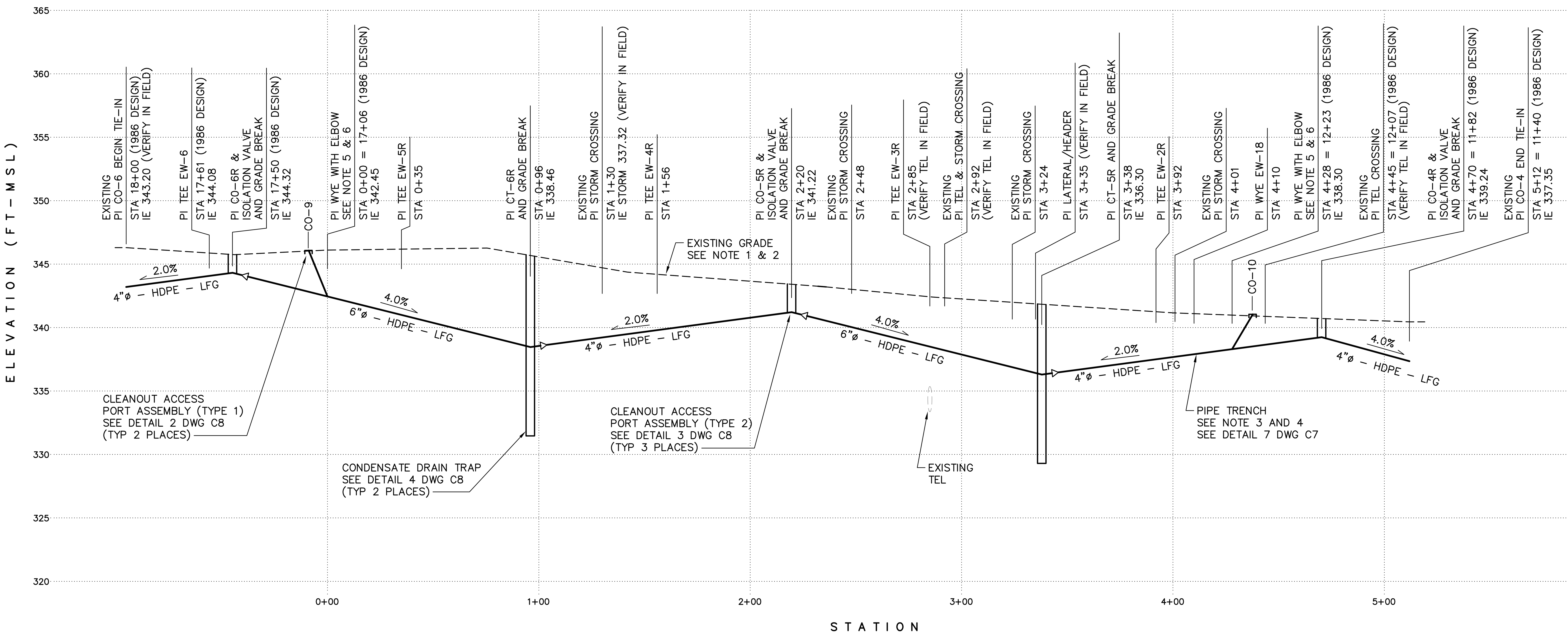
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00 | DWN. BY: LEL | ACAD FILE: C4
DSN. BY: TAM | CHK. BY: TAM | APP. BY: EEC

DATE: MAY 2006

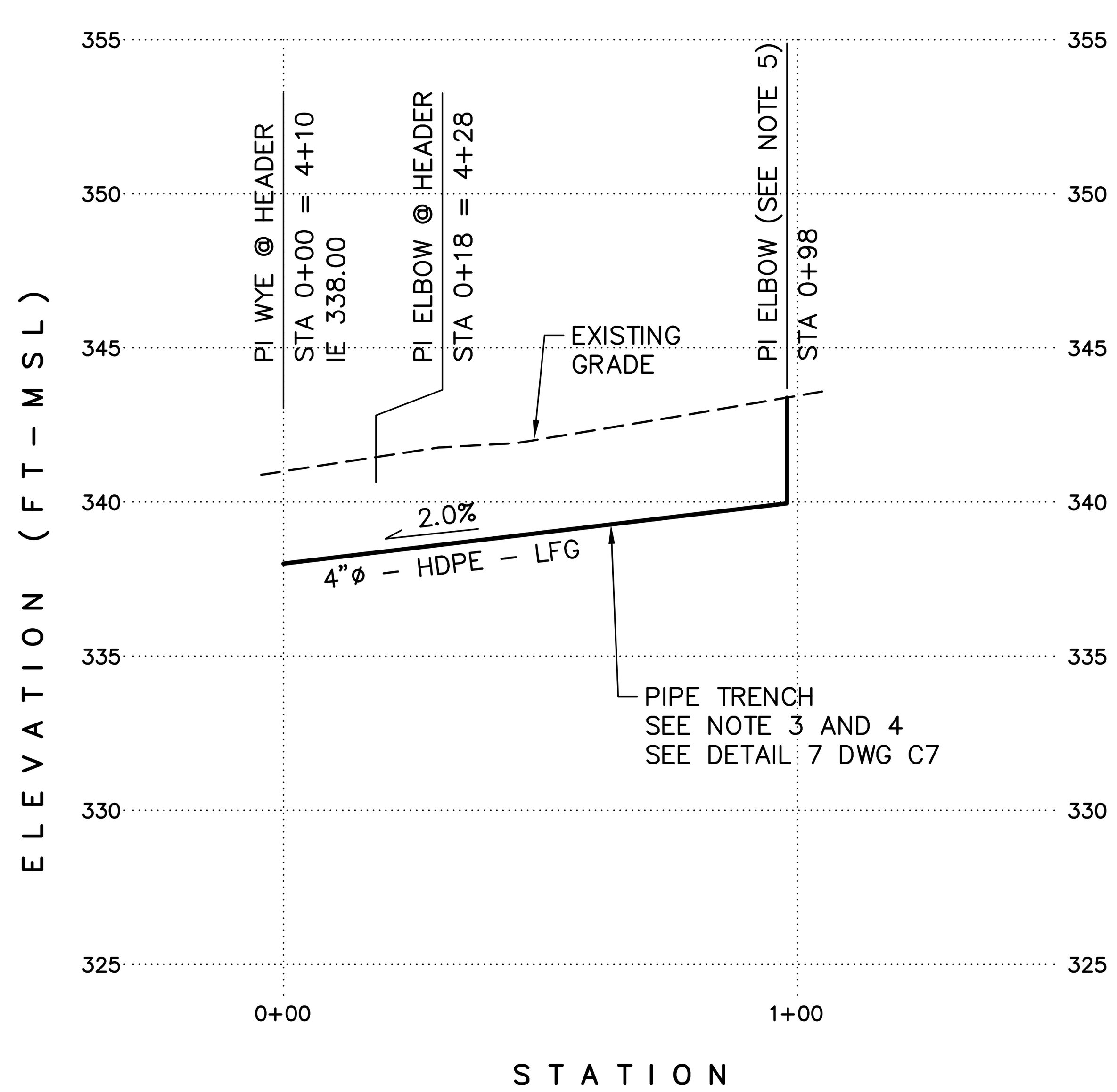
SCALE: AS SHOWN

DRAWING NO. C4



GAS HEADER PIPE PROFILE

SCALE: HORIZ 1" = 30'
VERT 1" = 5'



GAS BRANCH PIPE PROFILE (EW-18)

SCALE: HORIZ 1" = 30'
VERT 1" = 5'

RECORD DRAWING

THIS DRAWING IS A RECORD COMPILING THE DESIGN INFORMATION, FIELD CHANGES, AND SURVEY INFORMATION USED DURING CONSTRUCTION OF THE FACILITY. THE INTENT IS TO PROVIDE THE OWNER WITH A DOCUMENT TO FACILITATE THE OPERATION, MAINTENANCE, AND POSSIBLE FUTURE MODIFICATIONS DURING THE LIFE OF THE FACILITY. THIS RECORD DRAWING MAY NOT BE AN EXACT AND PRECISE DEPICTION OF THE FACILITY. NEITHER SCS NOR THE PROFESSIONAL ENGINEER ASSUMES LIABILITY OR RESPONSIBILITY FOR ANY ACTION OR ACTIVITY BASED UPON THIS DRAWING. IF NECESSARY, FIELD VERIFY THE FEATURES ON THIS DRAWING.

NOTES:

1. THE CONTRACTOR SHALL PROVIDE EXISTING ELEVATIONS AND LOCATIONS ALONG THE ALIGNMENT OF THE GAS HEADER AND BRANCH PIPES AT 20 FEET ON CENTER AND AT EVERY CHANGE IN ALIGNMENT AND WELL CONNECTION. THE ELEVATIONS AND LOCATIONS SHALL BE BASED ON PROJECT DATUM AND BE ACCURATE TO +/- 0.01 FEET.
2. THE CONTRACTOR SHALL SUBMIT ELEVATION AND LOCATIONS TWO WEEKS PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITIES (FOR THE ALIGNMENT DESCRIBED ABOVE). MINOR ADJUSTMENTS TO THE ALIGNMENT AND GRADE OF THE GAS HEADER, MAIN AND BRANCH PIPES WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER PRIOR TO INITIATING CONTRUCTION.
3. ALL PVC PIPE SHALL BE SCH 80 UNLESS NOTED OTHERWISE.
4. ALL HDPE PIPE SHALL BE SDR 17.0 UNLESS NOTED OTHERWISE.
5. ALL ELBOWS SHALL BE "LONG RADIUS" ELBOWS UNLESS NOTED OTHERWISE.
6. ALL WYES SHALL BE "TRUE LATERALS" UNLESS NOTED OTHERWISE.

GRAPHIC SCALE:

5 0 5 10
1" = 5'

30 0 30 60
1" = 30'

NO.	REVISION	DATE
A	ISSUED FOR REVIEW	5/22/06
B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE
GAS AND CONDENSATE CONVEYANCE PIPE PROFILES

PROJECT TITLE
LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

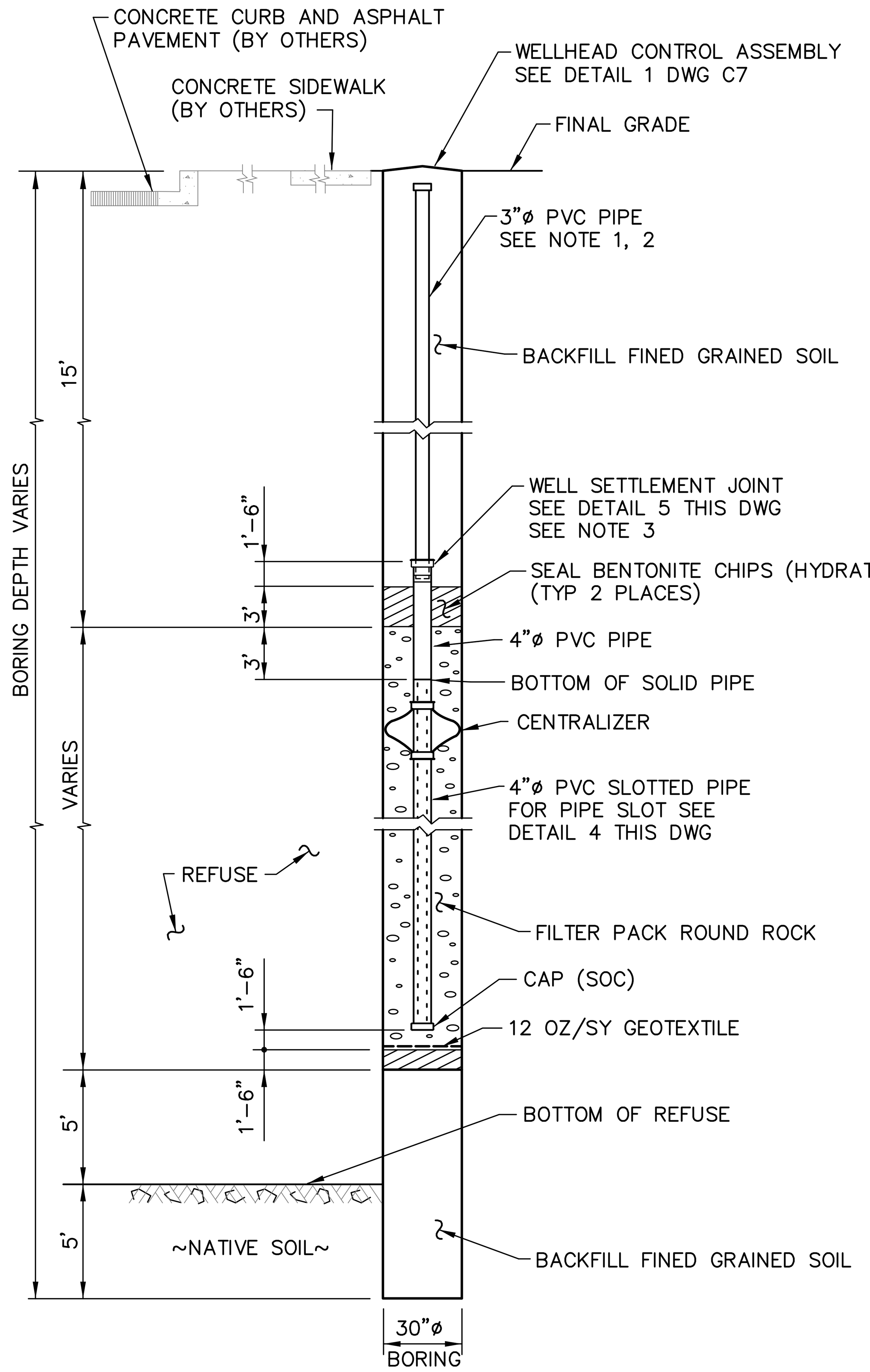
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: C5
DSN. BY: TAM	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

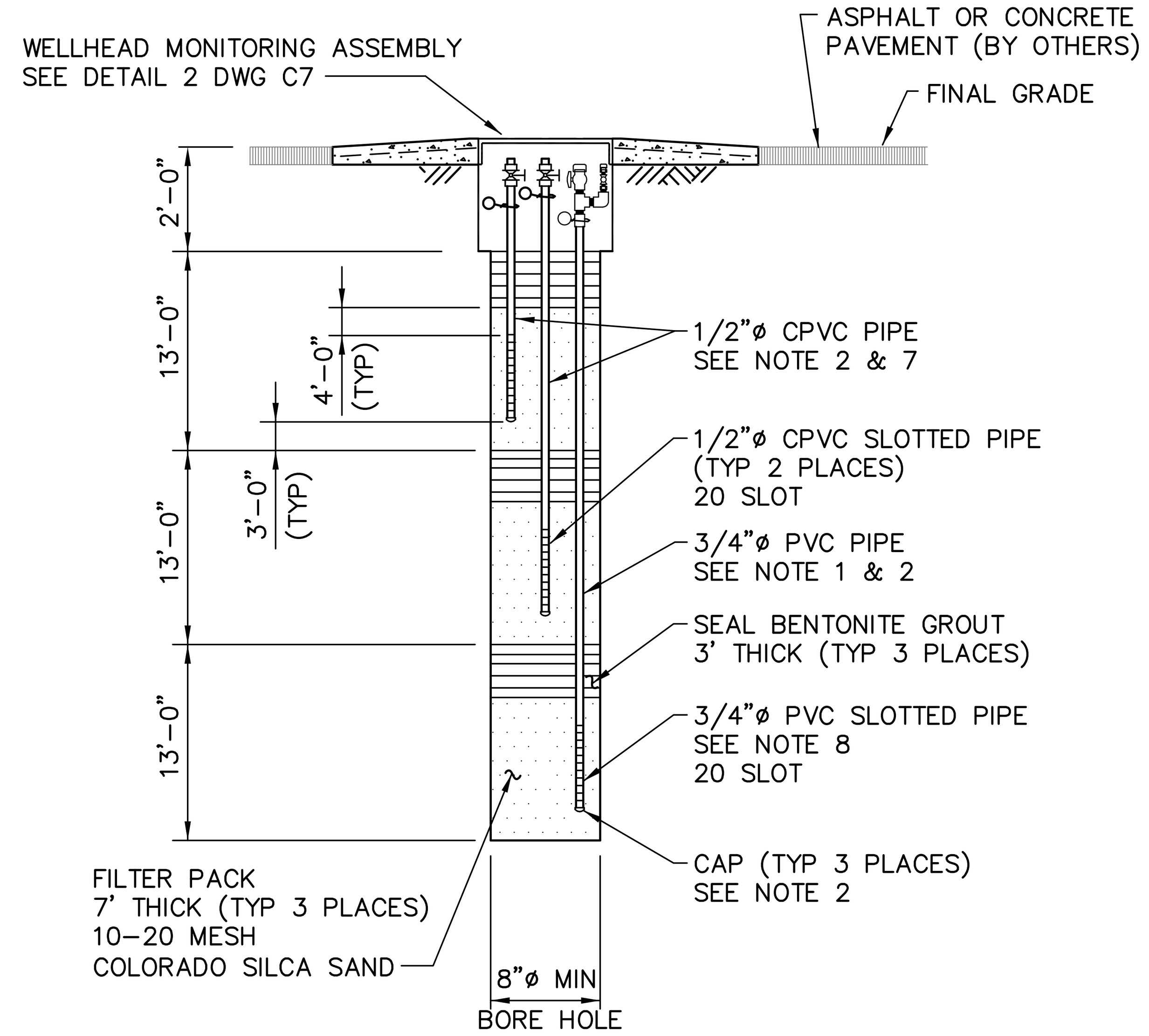
SCALE: AS SHOWN

DRAWING NO. **C5**



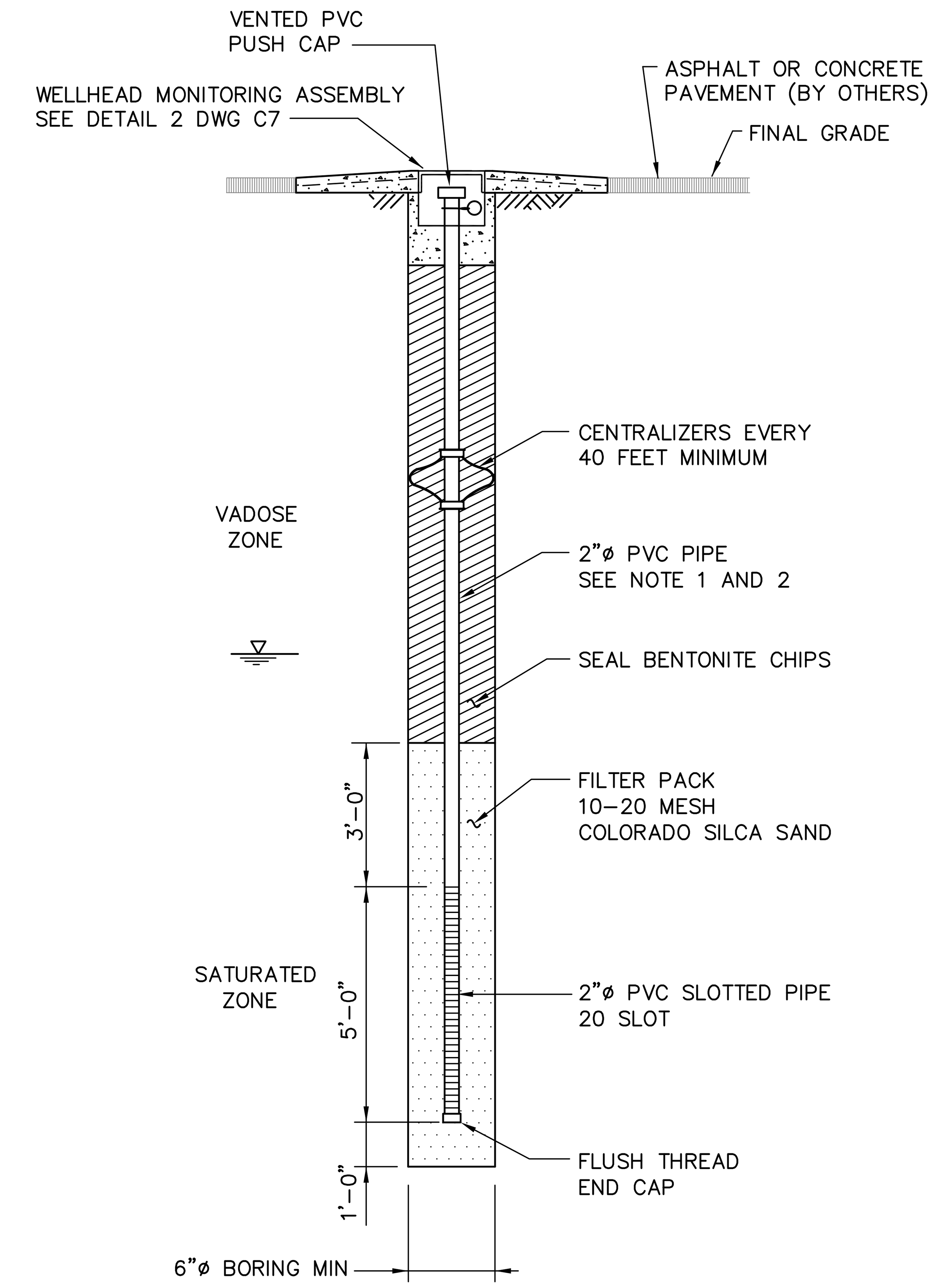
IN-REFUSE GAS EXTRACTION WELL

DETAIL 1
SCALE: NTS



SUBSURFACE GAS MONITORING WELL (GAS PROBE)

DETAIL 2
SCALE: NTS



GROUNDWATER MONITORING WELL

DETAIL 3
SCALE: NTS

NOTES:

1. ALL PVC PIPE SHALL BE SCHEDULE 80 UNLESS NOTED OTHERWISE.
2. ALL JOINTS SHALL BE SQUARE FORM-FLUSH JOINT THREADS WITH VITON -O- RINGS.
3. SECTION OF SOLID PIPE BELOW EACH SETTLEMENT JOINT SHALL HAVE A LENGTH OF 7'-6".
4. SIX SS SELF-TAPPING SCREWS SHALL BE SPACED EQUAL DISTANCE AROUND PIPE CIRCUMFERENCE AT EACH LOCATION.
5. SCREWS SHALL BE OF SUFFICIENT LENGTH FOR JOINT STRENGTH AND ALLOW FREE MOVEMENT OF THE SMALLER DIAMETER PIPE.
6. SCREWS SHALL EXTEND THROUGH PIPE WALL NOT MORE THAN 1/16 INCH. HEAD OF SCREW SHALL ALLOW FREE MOVEMENT OF PIPE.
7. ALL CPVC PIPE SHALL BE SDR 11.0 COPPER PIPE SIZE, UNLESS NOTED OTHERWISE.
8. DEEPEST PIPE FOR GAS PROBES SHALL BE 3/4"ø PVC. ALL OTHER GAS PROBE PIPES SHALL BE 1/2"ø CPVC SDR 11.0.

RECORD DRAWING

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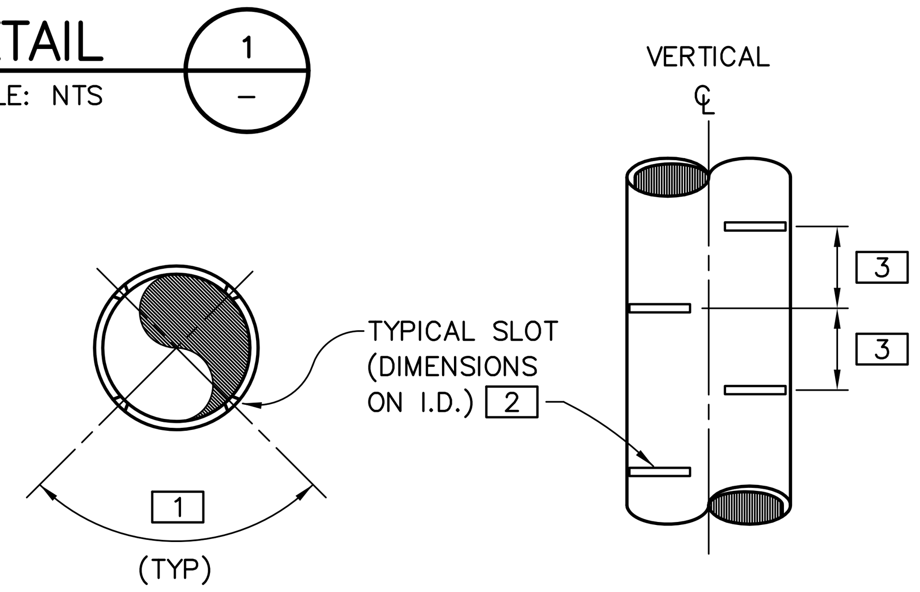
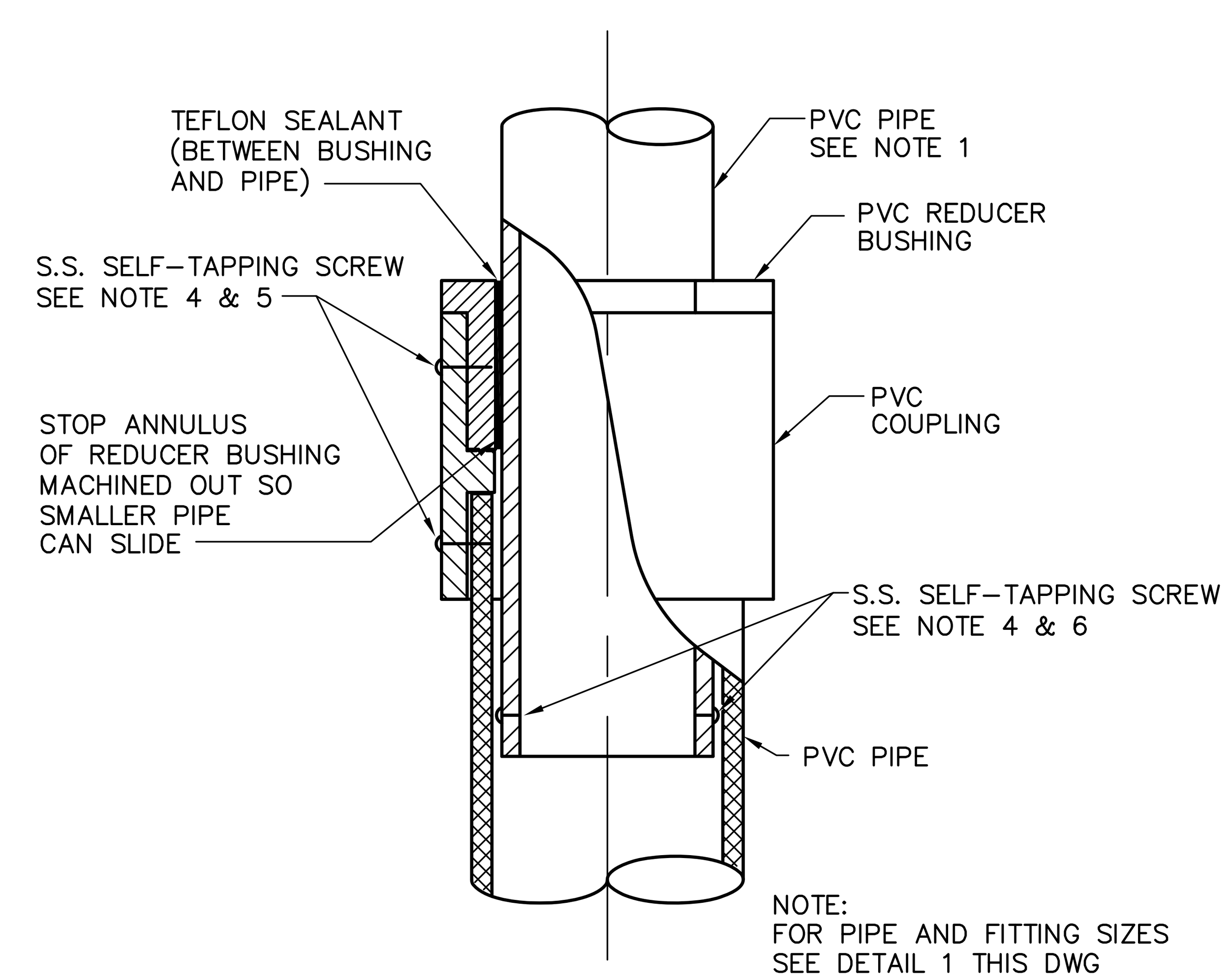


VERTICAL PIPE SLOT SCHEDULE			
PIPE DIA	SLOT ORIENTATION 1	SLOT DIM 2	SLOT SPACING O.C. 3
4"	90°	1/4" x 1"	1"

VERTICAL SLOTTED PIPE

DETAIL 4
SCALE: NTS



NOTE:
FOR PIPE AND FITTING SIZES SEE DETAIL 1 THIS DWG

WELL SETTLEMENT JOINT

DETAIL 5
SCALE: NTS

NO.	REVISION	DATE
A	ISSUED FOR REVIEW	5/22/06
B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE: WELL DETAILS

PROJECT TITLE: LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

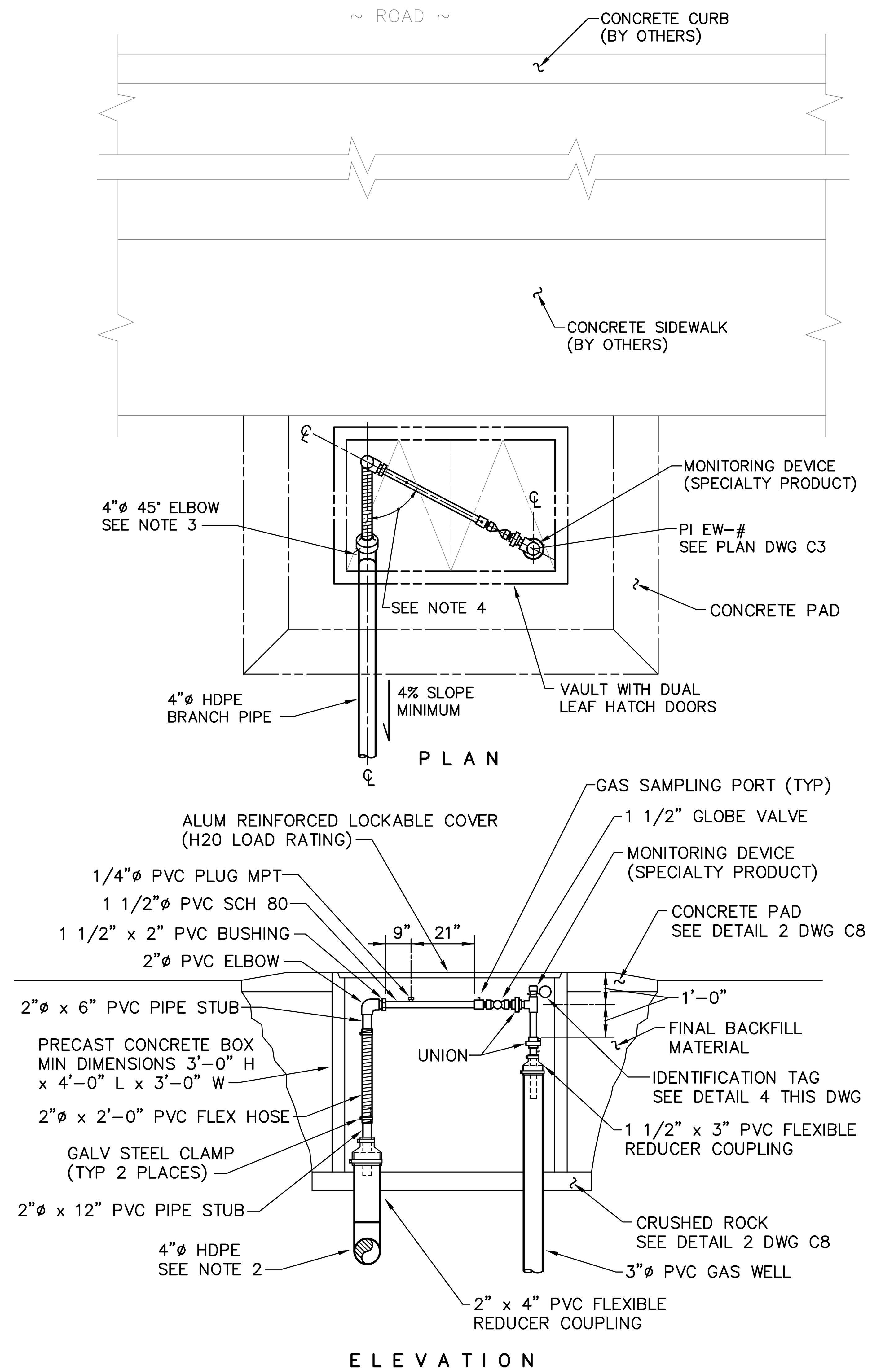
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00 | DWN. BY: LEL | ACAD FILE: C6
DSN. BY: TAM | CHK. BY: TAM | APP. BY: EEC

DATE: MAY 2006

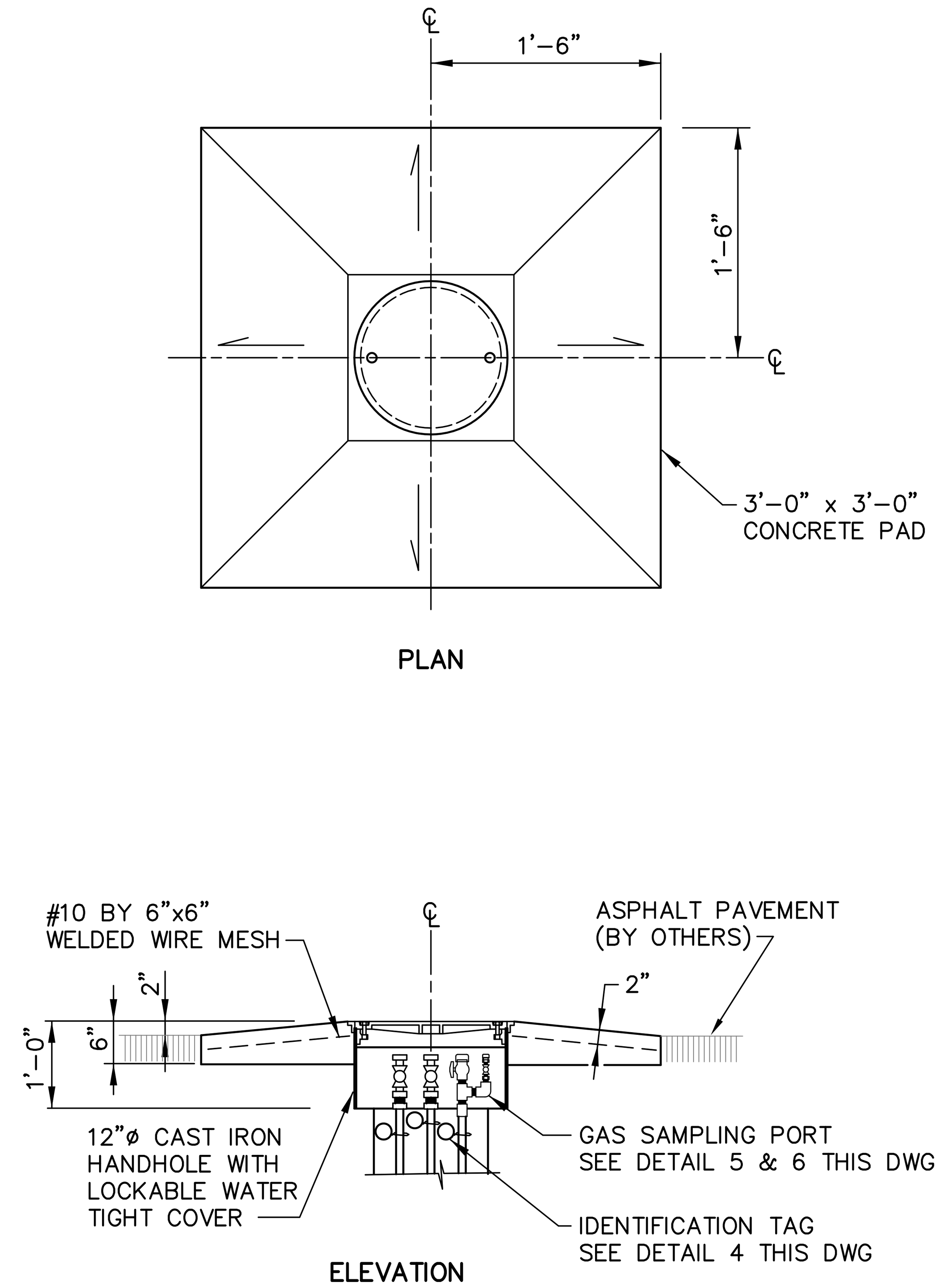
SCALE: AS SHOWN

DRAWING NO. C6



WELL HEAD CONTROL ASSEMBLY

DETAIL 1 / –
SCALE: NTS

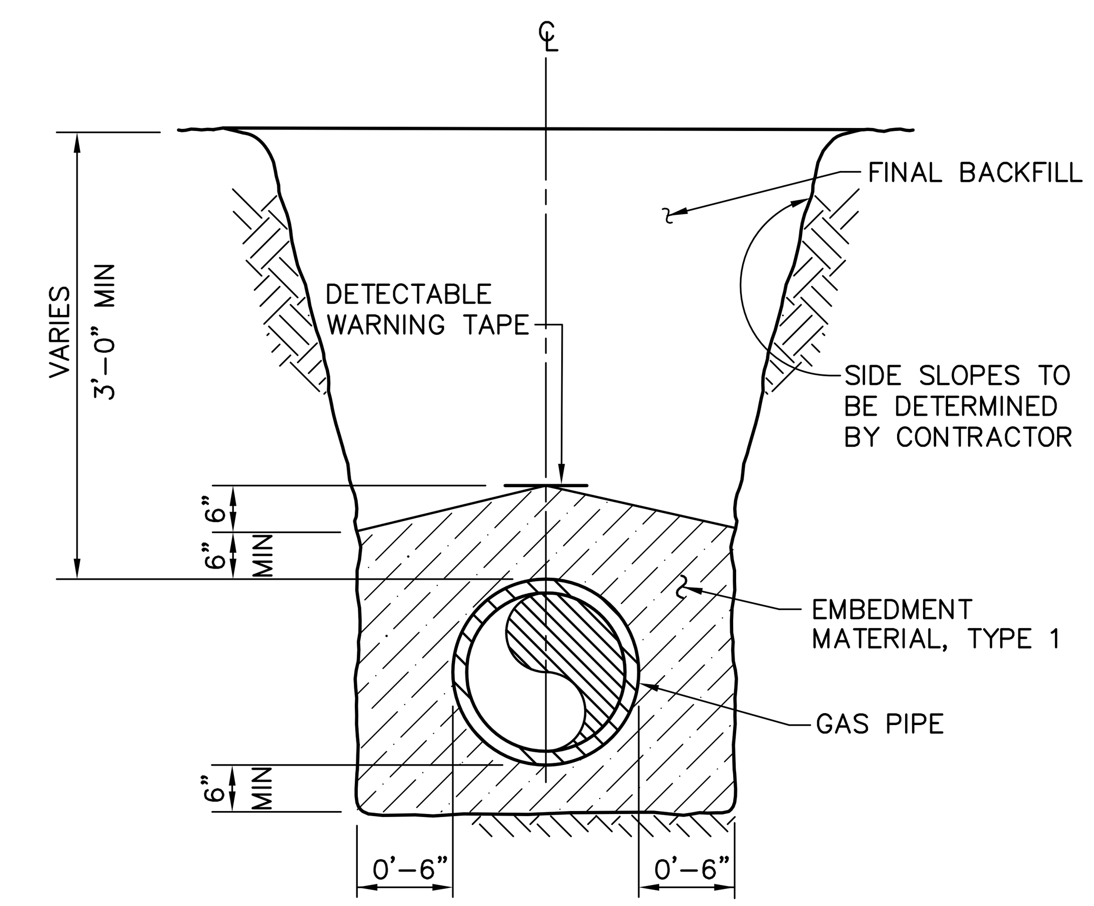


WELLHEAD MONITORING ASSEMBLY

DETAIL 2 / –
SCALE: NTS

NOTES:

1. ALL PVC PIPE SHALL BE SCHEDULE 80 UNLESS NOTED OTHERWISE.
2. ALL HDPE PIPE SHALL BE SDR 17.0 UNLESS NOTED OTHERWISE.
3. ALL HDPE ELBOWS SHALL BE LONG RADIUS UNLESS NOTED OTHERWISE.
4. ORIENTATION VARIES SEE PLAN.
5. ALL THREADED FITTING (IPT) SHALL HAVE TEFLON SEALANT.
6. ALL CPVC PIPE SHALL BE SDR 11.0 COPPER SIZE UNLESS NOTED OTHERWISE.



(FOR GAS AND CONDENSATE CONVEYANCE)

PIPE TRENCH – TYPE 1

DETAIL 7 / –
SCALE: NTS

RECORD DRAWING

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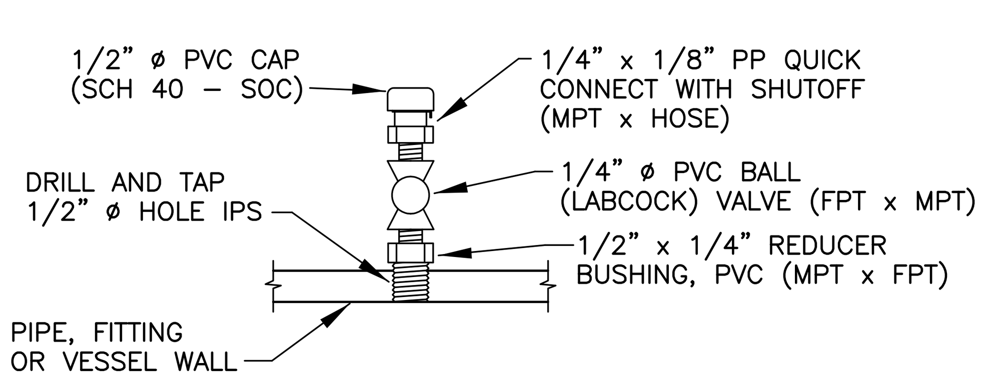
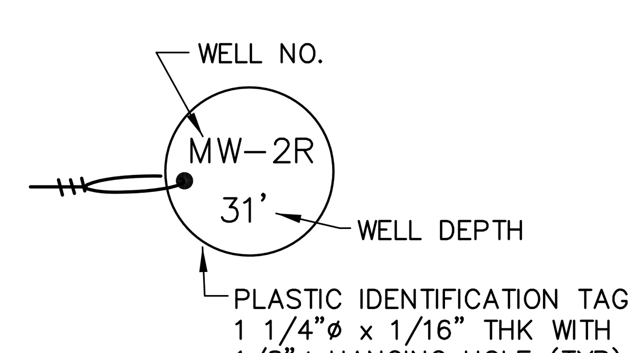


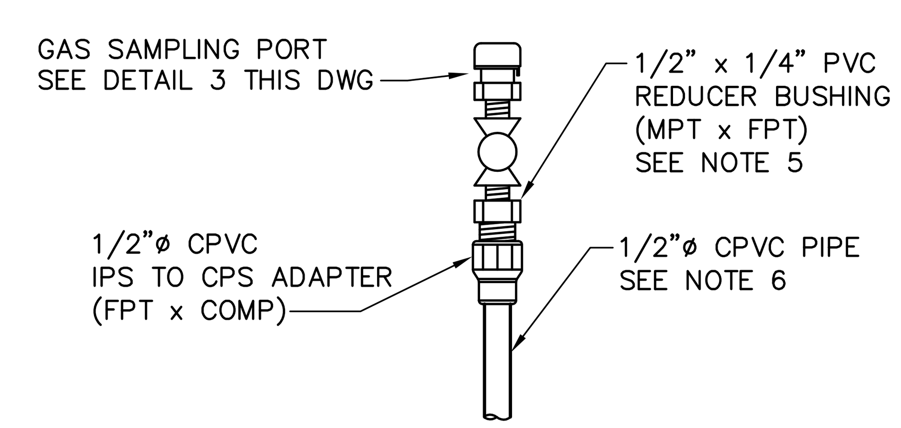
GAS SAMPLING PORT

DETAIL 3 / –
SCALE: NTS



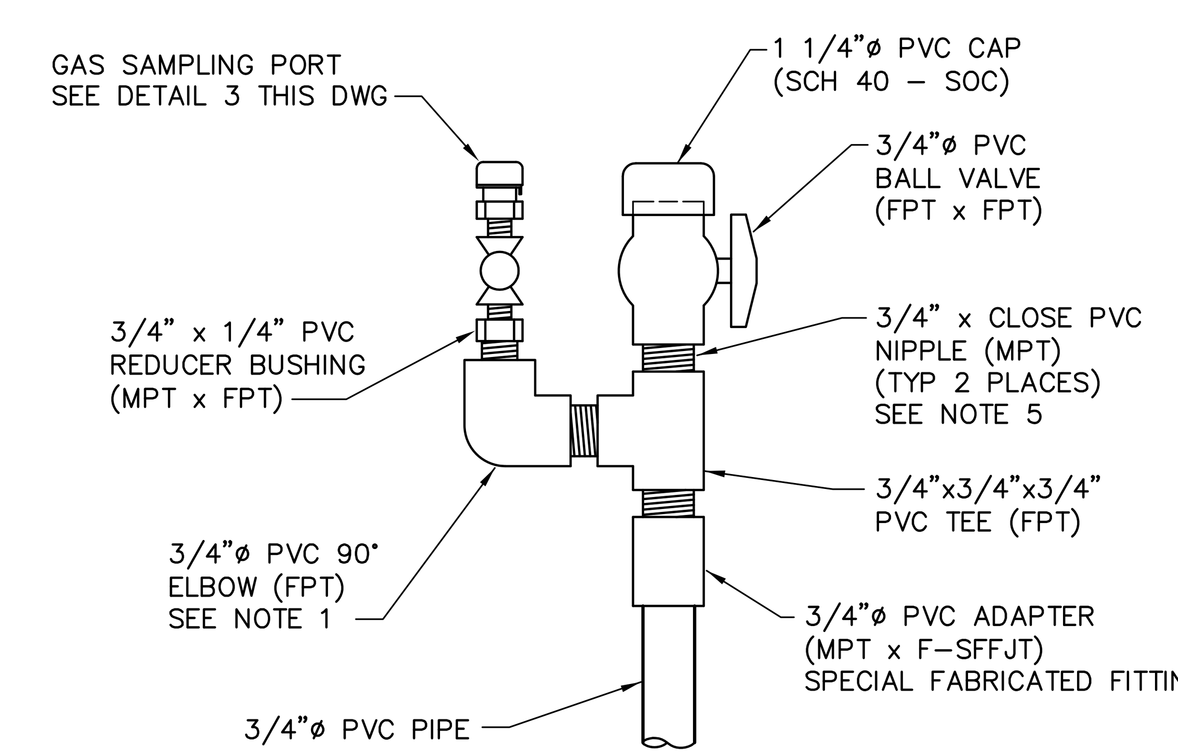
IDENTIFICATION TAG

DETAIL 4 / –
SCALE: NTS



GAS SAMPLING PORT CONNECTION (TYPE 1)

DETAIL 5 / –
SCALE: NTS



GAS SAMPLING PORT CONNECTION (TYPE 2)

DETAIL 6 / –
SCALE: NTS

NO.	REVISION	DATE
A	ISSUED FOR REVIEW	5/22/06
B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE
WELL HEAD DETAILS

PROJECT TITLE
LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL

THE BOEING COMPANY

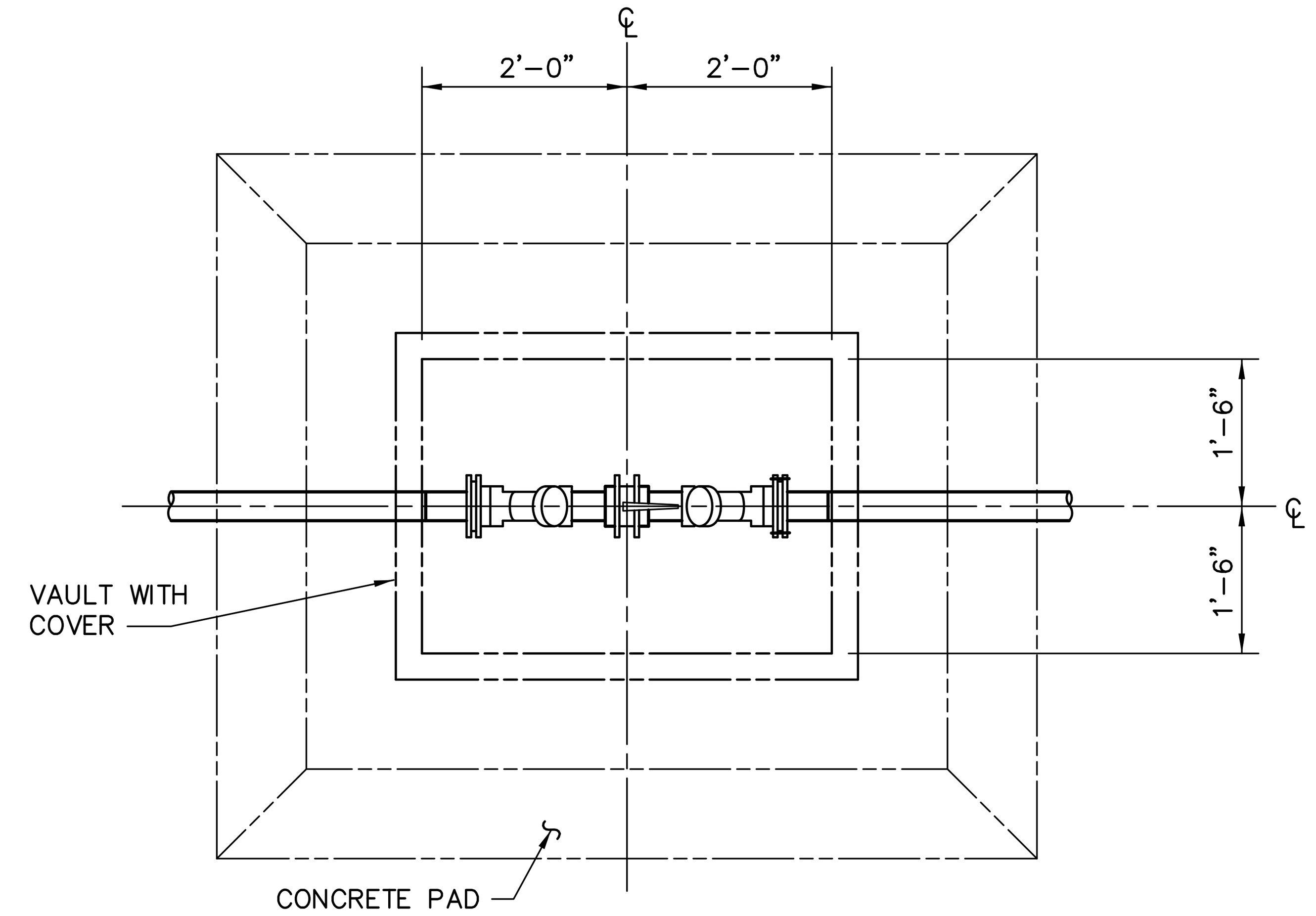
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00 | DWN. BY: LEL | ACAD FILE: C7
DSN. BY: TAM | CHK. BY: TAM | APP. BY: EEC

DATE: MAY 2006

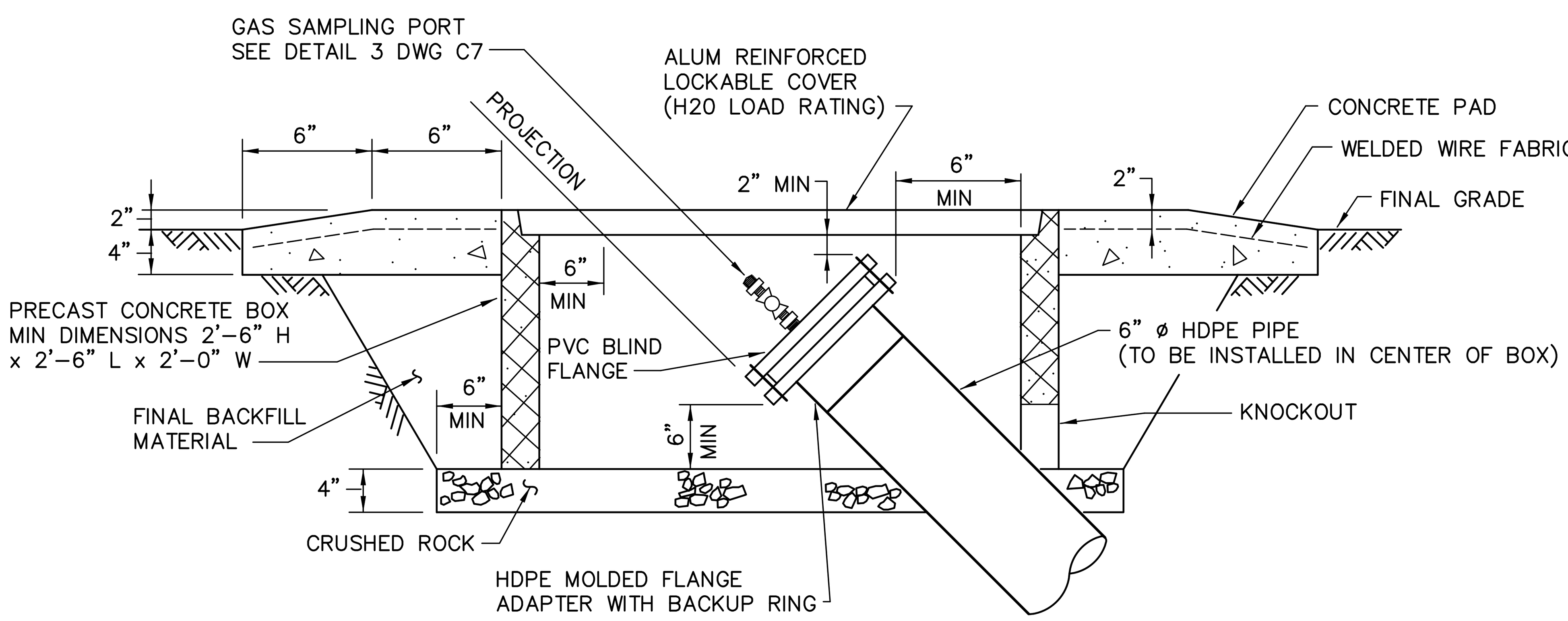
SCALE: AS SHOWN

DRAWING NO.
C7



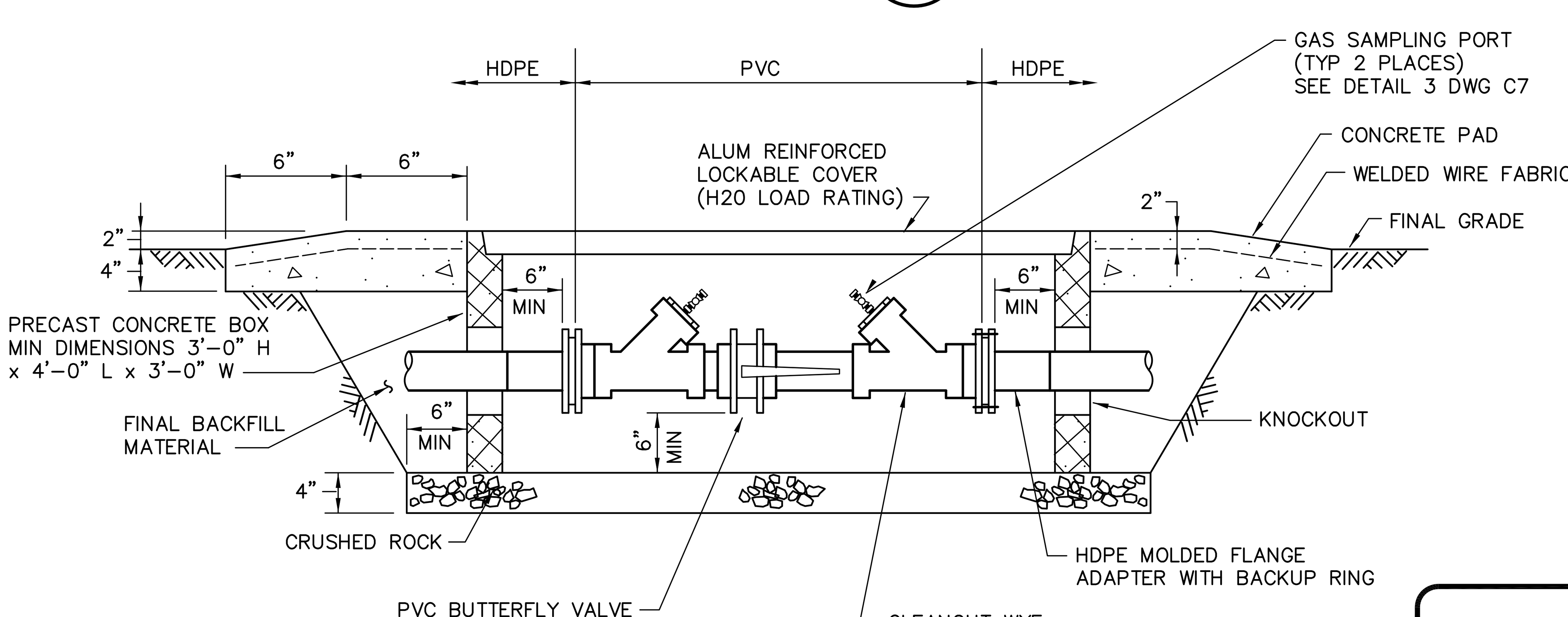
CLEANOUT ACCESS PORT PLAN – TYPE 2 (TYPE 1 SIM)

DETAIL 1 / –
SCALE: NTS



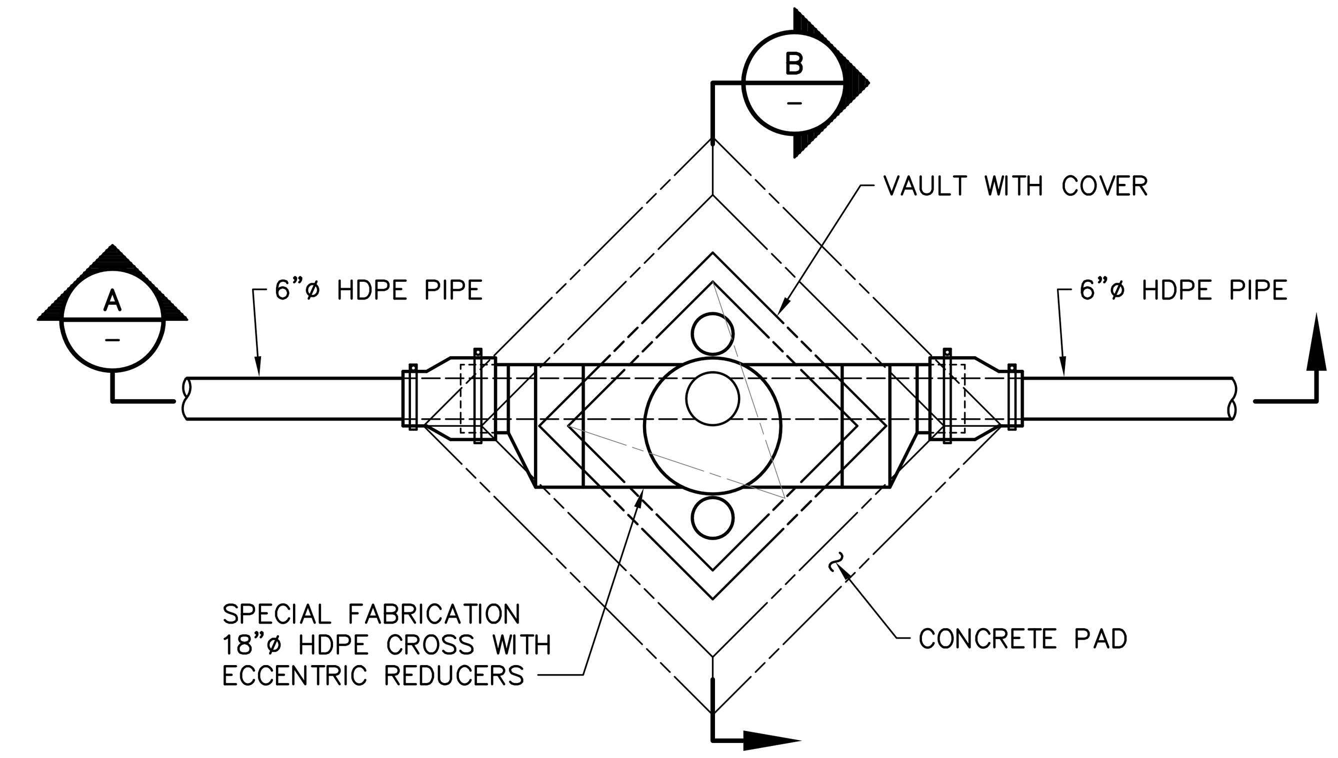
CLEANOUT ACCESS PORT (TYPE 1)

DETAIL 2 / –
SCALE: NTS



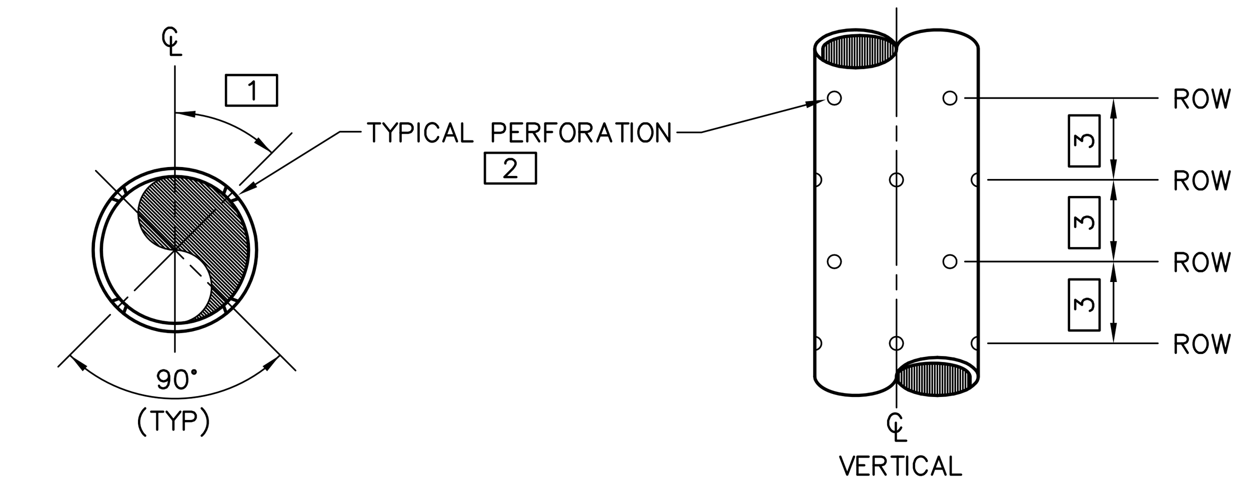
CLEANOUT ACCESS PORT (TYPE 2)

DETAIL 3 / –
SCALE: NTS



CONDENSATE DRAIN TRAP

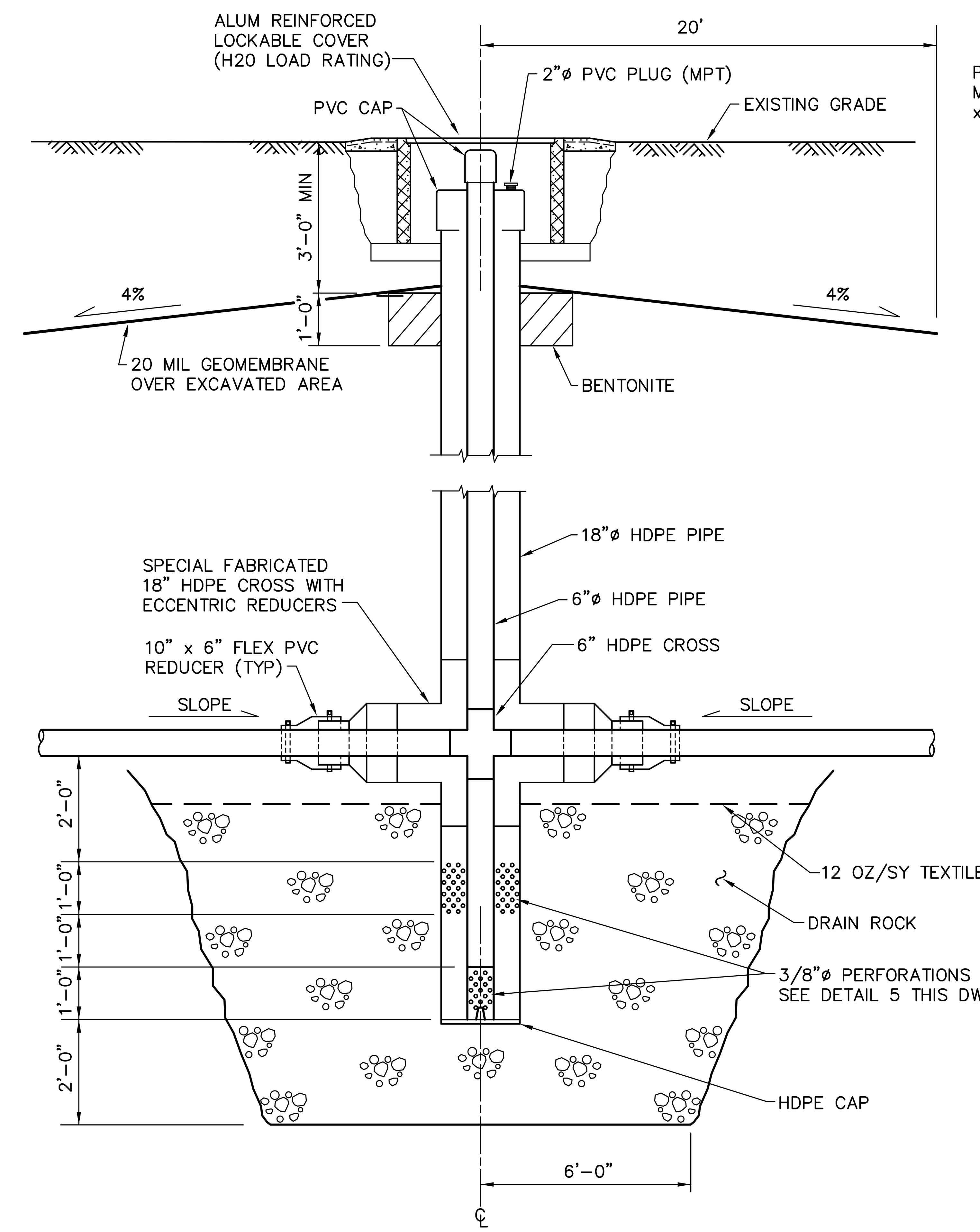
DETAIL 4 / –
SCALE: NTS



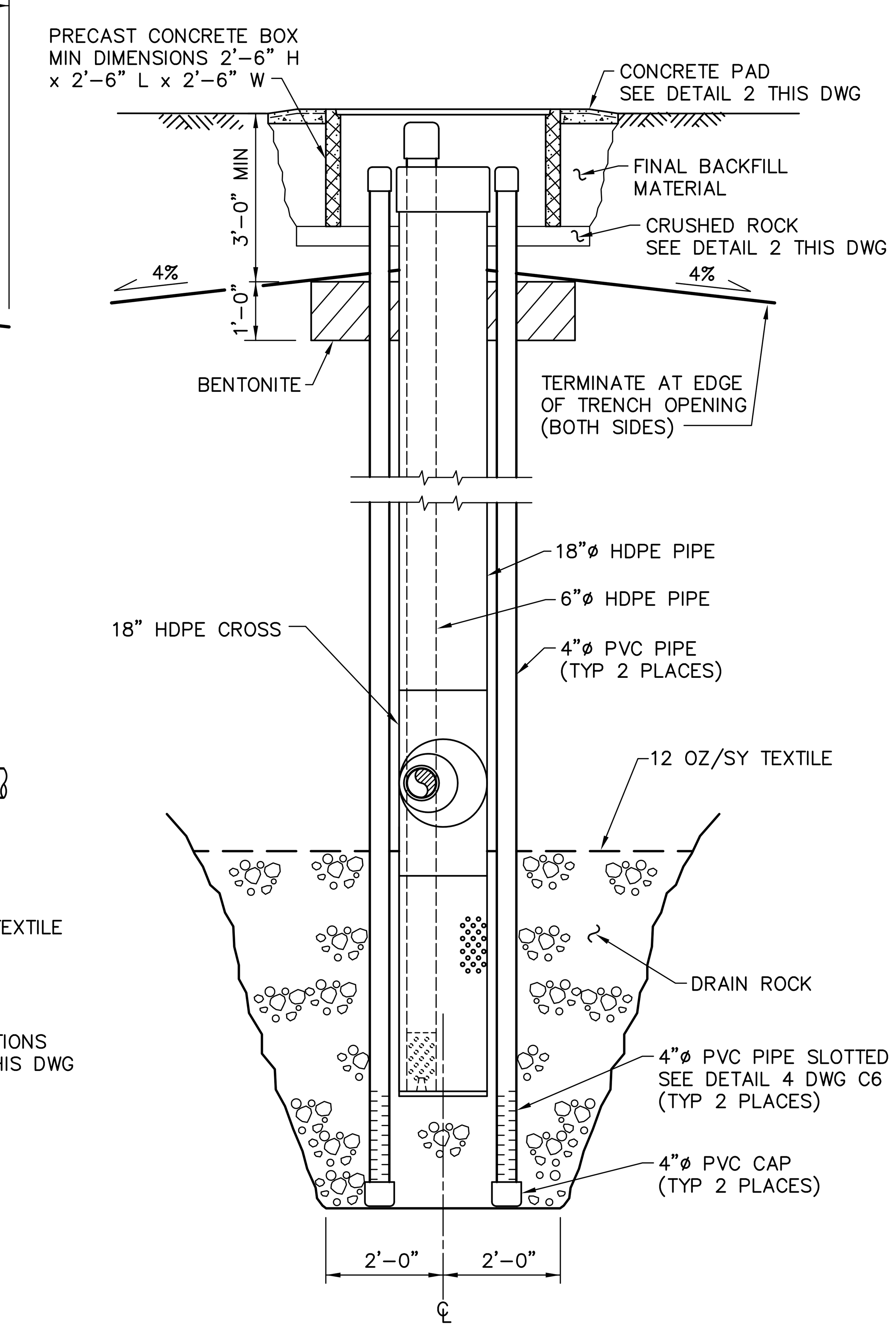
HDPE PERFORATION SCHEDULE				
PIPE DIA	ORIENTATION (FROM VERT ℄) 1		DIM 2	SPACING O.C. 3
	ROWS 1 & 3	ROWS 2 & 4		
6 IN	45°	90°	1/2" DIA	3 IN
18 IN	45°	90°	1/2" DIA	3 IN

PERFORATED PIPE

DETAIL 5 / –
NO SCALE



SECTION A / –
SCALE: NTS



SECTION B / –
SCALE: NTS

RECORD DRAWING

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NOTES:

1. ALL HDPE PIPE SHALL BE SDR 17.0 UNLESS NOTED OTHERWISE.
2. ALL PVC PIPE SHALL BE SCHEDULE 80 UNLESS NOTED OTHERWISE.

NO.	REVISION	DATE
A	ISSUED FOR REVIEW	5/22/06
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C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE: **GAS AND CONDENSATE CONVEYANCE PIPE DETAILS**

PROJECT TITLE: **LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL**

THE BOEING COMPANY

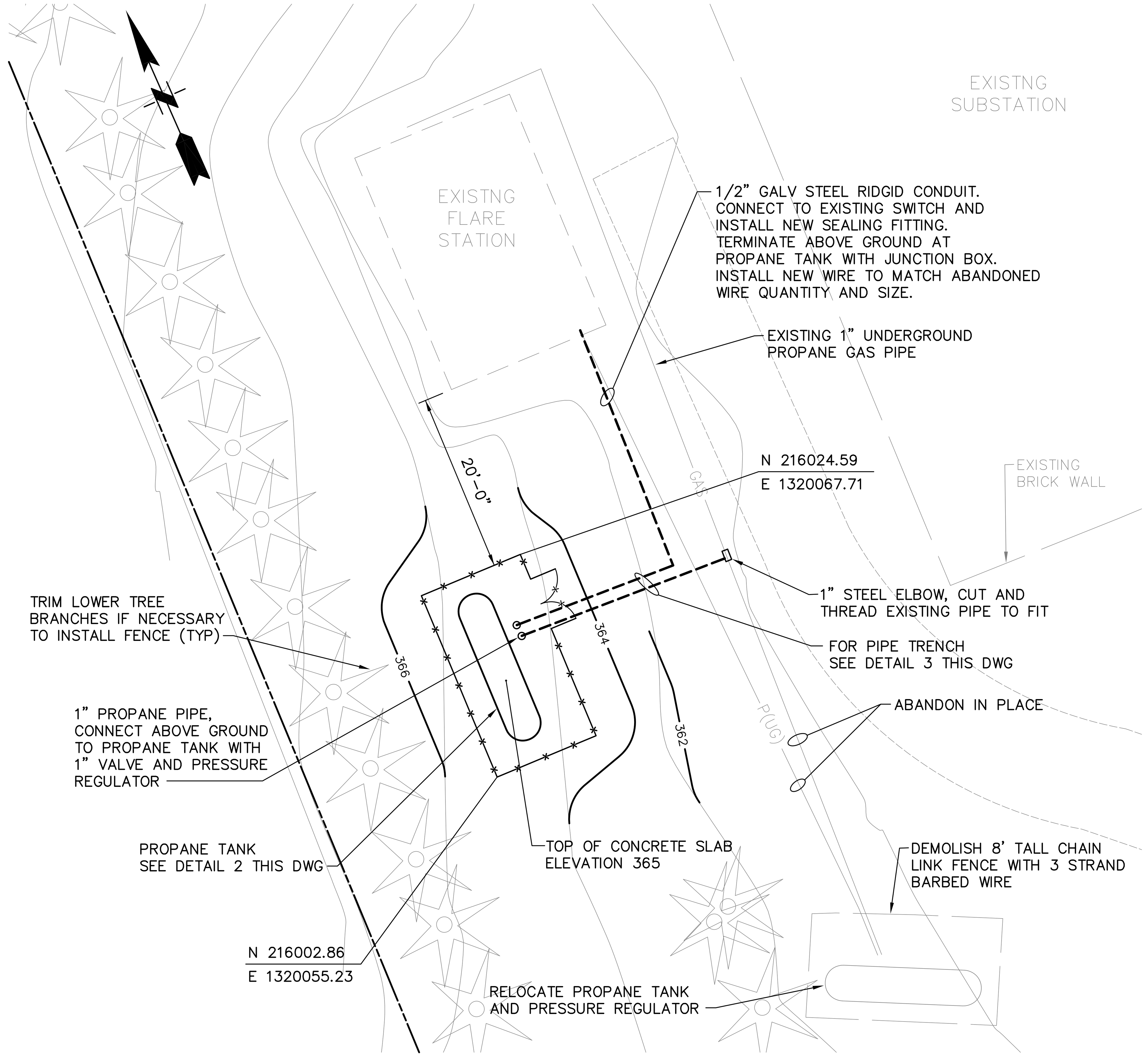
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

PROJ. NO. 04206007.00	DWN. BY: LEL	ACAD FILE: C8
DSN. BY: TAM	CHK. BY: TAM	APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

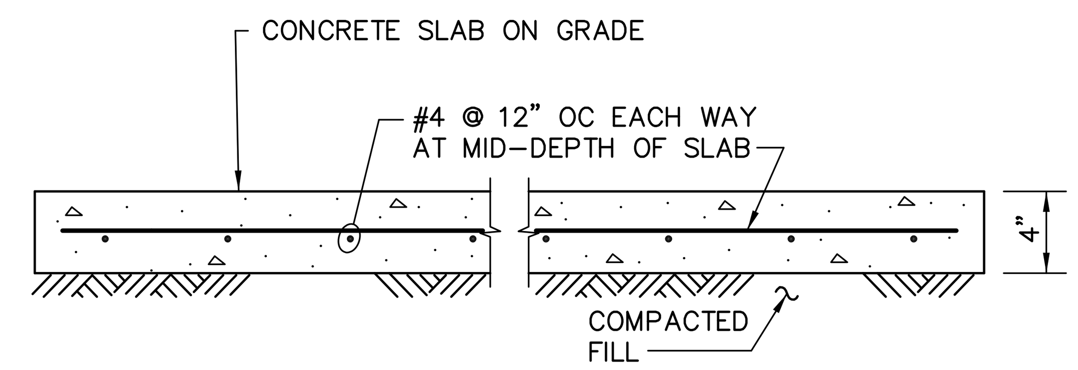
DRAWING NO. **C8**



FLARE STATION PROPANE TANK RELOCATION

PIPING PLAN

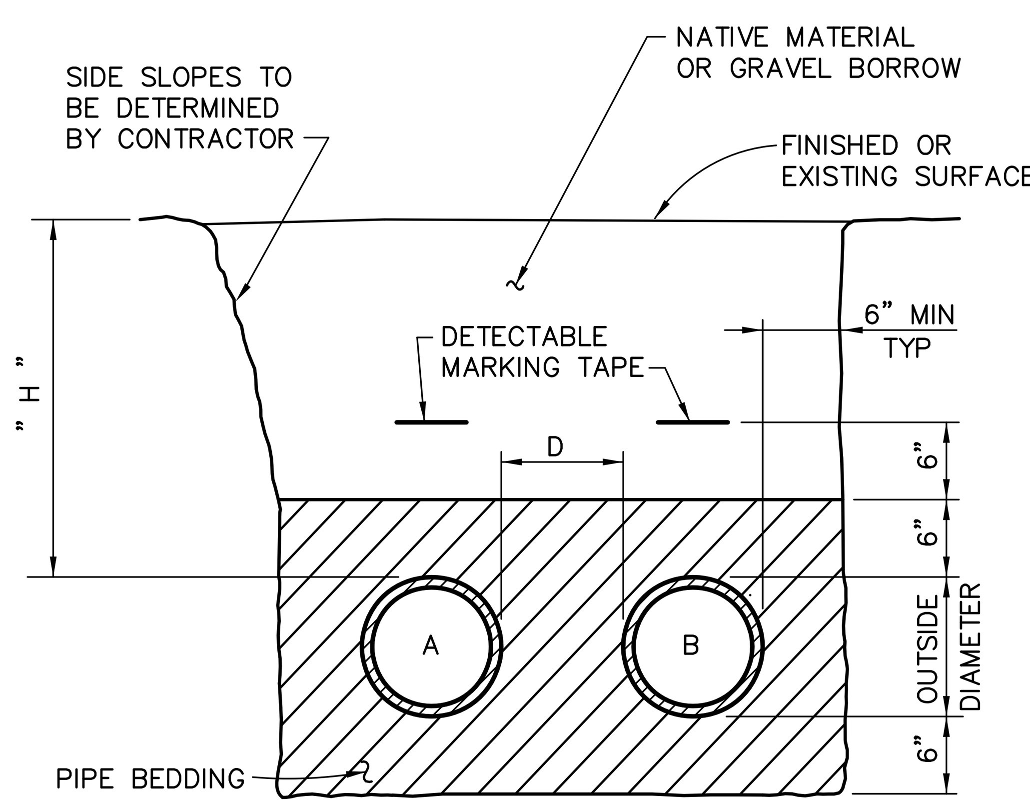
SCALE: 1" = 10'



CONCRETE SLAB

DETAIL 1 –

SCALE: NTS



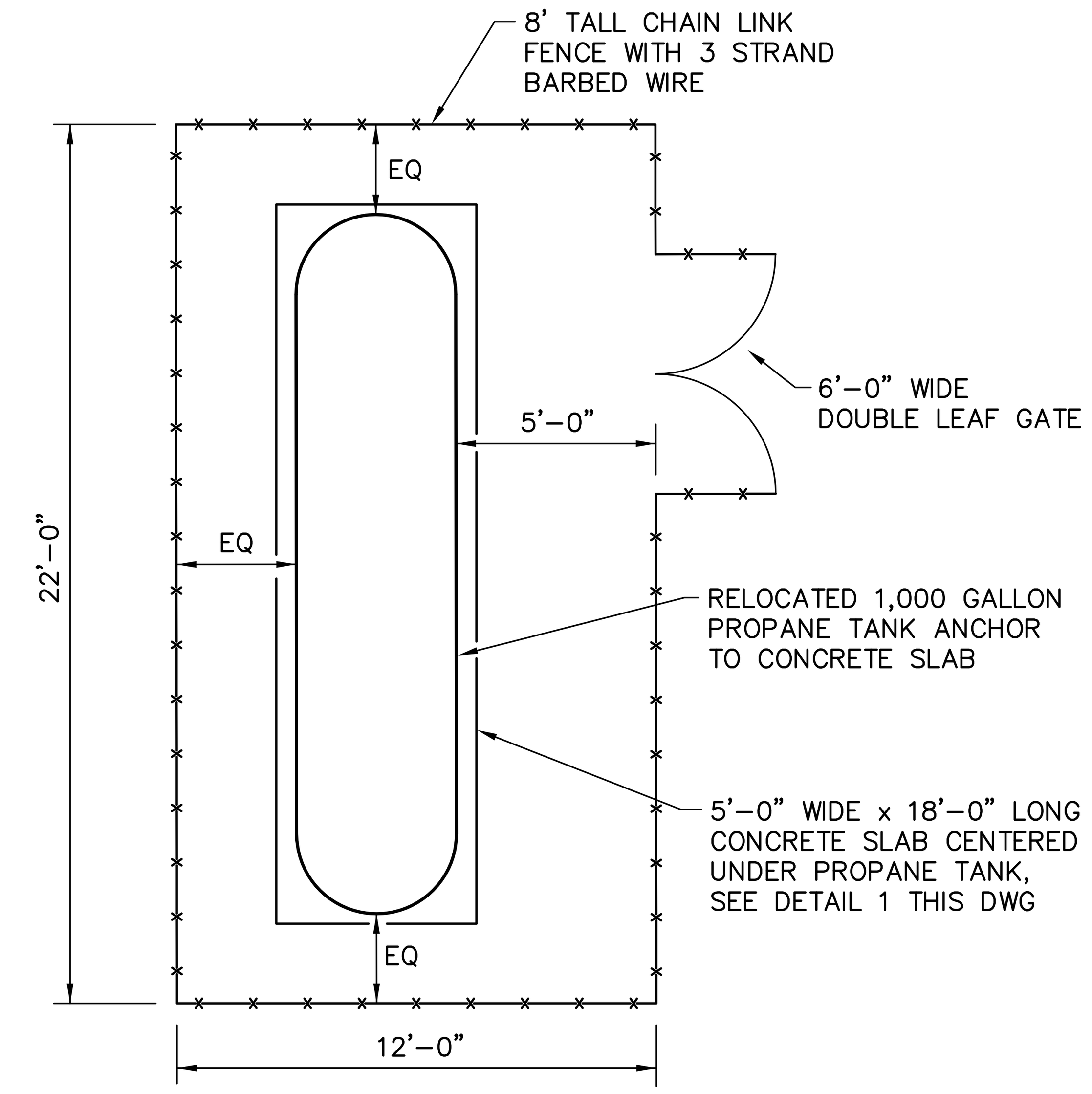
PIPE TRENCH – TYPE 2

DETAIL 3 –

NO SCALE

PIPE TYPE	MINIMUM BURIAL DEPTH "H" (FT)
PROPANE	2
ELECTRIC	2

PIPE A	PIPE B	MINIMUM SPACING "D" (FT)
PROPANE	ELECTRIC	2



PROPANE TANK

DETAIL 2 –

SCALE: 1/4" = 1'-0"

RECORD DRAWING

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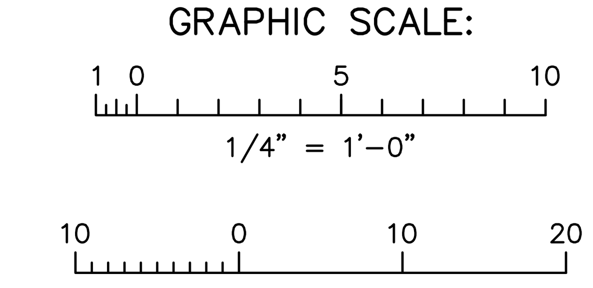
GRAPHIC SCALE:



NO.	REVISION	DATE
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B	ISSUED FOR AGENCY REVIEW	6/06/06
C	ISSUED FOR BIDDING	6/29/06
D	RECORD DRAWING	10/31/08

SHEET TITLE **PROPANE TANK RELOCATION PLAN AND DETAILS**

PROJECT TITLE **LANDFILL GAS CONTROL SYSTEM MODIFICATIONS EASTGATE LANDFILL**

THE BOEING COMPANY

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS, INC.

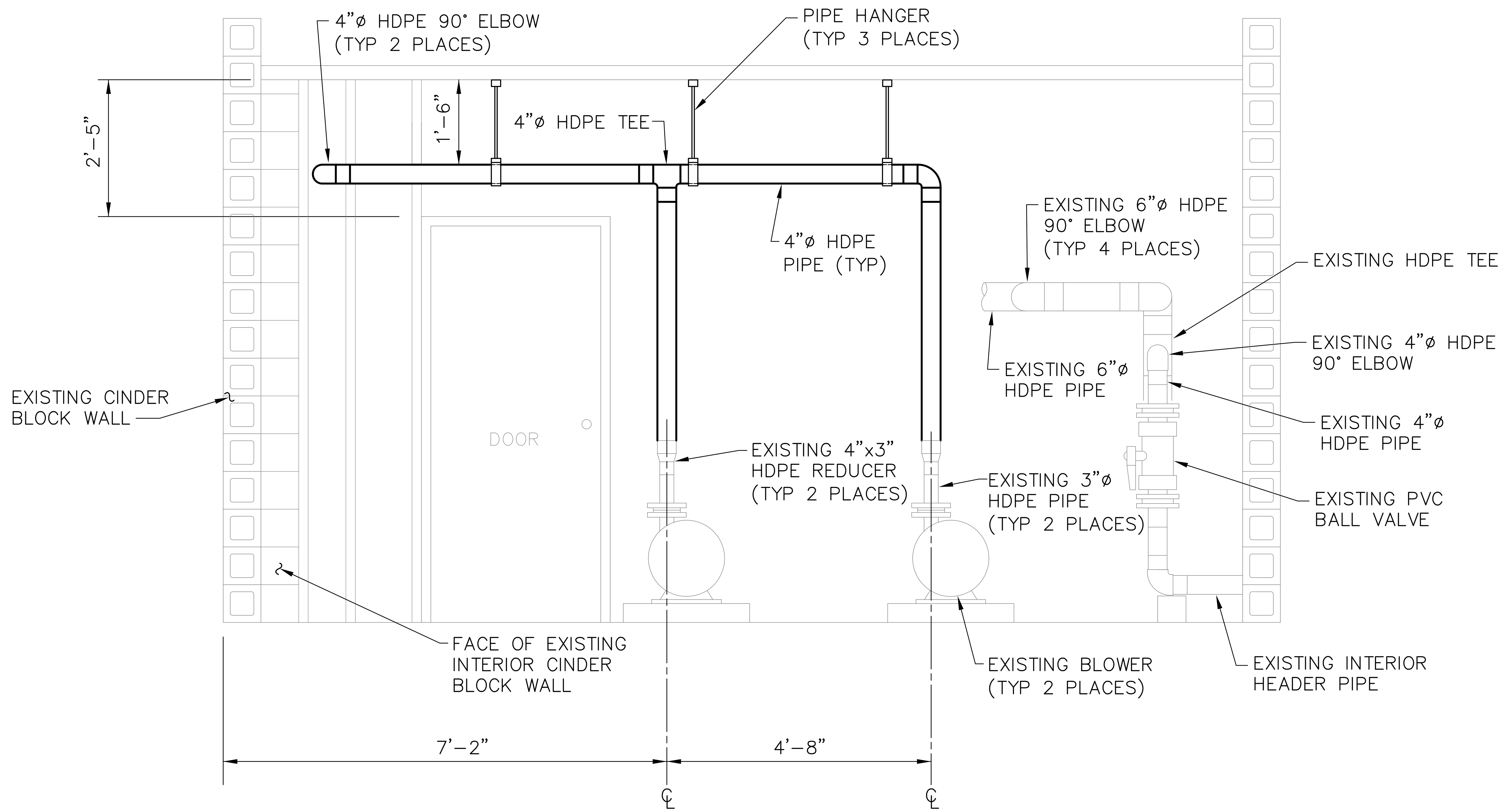
PROJ. NO. 04206007.00 | DWN. BY: LEL | ACAD FILE: C9
DSN. BY: JEH | CHK. BY: TAM | APP. BY: EEC

DATE: MAY 2006

SCALE: AS SHOWN

DRAWING NO. **C9**

Exhibit 3



NOTE: INLET PIPES TO BLOWER NOT SHOWN.

NO.	REVISION	DATE
1	ISSUED FOR REVIEW	09-28-10
2	ISSUED FOR CONSTRUCTION	09-21-11

SHEET TITLE: ELEVATION VIEW INSIDE

PROJECT TITLE: FLARE STATION UPGRADE EASTGATE LANDFILL

CITY OF BELLEVUE

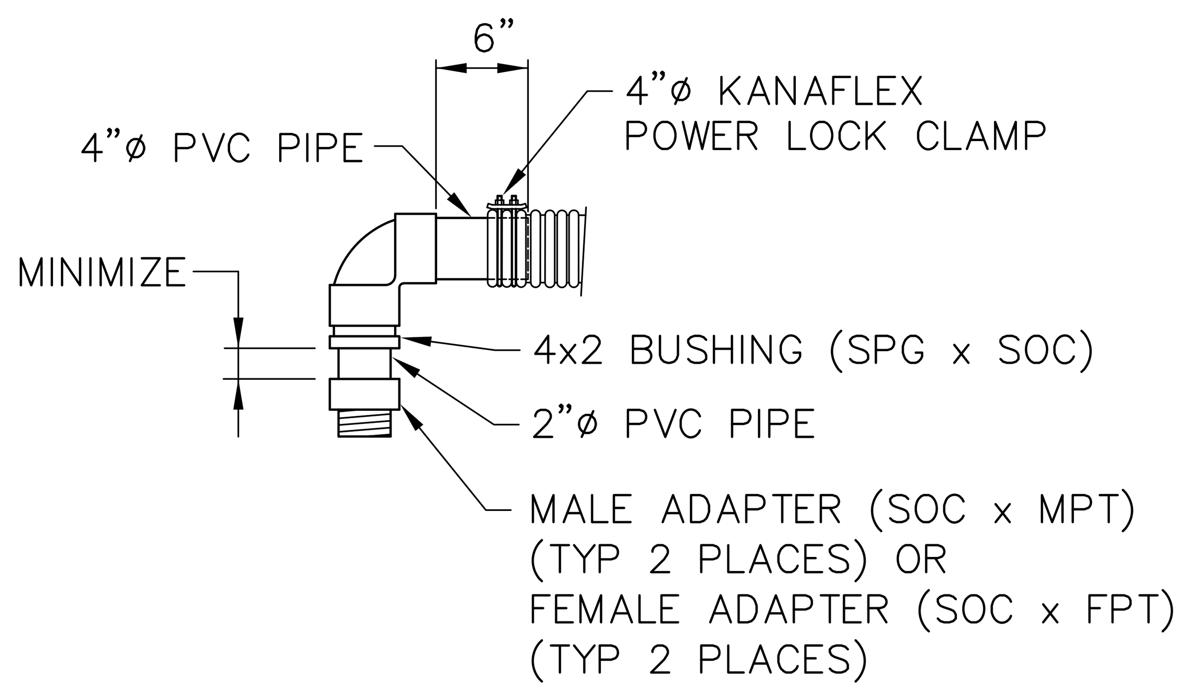
SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJ. NO. 04210016.00 | DSN. BY: EMS | DWN. BY: LEL | CHK. BY: TAM | ACAD FILE: C1-2 | APP. BY: JMR

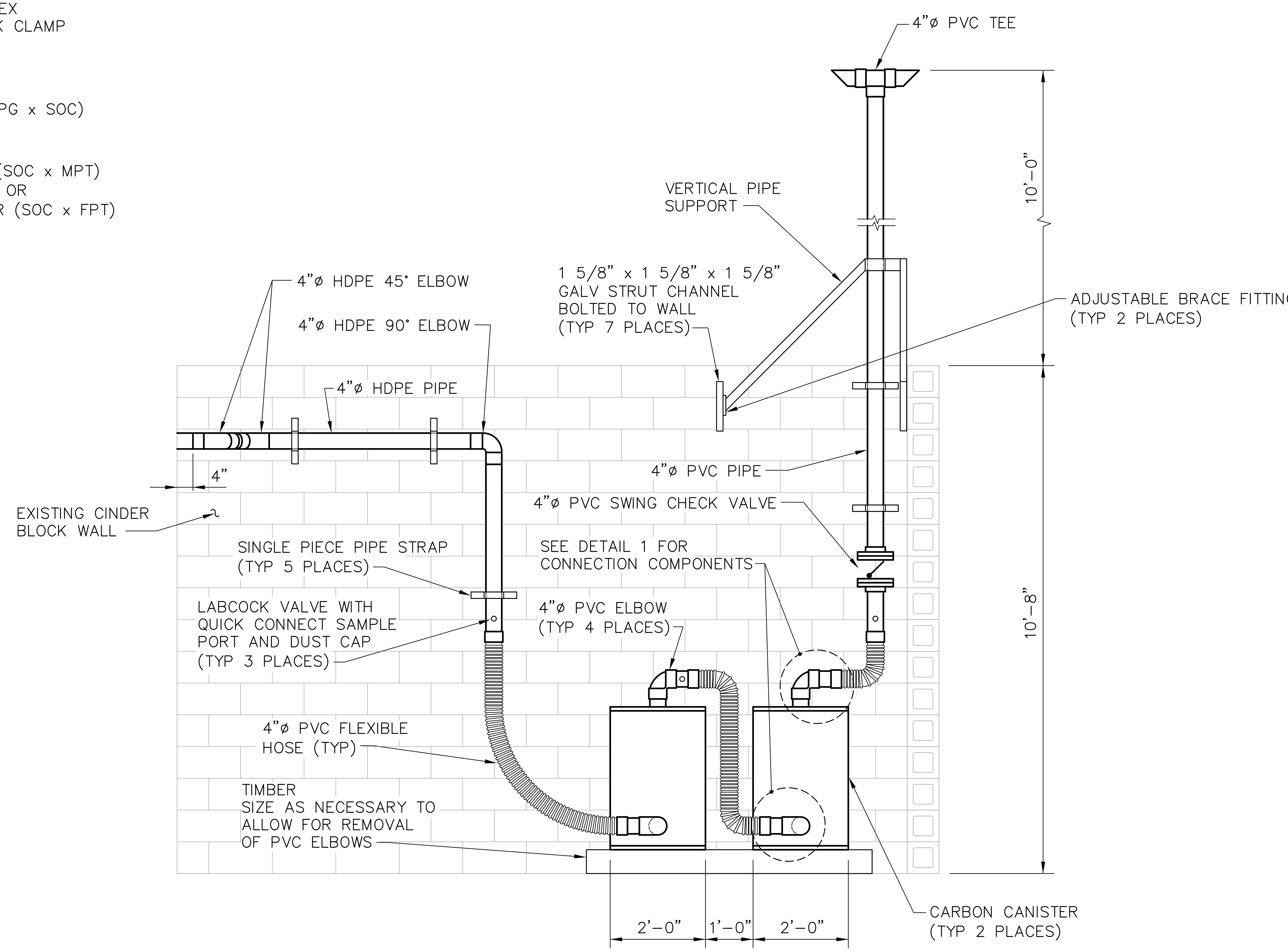
DATE: SEPTEMBER 2011

SCALE: 3/4" = 1'-0" (22x34 SHEET)

DRAWING NO. C1



DETAIL 1
NO SCALE



NO.	REVISION	DATE
1	ISSUED FOR REVIEW	09-28-10
2	ISSUED FOR CONSTRUCTION	09-21-11

SHEET TITLE: ELEVATION VIEW OUTSIDE

PROJECT TITLE: FLARE STATION UPGRADE EASTGATE LANDFILL

CITY OF BELLEVUE

SCS ENGINEERS
Environmental Consultants and Contractors
2405 140th Avenue NE, Suite 107
Bellevue, Washington 98005
(425) 746-4600 FAX: (425) 746-6747

PROJ. NO. 04210016.00 | DWN. BY: LEL | ACAD FILE: C1-2
DSN. BY: EMS | CHK. BY: TAM | APP. BY: JMR

DATE: SEPTEMBER 2011

SCALE: 3/4" = 1'-0" (22x34 SHEET)

DRAWING NO.
C2

Exhibit 4

EXHIBIT "B"
BOEING CAMPUS-PROPERTY INCLUDING NE PARKING LOT

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 24 NORTH, RANGE 5 EAST OF THE WILLAMETTE MERIDIAN IN KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 11; THENCE ALONG THE SOUTH LINE THEREOF SOUTH 88°37'24" EAST 287.87 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID SOUTH LINE SOUTH 88°37'24" EAST 377.97 FEET TO THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE ALONG THE EAST LINE THEREOF NORTH 1°28'15" EAST 116.64 FEET; THENCE LEAVING SAID EAST LINE NORTH 65°58'27" EAST 276.97 FEET TO A POINT BEING 250.00 FEET EASTERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE WEST LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 11, AND ALSO BEING 430.00 FEET SOUTHERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE NORTH LINE OF THE SAME SUBDIVISION;
THENCE PARALLEL WITH SAID WEST LINE NORTH 1°28'15" EAST 430.00 FEET TO THE NORTH LINE OF SAID SUBDIVISION; THENCE ALONG SAID NORTH LINE SOUTH 88°37'01" EAST 416.40 FEET TO THE NORTHEAST CORNER THEREOF; THENCE ALONG THE EASTERLY PROLONGATION OF SAID NORTH LINE SOUTH 88°37'01" EAST 83.37 FEET; THENCE SOUTH 2°28'22" WEST 10.94 FEET; THENCE SOUTH 5°53'15" WEST 10.98 FEET; THENCE SOUTH 2°47'53" WEST 83.50 FEET TO A POINT OF CURVATURE OF A 175.35 FOOT RADIUS CURVE TO THE RIGHT; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 32°10'44", SUBTENDED BY AN ARC LENGTH OF 98.48 FEET TO A POINT OF TANGENCY; THENCE SOUTH 34°58'37" WEST 20.50 FEET; THENCE PERPENDICULAR SOUTH 55°01'23" EAST 46.05 FEET; THENCE SOUTH 35°12'43" WEST 519.07 FEET TO A POINT OF CURVATURE OF A 444.00 FOOT RADIUS CURVE TO THE LEFT; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 47°15'00", SUBTENDED BY AN ARC LENGTH OF 366.15 FEET TO A POINT OF TANGENCY; THENCE SOUTH 12°02'17" EAST 170.41 FEET; THENCE SOUTH 15°50'46" WEST 85.48 FEET; THENCE SOUTH 35°17'26" WEST 56.30 FEET; THENCE NORTH 63°25'31" WEST 131.49 FEET TO A POINT OF CURVATURE OF A 200.00 FOOT RADIUS CURVE TO THE LEFT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 15°05'35", SUBTENDED BY AN ARC LENGTH OF 52.68 FEET TO A POINT OF REVERSE CURVATURE OF A 350.00 FOOT RADIUS CURVE TO THE RIGHT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 31°58'00", SUBTENDED BY AN ARC LENGTH OF 195.27 FEET TO A POINT OF TANGENCY; THENCE NORTH 46°33'07" WEST 135.06 FEET TO A POINT OF CURVATURE OF A 350.00 FOOT RADIUS CURVE TO THE LEFT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 52°14'18", SUBTENDED BY AN ARC LENGTH OF 319.11 FEET; THENCE NORTH 49°30'25" WEST 25.31 FEET TO A POINT BEING 287.87 FEET EASTERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE WEST LINE OF THE NORTHEAST QUARTER OF SECTION 11; THENCE PARALLEL WITH SAID WEST LINE NORTH 1°25'22" EAST 304.00 FEET TO THE TRUE POINT OF BEGINNING, AND THERE ENDING, ALL IN KING COUNTY, WASHINGTON.
CONTAINING 677,989 SQUARE FEET OR 15.56 ACRES.

EXHIBIT "B-1" BOEING CAMPUS-PROPERTY EXCLUDING NE PARKING LOT

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 11, TOWNSHIP 24 NORTH, RANGE 5 EAST OF THE WILLAMETTE MERIDIAN IN KING COUNTY WASHINGTON, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 11;
THENCE ALONG THE SOUTH LINE THEREOF SOUTH 88°37'24" EAST 287.87 FEET TO THE TRUE POINT OF BEGINNING; THENCE CONTINUING ALONG SAID SOUTH LINE SOUTH 88°37'24" EAST 377.97 FEET TO THE SOUTHEAST CORNER OF SAID SUBDIVISION; THENCE ALONG THE EAST LINE THEREOF NORTH 1°28'15" EAST 116.64 FEET; THENCE LEAVING SAID EAST LINE NORTH 65°58'27" EAST 276.97 FEET TO A POINT BEING 250.00 FEET EASTERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE WEST LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 11, AND ALSO BEING 430.00 FEET SOUTHERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE NORTH LINE OF THE SAME SUBDIVISION; THENCE PARALLEL WITH SAID WEST LINE NORTH 1°28'15" EAST 430.00 FEET TO THE NORTH LINE OF SAID SUBDIVISION; THENCE ALONG SAID NORTH LINE SOUTH 88°37'01" EAST 416.40 FEET TO THE NORTHEAST CORNER THEREOF; THENCE ALONG THE EASTERLY PROLONGATION OF SAID NORTH LINE SOUTH 88°37'01" EAST 83.37 FEET; THENCE SOUTH 2°28'22" WEST 10.94 FEET; THENCE SOUTH 5°53'15" WEST 10.98 FEET; THENCE SOUTH 2°47'53" WEST 83.50 FEET TO A POINT OF CURVATURE OF A 175.35 FOOT RADIUS CURVE TO THE RIGHT; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 32°10'44", SUBTENDED BY AN ARC LENGTH OF 98.48 FEET TO A POINT OF TANGENCY; THENCE SOUTH 34°58'37" WEST 20.50 FEET; THENCE PERPENDICULAR NORTH 55°01'23" WEST 89.00 FEET; THENCE SOUTH 35°11'14" WEST 296.31 FEET; THENCE SOUTH 15°34'05" EAST 50.37 FEET; THENCE SOUTH 55°03'51" EAST 95.89 FEET; THENCE SOUTH 35°12'43" WEST 190.82 FEET TO A POINT OF CURVATURE OF A 444.00 FOOT RADIUS CURVE TO THE LEFT; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 47°15'00", SUBTENDED BY AN ARC LENGTH OF 366.15 FEET TO A POINT OF TANGENCY; THENCE SOUTH 12°02'17" EAST 170.41 FEET; THENCE SOUTH 15°50'46" WEST 85.48 FEET; THENCE SOUTH 35°17'26" WEST 56.30 FEET; THENCE NORTH 63°25'31" WEST 131.49 FEET TO A POINT OF CURVATURE OF A 200.00 FOOT RADIUS CURVE TO THE LEFT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 15°05'35", SUBTENDED BY AN ARC LENGTH OF 52.68 FEET TO A POINT OF REVERSE CURVATURE OF A 350.00 FOOT RADIUS CURVE TO THE RIGHT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 31°58'00", SUBTENDED BY AN ARC LENGTH OF 195.27 FEET TO A POINT OF TANGENCY; THENCE NORTH 46°33'07" WEST 135.06 FEET TO A POINT OF CURVATURE OF A 350.00 FOOT RADIUS CURVE TO THE LEFT; THENCE NORTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 52°14'18", SUBTENDED BY AN ARC LENGTH OF 319.11; THENCE NORTH 49°30'25" WEST 25.31 FEET TO A POINT BEING 287.87 FEET EASTERLY OF, AS MEASURED AT RIGHT ANGLES TO, THE WEST LINE OF THE NORTHEAST QUARTER OF SECTION 11; THENCE PARALLEL WITH SAID WEST LINE NORTH 1°25'22" EAST 304.00 FEET TO THE TRUE POINT OF BEGINNING, AND THERE ENDING, ALL IN KING COUNTY, WASHINGTON.
CONTAINING 634,303 SQUARE FEET OR 14.56 ACRES.

SPECIAL EXCEPTIONS: SCHEDULE B
PER TRANSNATION TITLE INSURANCE ORDER NO. 800-10040051
FOURTH COMMITMENT, NOVEMBER 6, 2002 AMENDED

1. REAL ESTATE EXCISE TAX PURSUANT TO THE AUTHORITY OF RCW CHAPTER 82.45 AND SUBSEQUENT AMENDMENTS THERETO. AS OF THE DATE HEREIN, THE TAX RATE FOR SAID PROPERTY IS 1.78%.
(AFFECTS PARCEL, NOT PLOTTABLE)

(A) UNPATENTED MINING CLAIMS; (B) RESERVATIONS OR EXCEPTIONS IN PATENTS OR IN ACTS AUTHORIZING THE ISSUANCE THEREOF; (C) INDIAN TREATY OR ABORIGINAL RIGHTS, INCLUDING, BUT NOT LIMITED TO, EASEMENTS OR EQUITABLE SERVITUDES; OR (D) WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT THE MATTERS EXCEPTED UNDER (A), (B), (C), OR (D) ARE SHOWN BY THE PUBLIC RECORDS.
(AFFECTS PARCEL, NOT PLOTTABLE)

TITLE TO ANY PROPERTY BEYOND THE LINES OF THE LAND EXPRESSLY DESCRIBED HEREIN, OR TITLE TO STREETS, ROADS, AVENUES, LANES, WAYS OR WATERWAYS ON WHICH SAID LAND ABUTS, OR THE RIGHT TO MAINTAIN VAULTS, TUNNELS, RAMPS OR ANY OTHER STRUCTURE OR IMPROVEMENT; OR ANY RIGHTS OR EASEMENTS THEREIN UNLESS SUCH PROPERTY RIGHTS OR EASEMENTS ARE EXPRESSLY AND SPECIFICALLY SET FORTH IN THE LAND DESCRIBED HEREIN.
(AFFECTS PARCEL, NOT PLOTTABLE)

2. GENERAL PROPERTY TAXES AND SERVICE CHARGES, AS FOLLOWS, TOGETHER WITH INTEREST, PENALTY AND STATUTORY FORECLOSURE COSTS, IF ANY, AFTER DELINQUENCY: (1ST HALF DELINQUENT ON MAY 1; 2ND HALF DELINQUENT ON NOVEMBER 1)

TAX ACCT. NO.	YEAR	BILLED	PAID	BALANCE
112405-9004-01	2002	$875,741.98	$437,870.99	$437,870.99

TOTAL AMOUNT DUE, NOT INCLUDING INTEREST AND PENALTY: $875,741.98 LEVY CODE: 0730
ASSESSED VALUE LAND: $28,671,600.00 ASSESSED VALUE IMPROVEMENTS: $69,328,400.00
(AFFECTS PARCEL, NOT PLOTTABLE)

3. NOTICE OF TAP OR CONNECTION CHARGES WHICH HAVE BEEN OR WILL BE DUE IN CONNECTION WITH DEVELOPMENT OR RE-DEVELOPMENT OF THE LAND AS DISCLOSED BY RECORDED INSTRUMENT. INQUIRIES REGARDING THE SPECIFIC AMOUNT OF THE CHARGES SHOULD BE MADE TO THE CITY/COUNTY/AGENCY.
CITY/COUNTY/AGENCY: CITY OF BELLEVUE
RECORDED: NOVEMBER 9, 1977 RECORDING NO.: 7711090948
(AFFECTS PARCEL, NOT PLOTTABLE)

4. NOTICE OF CHARGES BY WATER, SEWER, AND STORM AND SURFACE WATER UTILITIES:
CITY/COUNTY/AGENCY: CITY OF BELLEVUE
RECORDED: DECEMBER 20, 1996 RECORDING NO.: 9612200938
(AFFECTS PARCEL, NOT PLOTTABLE)

5. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: A TRUNK SEWER LINE SYSTEM AREA AFFECTED: AS DESCRIBED IN THE INSTRUMENT RECORDING NO.: 5570601
AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
RECORDED: JULY 30, 1981 RECORDING NO.: 8107300655 REGARDING: CONSENT TO THE CROSSING OF A METRO EASEMENT WITH ELECTRIC SERVICE LINES.
(AFFECTS PARCEL, PLOTTED)

6. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: UNDERGROUND ELECTRIC SYSTEM AREA AFFECTED: 10 FOOT STRIP, THE DESCRIPTION CONTAINED THEREIN IS NOT SUFFICIENT TO DETERMINE ITS EXACT LOCATION WITHIN THE PROPERTY HEREIN DESCRIBED RECORDING NO.: 8112110348
(DOES NOT AFFECT PARCEL, PLOTTED)

7. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: STORM WATER DRAINAGE PIPELINES AREA AFFECTED: AS DESCRIBED THEREIN RECORDING NO.: 8112150228.
(AFFECTS PARCEL, PLOTTED)

8. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: RECREATIONAL TRAIL AREA AFFECTED: AS DESCRIBED THEREIN RECORDING NO.: 8201210656
(AFFECTS PARCEL, PLOTTED)

9. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: SANITARY SEWER INTERCEPTOR RECORDED: MAY 5, 1983 RECORDING NO.: 8305050458
(AFFECTS PARCEL, PLOTTED)

10. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: WATER PIPELINES AREA AFFECTED: AS DESCRIBED THEREIN RECORDING NO.: 8201200548
(DOES NOT AFFECT PARCEL)

11. PREVIOUSLY DELETED

12. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: SANITARY SEWER INTERCEPTOR AREA AFFECTED: AS DESCRIBED THEREIN RECORDING NO.: 8403050801
(AFFECTS PARCEL, PLOTTED)

13. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: UNDERGROUND ELECTRIC SYSTEM RECORDED: JANUARY 23, 1989 RECORDING NO.: 8901230704
(AFFECTS PARCEL, PLOTTED)

14. EASEMENT AND THE TERMS AND CONDITIONS THEREOF:
PURPOSE: UTILITIES AREA AFFECTED: A PORTION OF SAID PREMISES ALONG THE SOUTH LINE OF THE PROPERTY TO BE CONVEYED RECORDING NO.: 8602120512
(AFFECTS PARCEL, PLOTTED)

15. ALL COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS, OR OTHER SERVITUDES, IF ANY, DISCLOSED BY BOUNDARY LINE ADJUSTMENT NO. BLA 91-5283 AND RECORDED UNDER RECORDING NO. 9202149001.
RIGHTS OR BENEFITS, IF ANY, WHICH MAY BE DISCLOSED BY THE RECORDED DOCUMENT(S) ABOVE AFFECTING LAND OUTSIDE THE BOUNDARY DESCRIBED.
(AFFECTS PARCEL, PLOTTED)

16. COVENANTS, CONDITIONS AND RESTRICTIONS IMPOSED BY INSTRUMENT RECORDED ON MAY 13, 1980, UNDER RECORDING NO. 8005130448, AND AMENDED BY INSTRUMENT RECORDED UNDER RECORDING NOS. 8110150240 AND 8403220558, INCLUDING, BUT NOT LIMITED TO, LIABILITY FOR ASSESSMENTS LEVIED BY THE COMMUNITY ASSOCIATION, AND RIGHTS OR BENEFITS WHICH MAY BE DISCLOSED AFFECTING LAND OUTSIDE THE BOUNDARY DESCRIBED IN SCHEDULE A.
(MAY AFFECT PARCEL AND SOME ITEMS ARE PLOTTED)

17. AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
RECORDED: AUGUST 28, 1981 RECORDING NO.: 8108280987 REGARDING: CONCOMITANT AGREEMENT
(MAY AFFECT PARCEL AND SOME ITEMS ARE PLOTTED)

18. AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
RECORDED: MARCH 12, 1980 RECORDING NO.: 8003120648 REGARDING: CONCOMITANT ZONING.
(MAY AFFECT PARCEL AND SOME ITEMS ARE PLOTTED)

19. PREVIOUSLY DELETED

20. PREVIOUSLY DELETED

21. EXCEPTIONS AND RESERVATIONS CONTAINED IN DEED FROM WEYERHAEUSER TIMBER COMPANY, A WASHINGTON CORPORATION, RECORDED UNDER RECORDING NO. 1755257, WHEREBY THE FIRST PARTY EXPRESSLY SAVES, EXCEPTS AND RESERVES OUT OF THE GRANT HEREBY MADE UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS FOREVER, ALL ORES AND MINERALS OF ANY NATURE WHATSOEVER IN OR UPON SAID LANDS, INCLUDING COAL, OIL AND GAS, TOGETHER WITH THE RIGHT TO ENTER UPON SAID LANDS FOR THE PURPOSE OF EXPLORING THE SAME FOR SUCH ORES AND MINERALS, AND FOR THE PURPOSE OF DRILLING, OPENING, DEVELOPING AND WORKING MINES AND WELLS THEREON, AND TAKING OUT AND REMOVING THEREFROM ALL SUCH ORES AND MINERALS, AND TO OCCUPY AND MAKE USE OF SO MUCH OF THE SURFACE OF SAID LAND AS MAY BE REASONABLY NECESSARY FOR SAID PURPOSE; PROVIDED THAT THE SECOND PARTY, THEIR HEIRS, REPRESENTATIVES, SUCCESSORS OR ASSIGNS SHALL BE PAID JUST AND REASONABLE COMPENSATION FOR ANY INJURY OR DAMAGE TO THE SURFACE OF SAID LAND, TO THE CROPS OR TO THE IMPROVEMENTS THEREON BY THE EXERCISE OF ANY RIGHTS HEREIN RESERVED; BUT PROVIDED FURTHER THAT THE EXERCISE OF SUCH RIGHT BY THE FIRST PARTY SHALL NOT BE POSTPONED OR DELAYED PENDING REASONABLE EFFORTS TO AGREE UPON OR HAVE DETERMINED SUCH JUST AND REASONABLE COMPENSATION. COVERS NORTHEASTERLY PORTION OF PROPERTY HEREIN DESCRIBED.
(AFFECTS PARCEL, NOT PLOTTABLE)

22. AGREEMENT AND THE TERMS AND CONDITIONS THEREOF:
RECORDED: SEPTEMBER 11, 1957 RECORDING NO.: 4832212 REGARDING: SEWER SERVICE
(AFFECTS PARCEL, PLOTTED)

23. CITY OF BELLEVUE RESOLUTION NO. 3773, DATED JUNE 4, 1981 IMPOSED BY INSTRUMENT RECORDED ON JANUARY 13, 1982, UNDER RECORDING NO. 8201130375.
(AFFECTS PARCEL, NOT PLOTTABLE)

24. TERMS AND CONDITIONS OF CITY OF BELLEVUE COMPREHENSIVE DEVELOPMENT PLAN IMPOSED BY INSTRUMENT RECORDED ON NOVEMBER 5, 1984, UNDER RECORDING NO. 8411050290.
(AFFECTS PARCEL, NOT PLOTTABLE)

25. NOTICE IMPOSED BY INSTRUMENT RECORDED ON APRIL 25, 1985, UNDER RECORDING NO. 8504250469.
(AFFECTS PARCEL, NOT PLOTTABLE)

26. NOTICE IMPOSED BY INSTRUMENT RECORDED ON JANUARY 17, 1986, UNDER RECORDING NO. 8601170846.
(AFFECTS PARCEL, NOT PLOTTABLE)

27. ALL COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS OR OTHER SERVITUDES, IF ANY, DISCLOSED BY THE SURVEY RECORDED UNDER RECORDING NO. 8501039003.
(AFFECTS PARCEL, PLOTTED)

28. ALL COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS OR OTHER SERVITUDES, IF ANY, DISCLOSED BY THE SURVEY RECORDED UNDER RECORDING NO. 20000804900002.
(AFFECTS PARCEL, PLOTTED)

29. ALL COVENANTS, CONDITIONS, RESTRICTIONS, RESERVATIONS, EASEMENTS OR OTHER SERVITUDES, IF ANY, DISCLOSED BY THE SURVEY RECORDED UNDER RECORDING NO. 20001107900003.
(AFFECTS PARCEL, PLOTTED)

30. PREVIOUSLY DELETED

LEGEND

- METHANE MONITOR WELL
- METHANE EXTRACTION WELL
- METHANE BORING WELL
- METHANE CONDENSATE TRAP
- METHANE CLEANOUT
- HYDRANT
- WATER VALVE
- WATER METER
- SPRINKLER HEAD
- SPRINKLER VALVE
- DOWN SPOUT
- STAND PIPE
- CATCH BASIN
- STORM DRAIN MANHOLE
- CULVERT
- ELECTRIC MANHOLE
- UTILITY POLE
- P POWER VAULT
- JUNCTION BOX
- YARD LIGHT
- STREET LIGHT W/ POLE
- DUAL LIGHT W/ POLE
- TELEPHONE MANHOLE
- TELEPHONE RISER
- ROCKERY
- SIGN
- PK NAIL
- IRON PIPE
- FOUND MONUMENT IN CASE
- DECIDUOUS TREE

LINETYPES

- WOOD FENCE
- VEGETATION LINE
- EXISTING BOUNDARY LINE
- MIGRATION PIPELINE
- EDGE OF WATER
- UGP UNDERGROUND POWER
- UGT UNDERGROUND TELEPHONE
- SD STORM DRAIN W/FLOW ARROWS
- SS SANITARY SEWER
- CW WATER LINE
- CALCULATED CITY OF BELLEVUE PROPERTY LINE

NOTES

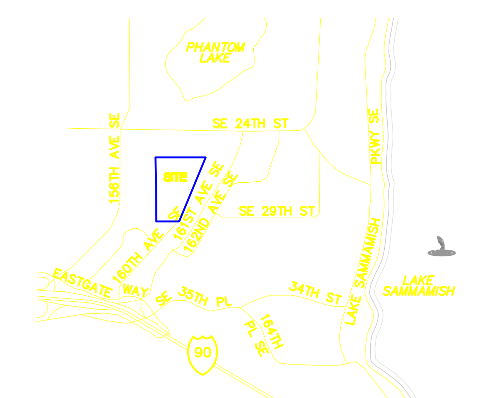
BASIS OF BEARING: WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE, NAD 83(91)

THIS SURVEY COMPLIES WITH ALL STANDARDS AND GUIDELINES OF THE SURVEY RECORDING ACT AS PER CHAPTER 58.09 RCW AND CHAPTER 332-130 WAC.

ALL MONUMENTS VISITED DURING OCTOBER 2002, UNLESS OTHERWISE NOTED.
EQUIPMENT: THE PRIMARY MEASUREMENT EQUIPMENT UTILIZED IN THE PERFORMANCE OF THIS SURVEY WAS A SOKKIA 3100 TOTAL STATION, SN# 19802.
ALL PRIMARY MEASUREMENT EQUIPMENT UTILIZED HAS BEEN COMPARED TO AND ADJUSTED AGAINST A NATIONAL GEODETIC SURVEY CALIBRATED BASELINE WITHIN THE PAST ONE YEAR.

TO THE CITY OF BELLEVUE,
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE (i)IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 1999, (ii)PURSUANT TO THE ACCURACY STANDARDS (AS ADOPTED BY ALTA AND ACSM AND IN EFFECT ON THE DATE OF THIS CERTIFICATION) OF AN URBAN SURVEY.

DATE: 11/05/2002



VICINITY MAP - NOT TO SCALE

BASIS OF BEARING: WASHINGTON COORDINATE SYSTEM OF 1983, NORTH ZONE, NAD 83/91

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
	REVISION 1	SDO		10/02/2002					
	REVISION 2	SDO		10/07/2002					
	REVISION 3	SDO		10/29/2002					
	SUPPLEMENTAL NO. 2 TO FOURTH TITLE COMMITMENT NO.10040051	SDO		11/04/2002					

DHA
DUANE HARTMAN & ASSOCIATES, INC.
Surveyors
16928 WOODINVILLE-REDMOND ROAD, B-107 (425) 483-5355
WOODINVILLE, WASHINGTON 98072 FAX (425) 483-4650

ACCEPTABILITY
THIS DESIGN AND/OR SPECIFICATION IS APPROVED

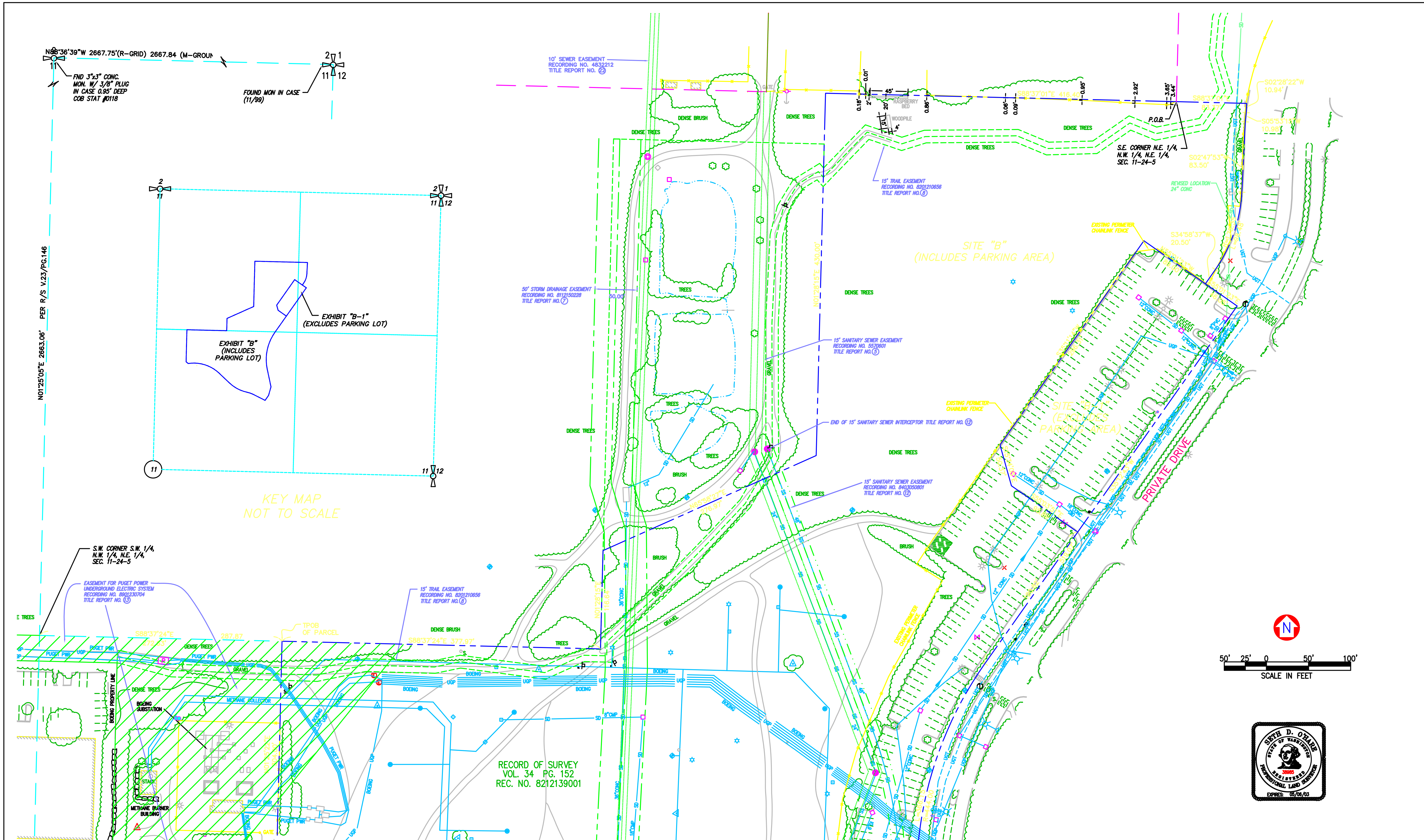
APPROVED BY	DEPT.	DATE

		DATE
DRAWN BY	GRB	08/14/02
CHECKED	SDO	09/30/02
ENGR.		
CHECKED		
APPROVED		
APPROVED		

SUBTITLE: ALTA SURVEY
TITLE: BELLEVUE/I-90 BUSINESS PARK
BOEING FOCUS AREA PARCEL
BELLEVUE WASHINGTON

LAST REVISION	SYMBOL	DATE
SHEET S1		1 OF 3

JOB NO. 02-371
DWG. NO. 02-371FINAL.DWG



MATCHLINE – FOR CONTINUATION SEE S3

SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
	REVISION 1	SDO		10/02/2002					
	REVISION 2	SDO		10/07/2002					
	REVISION 3	SDO		10/29/2002					
	SUPPLEMENTAL NO. 2 TO FOURTH TITLE COMMITMENT NO.10040051	SDO		11/04/2002					

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APPROVED BY	DEPT.	DATE

DRAWN BY GRB	DATE 08/14/02
CHECKED SDO	09/30/02
ENGR.	
CHECKED	
APPROVED	
APPROVED	

SUBTITLE
ALTA SURVEY

TITLE
BELLEVUE/I-90 BUSINESS PARK
BOEING FOCUS AREA PARCEL

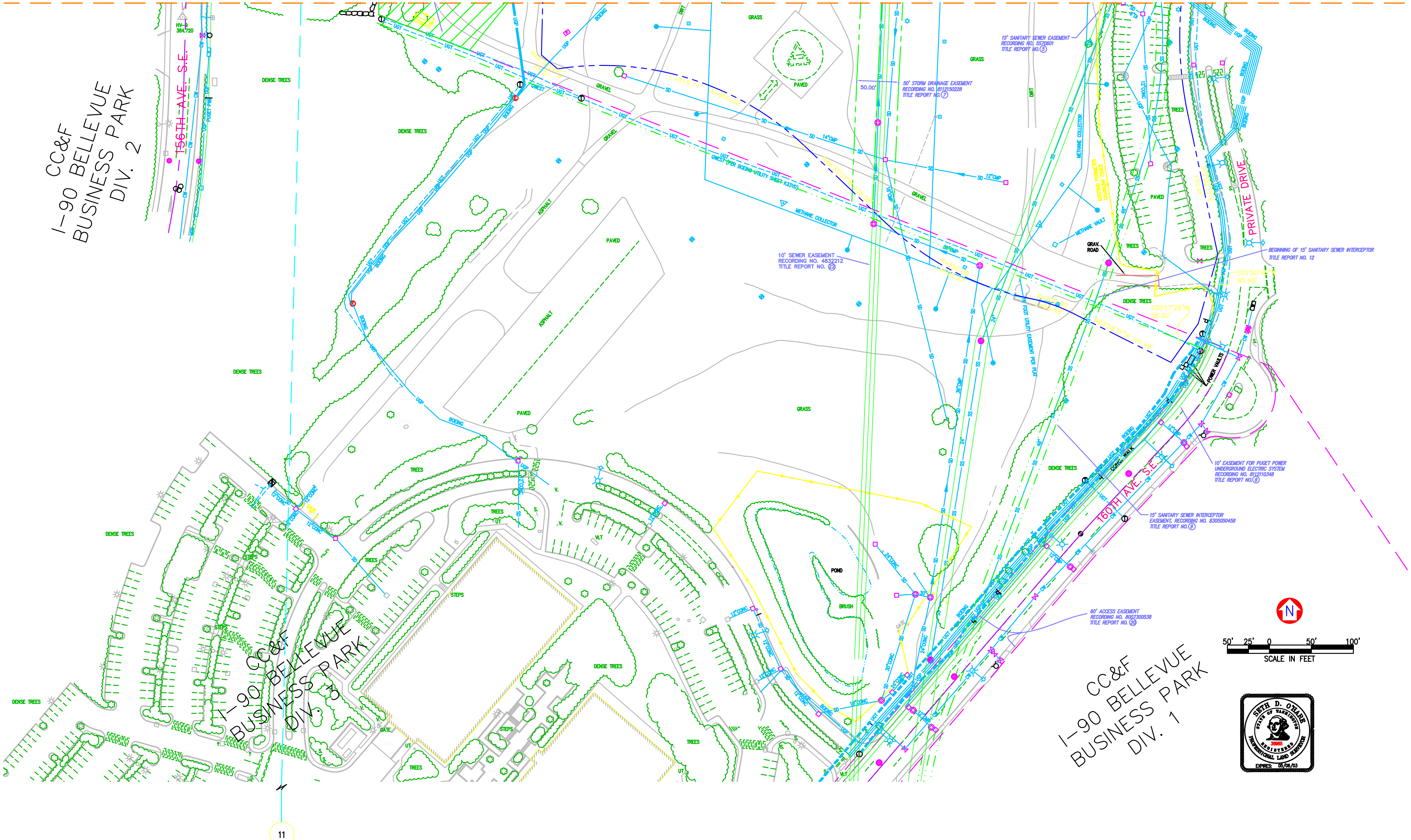
BELLEVUE WASHINGTON

LAST REVISION	SYMBOL	DATE
SHEET S2		2 OF 3

JOB NO. 02-371

DWG. NO. 02-371FINAL.DWG

MATCHLINE – FOR CONTINUATION SEE S2



SYM	REVISION	BY	APPROVED	DATE	SYM	REVISION	BY	APPROVED	DATE
	REVISION 1	SDO		10/02/2002					
	REVISION 2	SDO		10/07/2002					
	REVISION 3	SDO		10/29/2002					
	SUPPLEMENTAL NO. 2 TO FOURTH TITLE COMMITMENT NO.10040051	SDO		11/04/2002					

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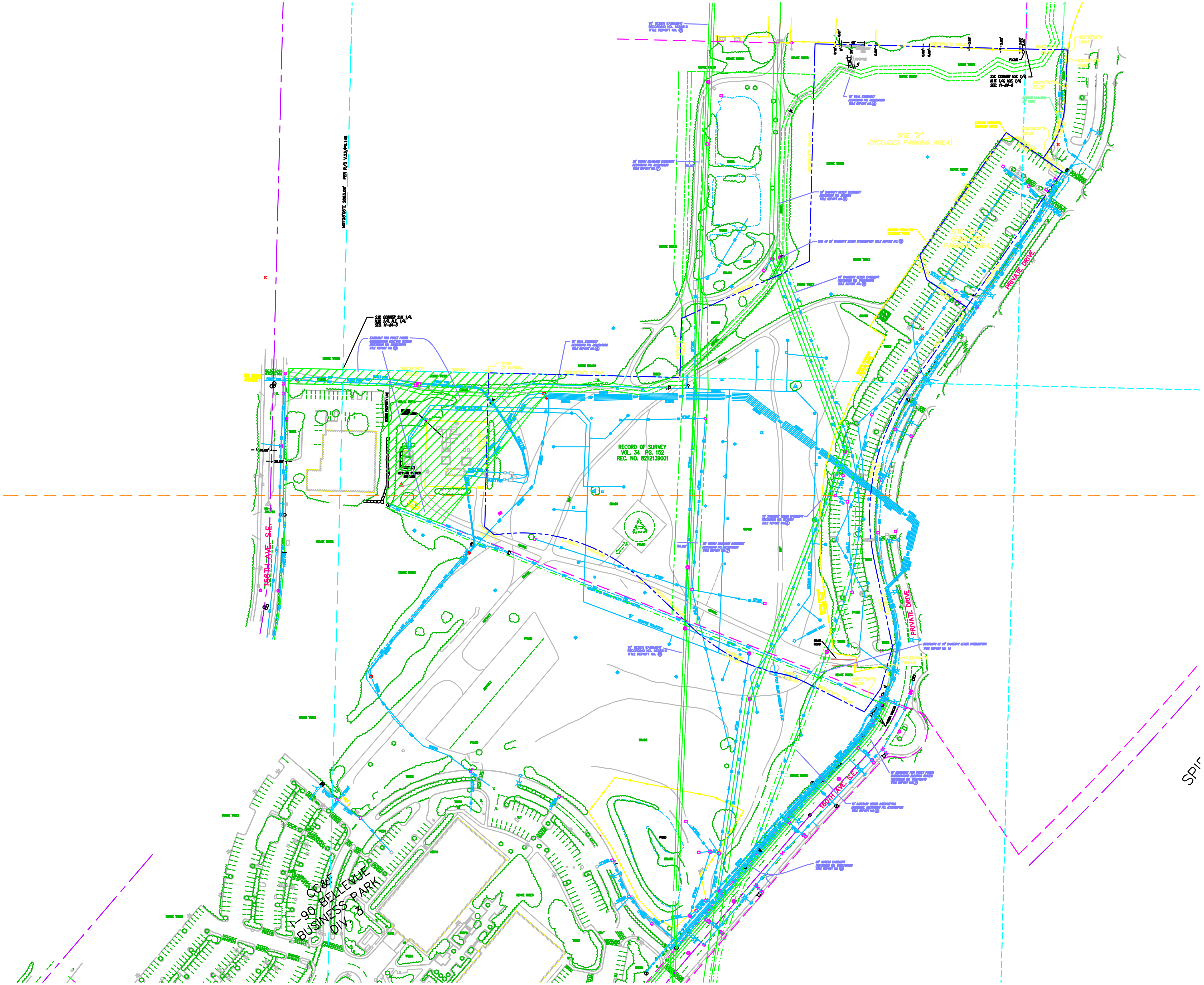
APPROVED BY	DEPT.	DATE

DRAWN BY GRB	DATE 08/14/02
CHECKED SDO	09/30/02
ENGR.	
CHECKED	
APPROVED	
APPROVED	

SUBTITLE
ALTA SURVEY

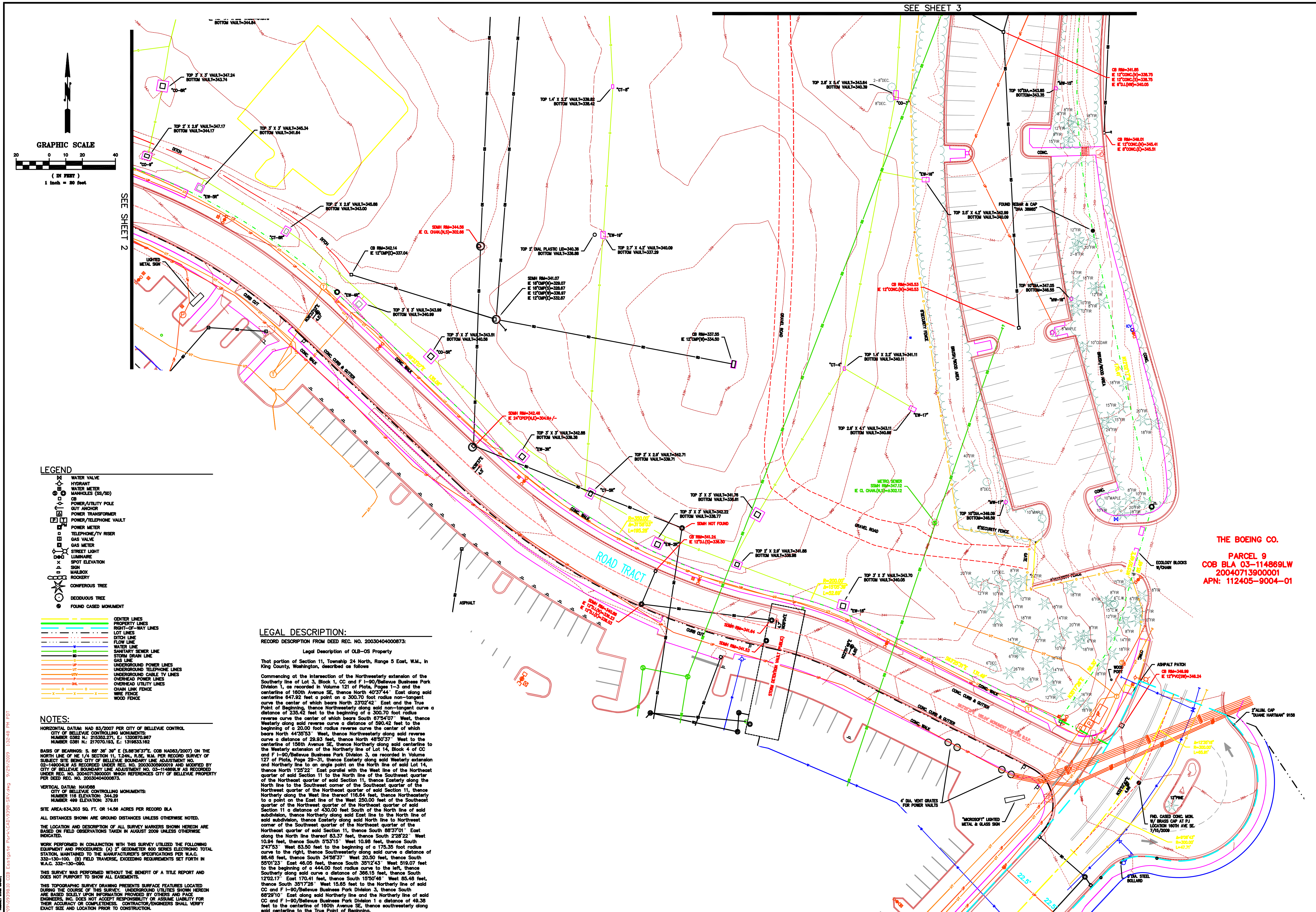
TITLE
BELLEVUE/I-90 BUSINESS PARK
BOEING FOCUS AREA PARCEL
BELLEVUE WASHINGTON

LAST REVISION	SYMBOL	DATE
SHEET S3		3 OF 3
JOB NO. 02-371		
DWG. NO. 02-371FINAL.DWG		



RECORD OF SURVEY
VOL. 34 PG. 152
REC. NO. 8212139001
156TH AVE. S.E.
160TH AVE. S.E.
PRIVATE DRIVE
PRIVATE DRIVE
I-90 BELLEVUE
BUSINESS PARK
DIV. 3

Exhibit 5



LEGEND

WATER VALVE
HYDRANT
WATER METER
MANHOLES (SS/SD)
CB
POWER/UTILITY POLE
GUY ANCHOR
POWER TRANSFORMER
POWER/TELEPHONE VAULT
POWER METER
TELEPHONE/TV RISER
GAS VALVE
GAS METER
STREET LIGHT
LUMINAIRE
SPOT ELEVATION
SIGN
MAILBOX
ROCKERY
CONIFEROUS TREE
DECIDUOUS TREE
FOUND CASED MONUMENT

CENTER LINES
PROPERTY LINES
RIGHT-OF-WAY LINES
LOT LINES
DITCH LINE
FLOW LINE
W WATER LINE
SS SANITARY SEWER LINE
SD STORM DRAIN LINE
G GAS LINE
UP UNDERGROUND POWER LINES
UT UNDERGROUND TELEPHONE LINES
UTV UNDERGROUND CABLE TV LINES
P OVERHEAD POWER LINES
OHL OVERHEAD UTILITY LINES
O CHAIN LINK FENCE
X WIRE FENCE
WOOD FENCE

NOTES:

HORIZONTAL DATUM: NAD 83/2007 PER CITY OF BELLEVUE CONTROL
CITY OF BELLEVUE CONTROLLING MONUMENTS:
NUMBER 0382 N.: 215352.271, E.: 1320870.967
NUMBER 0381 N.: 217070.193, E.: 1319833.162

BASIS OF BEARINGS: S. 88° 36' 39" E (S.88°36'37"E. COB NAD83/2007) ON THE NORTH LINE OF NE 1/4 SECTION 11, T.24N., R.5E, W.M. PER RECORD SURVEY OF SUBJECT SITE BEING CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO. 02-149004LW AS RECORDED UNDER REC. NO. 20030305900019 AND MODIFIED BY CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO. 03-114869LW AS RECORDED UNDER REC. NO. 20040713900001 WHICH REFERENCES CITY OF BELLEVUE PROPERTY PER DEED REC. NO. 20030404000873.

VERTICAL DATUM: NAVD88
CITY OF BELLEVUE CONTROLLING MONUMENTS:
NUMBER 116 ELEVATION: 344.29
NUMBER 499 ELEVATION: 379.61

SITE AREA: 634,303 SQ. FT. OR 14.56 ACRES PER RECORD BLA

ALL DISTANCES SHOWN ARE GROUND DISTANCES UNLESS OTHERWISE NOTED.

THE LOCATION AND DESCRIPTION OF ALL SURVEY MARKERS SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS TAKEN IN AUGUST 2009 UNLESS OTHERWISE INDICATED.

WORK PERFORMED IN CONJUNCTION WITH THIS SURVEY UTILIZED THE FOLLOWING EQUIPMENT AND PROCEDURES: (A) 2" GEODIMETER 600 SERIES ELECTRONIC TOTAL STATION, MAINTAINED TO THE MANUFACTURER'S SPECIFICATIONS PER W.A.C. 332-130-100. (B) FIELD TRAVERSE, EXCEEDING REQUIREMENTS SET FORTH IN W.A.C. 332-130-090.

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS.

THIS TOPOGRAPHIC SURVEY DRAWING PRESENTS SURFACE FEATURES LOCATED DURING THE COURSE OF THIS SURVEY. UNDERGROUND UTILITIES SHOWN HEREON ARE BASED SOLELY UPON INFORMATION PROVIDED BY OTHERS AND PACE ENGINEERS, INC. DOES NOT ACCEPT RESPONSIBILITY OR ASSUME LIABILITY FOR THEIR ACCURACY OR COMPLETENESS. CONTRACTOR/ENGINEERS SHALL VERIFY EXACT SIZE AND LOCATION PRIOR TO CONSTRUCTION.

CALL FOR LOCATE: UTILITY LOCATION SERVICE: 1-800-424-5555.

LEGAL DESCRIPTION:

RECORD DESCRIPTION FROM DEED REC. NO. 20030404000873:

Legal Description of OLB-OS Property

That portion of Section 11, Township 24 North, Range 5 East, W.M., in King County, Washington, described as follows

Commencing at the intersection of the Northwesterly extension of the Southerly line of Lot 3, Block 1, CC and F I-90/Bellevue Business Park Division 1, as recorded in Volume 121 of Plats, Pages 1-3 and the centerline of 160th Avenue SE, thence North 40°37'44" East along said centerline 647.92 feet a point on a 300.70 foot radius non-tangent curve the center of which bears North 23°02'42" East and the True Point of Beginning, thence Northwesterly along said non-tangent curve a distance of 235.42 feet to the beginning of a 300.70 foot radius reverse curve the center of which bears South 67°54'07" West, thence Westerly along said reverse curve a distance of 590.42 feet to the beginning of a 20.00 foot radius reverse curve the center of which bears North 44°35'53" West, thence Northwesterly along said reverse curve a distance of 29.93 feet, thence North 48°50'37" West to the centerline of 156th Avenue SE, thence Northerly along said centerline to the Westerly extension of the Northerly line of Lot 14, Block 4 of CC and F I-90/Bellevue Business Park Division 3, as recorded in Volume 127 of Plats, Page 29-31, thence Easterly along said Westerly extension and Northerly line to an angle point on the North line of said Lot 14, thence North 1°25'22" East parallel with the West line of the Northeast quarter of said Section 11 to the North line of the Southwest quarter of the Northeast quarter of said Section 11, thence Easterly along the North line to the Southwest corner of the Southeast quarter of the Northwest quarter of the Northeast quarter of said Section 11, thence Northerly along the West line thereof 116.64 feet, thence Northeasterly to a point on the East line of the West 250.00 feet of the Southeast quarter of the Northwest quarter of the Northeast quarter of said Section 11 a distance of 430.00 feet South of the North line of said subdivision, thence Northerly along said East line to the North line of said subdivision, thence Easterly along said North line to Northwest corner of the Southwest quarter of the Northeast quarter of the Northeast quarter of said Section 11, thence South 88°37'01" East along the North line thereof 83.37 feet, thence South 2°28'22" West 10.94 feet, thence South 5°53'15" West 10.98 feet, thence South 2°47'53" West 83.50 feet to the beginning of a 175.35 foot radius curve to the right, thence Southwesterly along said curve a distance of 98.48 feet, thence South 34°58'37" West 20.50 feet, thence South 55°01'23" East 46.05 feet, thence South 35°12'43" West 519.07 feet to the beginning of a 444.00 foot radius curve to the left, thence Southerly along said curve a distance of 366.15 feet, thence South 12°02.17" East 170.41 feet, thence South 15°50'46" West 85.48 feet, thence South 35°17'26" West 15.65 feet to the Northerly line of said CC and F I-90/Bellevue Business Park Division 3, thence South 68°29'10" East along said Northerly line and the Northerly line of said CC and F I-90/Bellevue Business Park Division 1 a distance of 49.38 feet to the centerline of 160th Avenue SE, thence southwesterly along said centerline to the True Point of Beginning.

PORTION OF: NW 1/4 & SW 1/4 OF NE 1/4 SECTION 11, T. 24 N., R. 5 E., W.M.

P:\P09\09398.10 COB Eastgate Park\CAD\9398-SRV.dwg 9/29/2009 1:32:48 PM PDT

CAD/CALC	JD	SYM	REVISION	DATE	BY	APP'D
DRAWN	DB					
XXX	XXX					

PACE
An Engineering Services Company
11255 Kirkland Way, Suite 300
Kirkland, WA 98033
p. 425.827.2014 | f. 425.827.5043
Civil | Structural | Planning | Survey
paceengrs.com

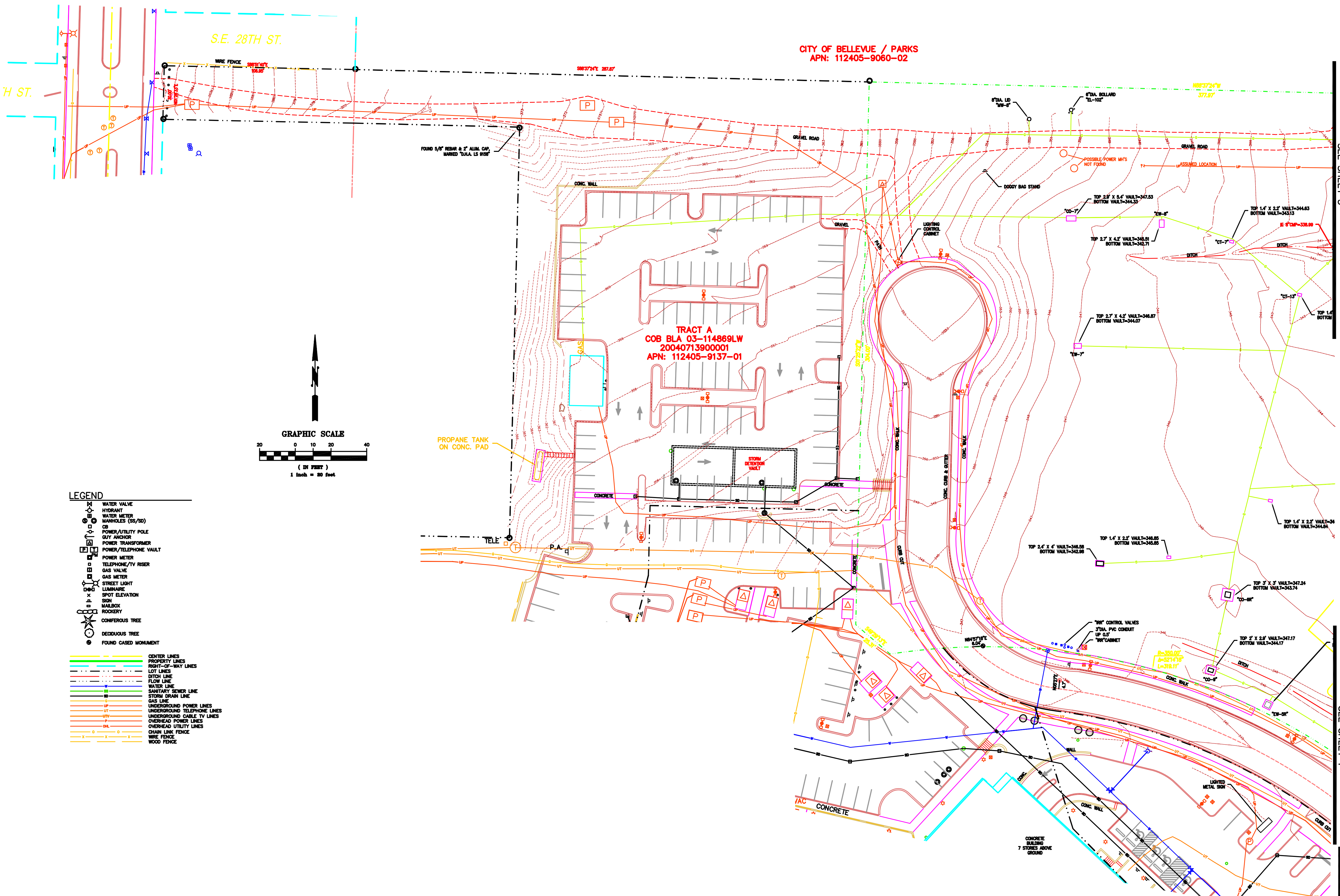
EASTGATE LANDFILL PARK

DATE	9/29/2009
SCALE	1" = 20'
SURVEY TEAM	GW/BD/DB
FIELD BOOK	611C, 611D
DWG FILE	9398-SRV.dwg

TOPOGRAPHIC SURVEY
FOR
CITY OF BELLEVUE
PARKS & COMMUNITY DEVELOPMENT DEPARTMENT

PROJECT NO. 09398.10

SHEET 1 OF 3



PORTION OF: NW 1/4 & SW 1/4 OF NE 1/4 SECTION 11, T. 24 N., R. 5 E., W.M.

CAD/CALC XXX	SYM	REVISION	DATE	BY	APP'D
DRAWN XXX					
PLAT CHK XXX					

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An Engineering Services Company
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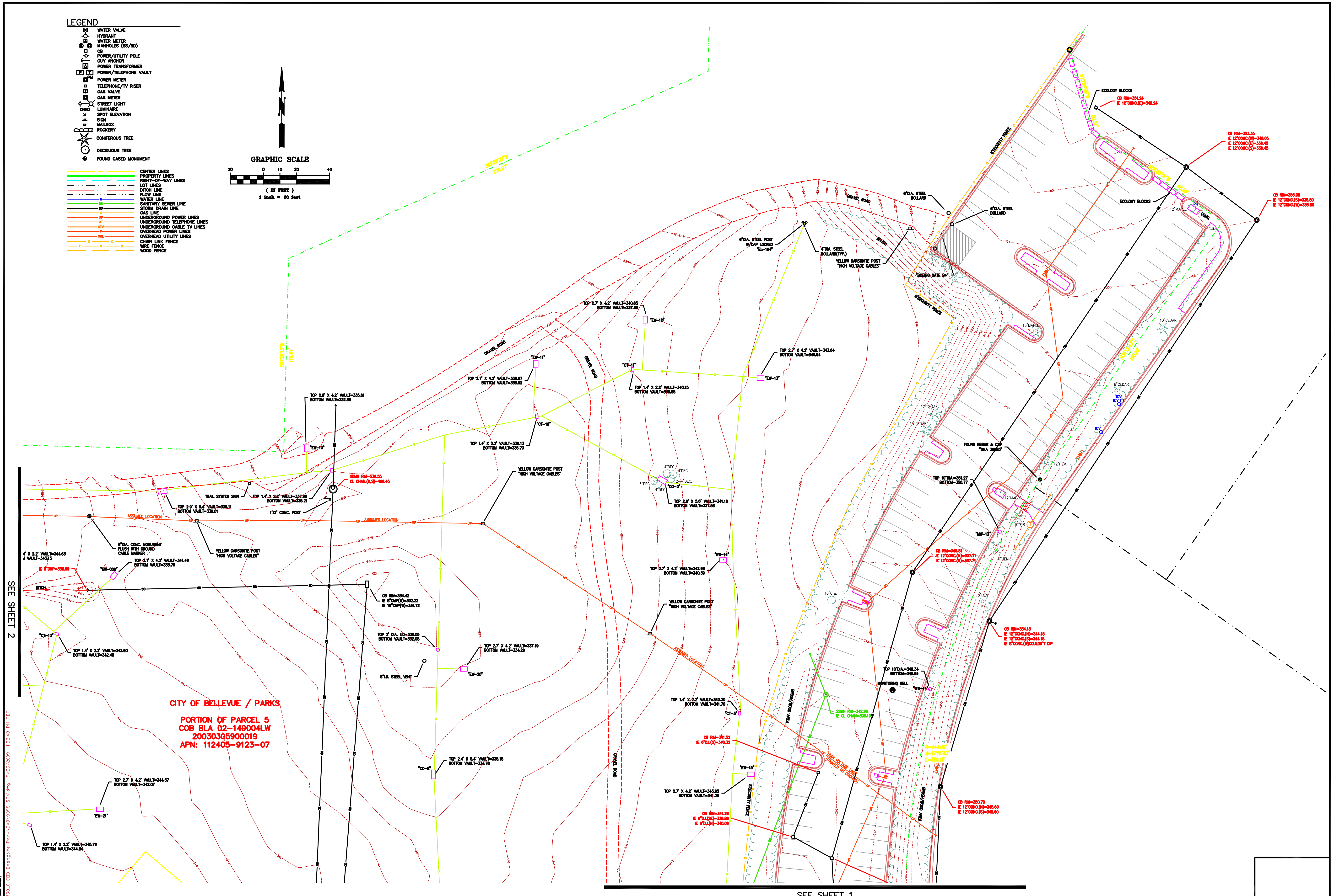
EASTGATE LANDFILL PARK

DATE	9/29/2009
SCALE	1" = 20'
SURVEY TEAM	GW/BD/DB
FIELD BOOK	611C, 611D
DWG FILE	9398-SRV.dwg

TOPOGRAPHIC SURVEY
FOR
CITY OF BELLEVUE
PARKS & COMMUNITY DEVELOPMENT DEPARTMENT

PROJECT NO. 09398.10

SHEET 2 OF 3



PORTION OF: NW 1/4 & SW 1/4 OF NE 1/4 SECTION 11, T. 24 N., R. 5 E., W.M.

CAD/CALC XXX					
DRAWN XXX					
PLAT CHK XXX	SYM	REVISION	DATE	BY	APP'D

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EASTGATE LANDFILL PARK

DATE	9/29/2009
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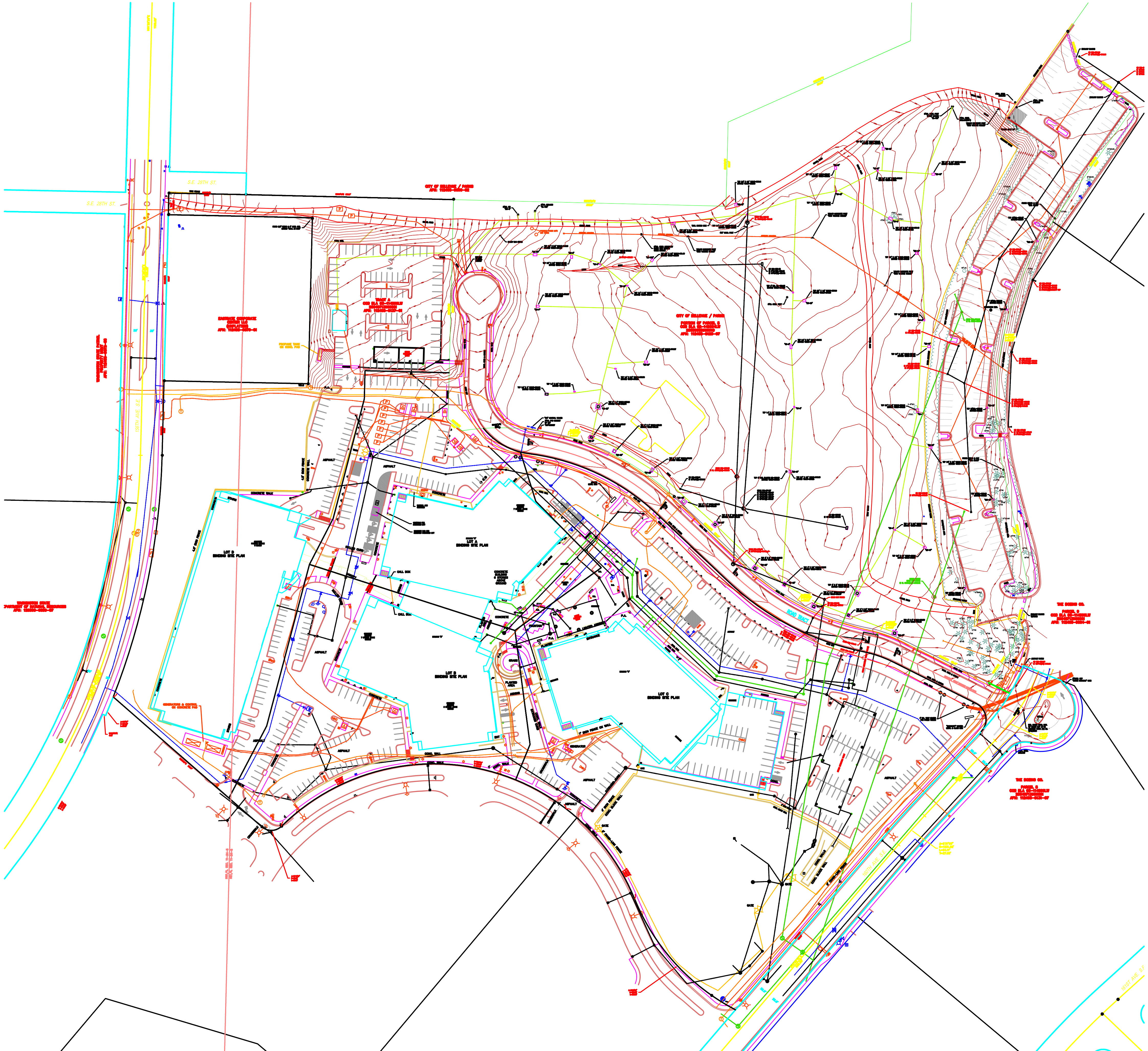
TOPOGRAPHIC SURVEY
FOR
CITY OF BELLEVUE
PARKS & COMMUNITY DEVELOPMENT DEPARTMENT

PROJECT NO. 09398.10

SHEET 2 OF 3



LOT A
BINDING SITE PLAN
LOT B
BINDING SITE PLAN
LOT C
BINDING SITE PLAN
CONCRETE BUILDING 6 STORIES ABOVE GROUND
CALL BOX
CONCRETE
FOUNTAIN
PLANTED AREA
GRASS
ENTRANCE
PLANTER
GENERATOR
ASPHALT
HVAC

Exhibit 6

LEGEND:

- Existing Right of Way
- Existing Property Line
- S — Existing Sanitary Sewer Line
- D — Existing Storm Drainage Line
- W — Existing Water Line
- G — Existing Gas Line
- OHP — Overhead Power Line
- UGC — Underground Telecom Line
- G — Monitoring Well Gas Line

Survey Control: MON IN CASE; IRON ROD; PK NAIL

Sanitary Sewer: CLEAN OUT; SEWER MANHOLE

Storm Drainage: CATCH BASIN; DRAIN MANHOLE

Water: FIRE HYDRANT; WATER VALVE; WATER METER

Gas: GAS VALVE; GAS METER

Groundwater Monitoring: VAULTS; MONITORING WELLS

Power: UTILITY POLE; POWER VAULT

Telecommunications: TELEPHONE RISER; TELEPHONE VAULT

Traffic Control: TRAFFIC SIGNAL; TRAFFIC CONTROLLER; STREET LIGHT; AREA LIGHT; JUNCTION BOX; STREET SIGN

Landscaping: CONIFER TREE; DECIDUOUS TREE

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007)
Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG 160th Ave. S.E. 600'+/- North of SE 33rd ST
Elev.=344.29' HORZ STA 0382

BM #499: 3"X3" CONC MON W/ 3/8" BRASS PLUG AT INTERSECTION OF 156th Ave. S.E. & S.E. 26th ST
Elev.=379.61' HORZ STA 0381

BM #838: 4"X4" CONC MON W/ 1 3/4" BRASS CAP AT INTERSECTION OF 158th Ave. S.E. & S.E. 26th ST
Elev.=301.397' HORZ STA 3182

autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - Topography

DRAFT

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY: S. Bratz | DATE: 11/16/2011
WORK ORDER NO.: 11069 | SHEET: 4 of 5

LEGEND:

Line	Description
— — —	Existing Right of Way
———	Existing Property Line
— S —	Existing Sanitary Sewer Line
— D —	Existing Storm Drainage Line
— W —	Existing Water Line
— G —	Existing Gas Line
— OHP —	Overhead Power Line
— UGC —	Underground Telecom Line
— G —	Monitoring Well Gas Line

Survey Control
- MON IN CASE
- IRON ROD
- PK NAIL

Sanitary Sewer
- CLEAN OUT
- SEWER MANHOLE

Storm Drainage
- CATCH BASIN
- DRAIN MANHOLE

Water
- FIRE HYDRANT
- WATER VALVE
- WATER METER

Gas
- GAS VALVE
- GAS METER

Groundwater Monitoring
- VAULTS
- MONITORING WELLS

Power
- UTILITY POLE
- PV POWER VAULT

Telecommunications
- TELEPHONE RISER
- TV TELEPHONE VAULT

Traffic Control
- TRAFFIC SIGNAL
- TRAFFIC CONTROLLER
- STREET LIGHT
- AREA LIGHT
- JUNCTION BOX
- STREET SIGN

Landscaping
- CONIFER TREE
- DECIDUOUS TREE

GRID NORTH

100' 50' 0' 100' 200'

Scale: 1 inch = 100 feet (Ground)

Basis of Bearing: NAD 83 (2007) Washington, North Zone

Vertical Datum: NAVD 1988

VERTICAL CONTROL:

BM #116: 4"X4"CONC MON W/ 2" BRASS PLUG 160th Ave. S.E. 600'+/- North of SE 33rd ST Elev.=344.29' HORZ STA 0382

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autocad drawing file: 11069 Bellevue Airfield Park.dwg

NO.	DATE	BY	APPR.	REVISIONS

Bellevue Airfield Park

Eastgate Area - Topography

DRAFT

City of Bellevue
Civic Services Department

Topographic Survey
situated in
NE 1/4 Section 11, T.24 N., R.5 E., W.M.
King County, Washington

PREPARED BY:	S. Bratz	DATE:	11/16/2011
WORK ORDER NO.:	11069	SHEET:	4 of 5

Tree Solutions Inc
Consulting Arborists

Project No. TS - 5069

Arborist Report

TO:	Chelsea McCann, Walker Macy Landscape Architects
SITE:	Bellevue Airfield Park – 2997 160th Ave SE Bellevue, WA 98008
RE:	Tree Inventory & Assessment
DATE:	October 28, 2015
PROJECT ARBORIST:	J. Casey Clapp, ISA Certified Arborist #PN-7475A ISA Qualified Tree Risk Assessor
REVIEWED BY:	Katie Hogan, ISA Certified Arborist #PN- 8078A

Summary

We inventoried and assessed nine-hundred and fifty-eight (958) significant trees on site within scope area. We noted observations and provided a general health and structural condition for all trees assessed. Sixty-seven (67) of these trees were in poor health or structural condition at the time of inspection. No high risk tree were found on site. Most of the large conifer trees assessed were found to be in good to fair condition. A number of smaller deciduous trees that have advanced decay and poor structural condition existed on site. Most of these trees have relatively small diameters and will not pose major risk to surrounding proposed structures or pathways. There is a large grove of native black cottonwood (*Populus trichocarpa*) trees along the existing walking paths that may require a more detailed assessment as proposed plans become more solidified.

Assignment & Scope of Report

This report outlines the site inspections by Casey Clapp, Sean Dugan, and Katie Hogan, of Tree Solutions Inc, on October 6, 7, 9, 19, 27, 2015. We were asked to visit specific areas on site in order to tag and assess significant trees for production of an Arborist Report including our findings and management recommendations. Chelsea McCann of Walker Macy Landscape Architects, requested these services to gain information on trees for site development.

The tree size, species, health and structural condition and related notes and recommendations for each tree can be found in the attached Tree Inventory. A site map with tree locations can be found in the attached Site Map. An aerial view of the existing conditions of the site and proposed plans can be found in Figures: Site Maps & Plans. Photographs, Glossary and References the site map. Limits of assignment can be found in Appendix A. Methods can be found in Appendix B. Additional assumptions and limiting conditions can be found in Appendix C.

Observations

The Site and History

The site consists mainly of a dense Douglas-fir (*Pseudotsuga menziesii*) – western hemlock (*Tsuga heterophylla*) forest covertype with predominantly native vegetation growing in the understory. Patches of wetland also exist throughout site which consist of native riparian trees and understory species. The southern half of the site is a grassy park area.

The grassy area to the south was previously a landfill site that was capped.

There is a series of heavily used walking paths throughout the site, primarily around the existing pond. A recent clearing event occurred in the northeast corner of the site, exposing forest-grown trees to new conditions. We were informed on site that this clearing was done to mitigate a root disease issue in a stand of Douglas-fir trees.

Common invasive plants such as invasive ivy (*Hedera* spp.), Himalayan blackberry (*Rubus bifrons*), cutleaf blackberry (*Rubus laciniatus*), English holly (*Ilex aquifolium*), and cherry laurel (*Prunus laurocerasus*) were observed. The highest density of invasive species was observed in areas bordered by trails. We noted that invasive ivy was recently removed or girdled on tree trunks of the retained trees in the northwest section of the site.

The site is a heavily used park that borders corporate headquarters for Boeing and Microsoft. We observed the park being used frequently by residents of the surrounding neighborhoods and by employees of the surrounding businesses.

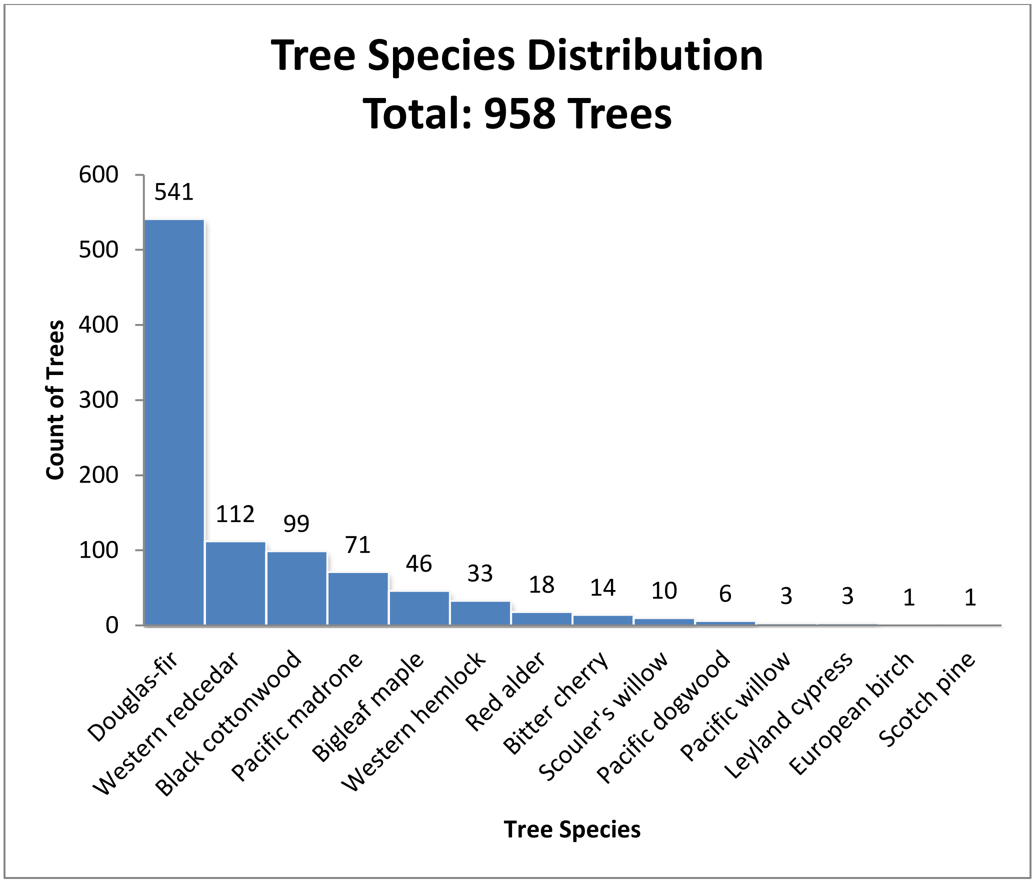
The Trees

We inventoried and assessed nine-hundred and fifty-eight (958) trees in the area scoped for inventory and assessment.

Tree species included naturally occurring Douglas-fir, western redcedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), Scouler's willow (*Salix scouleriana*), Pacific dogwood (*Cornus nuttallii*), cascara (*Rhamnus purshiana*), bitter cherry (*Prunus emarginata*), western hemlock (*Tsuga heterophylla*), Pacific madrone (*Arbutus menziesii*) and black cottonwood (*Populus trichocarpa*). We assessed a few planted Leyland cypress (*× Cuprocyparis leylandii*) trees around the pond. Several non-native, volunteer sapling tree species were also found sporadically throughout the site including Norway maple (*Acer platanoides*) and northern red oak (*Quercus rubra*).

Most of the trees found were in fair to good health and structural condition. Sixty-seven (67) trees were found to be in poor health or structural condition. Many of these trees had decay in their stems or were in a declining state of health.

Several trees in the central portion of the forested area in the northwest corner of the site had failed due to laminated root rot (*Phellinus sulphurascens*). This was reportedly found in the northeast section of the site as well, and many trees were removed to combat the spread of the fungus.



Discussion

The northwestern corner of the site is a relatively undisturbed native forest with many dominant, mature trees. This site has been left largely undisturbed since it was originally logged and has developed characteristics of a late-successional forest. These characteristics include large-diameter living trees, large-diameter standing dead stags; an understory of late-successional species such as western hemlock and western redcedar; and large-diameter fallen woody debris.

There were many sections of the site that mostly had black cottonwoods and red alders as canopy trees and had an understory composed of Himalayan blackberry. This suggests that those sections of the site were disturbed more recently. Black cottonwoods and red alders are short lived, early successional species that colonize disturbed areas quickly.

Invasive ivy (*Hedera* spp.) had colonized much of the entire site and was growing up the stems of many trees. This vine can outcompete native vegetation and shade out the canopies of living trees. Additionally, the extra weight can cause the trees to fail under high wind load situations. All ivy on the stems of trees should be removed prior to any development activities.

Currently development plans call for a large amount of disturbance into the northwest area of the site. The trees in this area have all grown in a forested condition and may be destabilized if a large swath is cut into the stand. Plans should be adjusted as necessary to retain high-quality, stable trees where possible, and potentially less-stable trees should be chosen for removal.

Where possible, large, healthy conifers and Pacific madrone trees should be retained as they are more long-lived species that generally require minimal management. Additionally, their dense, evergreen canopies help to reduce the colonization of invasive species such as English holly and Himalayan blackberry.

Early successional species, such as black cottonwood, red alder, and bitter cherry, live comparably short lives and require extensive management as they age to reduce the risk of failure of large parts. Developing park facilities in upland areas dominated by these early-successional species will help to retain high-value trees in the interior sections of the site, and will place development on sites that do not have high-value understory species present.

In order to retain as many high-value tree species as possible, ensure that areas selected for retention have tree protection fencing thoroughly surrounding them. This will help to keep soils healthy and reduce the risk of root damage.

Several trees were noted as having a fungus present in their stems (see attached Tree Inventory.) Should these trees be retained near future targets, they should be inspected using advanced testing equipment to assess their structural integrity.

Recommendations

- Tree protection areas should be established prior to the commencement of site work activities, and maintained throughout all phases of development until completion.
- Maintain trees free of invasive species, and carefully remove invasive plants on the ground wherever possible.
- As noted in the attached tree inventory, there is the option to perform advanced assessment/testing of individual trees that show indications of decay or other defect. We recommend testing these trees if they are retained near targets.
- Retain mature, healthy conifers and their native understory species where possible.
- Attain all necessary permits prior to any site work commencement.

Site Map & Plans

Figure 1: Existing conditions and area of tree assessment.

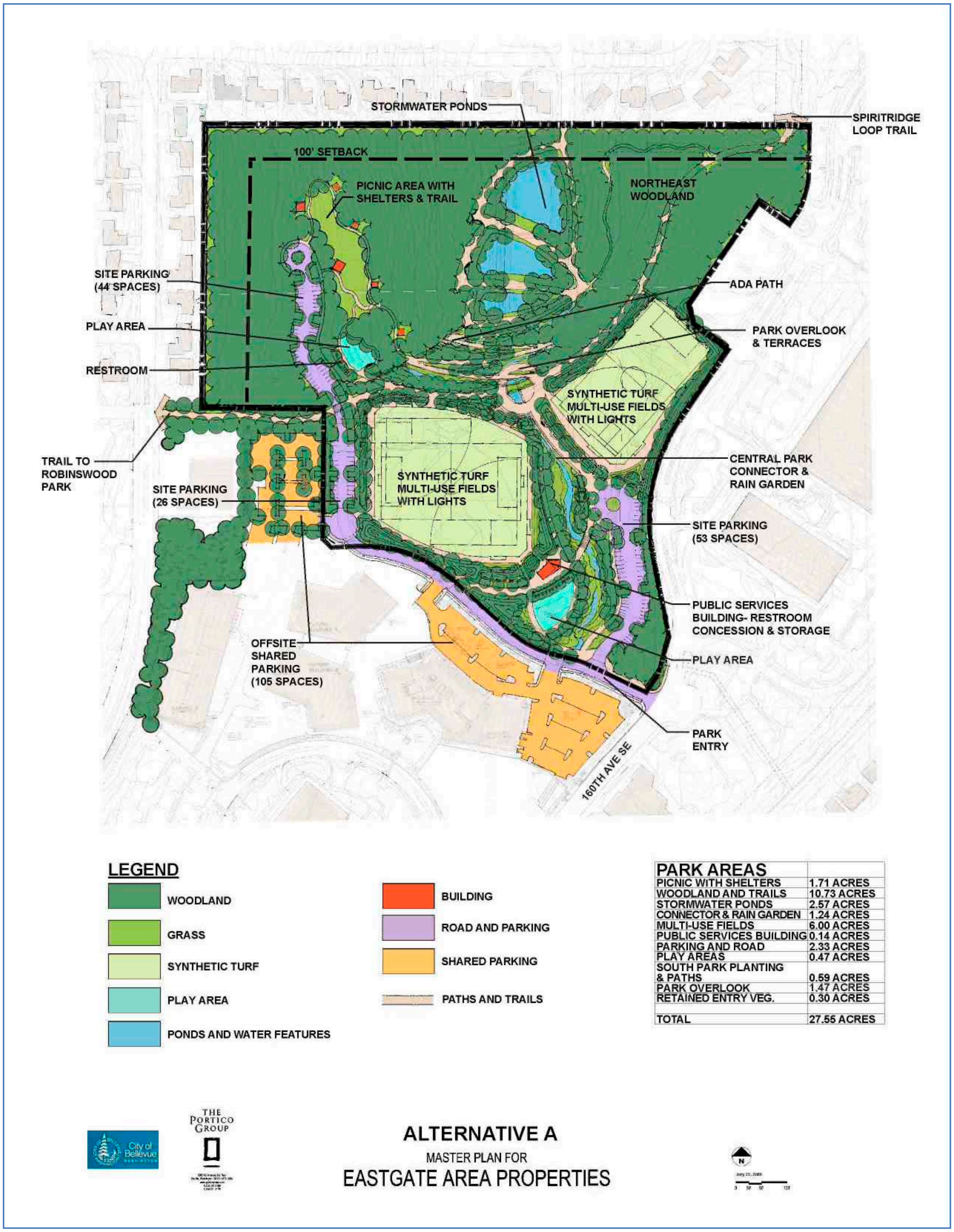


Figure 2: Proposed site plans.

Photographs

Photo 1: A view of the wooded area (10.53 acres) looking from the south. The interior of this area is dominated by a Douglas-fir—western hemlock covertype.

Photo 2: A view looking east at the edge between the forested and grassy areas.

Glossary

advanced assessment: an assessment performed to provide detailed information about specific tree parts, defects, targets, or site conditions. Specialized equipment, data collection and analysis, and/or expertise are usually required (ISA 2013)
ANSI A300: American National Standards Institute (ANSI) standards for tree care
basic assessment: detailed visual inspection of a tree and surrounding site that may include the use of simple tools. It requires that a tree risk assessor walk completely around the tree trunk looking at the site, aboveground roots, trunk, and branches (ISA 2013)
chlorotic: foliage with whitish or yellowish discoloration caused by lack of chlorophyll
codominant stems: stems or branches of nearly equal diameter, often weakly attached (Matheny *et al.* 1998)
cracks: defects in trees that, if severe, may pose a risk of tree or branch failure (Lilly 2001)
crown: the aboveground portions of a tree (Lilly 2001)
DBH or DSH: diameter at breast or standard height; the diameter of the trunk measured 54 inches (4.5 feet) above grade (Matheny *et al.* 1998)
deciduous: tree or other plant that loses its leaves sometime during the year and stays leafless generally during the cold season (Lilly 2001)
epicormic: arising from latent or adventitious buds (Lilly 2001)
evergreen: tree or plant that keeps its needles or leaves year round; this means for more than one growing season (Lilly 2001)
ISA: International Society of Arboriculture
included bark: bark that becomes embedded in a crotch between branch and trunk or between codominant stems and causes a weak structure (Lilly 2001)
landscape function: the environmental, aesthetic, or architectural functions that a plant can have (Lilly 2001)
lateral: secondary or subordinate branch (Lilly 2001)
level(s) of assessment: categorization of the breadth and depth of analysis used in an assessment (ISA 2013)
limited visual assessment: a visual assessment from a specified perspective such as foot, vehicle, or aerial (airborne) patrol of an individual tree or a population of trees near specified targets to identify specified conditions or obvious defects (ISA 2013)
mitigation: process of reducing damages or risk (Lilly 2001)
monitoring: keeping a close watch; performing regular checks or inspections (Lilly 2001)
owner/manager: the person or entity responsible for tree management or the controlling authority that regulates tree management (ISA 2013)
pathogen: causal agent of disease (Lilly 2001)
phototropic growth: growth toward light source or stimulant (Harris *et al.*1999)
retain and monitor: the recommendation to keep a tree and conduct follow-up assessments after a stated inspection interval (ISA 2013)
significant size: a tree measuring 8” DSH or greater
snag: a tree left partially standing for the primary purpose of providing habitat for wildlife
soil structure: the arrangement of soil particles (Lilly 2001)
sounding: process of striking a tree with a mallet or other appropriate tool and listening for tones that indicate dead bark, a thin layer of wood outside a cavity, or cracks in wood (ISA 2013)

structural defects: flaws, decay, or other faults in the trunk, branches, or root collar of a tree, whichmay lead to failure (Lilly 2001)

Visual Tree Assessment (VTA): method of evaluating structural defects and stability in trees by noting the pattern of growth. Developed by Claus Mattheck (Harris, *et al* 1999)

walk-by (assessment): a limited visual inspection, usually from one side of the tree, performed as the tree risk assessor walks by the tree(s) (ISA 2013)

References

ANSI A300 (Part 1) – 2008 American National Standards Institute. American National Standard for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance: Standard Practices (Pruning). New York: Tree Care Industry Association, 2008.

Dunster & Associates Environmental Consultants Ltd. Assessing Trees in Urban Areas and the Urban-Rural Interface, US Release 1.0. Silverton: Pacific Northwest Chapter ISA, 2006.

Dunster, Julian A., E. Thomas Smiley, Nelda Matheny, and Sharon Lilly. Tree Risk Assessment Manual. Champaign, Illinois: International Society of Arboriculture, 2013.

E. Smiley, N. Matheny, S. Lilly. Best Management Practices: TREE RISK ASSESSMENT. ISA 2011.

Lilly, Sharon. Arborists' Certification Study Guide. Champaign, IL: The International Society of Arboriculture, 2001.

Matheny, Nelda and James R. Clark. Trees and Development: A Technical Guide to Preservation of Trees During Land Development. Champaign, IL: International Society of Arboriculture, 1998.

Mattheck, Claus and Helge Breloer, The Body Language of Trees.: A Handbook for Failure Analysis. London: HMSO, 1994.

Appendix A - Limits of Assignment

Unless stated otherwise: 1) information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and 2) the inspection is limited to visual examination of the subject trees without dissection, excavation, probing, climbing, or coring unless explicitly specified. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

Tree Solutions did not review any reports or perform any tests related to the soil located on the subject property unless outlined in the scope of services. Tree Solutions staff are not and do not claim to be soils experts. An independent inventory and evaluation of the soils on site should be obtained by a qualified professional if an additional understanding of site characteristics is needed to make an informed decision.

Appendix B - Methods

We evaluated tree health and structure utilizing **visual tree assessment (VTA)** methods. The basis behind VTA is the identification of symptoms, which trees produce in reaction to weak spots or areas of mechanical stress. Trees react to mechanical and physiological stresses by growing more vigorously to re-enforce weak areas, while depriving less stressed parts (Mattheck & Breloer 1994). Understanding uniform stress allows us to make informed judgments about the condition of a tree.

Using the **International Society of Arboriculture (ISA)** Tree Risk Assessment Qualification method, we assigned a risk rating to the tree. We performed a Level 2 risk assessment of all trees as outlined in the Best Management Practices companion publication to the American National Standards Institute (ANSI) A300 Part 9: Tree Shrub and Other Woody Plant Management – Standards and Practices, Tree Risk Assessment. This approach provides assessors a structured process, based on good science and arboriculture, to assign recommended thresholds for action for the purpose of informing risk managers. Additional information regarding the method can be found in Appendix F.

We measured the diameter of each tree at 54 inches above grade, **diameter at standard height (DSH)**. Where a tree had multiple stems, we measured each stem individually at standard height and determined a single-stem equivalent diameter by using the method outlined in the Guide for Plant Appraisal, 9th Edition, published by the Council of Tree and Landscape Appraisers.

Appendix C - Assumptions & Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.

2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.

3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.

4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services as described in the Consulting Arborist Agreement.

5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.

6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant's prior express written consent.

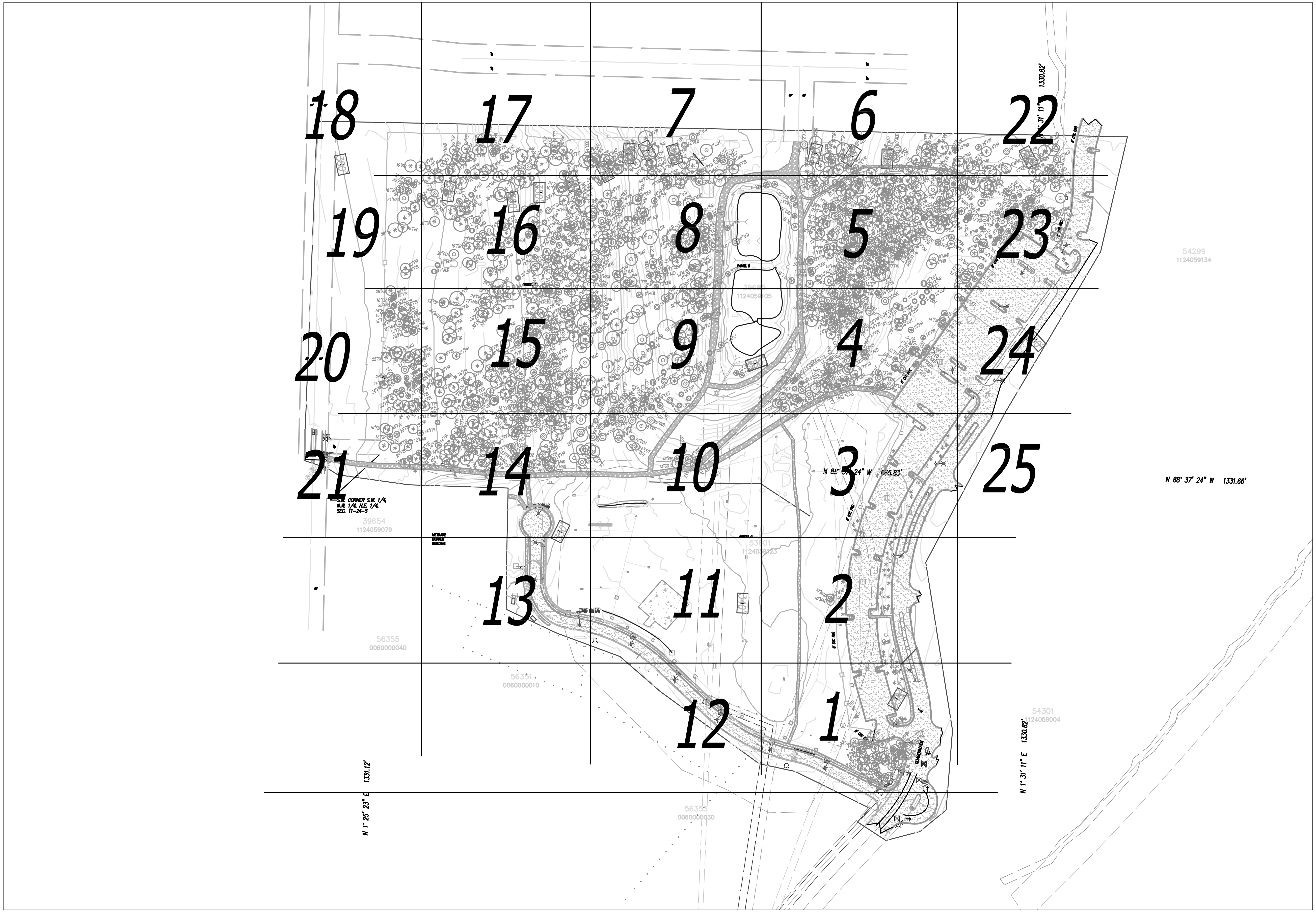
7. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.

8. All photographs included in this report were taken by Tree Solutions Inc. during the documented site visit, unless otherwise noted.

9. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.

10. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of the those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring. Consultant makes no warranty or guarantee, express or implied, that the problems or deficiencies of the plans or property in question may not arise in the future.

11. Loss or alteration of any part of this Agreement invalidates the entire report.



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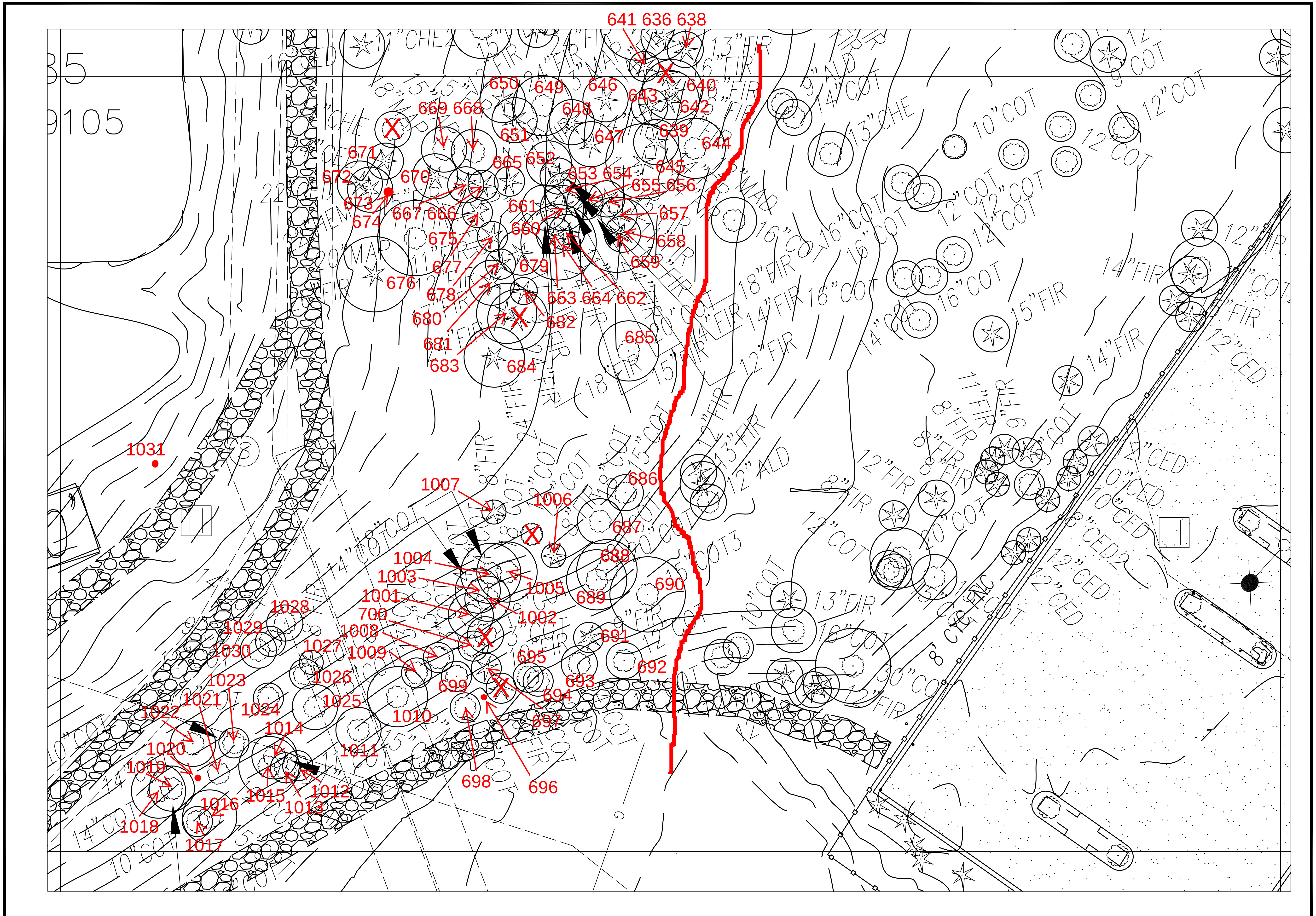

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Bellevue Air Park
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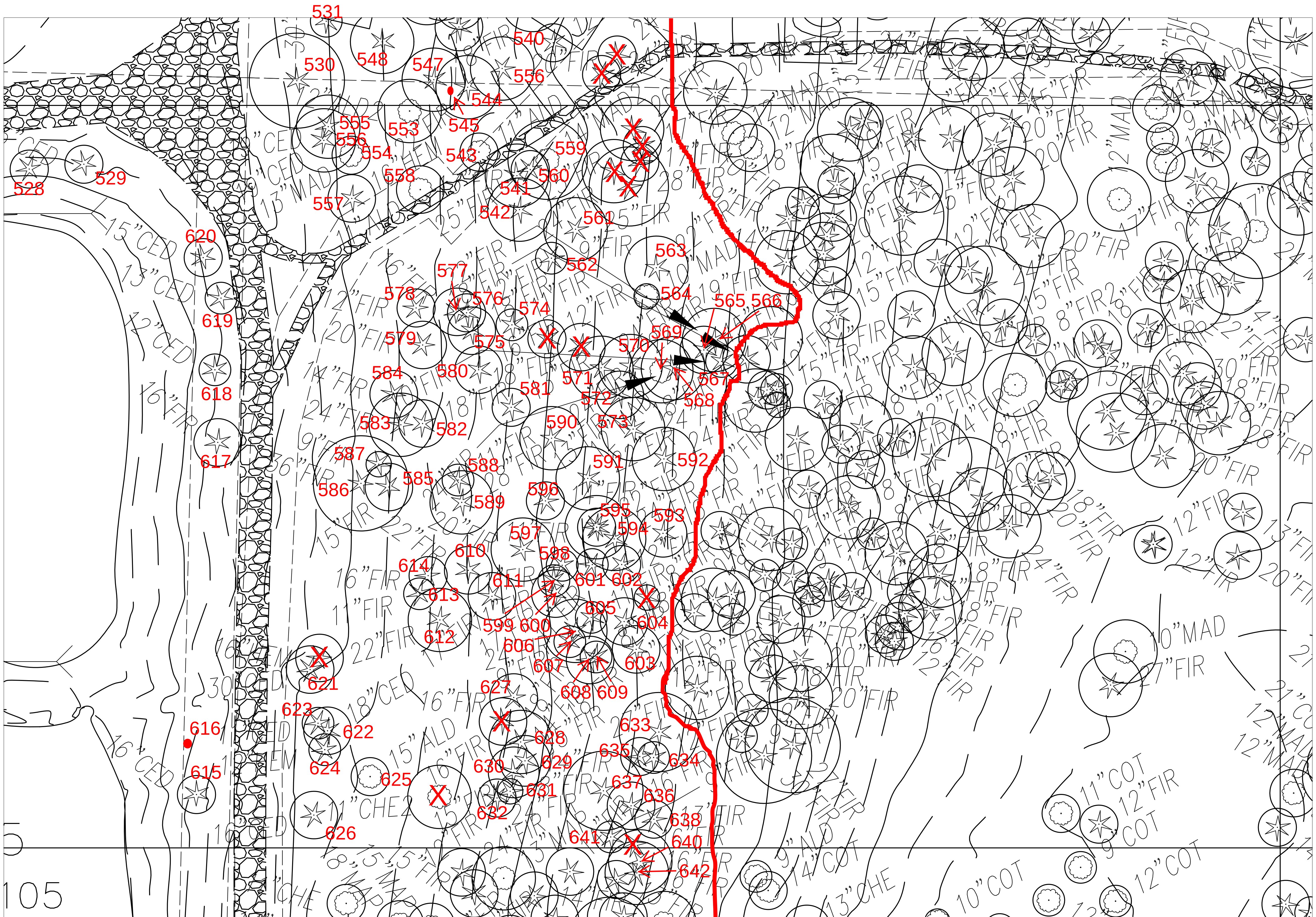

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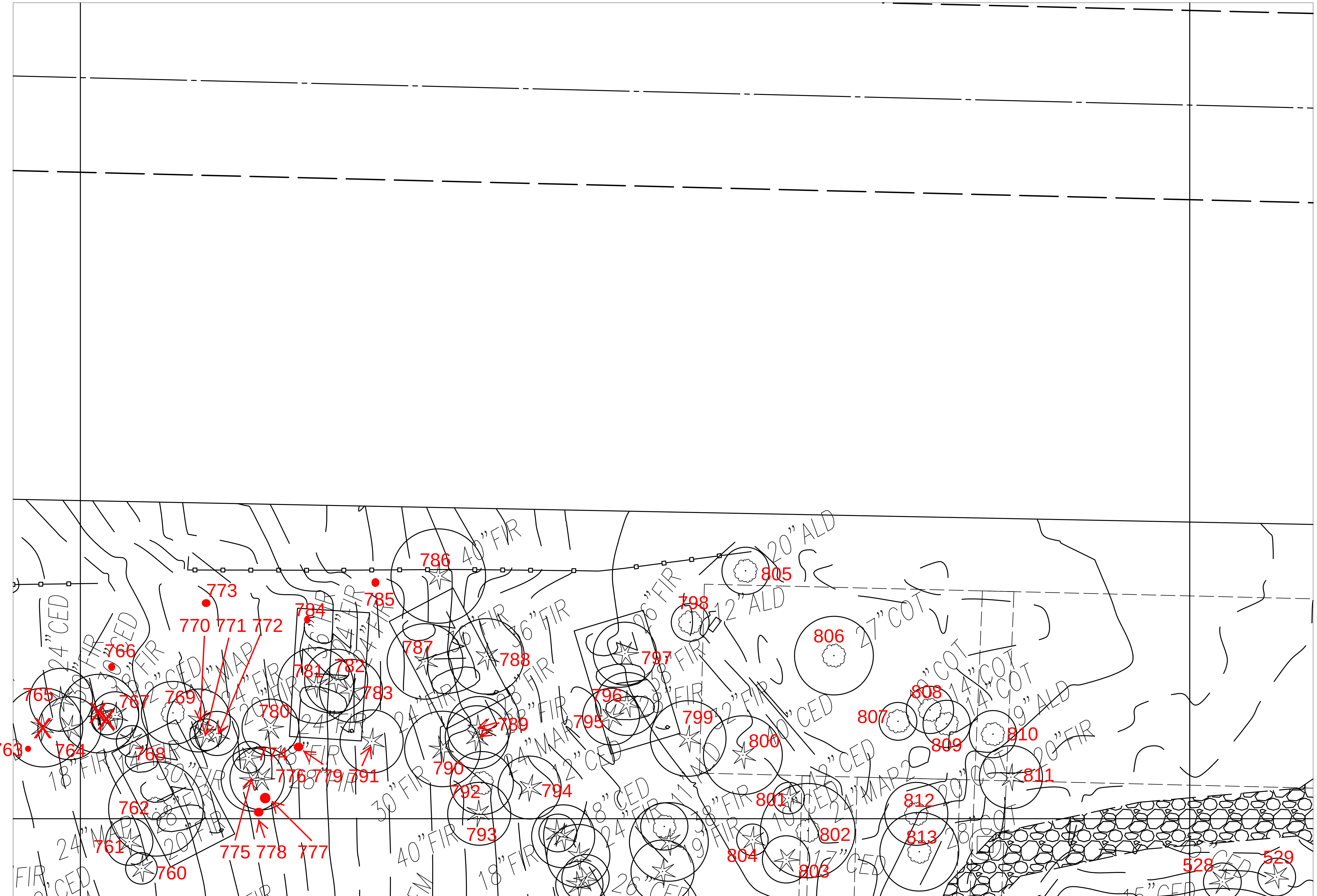

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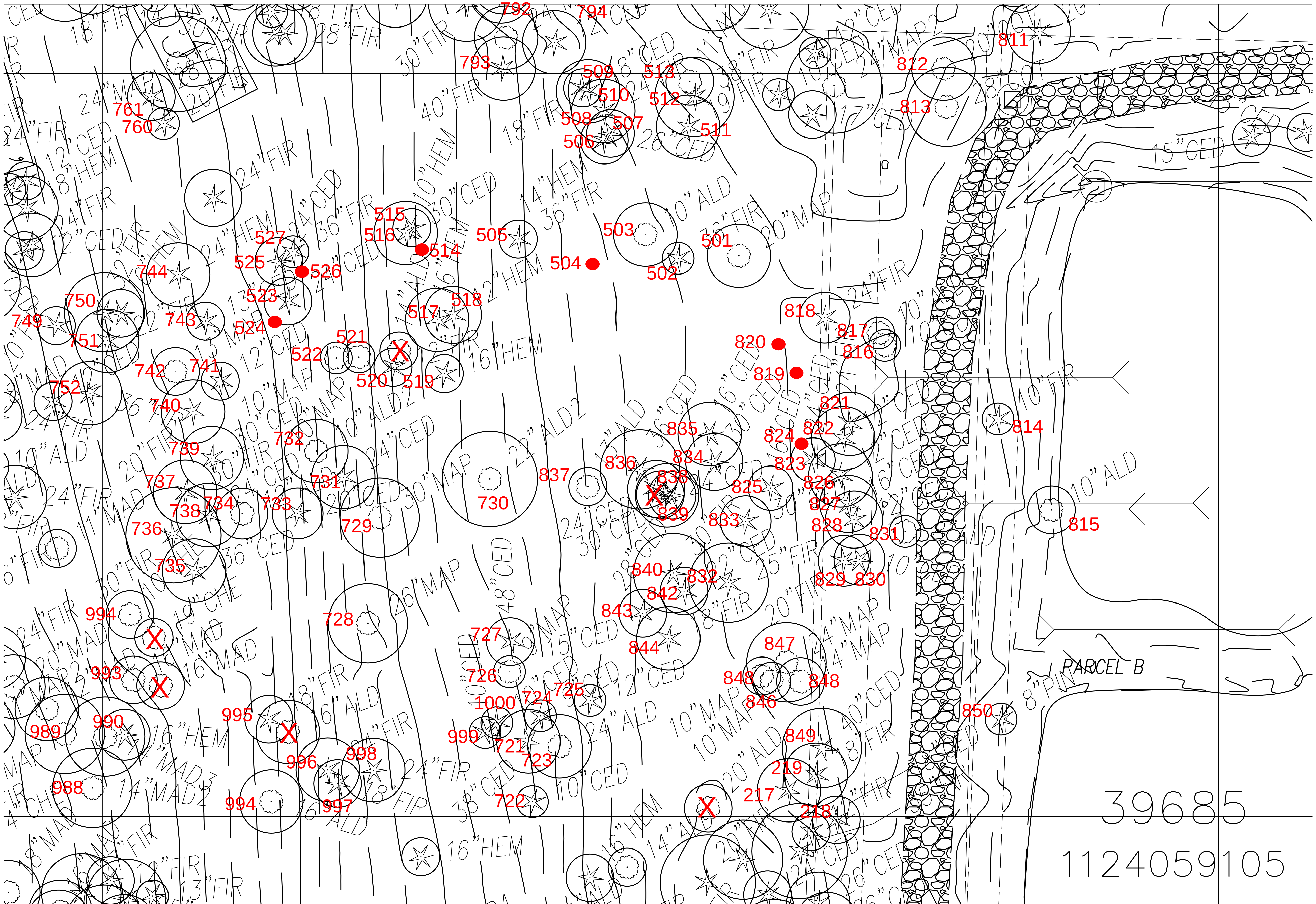

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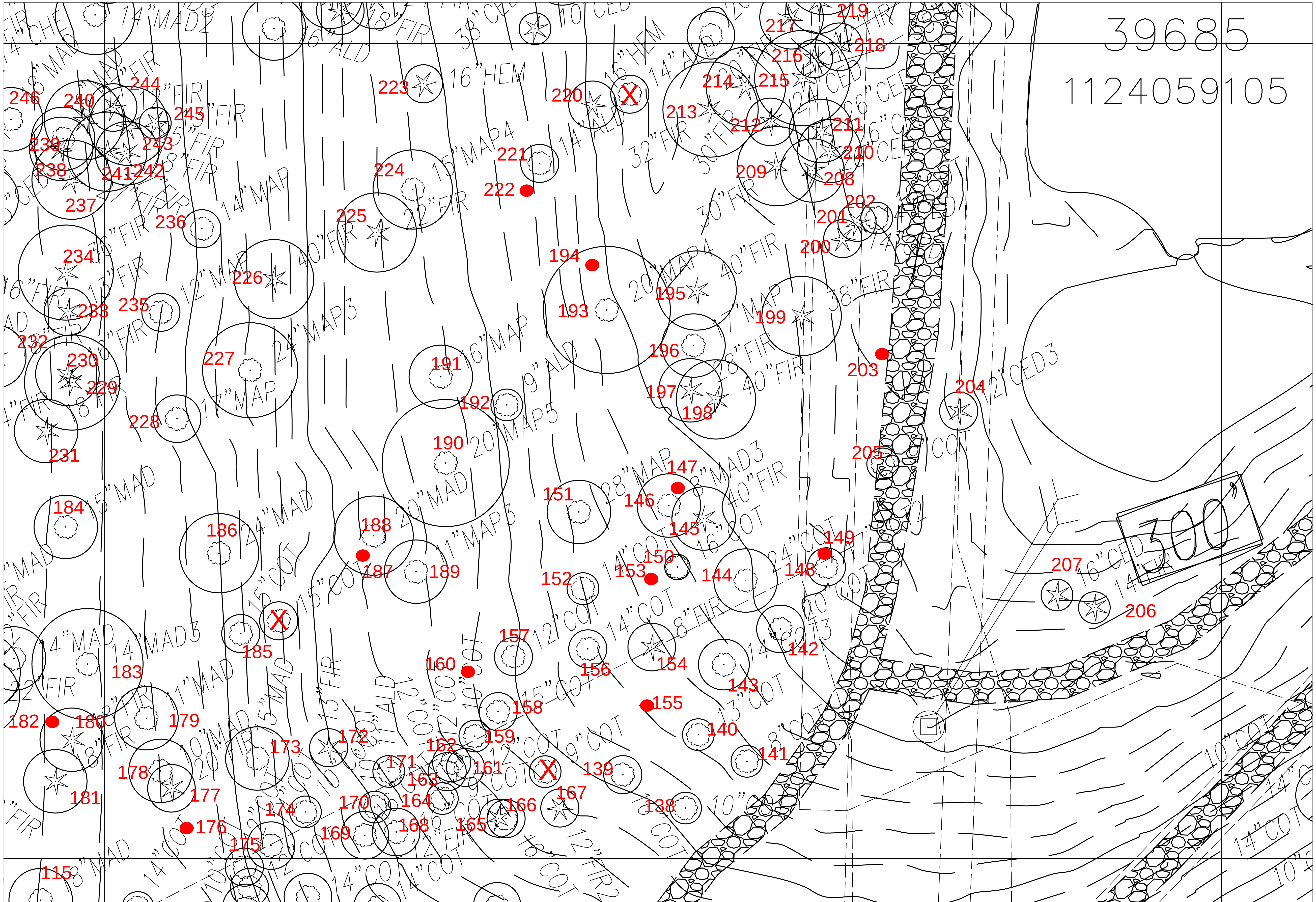

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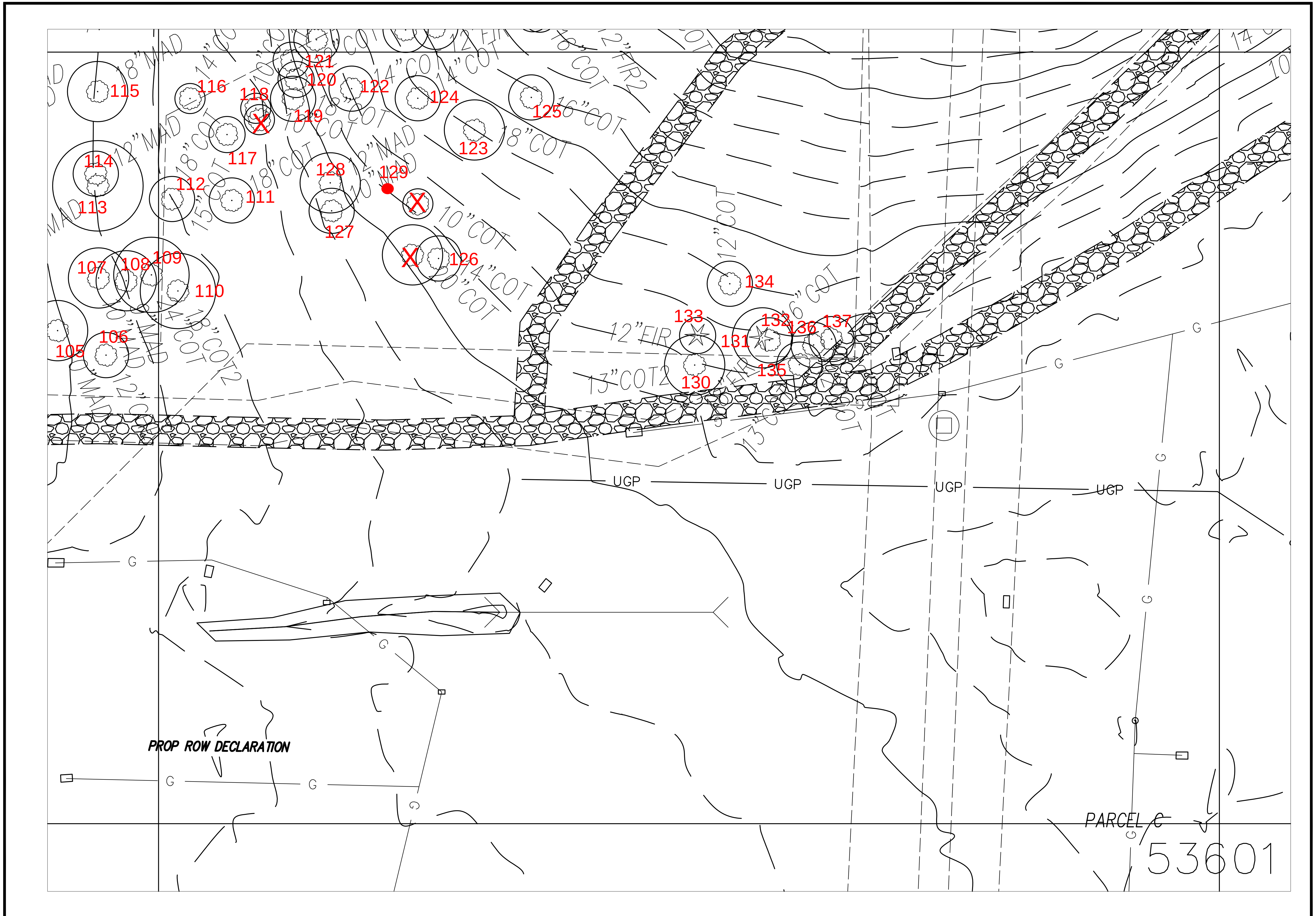

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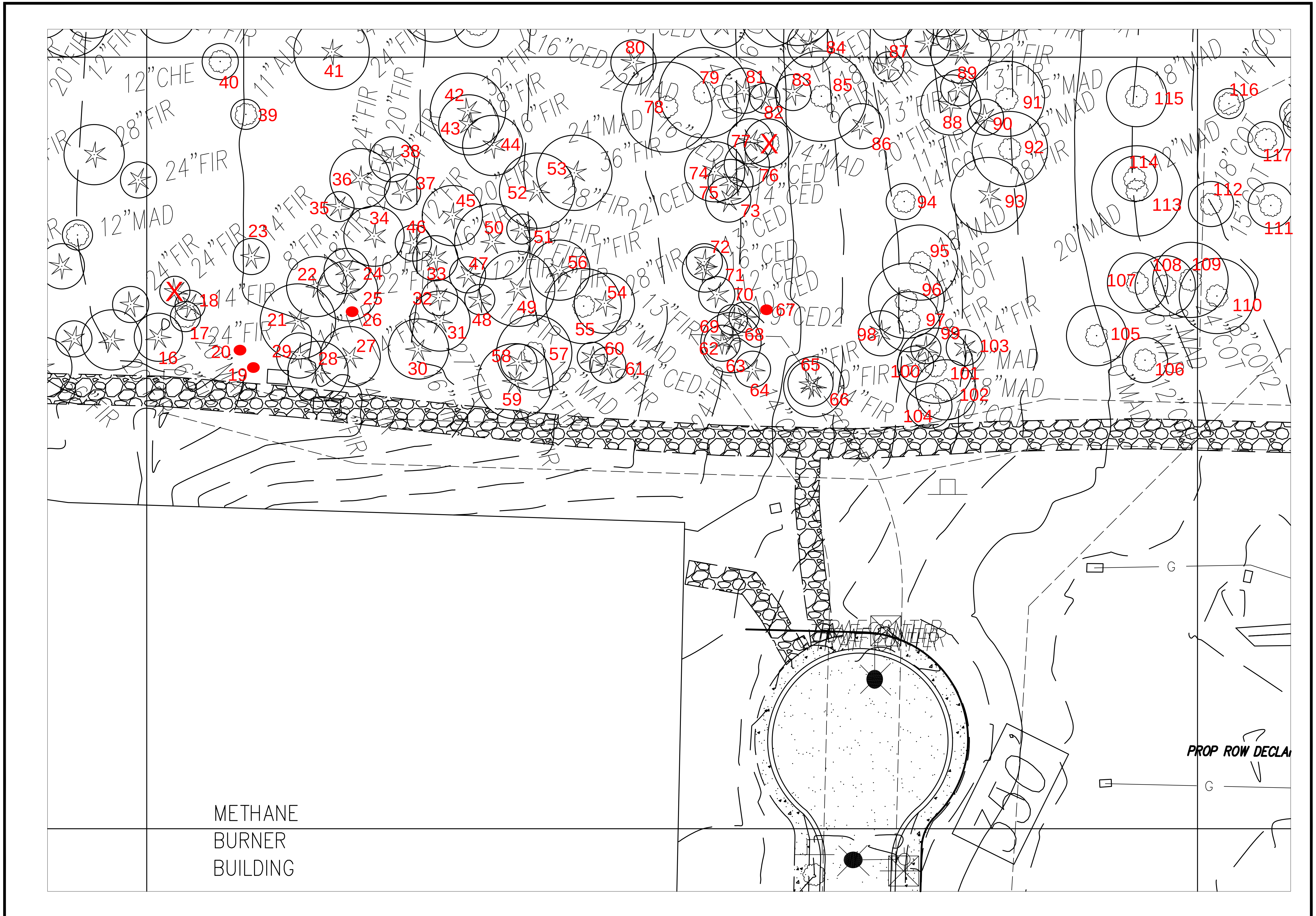

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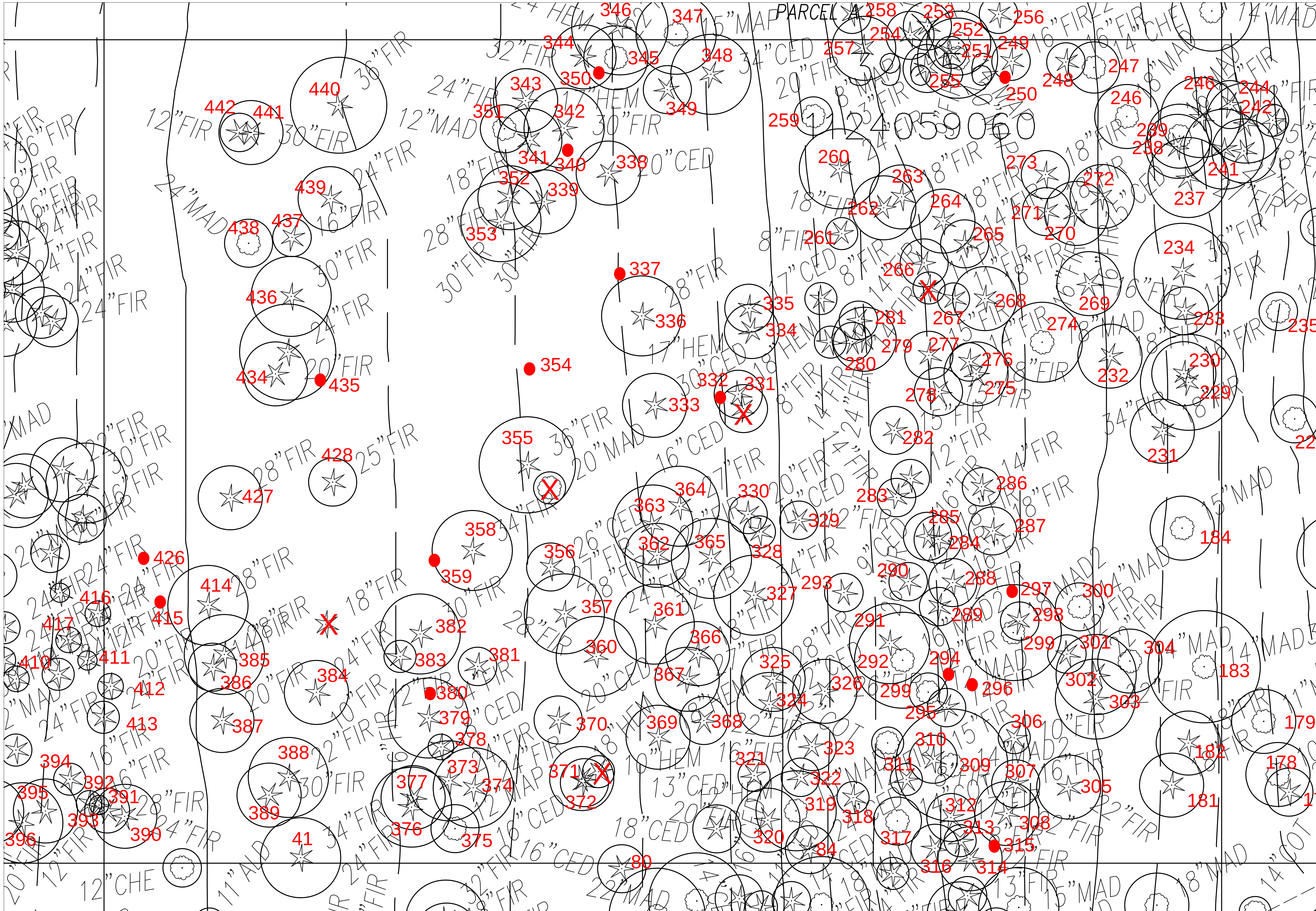

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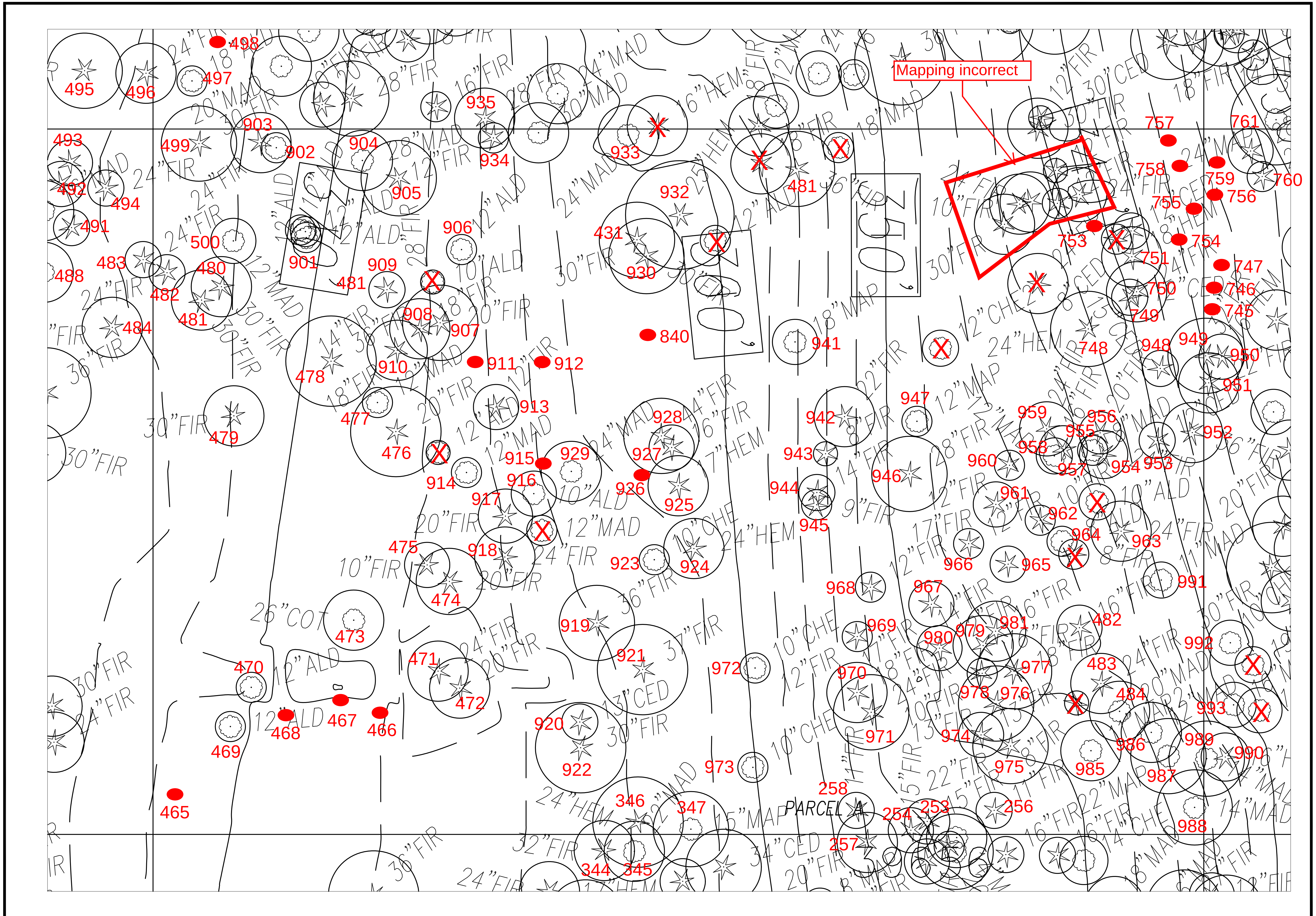

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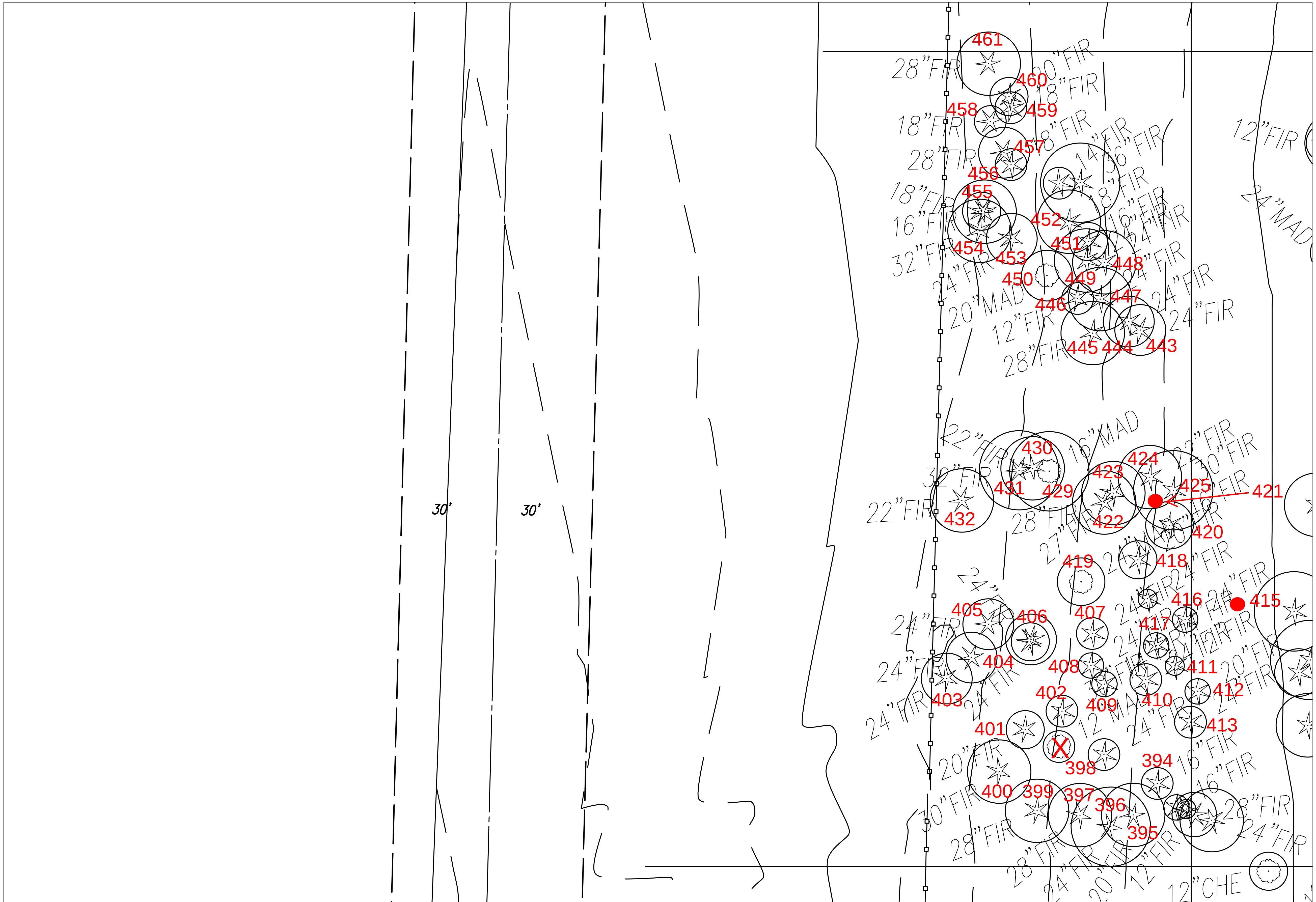

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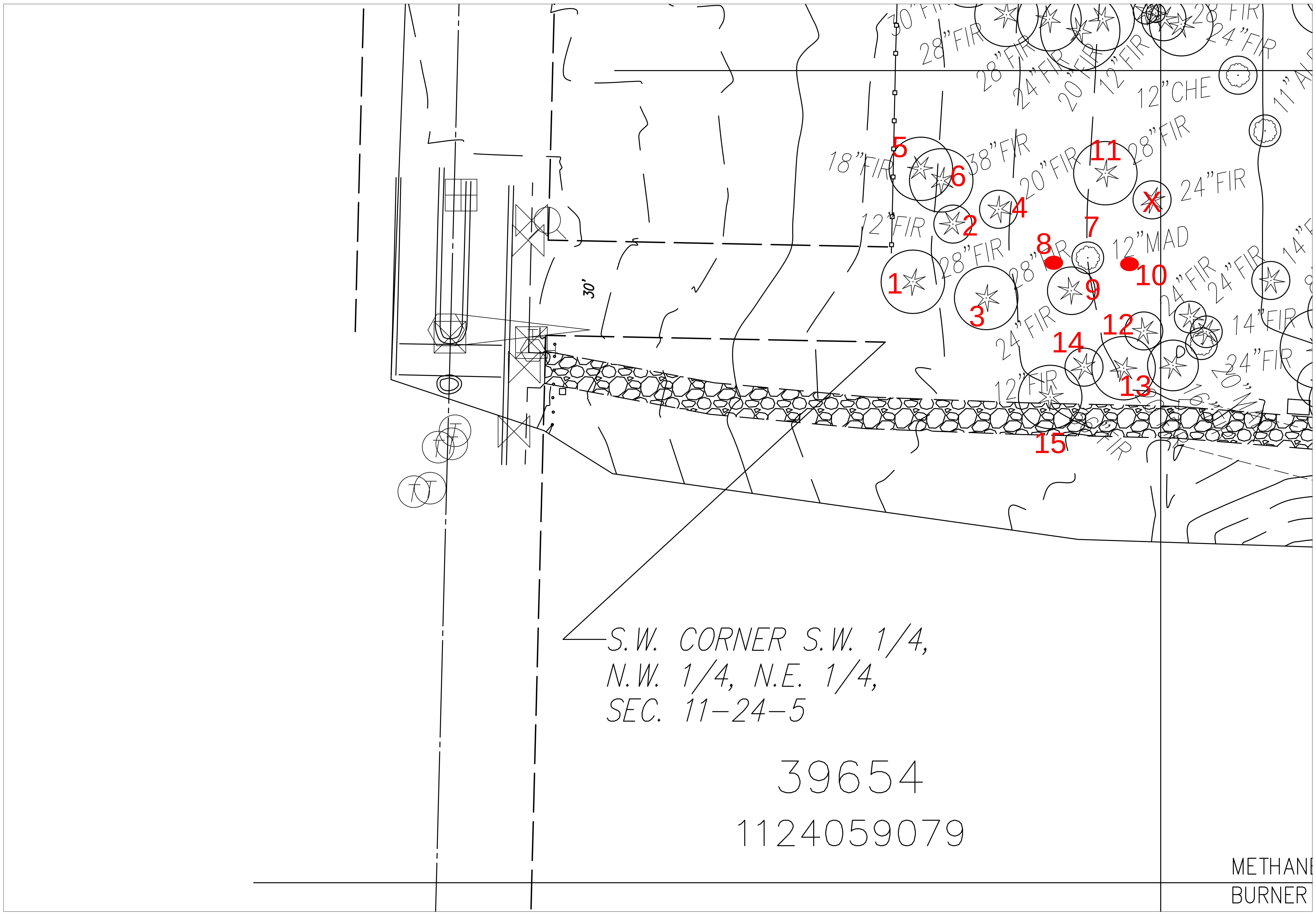

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Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
1	*Pseudotsuga menziesii*	Douglas-fir	29.0	Good	Good	12		Heavy blackberry (*Rubus bifrons*) coverage
2	*Pseudotsuga menziesii*	Douglas-fir	14.1	Good	Good	11		Heavy blackberry (*Rubus bifrons*) coverage
3	*Pseudotsuga menziesii*	Douglas-fir	30.0	Good	Good	15		Heavy blackberry (*Rubus bifrons*) coverage
4	*Pseudotsuga menziesii*	Douglas-fir	17.5	Good	Good	13		Heavy blackberry (*Rubus bifrons*) coverage
5	*Pseudotsuga menziesii*	Douglas-fir	17.0	Good	Fair	16		Lost top, suppressed tree; heavy blackberry (*Rubus bifrons*) coverage
6	*Pseudotsuga menziesii*	Douglas-fir	40.5	Good	Good	19		Exposed roots; heavy blackberry (*Rubus bifrons*) coverage
7	*Arbutus menziesii*	Pacific madrone	11.4	Fair	Fair	16		Heavy blackberry (*Rubus bifrons*) coverage
8	*Pseudotsuga menziesii*	Douglas-fir	8.3	Fair	Fair	17		Heavy blackberry (*Rubus bifrons*) coverage
9	*Pseudotsuga menziesii*	Douglas-fir	20.0	Fair	Good	18		Heavy blackberry (*Rubus bifrons*) coverage
10	*Pseudotsuga menziesii*	Douglas-fir	10.3	Good	Fair	15		Heavy blackberry (*Rubus bifrons*) coverage
11	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Fair	19		Heavy blackberry (*Rubus bifrons*) coverage
12	*Pseudotsuga menziesii*	Douglas-fir	23.0	Fair	Good	19		
13	*Pseudotsuga menziesii*	Douglas-fir	18.4	Fair	Poor	15		Douglas-fir canker on stem; bird holes in stem; high risk tree if targets are in area
14	*Pseudotsuga menziesii*	Douglas-fir	13.9	Good	Fair	16		Lost top
15	*Pseudotsuga menziesii*	Douglas-fir	35.0	Good	Fair	14		Wound at base; kink in stem; crack in stem; recommend testing if retained
16	*Pseudotsuga menziesii*	Douglas-fir	16.2	Good	Good	12		
17	*Arbutus menziesii*	Pacific madrone	20.3	Fair	Good	18		Canker on stem; large dead limbs
18	*Pseudotsuga menziesii*	Douglas-fir	17.0	Good	Good	16		

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
19	*Salix scouleriana*	Scouler's willow	11.4	Fair	Poor	14		Wound at base; willow borer evidence on stem; central decay in center
20	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	13		
21	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	15		
22	*Pseudotsuga menziesii*	Douglas-fir	17.5	Fair	Fair	13		Douglas-fir canker on stem
23	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	11		
24	*Pseudotsuga menziesii*	Douglas-fir	17.0	Fair	Good	15		Douglas-fir canker on stem
25	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	13		Shallow roots; suppressed
26	*Pseudotsuga menziesii*	Douglas-fir	14.4	Fair	Fair	12		Shallow roots; suppressed
27	*Pseudotsuga menziesii*	Douglas-fir	13.7	Good	Good	13		
28	*Pseudotsuga menziesii*	Douglas-fir	28.9	Good	Good	17		Sparse crown
29	*Pseudotsuga menziesii*	Douglas-fir	14.8	Good	Fair	15		Leaning trunk
30	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	18		
31	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	14		
32	*Pseudotsuga menziesii*	Douglas-fir	14.2	Fair	Poor	8		Decay in a wound at the base
33	*Pseudotsuga menziesii*	Douglas-fir	14.5	Fair	Good	7		Suppressed
34	*Pseudotsuga menziesii*	Douglas-fir	20.0	Fair	Good	11		Suppressed
35	*Pseudotsuga menziesii*	Douglas-fir	9.0	Poor	Fair	10		Suppressed

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
36	*Pseudotsuga menziesii*	Douglas-fir	23.0	Fair	Good	23		
37	*Pseudotsuga menziesii*	Douglas-fir	13.0	Fair	Good	21		
38	*Pseudotsuga menziesii*	Douglas-fir	22.5	Fair	Good	19		
39	*Alnus rubra*	Red alder	10.0	Good	Good	14		
40	*Prunus emarginata*	Bitter cherry	12.0	Fair	Fair	17		
41	*Pseudotsuga menziesii*	Douglas-fir	27.0	Good	Good	20		
42	*Pseudotsuga menziesii*	Douglas-fir	26.0	Fair	Good	22		
43	*Pseudotsuga menziesii*	Douglas-fir	20.0	Fair	Good	17		
44	*Pseudotsuga menziesii*	Douglas-fir	14.3	Fair	Fair	12		
45	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Fair	13		Co-dominant stems
46	*Pseudotsuga menziesii*	Douglas-fir	12.6	Good	Fair	14		
47	*Pseudotsuga menziesii*	Douglas-fir	11.3	Good	Good	7		
48	*Pseudotsuga menziesii*	Douglas-fir	8.0	Good	Good	6		
49	*Pseudotsuga menziesii*	Douglas-fir	21.1	Good	Good	18		
50	*Pseudotsuga menziesii*	Douglas-fir	28.6	Good	Good	19		
51	*Pseudotsuga menziesii*	Douglas-fir	8.5	Good	Good	20		
52	*Pseudotsuga menziesii*	Douglas-fir	26.3	Good	Good	23		
53	*Pseudotsuga menziesii*	Douglas-fir	32.6	Good	Good	28		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
54	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	25		
55	*Arbutus menziesii*	Pacific madrone	23.0	Good	Fair	30		Canker on stem; large dead parts
56	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	17		
57	*Arbutus menziesii*	Pacific madrone	14.0	Good	Good	22		
58	*Pseudotsuga menziesii*	Douglas-fir	12.3	Fair	Good	14		Suppressed
59	*Pseudotsuga menziesii*	Douglas-fir	29.5	Good	Good	21		
60	*Pseudotsuga menziesii*	Douglas-fir	9.7	Good	Good	16		
61	*Thuja plicata*	Western redcedar	13.0	Good	Good	17		Decay in central column; ant activity
62	*Pseudotsuga menziesii*	Douglas-fir	14.7	Good	Good	16		
63	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	15		
64	*Thuja plicata*	Western redcedar	15.0	Good	Good	16		
65	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	27		
66	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	13		Suppressed
67	*Thuja plicata*	Western redcedar	9.0	Good	Good	11		
68	*Thuja plicata*	Western redcedar	10.2	Good	Good	11		
69	*Thuja plicata*	Western redcedar	9.1	Good	Good	12		
70	*Thuja plicata*	Western redcedar	10.9	Good	Good	10		
71	*Thuja plicata*	Western redcedar	19.5	Good	Good	15		Laminated root rot (*Phellinus weirii*) in area
72	*Thuja plicata*	Western redcedar	13.7	Good	Good	17		Laminated root rot (*Phellinus weirii*) in area
73	*Thuja plicata*	Western redcedar	12.3	Good	Good	15		Laminated root rot (*Phellinus weirii*) in area
74	*Arbutus menziesii*	Pacific madrone	9.9	Good	Good	32		Laminated root rot (*Phellinus weirii*) in area
75	*Thuja plicata*	Western redcedar	16.0	Good	Good	11		Laminated root rot (*Phellinus weirii*) in area
76	*Thuja plicata*	Western redcedar	18.5	Good	Good	10		
77	*Thuja plicata*	Western redcedar	15.0	Good	Good	12		
78	*Arbutus menziesii*	Pacific madrone	19.9	Good	Poor	30		Tree failed onto side of this tree
79	*Arbutus menziesii*	Pacific madrone	21.0	Good	Good	28		

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
80	*Thuja plicata*	Western redcedar	17.0	Good	Good	14		
81	*Thuja plicata*	Western redcedar	17.8	Good	Good	18		
82	*Thuja plicata*	Western redcedar	10.8	Good	Good	17		
83	*Thuja plicata*	Western redcedar	12.8	Good	Good	12		
84	*Thuja plicata*	Western redcedar	23.2	Good	Good	14		
85	*Arbutus menziesii*	Pacific madrone	16.0	Good	Good	14		
86	*Pseudotsuga menziesii*	Douglas-fir	11.5	Good	Good	10		
87	*Pseudotsuga menziesii*	Douglas-fir	8.7	Good	Good	12		
88	*Pseudotsuga menziesii*	Douglas-fir	18.7	Good	Good	14		
89	*Pseudotsuga menziesii*	Douglas-fir	12.2	Good	Good	16		
90	*Pseudotsuga menziesii*	Douglas-fir	10.7	Good	Good	11		
91	*Arbutus menziesii*	Pacific madrone	12.9	Good	Good	20		
92	*Arbutus menziesii*	Pacific madrone	13.7	Fair	Fair	25		
93	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	22		
94	*Populus trichocarpa*	Black cottonwood	12.8	Good	Good	17		
95	*Arbutus menziesii*	Pacific madrone	16.3	Good	Good	25		
96	*Acer macrophyllum*	Bigleaf maple	15.3	Good	Good	26		
97	*Populus trichocarpa*	Black cottonwood	23.0	Good	Good	25		
98	*Pseudotsuga menziesii*	Douglas-fir	18.5	Good	Good	17		
99	*Pseudotsuga menziesii*	Douglas-fir	10.8	Good	Good	11		
100	*Pseudotsuga menziesii*	Douglas-fir	9.0	Good	Good	11		
101	*Arbutus menziesii*	Pacific madrone	20.3	Good	Good	23		

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
102	*Arbutus menziesii*	Pacific madrone	21.4	Good	Good	26		Co-dominant at DSH, measured diameter at the narrowest point below the union
103	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	12		
104	*Populus trichocarpa*	Black cottonwood	12.0	Good	Fair	22		
105	*Arbutus menziesii*	Pacific madrone	11.0	Good	Good	19		
106	*Prunus emarginata*	Bitter cherry	11.2	Good	Fair	13		Co-dominant from base: 9.5, 6.0
107	*Arbutus menziesii*	Pacific madrone	9.6	Good	Good	29		
108	*Arbutus menziesii*	Pacific madrone	8.5	Good	Good	26		
109	*Populus trichocarpa*	Black cottonwood	22.5	Good	Good	22		
110	*Populus trichocarpa*	Black cottonwood	23.3	Good	Fair	20		Co-dominant at base: 13.5, 19.0; animal burrow excavation around roots
111	*Populus trichocarpa*	Black cottonwood	22.0	Good	Good	17		Animal burrow excavation around roots
112	*Populus trichocarpa*	Black cottonwood	17.9	Good	Good	15		Animal burrow excavation around roots
113	*Arbutus menziesii*	Pacific madrone	21.0	Good	Good	19		Animal burrow excavation around roots
114	*Arbutus menziesii*	Pacific madrone	11.7	Good	Good	18		Animal burrow excavation around roots
115	*Arbutus menziesii*	Pacific madrone	14.0	Fair	Good	23		Animal burrow excavation around roots
116	*Populus trichocarpa*	Black cottonwood	12.0	Poor	Good	8		Sparse crown; animal burrow excavation around roots
117	*Populus trichocarpa*	Black cottonwood	15.0	Fair	Good	9		Animal burrow excavation around roots
118	*Populus trichocarpa*	Black cottonwood	10.4	Fair	Fair	10		Animal burrow excavation around roots
119	*Populus trichocarpa*	Black cottonwood	19.0	Good	Good	13		Sparse crown; animal burrow excavation around roots
120	*Populus trichocarpa*	Black cottonwood	11.1	Fair	Good	7		Sparse crown; animal burrow excavation around roots
121	*Populus trichocarpa*	Black cottonwood	12.3	Fair	Good	8		Sparse crown; animal burrow excavation around roots

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
122	*Populus trichocarpa*	Black cottonwood	16.0	Fair	Good	12		Sparse crown; animal burrow excavation around roots
123	*Populus trichocarpa*	Black cottonwood	24.0	Fair	Good	21		Sparse crown; animal burrow excavation around roots
124	*Populus trichocarpa*	Black cottonwood	16.6	Fair	Good	16		Sparse crown; animal burrow excavation around roots
125	*Populus trichocarpa*	Black cottonwood	21.0	Fair	Good	17		Sparse crown; animal burrow excavation around roots
126	*Populus trichocarpa*	Black cottonwood	15.5	Good	Fair	18		Trunk lean
127	*Arbutus menziesii*	Pacific madrone	10.0	Good	Good	22		
128	*Arbutus menziesii*	Pacific madrone	11.1	Good	Good	21		
130	*Populus trichocarpa*	Black cottonwood	20.4	Good	Fair	14		Co-dominant at base: 13.2, 15.6
131	*Pseudotsuga menziesii*	Douglas-fir	22.2	Good	Good	18		Exposed roots; shared rootplate with tree 132
132	*Populus trichocarpa*	Black cottonwood	20.4	Good	Fair	23		Exposed roots; shared rootplate with tree 131; broken top
133	*Pseudotsuga menziesii*	Douglas-fir	13.8	Good	Good	10		
134	*Populus trichocarpa*	Black cottonwood	14.7	Good	Fair	15		
135	*Populus trichocarpa*	Black cottonwood	14.2	Good	Good	13		
136	*Populus trichocarpa*	Black cottonwood	11.5	Good	Good	14		
137	*Populus trichocarpa*	Black cottonwood	13.2	Good	Good	13		
138	*Populus trichocarpa*	Black cottonwood	17.2	Fair	Good	15		Co-dominant at base: 14.0, 10.0
139	*Populus trichocarpa*	Black cottonwood	17.6	Good	Fair	18		
140	*Populus trichocarpa*	Black cottonwood	13.2	Poor	Fair	11		Decay in stem

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
141	*Populus trichocarpa*	Black cottonwood	11.2	Fair	Fair	14		Decay in leader
142	*Populus trichocarpa*	Black cottonwood	21.5	Good	Good	26		
143	*Populus trichocarpa*	Black cottonwood	22.1	Good	Fair	25		Co-dominant at base: 12.9, 18.0
144	*Populus trichocarpa*	Black cottonwood	28.9	Good	Good	31		
145	*Pseudotsuga menziesii*	Douglas-fir	47.5	Good	Good	28		Heavy invasive ivy (*Hedera* spp.) on stem
146	*Arbutus menziesii*	Pacific madrone	9.2	Good	Good	27		Heavy invasive ivy (*Hedera* spp.) on stem
147	*Arbutus menziesii*	Pacific madrone	9.0	Good	Good	26		Heavy invasive ivy (*Hedera* spp.) on stem
148	*Populus trichocarpa*	Black cottonwood	19.8	Good	Good	24		
149	*Populus trichocarpa*	Black cottonwood	17.0	Good	Fair	25		
150	*Populus trichocarpa*	Black cottonwood	18.5	Good	Good	18		
151	*Acer macrophyllum*	Bigleaf maple	25.6	Good	Good	29		
152	*Populus trichocarpa*	Black cottonwood	14.4	Good	Good	14		
153	*Populus trichocarpa*	Black cottonwood	9.9	Fair	Fair	10		Dead top; decay in stem
154	*Pseudotsuga menziesii*	Douglas-fir	11.2	Good	Good	12		
155	*Populus trichocarpa*	Black cottonwood	11.1	Good	Good	11		
156	*Populus trichocarpa*	Black cottonwood	14.7	Good	Good	16		
157	*Populus trichocarpa*	Black cottonwood	14.0	Good	Good	18		
158	*Populus trichocarpa*	Black cottonwood	18.0	Good	Good	17		Surface roots

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
159	*Populus trichocarpa*	Black cottonwood	9.7	Good	Good	9		
160	*Pseudotsuga menziesii*	Douglas-fir	8.6	Good	Good	9		
161	*Populus trichocarpa*	Black cottonwood	13.0	Good	Good	15		
162	*Populus trichocarpa*	Black cottonwood	12.5	Good	Good	15		
163	*Populus trichocarpa*	Black cottonwood	11.4	Good	Good	15		
164	*Populus trichocarpa*	Black cottonwood	9.1	Good	Fair	13		
165	*Pseudotsuga menziesii*	Douglas-fir	13.3	Good	Good	15		Shared base
166	*Populus trichocarpa*	Black cottonwood	16.5	Good	Fair	17		Co-dominant, asymmetrical canopy to south
167	*Pseudotsuga menziesii*	Douglas-fir	16.9*	Good	Fair	13		
168	*Populus trichocarpa*	Black cottonwood	20.0	Good	Good	16		
169	*Populus trichocarpa*	Black cottonwood	17.0	Good	Good	18		
170	*Populus trichocarpa*	Black cottonwood	11.0	Good	Good	10		
171	*Populus trichocarpa*	Black cottonwood	10.9	Good	Fair	9		
172	*Pseudotsuga menziesii*	Douglas-fir	13.4	Good	Good	10		
173	*Arbutus menziesii*	Pacific madrone	14.5	Good	Good	20		
174	*Populus trichocarpa*	Black cottonwood	10.1	Good	Good	14		
175	*Populus trichocarpa*	Black cottonwood	12.9	Good	Fair	15		
176	*Arbutus menziesii*	Pacific madrone	9.5	Good	Good	24		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
177	*Pseudotsuga menziesii*	Douglas-fir	18.7	Good	Good	11		Kink in trunk
178	*Arbutus menziesii*	Pacific madrone	10.7	Good	Good	16		Epicormic branching - stressed
179	*Arbutus menziesii*	Pacific madrone	10.6	Good	Fair	21		Sparse crown
180	*Pseudotsuga menziesii*	Douglas-fir	22.7	Good	Good	23		
181	*Pseudotsuga menziesii*	Douglas-fir	20.9	Good	Good	21		
182	*Arbutus menziesii*	Pacific madrone	10.6	Poor	Good	17		Suppressed
183	*Arbutus menziesii*	Pacific madrone	27.9*	Good	Good	26		Included bark, co-dominant stem
184	*Arbutus menziesii*	Pacific madrone	12.4	Fair	Good	20		
185	*Arbutus menziesii*	Pacific madrone	16.0	Good	Good	26		
186	*Arbutus menziesii*	Pacific madrone	22.0	Fair	Good	30		
187	*Acer macrophyllum*	Bigleaf maple	8.6	Good	Good	25		
188	*Arbutus menziesii*	Pacific madrone	22.4	Good	Good	31		
189	*Acer macrophyllum*	Bigleaf maple	21.2*	Good	Fair	35		Co-dominant, dead parts
190	*Acer macrophyllum*	Bigleaf maple	44.5*	Good	Fair	37		Dead trunks, *Ganoderma applanatum* conk present
191	*Acer macrophyllum*	Bigleaf maple	16.0	Good	Good	27		
192	*Cornus nuttallii*	Pacific dogwood	9.5	Fair	Fair	13		Hollow, suppressed
193	*Acer macrophyllum*	Bigleaf maple	45.4*	Fair	Fair	39		DSH measured at narrowest point below co-dominant union, ivy coverage
194	*Acer macrophyllum*	Bigleaf maple	12.0	Fair	Fair	20		Suppressed
195	*Pseudotsuga menziesii*	Douglas-fir	36.6	Good	Good	22		
196	*Acer macrophyllum*	Bigleaf maple	17.2	Fair	Fair	30		Ivy coverage
197	*Pseudotsuga menziesii*	Douglas-fir	27.1	Good	Good	24		Ivy coverage
198	*Pseudotsuga menziesii*	Douglas-fir	38.3	Good	Good	27		Ivy coverage

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
199	*Pseudotsuga menziesii*	Douglas-fir	40.0	Good	Good	25		
200	*Thuja plicata*	Western redcedar	14.7	Good	Good	11		
201	*Thuja plicata*	Western redcedar	14.0	Good	Good	11		Reiterations - partial failure
202	*Salix scouleriana*	Scouler's willow	10.8	Good	Good	12		
203	*Acer macrophyllum*	Bigleaf maple	8.5	Good	Good	15		
204	*Thuja plicata*	Western redcedar	28.0	Good	Good	12		100-percent live crown ratio, DSH measured at narrowest point below co-dominant union
205	*Populus trichocarpa*	Black cottonwood	11.1	Good	Good	13		
206	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Good	14		J-base, 100-percent live crown ratio
207	*Thuja plicata*	Western redcedar	18.0	Good	Good	11		100-percent live crown ratio
208	*Thuja plicata*	Western redcedar	26.4	Good	Good	11		Swollen base
209	*Pseudotsuga menziesii*	Douglas-fir	31.6	Good	Good	15		
210	*Thuja plicata*	Western redcedar	28.5	Good	Good	12		
211	*Thuja plicata*	Western redcedar	24.4	Good	Good	13		Wound on stem, decay, bird activity
212	*Thuja plicata*	Western redcedar	23.3	Good	Good	14		
213	*Pseudotsuga menziesii*	Douglas-fir	34.7	Good	Good	18		
214	*Pseudotsuga menziesii*	Douglas-fir	31.4	Good	Good	23		
215	*Pseudotsuga menziesii*	Douglas-fir	35.5	Good	Good	24		
216	*Pseudotsuga menziesii*	Douglas-fir	12.0	Fair	Fair	15		Broken top
217	*Pseudotsuga menziesii*	Douglas-fir	21.2	Good	Good	18		
218	*Thuja plicata*	Western redcedar	18.0	Good	Good	12		
219	*Pseudotsuga menziesii*	Douglas-fir	18.4	Good	Good	14		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
220	*Tsuga heterophylla*	Western hemlock	15.6	Fair	Fair	15		Sparse crown, losing foliage, girdling root
221	*Alnus rubra*	Red alder	16.4	Good	Poor	12		Basal wound, decay
222	*Acer macrophyllum*	Bigleaf maple	12.8*	Good	Fair	17		Co-dominant trunk
223	*Tsuga heterophylla*	Western hemlock	14.5	Fair	Good	15		Losing needles
224	*Acer macrophyllum*	Bigleaf maple	31.7*	Good	Good	23		
225	*Pseudotsuga menziesii*	Douglas-fir	24.3	Good	Good	20		
226	*Pseudotsuga menziesii*	Douglas-fir	38.4	Good	Good	29		Kink in trunk
227	*Acer macrophyllum*	Bigleaf maple	45.4	Good	Fair	34		Co-dominant, included bark, *Armillaria* in trunk wound
228	*Acer macrophyllum*	Bigleaf maple	16.4	Good	Good	23		
229	*Pseudotsuga menziesii*	Douglas-fir	31.1	Good	Good	18		
230	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	16		
231	*Pseudotsuga menziesii*	Douglas-fir	18.1	Good	Good	16		
232	*Pseudotsuga menziesii*	Douglas-fir	18.5	Good	Good	14		
233	*Pseudotsuga menziesii*	Douglas-fir	12.6	Good	Good	18		
234	*Pseudotsuga menziesii*	Douglas-fir	35.9	Good	Good	26		
235	*Acer macrophyllum*	Bigleaf maple	12.3	Good	Fair	15		
236	*Acer macrophyllum*	Bigleaf maple	12.0	Good	Fair	15		
237	*Pseudotsuga menziesii*	Douglas-fir	34.0	Good	Fair	26		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
238	*Thuja plicata*	Western redcedar	14.3	Good	Good	14		100-percent live crown ratio
239	*Arbutus menziesii*	Pacific madrone	13.8	Poor	Fair	26		100-percent live crown ratio
240	*Pseudotsuga menziesii*	Douglas-fir	25.2	Fair	Good	15		Thin crown
241	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	19		
242	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	18		
243	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	21		
244	*Pseudotsuga menziesii*	Douglas-fir	11.5	Good	Good	26		Suppressed
245	*Pseudotsuga menziesii*	Douglas-fir	12.0	Fair	Good	18		
246	*Arbutus menziesii*	Pacific madrone	16.0	Fair	Fair	17		Large dead parts
247	*Prunus emarginata*	Bitter cherry	12.7	Poor	Poor	12		Nearly dead
248	*Pseudotsuga menziesii*	Douglas-fir	14.5	Good	Fair	13		
249	*Pseudotsuga menziesii*	Douglas-fir	14.2	Good	Good	12		
250	*Pseudotsuga menziesii*	Douglas-fir	17.2	Good	Fair	16		
251	*Populus trichocarpa*	Black cottonwood	22.0	Good	Good	20		
252	*Populus trichocarpa*	Black cottonwood	12.2	Poor	Good	12		Nearly dead
253	*Pseudotsuga menziesii*	Douglas-fir	14.2	Good	Good	12		
254	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Good	12		
255	*Pseudotsuga menziesii*	Douglas-fir	11.7	Good	Good	11		
256	*Pseudotsuga menziesii*	Douglas-fir	10.7	Good	Good	13		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
257	*Pseudotsuga menziesii*	Douglas-fir	22.2	Good	Good	17		
258	*Pseudotsuga menziesii*	Douglas-fir	9.9	Fair	Good	16		
259	*Acer macrophyllum*	Bigleaf maple	10.0	Good	Good	25		
260	*Pseudotsuga menziesii*	Douglas-fir	24.4	Good	Good	28		
261	*Pseudotsuga menziesii*	Douglas-fir	8.3	Fair	Fair	15		
262	*Pseudotsuga menziesii*	Douglas-fir	19.4	Good	Good	18		
263	*Pseudotsuga menziesii*	Douglas-fir	17.0	Fair	Good	17		
264	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Good	17		
265	*Pseudotsuga menziesii*	Douglas-fir	15.8	Good	Good	16		
266	*Pseudotsuga menziesii*	Douglas-fir	17.1	Good	Good	17		
267	*Pseudotsuga menziesii*	Douglas-fir	13.4	Good	Good	10		
268	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Good	16		
269	*Pseudotsuga menziesii*	Douglas-fir	16.8	Good	Good	18		
270	*Pseudotsuga menziesii*	Douglas-fir	16.6	Good	Good	12		
271	*Pseudotsuga menziesii*	Douglas-fir	21.2	Good	Good	15		
272	*Pseudotsuga menziesii*	Douglas-fir	16.5	Good	Good	17		
273	*Pseudotsuga menziesii*	Douglas-fir	19.5	Good	Good	17		
274	*Arbutus menziesii*	Pacific madrone	18.0	Good	Good	21		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
275	*Pseudotsuga menziesii*	Douglas-fir	23.0	Good	Good	13		
276	*Pseudotsuga menziesii*	Douglas-fir	14.0	Good	Good	20		
277	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	14		
278	*Pseudotsuga menziesii*	Douglas-fir	15.3	Good	Good	22		
279	*Pseudotsuga menziesii*	Douglas-fir	25.7	Good	Good	20		
280	*Pseudotsuga menziesii*	Douglas-fir	15.3	Good	Good	25		
281	*Pseudotsuga menziesii*	Douglas-fir	10.8	Good	Fair	20		
282	*Pseudotsuga menziesii*	Douglas-fir	16.4	Good	Good	16		
283	*Pseudotsuga menziesii*	Douglas-fir	15.5	Good	Fair	17		
284	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Fair	16		
285	*Pseudotsuga menziesii*	Douglas-fir	17.8	Good	Fair	18		
286	*Pseudotsuga menziesii*	Douglas-fir	14.5	Good	Good	16		
287	*Pseudotsuga menziesii*	Douglas-fir	18.3	Good	Good	19		
288	*Pseudotsuga menziesii*	Douglas-fir	15.6	Good	Good	14		
289	*Pseudotsuga menziesii*	Douglas-fir	11.8	Good	Good	13		
290	*Pseudotsuga menziesii*	Douglas-fir	11.3	Good	Good	13		
291	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	14		
292	*Arbutus menziesii*	Pacific madrone	17.7	Good	Fair	28		Co-dominant: 12.4, 12.7

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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
293	*Thuja plicata*	Western redcedar	11.2	Good	Good	15		
294	*Arbutus menziesii*	Pacific madrone	10.6	Good	Good	23		
295	*Pseudotsuga menziesii*	Douglas-fir	13.1	Good	Good	18		
296	*Arbutus menziesii*	Pacific madrone	8.5	Good	Good	16		
297	*Pseudotsuga menziesii*	Douglas-fir	9.4	Good	Good	11		
298	*Pseudotsuga menziesii*	Douglas-fir	11.0	Good	Poor	19		Suppressed; kink in trunk
299	*Arbutus menziesii*	Pacific madrone	23.7	Good	Good	29		Co-dominant: 20.0, 12.8
300	*Arbutus menziesii*	Pacific madrone	10.0	Poor	Fair	24		
301	*Pseudotsuga menziesii*	Douglas-fir	11.6	Good	Good	12		Slightly suppressed
302	*Pseudotsuga menziesii*	Douglas-fir	24.2	Good	Good	11		
303	*Pseudotsuga menziesii*	Douglas-fir	22.1	Good	Good	16		Two dead leaders
304	*Arbutus menziesii*	Pacific madrone	13.2	Good	Good	15		
305	*Pseudotsuga menziesii*	Douglas-fir	21.9	Good	Fair	18		Bulge at base
306	*Pseudotsuga menziesii*	Douglas-fir	9.0	Fair	Good	10		Suppressed tree
307	*Pseudotsuga menziesii*	Douglas-fir	15.9	Good	Fair	11		Reiteration growth
308	*Pseudotsuga menziesii*	Douglas-fir	25.4	Good	Fair	13		Kink at base
309	*Arbutus menziesii*	Pacific madrone	13.0	Fair	Good	13		Dead leader
310	*Pseudotsuga menziesii*	Douglas-fir	15.6	Good	Good	13		
311	*Pseudotsuga menziesii*	Douglas-fir	8.8	Fair	Good	10		Slightly suppressed
312	*Pseudotsuga menziesii*	Douglas-fir	17.4	Good	Good	11		Slightly suppressed
313	*Pseudotsuga menziesii*	Douglas-fir	8.2	Fair	Good	8		Kink in trunk

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
314	*Pseudotsuga menziesii*	Douglas-fir	23.2	Good	Fair	17		Slightly suppressed
315	*Pseudotsuga menziesii*	Douglas-fir	8.3	Fair	Fair	16		
316	*Pseudotsuga menziesii*	Douglas-fir	13.6	Good	Fair	12		
317	*Populus trichocarpa*	Black cottonwood	14.9	Good	Fair	15		
318	*Pseudotsuga menziesii*	Douglas-fir	12.6	Good	Good	15		
319	*Arbutus menziesii*	Pacific madrone	12.8	Fair	Poor	26		Other leaders decayed, failed; last of leaders is one measured
320	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Fair	18		
321	*Thuja plicata*	Western redcedar	13.5	Fair	Good	9		
322	*Tsuga heterophylla*	Western hemlock	11.5	Fair	Poor	12		Large cavity in base; ant activity observed; kink in trunk
323	*Pseudotsuga menziesii*	Douglas-fir	17.5	Good	Good	11		Surface roots
324	*Thuja plicata*	Western redcedar	16.3	Good	Good	10		Board on stem
325	*Pseudotsuga menziesii*	Douglas-fir	26.3	Good	Poor	18		Co-dominant; measured at the narrowest point below the union; *Porodaedalea pini* in union
326	*Pseudotsuga menziesii*	Douglas-fir	29.7	Good	Good	23		
327	*Pseudotsuga menziesii*	Douglas-fir	31.0	Good	Good	22		
328	*Thuja plicata*	Western redcedar	10.1	Good	Good	14		
329	*Pseudotsuga menziesii*	Douglas-fir	10.0	Good	Fair	12		
330	*Pseudotsuga menziesii*	Douglas-fir	24.8	Good	Fair	17		Kink in base
331	*Tsuga heterophylla*	Western hemlock	18.3	Good	Fair	18		Decay/cavity in base
332	*Thuja plicata*	Western redcedar	19.0	Good	Good	14		Decay at base; central cavity

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
333	*Thuja plicata*	Western redcedar	29.6	Good	Good	13		
334	*Tsuga heterophylla*	Western hemlock	22.1	Good	Fair	25		Co-dominant at 25 feet
335	*Thuja plicata*	Western redcedar	20.0	Good	Good	16		
336	*Tsuga heterophylla*	Western hemlock	28.0	Good	Good	21		Ivy on stem
337	*Pseudotsuga menziesii*	Douglas-fir	9.8	Good	Fair	14		Broken top; lean
338	*Thuja plicata*	Western redcedar	19.5	Fair	Good	15		Top dieback; branch reiterations
339	*Pseudotsuga menziesii*	Douglas-fir	31.2	Good	Good	30		
340	*Pseudotsuga menziesii*	Douglas-fir	9.9	Poor	Poor	7		Suppressed; one dead leader; co-dominant form
341	*Pseudotsuga menziesii*	Douglas-fir	17.0	Good	Good	13		Ivy on stem
342	*Pseudotsuga menziesii*	Douglas-fir	30.7	Good	Good	28		
343	*Tsuga heterophylla*	Western hemlock	19.2	Good	Fair	16		Co-dominant: 16.1, 10.5; union has a narrow angle of attachment; one leader suppressed
344	*Pseudotsuga menziesii*	Douglas-fir	34.0	Good	Good	19		
345	*Arbutus menziesii*	Pacific madrone	18.6	Fair	Fair	28		One dead leader; suppressed growth
346	*Tsuga heterophylla*	Western hemlock	26.4	Good	Good	16		
347	*Acer macrophyllum*	Bigleaf maple	14.4	Good	Poor	24		Heavily suppressed; dead top; failing limbs
348	*Thuja plicata*	Western redcedar	31.6	Good	Good	20		
349	*Tsuga heterophylla*	Western hemlock	17.2	Good	Good	15		
350	*Cornus nuttallii*	Pacific dogwood	8.1	Fair	Good	22		Suppressed; Dogwood anthracnose in canopy
351	*Arbutus menziesii*	Pacific madrone	10.2	Poor	Fair	21		Suppressed; canker on stem
352	*Pseudotsuga menziesii*	Douglas-fir	23.2	Good	Good	24		

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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
353	*Pseudotsuga menziesii*	Douglas-fir	29.7	Good	Good	18		Cavity in base
354	*Arbutus menziesii*	Pacific madrone	11.7	Fair	Fair	10		Failed cherry in canopy
355	*Pseudotsuga menziesii*	Douglas-fir	33.7	Good	Good	27		
356	*Thuja plicata*	Western redcedar	28.0	Good	Good	15		
357	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	18		
358	*Pseudotsuga menziesii*	Douglas-fir	32.1	Good	Good	19		
359	*Thuja plicata*	Western redcedar	8.3	Good	Good	8		Co-dominant leader dead
360	*Pseudotsuga menziesii*	Douglas-fir	27.7	Good	Good	19		
361	*Pseudotsuga menziesii*	Douglas-fir	30.0	Good	Good	19		
362	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Good	14		
363	*Pseudotsuga menziesii*	Douglas-fir	25.2	Good	Good	19		
364	*Pseudotsuga menziesii*	Douglas-fir	25.1	Good	Good	16		
365	*Pseudotsuga menziesii*	Douglas-fir	22.5	Good	Good	13		
366	*Pseudotsuga menziesii*	Douglas-fir	16.7	Good	Good	12		Kink in trunk
367	*Pseudotsuga menziesii*	Douglas-fir	24.7	Good	Good	14		
368	*Pseudotsuga menziesii*	Douglas-fir	22.4	Good	Good	21		
369	*Tsuga heterophylla*	Western hemlock	18.0	Fair	Poor	19		Co-dominant at 10 feet; other leader dead, failed; living stem has a dead top
370	*Thuja plicata*	Western redcedar	21.3	Good	Good	15		
371	*Tsuga heterophylla*	Western hemlock	17.5	Poor	Poor	10		Root damage; bird holes; decay; nearly dead
372	*Thuja plicata*	Western redcedar	19.0	Good	Good	18		Co-dominant above standard height

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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
373	*Pseudotsuga menziesii*	Douglas-fir	22.3	Good	Good	16		
374	*Pseudotsuga menziesii*	Douglas-fir	24.3	Good	Good	19		
375	*Acer macrophyllum*	Bigleaf maple	14.1	Good	Fair	20		Broken top
376	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	16		
377	*Pseudotsuga menziesii*	Douglas-fir	17.5	Good	Good	23		
378	*Thuja plicata*	Western redcedar	10.0	Good	Good	9		Kink in trunk
379	*Pseudotsuga menziesii*	Douglas-fir	29.9	Fair	Good	19		Thinning crown
380	*Thuja plicata*	Western redcedar	10.0	Good	Good	10		
381	*Pseudotsuga menziesii*	Douglas-fir	11.9	Poor	Fair	17		Dead top; very thin canopy; suppressed
382	*Pseudotsuga menziesii*	Douglas-fir	30.2	Fair	Good	20		Thinning canopy; flat side on lower stem
383	*Pseudotsuga menziesii*	Douglas-fir	10.1	Fair	Fair	13		Swollen base; wound at base covered over by wound wood
384	*Pseudotsuga menziesii*	Douglas-fir	23.9	Fair	Good	12		Sparse crown
385	*Pseudotsuga menziesii*	Douglas-fir	29.7	Good	Good	16		
386	*Pseudotsuga menziesii*	Douglas-fir	13.2	Fair	Fair	14		Suppressed; lost top
387	*Pseudotsuga menziesii*	Douglas-fir	20.9	Good	Good	15		
388	*Pseudotsuga menziesii*	Douglas-fir	23.4	Fair	Fair	15		*Phaeolus schweinitzii* at base; test base if retained
389	*Pseudotsuga menziesii*	Douglas-fir	29.7	Fair	Good	21		*Phaeolus schweinitzii* at base; test base if retained
390	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Fair	18		*Phaeolus schweinitzii* at base; test base if retained

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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
391	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Fair	17		*Phaeolus schweinitzii* at base; test base if retained
392	*Pseudotsuga menziesii*	Douglas-fir	11.8	Good	Fair	15		*Phaeolus schweinitzii* at base; test base if retained
393	*Pseudotsuga menziesii*	Douglas-fir	15.8	Good	Fair	15		*Phaeolus schweinitzii* at base; test base if retained
394	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	12		
395	*Pseudotsuga menziesii*	Douglas-fir	19.1	Good	Good	20		
396	*Pseudotsuga menziesii*	Douglas-fir	22.5	Good	Good	21		
397	*Pseudotsuga menziesii*	Douglas-fir	23.8	Good	Good	29		
398	*Pseudotsuga menziesii*	Douglas-fir	22.7	Good	Good	14		
399	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	28		
400	*Pseudotsuga menziesii*	Douglas-fir	28.3	Good	Good	26		
401	*Pseudotsuga menziesii*	Douglas-fir	16.9	Good	Good	25		Ivy on stem
402	*Pseudotsuga menziesii*	Douglas-fir	33.5	Good	Good	26		Ivy on stem
403	*Pseudotsuga menziesii*	Douglas-fir	24.3	Good	Good	27		Ivy on stem
404	*Pseudotsuga menziesii*	Douglas-fir	25.9	Good	Good	25		Ivy on stem
405	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	19		Ivy on stem
406	*Pseudotsuga menziesii*	Douglas-fir	23.0	Good	Good	17		Ivy on stem
407	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	12		Ivy on stem

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
408	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	13		Ivy on stem
409	*Pseudotsuga menziesii*	Douglas-fir	11.7	Good	Fair	7		Ivy on stem; suppressed, kink in trunk
410	*Pseudotsuga menziesii*	Douglas-fir	23.6	Good	Good	10		Ivy on stem
411	*Pseudotsuga menziesii*	Douglas-fir	11.7	Good	Good	9		Ivy on stem
412	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	13		Ivy on stem; *Phaeolus schweinitzii* at base; test base if retained
413	*Pseudotsuga menziesii*	Douglas-fir	25.2	Good	Good	2		Ivy on stem; *Phaeolus schweinitzii* at base; test base if retained
414	*Pseudotsuga menziesii*	Douglas-fir	28.7	Good	Good	17		Animal undermining roots; ivy on stem
415	*Pseudotsuga menziesii*	Douglas-fir	30.5	Good	Good	15		Ivy on stem
416	*Pseudotsuga menziesii*	Douglas-fir	22.7	Good	Good	13		Ivy on stem
417	*Pseudotsuga menziesii*	Douglas-fir	13.0	Good	Good	10		Ivy on stem
418	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Good	17		Ivy on stem
419	*Arbutus menziesii*	Pacific madrone	18.5	Good	Fair	22		Ivy on stem; decay on side of trunk
420	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	12		Ivy on stem
421	*Pseudotsuga menziesii*	Douglas-fir	14.9	Good	Good	10		Ivy on stem
422	*Pseudotsuga menziesii*	Douglas-fir	25.4	Good	Fair	18		Ivy on stem; *Phaeolus schweinitzii* at base; test base if retained
423	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	19		Ivy on stem; *Phaeolus schweinitzii* at base; test base if retained
424	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Fair	20		Ivy on stem; root damage
425	*Pseudotsuga menziesii*	Douglas-fir	27.0	Good	Good	18		Ivy on stem

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Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
426	*Pseudotsuga menziesii*	Douglas-fir	11.5	Fair	Poor	10		Ivy on stem; wound on stem
427	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	18		
428	*Tsuga heterophylla*	Western hemlock	21.0	Good	Good	14		
429	*Arbutus menziesii*	Pacific madrone	16.3	Poor	Poor	27		Nearly dead; suppressed
430	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Good	19		
431	*Pseudotsuga menziesii*	Douglas-fir	34.8	Good	Good	26		Crack in bark
432	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	18		
433	*Pseudotsuga menziesii*	Douglas-fir	23.9	Good	Good	21		
434	*Pseudotsuga menziesii*	Douglas-fir	21.0	Good	Good	25		
435	*Prunus emarginata*	Bitter cherry	21.0	Fair	Poor	18		Decay in base; cavity in base; dead top
436	*Pseudotsuga menziesii*	Douglas-fir	34.7	Good	Good	26		
437	*Pseudotsuga menziesii*	Douglas-fir	16.0	Good	Good	22		
438	*Arbutus menziesii*	Pacific madrone	18.4	Fair	Good	11		Crown dieback
439	*Pseudotsuga menziesii*	Douglas-fir	28.4	Good	Good	20		
440	*Pseudotsuga menziesii*	Douglas-fir	34.6	Good	Good	29		
441	*Pseudotsuga menziesii*	Douglas-fir	31.6	Good	Good	22		
442	*Pseudotsuga menziesii*	Douglas-fir	14.1	Good	Good	12		*Porodaedalea pini* conk at 10 feet
443	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Good	21		Ivy on stem

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
444	*Pseudotsuga menziesii*	Douglas-fir	26.0	Good	Good	16		Ivy on stem
445	*Pseudotsuga menziesii*	Douglas-fir	27.0	Good	Fair	20		Ivy on stem; co-dominant at DSH
446	*Pseudotsuga menziesii*	Douglas-fir	11.5	Fair	Fair	16		Ivy on stem; old girdling fiber removed; suppressed
447	*Pseudotsuga menziesii*	Douglas-fir	23.5	Good	Good	15		Ivy on stem
448	*Pseudotsuga menziesii*	Douglas-fir	21.5	Good	Good	27		Ivy on stem
449	*Pseudotsuga menziesii*	Douglas-fir	20.7	Good	Good	15		Ivy on stem
450	*Arbutus menziesii*	Pacific madrone	16.3	Good	Good	27		Ivy on stem; one suppressed leader
451	*Pseudotsuga menziesii*	Douglas-fir	12.7	Good	Good	15		Ivy on stem
452	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	17		Ivy on stem
453	*Pseudotsuga menziesii*	Douglas-fir	23.0	Good	Good	13		Ivy on stem
454	*Pseudotsuga menziesii*	Douglas-fir	30.1	Good	Good	24		Ivy on stem
455	*Pseudotsuga menziesii*	Douglas-fir	15.5	Good	Good	21		Ivy on stem
456	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	20		Ivy on stem
457	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	26		Ivy on stem
458	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	19		Ivy on stem; broken top
459	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	21		Ivy on stem
460	*Pseudotsuga menziesii*	Douglas-fir	20.4	Good	Good	24		Ivy on stem
461	*Pseudotsuga menziesii*	Douglas-fir	33.2	Good	Good	20		Ivy on stem

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462	*Betula pendula*	European birch	14.5	Good	Good	17		
463	*Tsuga heterophylla*	Western hemlock	25.0	Good	Good	22		
464	*Pseudotsuga menziesii*	Douglas-fir	27.0	Good	Good	17		
465	*Prunus emarginata*	Bitter cherry	17.0	Good	Good	12		
466	*Prunus emarginata*	Bitter cherry	16.5	Poor	Poor	5		Decay at base; thin canopy
467	*Pseudotsuga menziesii*	Douglas-fir	10.2	Good	Fair	9		Cherry failed into canopy
468	*Pseudotsuga menziesii*	Douglas-fir	12.3	Good	Fair	11		J-base
469	*Prunus emarginata*	Bitter cherry	11.0	Fair	Fair	9		dead top; sparse crown
470	*Prunus emarginata*	Bitter cherry	13.2	Good	Good	10		Gummosis on stem
471	*Pseudotsuga menziesii*	Douglas-fir	25.2	Good	Good	18		
472	*Pseudotsuga menziesii*	Douglas-fir	22.0	Good	Good	19		
473	*Populus trichocarpa*	Black cottonwood	26.0	Good	Good	25		
474	*Pseudotsuga menziesii*	Douglas-fir	11.9	Good	Good	13		Suppressed, co-dominant top
475	*Pseudotsuga menziesii*	Douglas-fir	21.5	Good	Fair	20		
476	*Pseudotsuga menziesii*	Douglas-fir	23.4	Good	Good	19		
477	*Arbutus menziesii*	Pacific madrone	10.3	Good	Good	28		
478	*Pseudotsuga menziesii*	Douglas-fir	38.9	Good	Good	31		
479	*Pseudotsuga menziesii*	Douglas-fir	31.8	Good	Good	26		

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480	*Pseudotsuga menziesii*	Douglas-fir	26.5	Good	Good	19		
481	*Pseudotsuga menziesii*	Douglas-fir	28.6	Good	Good	20		
482	*Pseudotsuga menziesii*	Douglas-fir	23.3	Good	Good	17		
483	*Pseudotsuga menziesii*	Douglas-fir	22.0	Good	Fair	18		
484	*Pseudotsuga menziesii*	Douglas-fir	33.5	Good	Good	32		
485	*Pseudotsuga menziesii*	Douglas-fir	36.3	Good	Good	28		
486	*Pseudotsuga menziesii*	Douglas-fir	34.7	Good	Good	29		
487	*Pseudotsuga menziesii*	Douglas-fir	29.6	Good	Fair	21		Lost top; two new reiterations
488	*Arbutus menziesii*	Pacific madrone	19.9	Good	Good	22		
489	*Pseudotsuga menziesii*	Douglas-fir	16.1	Good	Good	15		
490	*Acer macrophyllum*	Bigleaf maple	11.6	Good	Fair	26		Poor crown architecture
491	*Pseudotsuga menziesii*	Douglas-fir	24.9	Good	Good	13		
492	*Pseudotsuga menziesii*	Douglas-fir	28.5	Good	Good	19		Ivy on stem
493	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	16		Ivy on stem
494	*Pseudotsuga menziesii*	Douglas-fir	19.8	Good	Good	15		Ivy on stem
495	*Pseudotsuga menziesii*	Douglas-fir	32.6	Good	Good	27		Ivy on stem
496	*Pseudotsuga menziesii*	Douglas-fir	23.0	Good	Good	26		Ivy on stem
497	*Acer macrophyllum*	Bigleaf maple	18.5	Good	Good	23		Ivy on stem

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498	*Pseudotsuga menziesii*	Douglas-fir	31.8	Good	Good	25		Ivy on stem
499	*Pseudotsuga menziesii*	Douglas-fir	29.0	Good	Good	28		
500	*Arbutus menziesii*	Pacific madrone	10.1	Good	Fair	10		Cavity in base
501	*Alnus rubra*	Red alder	16.4	Good	Poor	16		
502	*Pseudotsuga menziesii*	Douglas-fir	35.2	Good	Good	17		
503	*Alnus rubra*	Red alder	9.5	Good	Good	15		
504	*Alnus rubra*	Red alder	18.0	Poor	Poor	18		Hollow; wound on north side going up entire stem
505	*Pseudotsuga menziesii*	Douglas-fir	39.5	Good	Good	21		
506	*Tsuga heterophylla*	Western hemlock	13.0	Fair	Good	16		Boards nailed to stem
507	*Thuja plicata*	Western redcedar	28.1	Good	Fair	13		Swollen base; boards nailed to stem
508	*Pseudotsuga menziesii*	Douglas-fir	29.0	Fair	Poor	14		*Porodaedalea pini* on stem
509	*Thuja plicata*	Western redcedar	15.0	Good	Good	16		
510	*Pseudotsuga menziesii*	Douglas-fir	14.7	Good	Good	15		Ivy on stem
511	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	13		
512	*Pseudotsuga menziesii*	Douglas-fir	28.0	Good	Good	20		
513	*Cornus nuttallii*	Pacific dogwood	8.5	Good	Good	11		
514	*Acer macrophyllum*	Bigleaf maple	8.5	Good	Good	22		
515	*Tsuga heterophylla*	Western hemlock	9.8	Fair	Poor	12		Bow in stem; suppressed; reiterative growth
516	*Thuja plicata*	Western redcedar	33.8	Good	Good	17		
517	*Tsuga heterophylla*	Western hemlock	18.8	Good	Good	13		
518	*Tsuga heterophylla*	Western hemlock	14.1	Poor	Fair	14		Ganoderma applanatum conks at base

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
519	*Tsuga heterophylla*	Western hemlock	16.5	Good	Good	16		
520	*Pseudotsuga menziesii*	Douglas-fir	12.5	Fair	Poor	11		Reiterative growth; suppressed
521	*Acer macrophyllum*	Bigleaf maple	10.4	Good	Good	19		
522	*Acer macrophyllum*	Bigleaf maple	9.2	Good	Fair	21		Partial failure at base, corrected; wound in stem at 25 feet
523	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	20		Shared root plate with524
524	*Thuja plicata*	Western redcedar	14.5	Good	Good	23		Shared rootplate with 523
525	*Thuja plicata*	Western redcedar	18.7	Good	Good	17		
526	*Thuja plicata*	Western redcedar	19.6	Good	Good	18		
527	*Pseudotsuga menziesii*	Douglas-fir	38.0	Good	Good	24		
528	*Thuja plicata*	Western redcedar	17.0	Good	Good	11		
529	*× Cuprocyparis leylandii*	Leyland cypress	19.0	Good	Good	14		
530	*Pseudotsuga menziesii*	Douglas-fir	29.7	Good	Good	28		Ivy on stem
531	*Pseudotsuga menziesii*	Douglas-fir	11.0	Good	Good	16		Ivy on stem
532	*Pseudotsuga menziesii*	Douglas-fir	10.0	Good	Good	18		Corrected lean
533	*Alnus rubra*	Red alder	15.0	Good	Good	25		Ivy on stem; wire wrapped around the trunk
534	*Pseudotsuga menziesii*	Douglas-fir	32.6	Good	Good	24		
535	*Pseudotsuga menziesii*	Douglas-fir	12.4	Good	Good	12		Ivy on stem
536	*Pseudotsuga menziesii*	Douglas-fir	35.0	Good	Good	26		Ivy on stem
537	*Pseudotsuga menziesii*	Douglas-fir	28.6	Good	Good	23		Ivy on stem; low vigor
538	*Thuja plicata*	Western redcedar	27.0	Good	Good	19		100% live crown ratio

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
539	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Fair	11		Kinked trunk
540	*Thuja plicata*	Western redcedar	13.3	Good	Good	13		
541	*Pseudotsuga menziesii*	Douglas-fir	22.4	Fair	Good	18		
542	*Pseudotsuga menziesii*	Douglas-fir	24.9	Fair	Good	16		
543	*Alnus rubra*	Red alder	9.8	Poor	Fair	10		Crown dieback
544	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Fair	148		Epicormic sprouts; kink in stem
545	*Pseudotsuga menziesii*	Douglas-fir	8.2	Good	Good	10		
546	*Pseudotsuga menziesii*	Douglas-fir	20.0	Good	Good	13		
547	*Pseudotsuga menziesii*	Douglas-fir	19.1	Good	Fair	12		
548	*Pseudotsuga menziesii*	Douglas-fir	28.2	Good	Fair	15		Bends in trunk
549	*Pseudotsuga menziesii*	Douglas-fir	21.2	Good	Good	19		Buried stem
550	*Pseudotsuga menziesii*	Douglas-fir	19.5	Good	Fair	22		Suppressed
551	*Pseudotsuga menziesii*	Douglas-fir	14.2	Good	Fair	14		Suppressed
552	*Pseudotsuga menziesii*	Douglas-fir	13.0	Good	Fair	13		Suppressed
553	*Alnus rubra*	Red alder	14.4	Good	Fair	26		Co-dominant: 10.3, 10.0; dead parts in canopy
554	*Arbutus menziesii*	Pacific madrone	11.9	Fair	Poor	19		Decay at base; canopy decline
555	*Thuja plicata*	Western redcedar	23.0	Good	Good	16		
556	*Thuja plicata*	Western redcedar	24.4	Good	Fair	18		Kink in stem
557	*Tsuga heterophylla*	Western hemlock	16.7	Good	Good	12		
558	*Cornus nuttallii*	Pacific dogwood	9.1	Good	Good	20		
559	*Arbutus menziesii*	Pacific madrone	18.9	Fair	Fair	21		Co-dominant: 16.1, 9.9; dieback in canopy

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560	*Pseudotsuga menziesii*	Douglas-fir	13.2	Good	Good	15		
561	*Pseudotsuga menziesii*	Douglas-fir	24.5	Good	Fair	16		Hanger in canopy; newly exposed forest tree
562	*Pseudotsuga menziesii*	Douglas-fir	8.4	Fair	Fair	8		Newly exposed forest tree
563	*Pseudotsuga menziesii*	Douglas-fir	21.2	Good	Good	13		Newly exposed forest tree
564	*Arbutus menziesii*	Pacific madrone	9.7	Good	Good	16		Newly exposed forest tree
565	*Pseudotsuga menziesii*	Douglas-fir	15.2	Good	Good	9		Newly exposed forest tree
566	*Pseudotsuga menziesii*	Douglas-fir	21.0	Good	Good	16		Newly exposed forest tree
567	*Pseudotsuga menziesii*	Douglas-fir	9.4	Good	Fair	12		Newly exposed forest tree
568	*Pseudotsuga menziesii*	Douglas-fir	22.8	Good	Good	21		
569	*Arbutus menziesii*	Pacific madrone	12.5	Good	Good	19		Ivy on stem
570	*Pseudotsuga menziesii*	Douglas-fir	20.5	Good	Good	22		Kink in stem
571	*Pseudotsuga menziesii*	Douglas-fir	22.9	Good	Good	18		
572	*Pseudotsuga menziesii*	Douglas-fir	11.9	Good	Good	10		
573	*Pseudotsuga menziesii*	Douglas-fir	18.9	Good	Good	11		
574	*Pseudotsuga menziesii*	Douglas-fir	9.4	Fair	Fair	10		Logging machine wound at base; broken top
575	*Pseudotsuga menziesii*	Douglas-fir	17.4	Good	Good	18		
576	*Pseudotsuga menziesii*	Douglas-fir	11.3	Fair	Fair	20		Damaged root; kink in stem
577	*Pseudotsuga menziesii*	Douglas-fir	19.2	Good	Good	15		Reiterative top

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
578	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Fair	17		
579	*Pseudotsuga menziesii*	Douglas-fir	21.2	Good	Good	20		Logging machine damage
580	*Pseudotsuga menziesii*	Douglas-fir	15.1	Good	Good	11		Logging machine damage; exposed forest tree
581	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Good	9		
582	*Pseudotsuga menziesii*	Douglas-fir	17.4	Good	Good	11		
583	*Pseudotsuga menziesii*	Douglas-fir	22.2	Good	Good	13		
584	*Pseudotsuga menziesii*	Douglas-fir	13.9	Good	Fair	14		Suppressed; old stem wound
585	*Pseudotsuga menziesii*	Douglas-fir	15.9	Good	Good	22		
586	*Pseudotsuga menziesii*	Douglas-fir	34.0	Good	Good	23		Broken limbs from logging
587	*Pseudotsuga menziesii*	Douglas-fir	8.5	Good	Fair	10		Suppressed; broken top
588	*Pseudotsuga menziesii*	Douglas-fir	11.8	Good	Fair	19		Suppressed
589	*Pseudotsuga menziesii*	Douglas-fir	28.7	Good	Good	24		Lean in stem
590	*Pseudotsuga menziesii*	Douglas-fir	23.1	Good	Good	18		
591	*Pseudotsuga menziesii*	Douglas-fir	19.2	Good	Good	17		
592	*Pseudotsuga menziesii*	Douglas-fir	23.5	Good	Good	16		
593	*Pseudotsuga menziesii*	Douglas-fir	21.7	Good	Good	16		
594	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	23		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
595	*Pseudotsuga menziesii*	Douglas-fir	11.7	Good	Fair	17		Suppressed
596	*Pseudotsuga menziesii*	Douglas-fir	13.5	Good	Good	13		
597	*Pseudotsuga menziesii*	Douglas-fir	19.8	Good	Good	17		
598	*Pseudotsuga menziesii*	Douglas-fir	10.4	Poor	Fair	7		Suppressed; burls on stem
599	*Pseudotsuga menziesii*	Douglas-fir	10.2	Good	Fair	10		
600	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	13		
601	*Pseudotsuga menziesii*	Douglas-fir	9.1	Fair	Fair	9		Suppressed
602	*Pseudotsuga menziesii*	Douglas-fir	13.1	Good	Good	10		Suppressed
603	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	15		
604	*Pseudotsuga menziesii*	Douglas-fir	19.4	Good	Good	14		
605	*Pseudotsuga menziesii*	Douglas-fir	9.4	Good	Good	10		Suppressed
606	*Pseudotsuga menziesii*	Douglas-fir	22.8	Good	Good	16		
607	*Pseudotsuga menziesii*	Douglas-fir	8.3	Poor	Poor	8		Failed tree wounded side
608	*Pseudotsuga menziesii*	Douglas-fir	8.0	Good	Fair	7		Suppressed
609	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	13		
610	*Pseudotsuga menziesii*	Douglas-fir	18.2	Good	Good	15		
611	*Pseudotsuga menziesii*	Douglas-fir	17.0	Good	Fair	16		Kinks in stem

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
612	*Pseudotsuga menziesii*	Douglas-fir	23.8	Fair	Good	16		Sparse crown
613	*Pseudotsuga menziesii*	Douglas-fir	10.5	Fair	Good	14		Sparse crown; lost top; suppressed
614	*Pseudotsuga menziesii*	Douglas-fir	17.3	Fair	Good	15		Sparse crown
615	*Thuja plicata*	Western redcedar	20.1	Good	Good	9		
616	*Pseudotsuga menziesii*	Douglas-fir	10.2	Good	Good	11		
617	*Pseudotsuga menziesii*	Douglas-fir	18.3	Good	Good	16		
618	*Thuja plicata*	Western redcedar	15.6	Good	Good	8		100% live crown ratio
619	*× Cuprocyparis leylandii*	Leyland cypress	15.5	Good	Good	8		100% live crown ratio
620	*× Cuprocyparis leylandii*	Leyland cypress	16.0	Good	Good	8		100% live crown ratio
621	*Thuja plicata*	Western redcedar	32.5	Good	Good	17		Old hemlock failed near base
622	*Thuja plicata*	Western redcedar	22.8	Good	Good	14		
623	*Thuja plicata*	Western redcedar	11.8	Good	Good	15		
624	*Tsuga heterophylla*	Western hemlock	12.5	Good	Good	16		
625	*Salix scouleriana*	Scouler's willow	16.0	Poor	Poor	21		Conks throughout stem; previous stem failures
626	*Thuja plicata*	Western redcedar	18.5	Good	Good	16		
627	*Pseudotsuga menziesii*	Douglas-fir	16.5	Good	Fair	10		
628	*Pseudotsuga menziesii*	Douglas-fir	20.1	Good	Good	14		
629	*Pseudotsuga menziesii*	Douglas-fir	16.4	Good	Good	16		
630	*Pseudotsuga menziesii*	Douglas-fir	14.5	Good	Good	18		
631	*Pseudotsuga menziesii*	Douglas-fir	8.0	Fair	Fair	14		Suppressed; ivy on stem

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
632	*Pseudotsuga menziesii*	Douglas-fir	12.1	Good	Fair	16		Suppressed; ivy on stem
633	*Pseudotsuga menziesii*	Douglas-fir	21.6	Good	Fair	21		Dead co-dominant leader
634	*Pseudotsuga menziesii*	Douglas-fir	11.0	Good	Good	18		
635	*Pseudotsuga menziesii*	Douglas-fir	15.5	Good	Good	18		
636	*Pseudotsuga menziesii*	Douglas-fir	16.4	Good	Good	14		
637	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	26		
638	*Pseudotsuga menziesii*	Douglas-fir	11.6	Good	Good	15		
639	*Pseudotsuga menziesii*	Douglas-fir	14.0	Good	Good	18		
640	*Pseudotsuga menziesii*	Douglas-fir	18.3	Good	Good	21		
641	*Pseudotsuga menziesii*	Douglas-fir	9.4	Good	Good	10		Suppressed top
642	*Pseudotsuga menziesii*	Douglas-fir	14.8	Good	Fair	21		Suppressed top
643	*Pseudotsuga menziesii*	Douglas-fir	12.5	Good	Good	13		
644	*Arbutus menziesii*	Pacific madrone	9.8	Good	Fair	19		
645	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	21		
646	*Pseudotsuga menziesii*	Douglas-fir	14.8	Good	Good	17		
647	*Pseudotsuga menziesii*	Douglas-fir	14.4	Good	Good	11		
648	*Pseudotsuga menziesii*	Douglas-fir	17.1	Good	Good	16		
649	*Acer macrophyllum*	Bigleaf maple	13.0	Good	Good	24		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
650	*Pseudotsuga menziesii*	Douglas-fir	22.8	Good	Good	18		
651	*Pseudotsuga menziesii*	Douglas-fir	15.9	Good	Good	19		
652	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	16		
653	*Pseudotsuga menziesii*	Douglas-fir	14.2	Good	Good	9		
654	*Pseudotsuga menziesii*	Douglas-fir	12.5	Good	Good	10		
655	*Pseudotsuga menziesii*	Douglas-fir	13.1	Good	Good	11		
656	*Pseudotsuga menziesii*	Douglas-fir	10.9	Good	Good	9		Suppressed
657	*Pseudotsuga menziesii*	Douglas-fir	10.7	Good	Good	11		
658	*Pseudotsuga menziesii*	Douglas-fir	14.0	Fair	Poor	12		Kink in stem; lost top
659	*Pseudotsuga menziesii*	Douglas-fir	22.8	Fair	Poor	16		Lost top; reiteration growing
660	*Pseudotsuga menziesii*	Douglas-fir	15.2	Good	Good	14		
661	*Pseudotsuga menziesii*	Douglas-fir	22.5	Good	Fair	21		Old dead reiteration
662	*Pseudotsuga menziesii*	Douglas-fir	11.2	Good	Good	18		
663	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Good	11		Suppressed
664	*Pseudotsuga menziesii*	Douglas-fir	25.3	Good	Good	22		Swollen base
665	*Pseudotsuga menziesii*	Douglas-fir	11.1	Good	Fair	12		Old girdling strap removed
666	*Pseudotsuga menziesii*	Douglas-fir	9.8	Good	Fair	8		Suppressed

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
667	*Pseudotsuga menziesii*	Douglas-fir	15.9	Good	Good	14		
668	*Pseudotsuga menziesii*	Douglas-fir	15.0	Good	Good	16		
669	*Pseudotsuga menziesii*	Douglas-fir	18.2	Good	Fair	17		
670	*Pseudotsuga menziesii*	Douglas-fir	20.6	Good	Good	13		
671	*Thuja plicata*	Western redcedar	16.4	Good	Good	14		
672	*Thuja plicata*	Western redcedar	21.0	Good	Good	18		
673	*Tsuga heterophylla*	Western hemlock	20.8	Good	Fair	14		Seam in stem; old wound on side; forked top
674	*Thuja plicata*	Western redcedar	11.8	Good	Good	12		
675	*Acer macrophyllum*	Bigleaf maple	19.6	Good	Good	29		
676	*Pseudotsuga menziesii*	Douglas-fir	25.3	Good	Good	23		
677	*Pseudotsuga menziesii*	Douglas-fir	10.0	Good	Good	12		
678	*Pseudotsuga menziesii*	Douglas-fir	11.5	Good	Poor	11		Cankers on stem; kink in trunk; suppressed
679	*Pseudotsuga menziesii*	Douglas-fir	16.5	Good	Good	17		
680	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Good	15		
681	*Pseudotsuga menziesii*	Douglas-fir	16.2	Good	Fair	18		Wound at base
682	*Pseudotsuga menziesii*	Douglas-fir	8.3	Good	Fair	12		Suppressed
683	*Pseudotsuga menziesii*	Douglas-fir	25.0	Fair	Good	19		Beetle-killed tree next to this tree; beetle frass found on stem of this tree
684	*Pseudotsuga menziesii*	Douglas-fir	22.5	Good	Fair	25		
685	*Populus trichocarpa*	Black cottonwood	17.8	Good	Good	19		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
686	*Populus trichocarpa*	Black cottonwood	16.2	Good	Good	20		
687	*Populus trichocarpa*	Black cottonwood	16.5	Good	Good	22		
688	*Populus trichocarpa*	Black cottonwood	20.0	Good	Good	25		
689	*Populus trichocarpa*	Black cottonwood	19.8	Good	Good	26		
690	*Populus trichocarpa*	Black cottonwood	31.6	Good	Poor	25		Co-dominant: 18.0, 26.0; included bark in union
691	*Pseudotsuga menziesii*	Douglas-fir	12.5	Good	Good	14		
692	*Populus trichocarpa*	Black cottonwood	14.8	Good	Fair	18		
693	*Populus trichocarpa*	Black cottonwood	16.1	Good	Fair	19		
694	*Populus trichocarpa*	Black cottonwood	10.0	Fair	Good	20		
695	*Populus trichocarpa*	Black cottonwood	13.2	Good	Good	21		
696	*Populus trichocarpa*	Black cottonwood	10.2	Good	Good	19		
697	*Pseudotsuga menziesii*	Douglas-fir	10.8	Good	Good	12		
698	*Populus trichocarpa*	Black cottonwood	11.2	Good	Good	18		
699	*Populus trichocarpa*	Black cottonwood	12.3	Good	Good	12		
700	*Populus trichocarpa*	Black cottonwood	12.0	Fair	Good	10		
721	*Thuja plicata*	Western redcedar	39.0	Good	Good	15		
722	*Thuja plicata*	Western redcedar	12.0	Good	Good	12		
723	*Alnus rubra*	Red alder	22.6	Fair	Fair	17		Broken top
724	*Thuja plicata*	Western redcedar	9.1	Fair	Fair	11		
725	*Thuja plicata*	Western redcedar	13.3	Good	Good	12		

Table of Trees
2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
726	*Acer macrophyllum*	Bigleaf maple	9.9	Good	Good	18		
727	*Thuja plicata*	Western redcedar	47.3	Good	Good	18		Decay at base
728	*Acer macrophyllum*	Bigleaf maple	28.8	Good	Fair	30		Co-dominant with a narrow angle of attachment; included bark
729	*Acer macrophyllum*	Bigleaf maple	32.7	Good	Good	30		Dead wood in canopy
730	*Alnus rubra*	Red alder	26.8	Poor	Poor	20		Co-dominant: 16.5, 21.1; broken top; crown dieback; decay and bird holes in stem
731	*Thuja plicata*	Western redcedar	22.2	Good	Good	14		
732	*Acer macrophyllum*	Bigleaf maple	15.7	Good	Good	15		Co-dominant: 10.4, 11.7
733	*Thuja plicata*	Western redcedar	15.9	Good	Good	12		
734	*Acer macrophyllum*	Bigleaf maple	10.8	Good	Good	12		Co-dominant: 8.8, 6.3
735	*Thuja plicata*	Western redcedar	39.9	Good	Good	12		
736	*Pseudotsuga menziesii*	Douglas-fir	32.0	Good	Good	21		Ivy on stem; central decay column
737	*Pseudotsuga menziesii*	Douglas-fir	32.4	Good	Good	15		Ivy on stem
738	*Thuja plicata*	Western redcedar	21.4	Fair	Good	15		Ivy on stem; suppressed; decay in stem with ant activity
739	*Thuja plicata*	Western redcedar	29.5	Good	Good	14		
740	*Pseudotsuga menziesii*	Douglas-fir	19.9	Good	Good	15		Ivy on stem
741	*Thuja plicata*	Western redcedar	11.4	Good	Good	10		
742	*Acer macrophyllum*	Bigleaf maple	12.0	Good	Good	22		
743	*Thuja plicata*	Western redcedar	10.7	Good	Good	10		
744	*Tsuga heterophylla*	Western hemlock	22.9	Good	Good	15		Wound on trunk
745	*Pseudotsuga menziesii*	Douglas-fir	8.8	Good	Good	6		Suppressed; *Phaeolus schweinitzii* near base; test if retained near a target
746	*Pseudotsuga menziesii*	Douglas-fir	23.9	Fair	Fair	12		*Phaeolus schweinitzii* near base; epicormic sprouts; test if retained near a target

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
747	*Pseudotsuga menziesii*	Douglas-fir	20.4	Good	Good	10		
748	*Tsuga heterophylla*	Western hemlock	22.5	Fair	Good	18		Ivy on stem
749	*Thuja plicata*	Western redcedar	11.9	Good	Good	12		
750	*Pseudotsuga menziesii*	Douglas-fir	25.4	Good	Good	18		
751	*Tsuga heterophylla*	Western hemlock	11.9	Good	Good	12		
752	*Thuja plicata*	Western redcedar	9.7	Good	Good	7		
753	*Thuja plicata*	Western redcedar	22.5	Good	Good	12		
754	*Pseudotsuga menziesii*	Douglas-fir	31.7	Good	Good	16		
755	*Pseudotsuga menziesii*	Douglas-fir	9.5	Fair	Poor	7		Crack at 10 feet; *Porodaedalea pini* on stem
756	*Pseudotsuga menziesii*	Douglas-fir	21.9	Good	Good	11		
757	*Pseudotsuga menziesii*	Douglas-fir	10.7	Fair	Poor	12		Suppressed
758	*Pseudotsuga menziesii*	Douglas-fir	10.5	Fair	Good	10		Suppressed
759	*Pseudotsuga menziesii*	Douglas-fir	22.5	Fair	Good	12		Ivy on stem; love live crown ratio
760	*Pseudotsuga menziesii*	Douglas-fir	17.7	Good	Fair	14		Suppressed
761	*Pseudotsuga menziesii*	Douglas-fir	28.6	Good	Good	16		
762	*Acer macrophyllum*	Bigleaf maple	22.3	Good	Fair	35		
763	*Pseudotsuga menziesii*	Douglas-fir	30.6	Good	Good	15		
764	*Pseudotsuga menziesii*	Douglas-fir	31.5	Good	Good	15		
765	*Thuja plicata*	Western redcedar	20.8	Good	Good	12		
766	*Thuja plicata*	Western redcedar	33.8	Good	Fair	17		Forked top

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
767	*Thuja plicata*	Western redcedar	12.6	Good	Good	12		
768	*Pseudotsuga menziesii*	Douglas-fir	19.0	Fair	Good	7		Ivy on stem
769	*Acer macrophyllum*	Bigleaf maple	11.8	Good	Fair	15		
770	*Pseudotsuga menziesii*	Douglas-fir	23.9	Good	Good	10		
771	*Pseudotsuga menziesii*	Douglas-fir	13.3	Good	Good	7		
772	*Pseudotsuga menziesii*	Douglas-fir	17.5	Good	Good	15		
773	*Alnus rubra*	Red alder	10.0	Good	Good	13		Dead top
774	*Pseudotsuga menziesii*	Douglas-fir	15.2	Good	Good	5		
775	*Pseudotsuga menziesii*	Douglas-fir	32.4	Good	Good	20		
776	*Pseudotsuga menziesii*	Douglas-fir	27.8	Fair	Poor	25		
777	*Thuja plicata*	Western redcedar	13.3	Good	Good	14		
778	*Thuja plicata*	Western redcedar	8.4	Good	Good	8		
779	*Acer macrophyllum*	Bigleaf maple	8.8	Good	Fair	18		
780	*Pseudotsuga menziesii*	Douglas-fir	22.5	Good	Good	12		
781	*Pseudotsuga menziesii*	Douglas-fir	31.6	Good	Good	20		
782	*Pseudotsuga menziesii*	Douglas-fir	16.2	Good	Good	20		
783	*Pseudotsuga menziesii*	Douglas-fir	23.4	Good	Good	12		
784	*Alnus rubra*	Red alder	11.3	Good	Fair	17		Co-dominant: 8.9, 6.9
785	*Tsuga heterophylla*	Western hemlock	11.1	Fair	Good	24		Thin crown
786	*Pseudotsuga menziesii*	Douglas-fir	38.4	Good	Fair	24		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
787	*Pseudotsuga menziesii*	Douglas-fir	35.6	Good	Good	22		
788	*Pseudotsuga menziesii*	Douglas-fir	30.3	Good	Good	18		
789	*Pseudotsuga menziesii*	Douglas-fir	42.9	Good	Poor	15		Co-dominant: 28.5, 32.1; included bark; *Porodaedalea pini* on stem; test if retained near a target
790	*Pseudotsuga menziesii*	Douglas-fir	30.5	Good	Good	12		
791	*Pseudotsuga menziesii*	Douglas-fir	22.3	Good	Good	12		
792	*Acer macrophyllum*	Bigleaf maple	18.9	Good	Good	25		
793	*Pseudotsuga menziesii*	Douglas-fir	40.4	Good	Good	20		
794	*Thuja plicata*	Western redcedar	12.4	Good	Good	15		
795	*Pseudotsuga menziesii*	Douglas-fir	24.0	Good	Good	15		Extreme taper; kink in trunk
796	*Pseudotsuga menziesii*	Douglas-fir	30.5	Good	Fair	12		
797	*Pseudotsuga menziesii*	Douglas-fir	27.0	Good	Good	12		Bow in trunk
798	*Alnus rubra*	Red alder	11.8	Fair	Fair	15		Broken top; adjacent to storm drain
799	*Pseudotsuga menziesii*	Douglas-fir	35.5	Good	Good	12		Broken top
800	*Thuja plicata*	Western redcedar	38.4	Good	Good	18		
801	*Thuja plicata*	Western redcedar	11.3	Good	Good	10		
802	*Acer macrophyllum*	Bigleaf maple	32.5	Good	Good	30		Co-dominant: 25.5, 20.1
803	*Thuja plicata*	Western redcedar	18.8	Good	Fair	8		Broken top
804	*Thuja plicata*	Western redcedar	10.6	Good	Good	10		J-base
805	*Salix scouleriana*	Scouler's willow	21.0	Good	Poor	18		Along fenceline; conks at base
806	*Populus trichocarpa*	Black cottonwood	28.2	Good	Fair	28		Co-dominant top
807	*Salix lucida*	Pacific willow	9.7	Fair	Good	28		Conk at 10 feet

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
808	*Salix lucida*	Pacific willow	12.5	Fair	Fair	8		
809	*Salix lucida*	Pacific willow	13.6	Fair	Fair	8		
810	*Alnus rubra*	Red alder	10.0	Fair	Fair	12		
811	*Pseudotsuga menziesii*	Douglas-fir	22.4	Good	Good	12		J-base
812	*Populus trichocarpa*	Black cottonwood	21.5	Good	Good	21		
813	*Populus trichocarpa*	Black cottonwood	31.5	Good	Good	18		
814	*Pseudotsuga menziesii*	Douglas-fir	10.8	Good	Good	9		
815	*Alnus rubra*	Red alder	9.6	Good	Good	15		Next to pond
816	*Populus trichocarpa*	Black cottonwood	13.6	Good	Good	12		
817	*Populus trichocarpa*	Black cottonwood	11.8	Good	Good	10		
818	*Pseudotsuga menziesii*	Douglas-fir	24.1	Good	Good	10		
819	*Thuja plicata*	Western redcedar	18.2	Good	Good	15		
820	*Thuja plicata*	Western redcedar	9.9	Good	Good	12		
821	*Pseudotsuga menziesii*	Douglas-fir	20.8	Good	Good	14		
822	*Thuja plicata*	Western redcedar	14.0	Good	Good	7		
823	*Thuja plicata*	Western redcedar	25.6	Good	Good	15		
824	*Thuja plicata*	Western redcedar	12.8	Good	Good	10		
825	*Thuja plicata*	Western redcedar	15.5	Good	Good	7		
826	*Thuja plicata*	Western redcedar	13.8	Good	Good	10		
827	*Thuja plicata*	Western redcedar	16.6	Good	Good	15		
828	*Thuja plicata*	Western redcedar	21.0	Good	Good	12		
829	*Pseudotsuga menziesii*	Douglas-fir	17.4	Good	Good	10		
830	*Thuja plicata*	Western redcedar	11.5	Good	Good	10		
831	*Alnus rubra*	Red alder	9.5	Good	Good	15		
832	*Pseudotsuga menziesii*	Douglas-fir	28.6	Fair	Good	12		*Phaeolus schweinitzii* near base

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
833	*Thuja plicata*	Western redcedar	22.9	Good	Good	11		
834	*Thuja plicata*	Western redcedar	30.9	Good	Good	12		
835	*Thuja plicata*	Western redcedar	13.5	Good	Fair	8		Co-dominant: 11.2, 7.5
836	*Thuja plicata*	Western redcedar	33.2	Good	Good	18		Co-dominant: 14.0, 30.1
837	*Cornus nuttallii*	Pacific dogwood	11.2	Good	Good	20		
838	*Thuja plicata*	Western redcedar	23.2	Good	Good	12		
839	*Thuja plicata*	Western redcedar	27.5	Good	Good	13		
840	*Pseudotsuga menziesii*	Douglas-fir	28.5	Good	Good	15		
842	*Thuja plicata*	Western redcedar	22.7	Good	Good	10		
843	*Thuja plicata*	Western redcedar	14.4	Good	Good	15		
844	*Pseudotsuga menziesii*	Douglas-fir	20.3	Good	Fair	12		Flat side; possible decay; test if retained near a target
845	*Acer macrophyllum*	Bigleaf maple	10.3	Good	Fair	16		Asymmetrical crown to west
846	*Acer macrophyllum*	Bigleaf maple	11.5	Good	Fair	12		Co-dominant: 9.6, 6.3; asymmetrical crown to west
847	*Acer macrophyllum*	Bigleaf maple	24.1	Good	Good	33		
848	*Acer macrophyllum*	Bigleaf maple	12.5	Good	Fair	15		
849	*Thuja plicata*	Western redcedar	42.0	Good	Good	18		
850	*Pinus sylvestris*	Scotch pine	9.7	Good	Good	7		
901	*Acer macrophyllum*	Bigleaf maple	18.3	Fair	Fair	15		Co-dominant: 10.1, 7.2, 5.9, 8.5, 8.7; Broken top
902	*Acer macrophyllum*	Bigleaf maple	10.7	Fair	Fair	18		Ivy on stem; dead top
903	*Pseudotsuga menziesii*	Douglas-fir	27.2	Good	Good	18		Ivy on stem
904	*Arbutus menziesii*	Pacific madrone	26.8	Good	Good	25		
905	*Pseudotsuga menziesii*	Douglas-fir	28.2	Good	Good	20		Ivy on stem
906	*Prunus emarginata*	Bitter cherry	10.2	Poor	Fair	6		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
907	*Pseudotsuga menziesii*	Douglas-fir	22.9	Good	Good	18		
908	*Pseudotsuga menziesii*	Douglas-fir	18.4	Good	Good	13		
909	*Pseudotsuga menziesii*	Douglas-fir	14.4	Good	Good	14		
910	*Pseudotsuga menziesii*	Douglas-fir	19.0	Good	Good	13		
911	*Prunus emarginata*	Bitter cherry	8.2	Fair	Good	5		Gummosis at base
912	*Pseudotsuga menziesii*	Douglas-fir	10.0	Fair	Fair	7		Co-dominant at top
913	*Pseudotsuga menziesii*	Douglas-fir	12.4	Good	Good	10		
914	*Arbutus menziesii*	Pacific madrone	10.2	Good	Good	12		
915	*Pseudotsuga menziesii*	Douglas-fir	8.1	Good	Good	7		Suppressed
916	*Cornus nuttallii*	Pacific dogwood	8.3	Good	Good	10		
917	*Pseudotsuga menziesii*	Douglas-fir	19.1	Good	Good	13		
918	*Pseudotsuga menziesii*	Douglas-fir	24.5	Good	Good	16		
919	*Pseudotsuga menziesii*	Douglas-fir	34.3	Good	Good	20		*Phaeolus schweinitzii* at base; test base if retained
920	*Thuja plicata*	Western redcedar	10.1	Good	Good	9		
921	*Pseudotsuga menziesii*	Douglas-fir	35.7	Good	Good	20		
922	*Pseudotsuga menziesii*	Douglas-fir	29.8	Good	Good	20		
923	*Prunus emarginata*	Bitter cherry	8.6	Fair	Good	6		
924	*Tsuga heterophylla*	Western hemlock	25.9	Fair	Good	17		Test if retained
925	*Tsuga heterophylla*	Western hemlock	18.0	Good	Good	13		Cracks in stem; test if retained

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
926	*Tsuga heterophylla*	Western hemlock	16.1	Poor	Poor	6		45 degree lean into tree 927
927	*Pseudotsuga menziesii*	Douglas-fir	15.9	Good	Good	18		Supporting tree 926; old wound at base
928	*Pseudotsuga menziesii*	Douglas-fir	42.7	Good	Good	25		
929	*Arbutus menziesii*	Pacific madrone	16.6	Good	Poor	15		Wound at base with decay; bird holes in stem
930	*Tsuga heterophylla*	Western hemlock	28.8	Good	Poor	18		Visible decay at base
931	*Tsuga heterophylla*	Western hemlock	29.6	Good	Poor	15		Visible decay at base; kink in stem
932	*Tsuga heterophylla*	Western hemlock	21.4	Good	Fair	20		Co-dominant top
933	*Arbutus menziesii*	Pacific madrone	23.3	Good	Good	23		Seam at base
934	*Pseudotsuga menziesii*	Douglas-fir	10.8	Good	Good	12		Suppressed
935	*Pseudotsuga menziesii*	Douglas-fir	29.5	Good	Good	18		
936	*Tsuga heterophylla*	Western hemlock	33.4	Good	Fair	22		Decay at base
937	*Pseudotsuga menziesii*	Douglas-fir	16.8	Good	Good	13		Ivy on stem
938	*Salix scouleriana*	Scouler's willow	10.2	Good	Poor	5		Decay in stem
939	*Salix scouleriana*	Scouler's willow	14.8	Fair	Fair	10		Ivy on stem; decay in stem
940	*Salix scouleriana*	Scouler's willow	21.7	Good	Poor	12		
941	*Salix scouleriana*	Scouler's willow	21.8	Good	Poor	16		One stem hollow
942	*Pseudotsuga menziesii*	Douglas-fir	21.8	Good	Good	18		
943	*Pseudotsuga menziesii*	Douglas-fir	8.3	Fair	Good	12		Suppressed
944	*Pseudotsuga menziesii*	Douglas-fir	14.9	Good	Good	12		
945	*Pseudotsuga menziesii*	Douglas-fir	9.5	Good	Good	12		Suppressed

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
946	*Pseudotsuga menziesii*	Douglas-fir	28.6	Good	Good	22		
947	*Salix scouleriana*	Scouler's willow	10.8	Good	Good	12		
948	*Thuja plicata*	Western redcedar	16.8	Good	Fair	15		Previous failure
949	*Pseudotsuga menziesii*	Douglas-fir	30.0	Good	Good	15		
950	*Tsuga heterophylla*	Western redcedar	15.0	Fair	Fair	18		Co-dominant top
951	*Pseudotsuga menziesii*	Douglas-fir	21.1	Fair	Good	15		Epicormic sprouts; suppressed
952	*Pseudotsuga menziesii*	Douglas-fir	34.6	Good	Good	25		
953	*Thuja plicata*	Western redcedar	11.4	Good	Good	11		
954	*Pseudotsuga menziesii*	Douglas-fir	22.2	Good	Good	18		
956	*Pseudotsuga menziesii*	Douglas-fir	20.2	Good	Good	10		Old wound at base
957	*Pseudotsuga menziesii*	Douglas-fir	17.9	Good	Good	15		
958	*Arbutus menziesii*	Pacific madrone	12.7	Poor	Fair	7		Low live crown ratio
959	*Pseudotsuga menziesii*	Douglas-fir	25.0	Good	Good	12		
960	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Poor	17		Reiterated top
961	*Pseudotsuga menziesii*	Douglas-fir	16.8	Good	Good	12		
962	*Pseudotsuga menziesii*	Douglas-fir	11.2	Good	Fair	12		Suppressed
963	*Pseudotsuga menziesii*	Douglas-fir	21.3	Good	Good	18		
964	*Alnus rubra*	Red alder	8.2	Good	Fair	7		
965	*Pseudotsuga menziesii*	Douglas-fir	15.7	Good	Good	12		
966	*Pseudotsuga menziesii*	Douglas-fir	10.9	Good	Good	8		

Tree ID	**Scientific Name**	**Common Name**	**DSH** (inches)	**Health Condition**	**Structural Condition**	**Drip Line** (feet)	**Recommended Action**	**Notes**
967	*Pseudotsuga menziesii*	Douglas-fir	18.5	Good	Good	13		
968	*Pseudotsuga menziesii*	Douglas-fir	13.0	Good	Fair	9		Kink in trunk
969	*Pseudotsuga menziesii*	Douglas-fir	9.8	Good	Good	7		
970	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	15		
971	*Pseudotsuga menziesii*	Douglas-fir	25.9	Good	Good	20		
972	*Prunus emarginata*	Bitter cherry	9.7	Good	Good	10		
973	*Prunus emarginata*	Bitter cherry	9.0	Good	Good	8		
974	*Pseudotsuga menziesii*	Douglas-fir	12.8	Good	Good	12		
975	*Pseudotsuga menziesii*	Douglas-fir	21.4	Good	Good	5		
976	*Pseudotsuga menziesii*	Douglas-fir	11.8	Good	Good	10		Canker on some branches; suppressed
977	*Pseudotsuga menziesii*	Douglas-fir	18.4	Good	Fair	12		Reiterative growth
978	*Pseudotsuga menziesii*	Douglas-fir	9.9	Poor	Fair	5		Suppressed; ivy on stem; low live crown ratio
979	*Pseudotsuga menziesii*	Douglas-fir	16.6	Good	Good	10		
980	*Pseudotsuga menziesii*	Douglas-fir	12.4	Good	Good	12		
981	*Pseudotsuga menziesii*	Douglas-fir	18.6	Good	Good	15		
982	*Pseudotsuga menziesii*	Douglas-fir	18.0	Good	Good	15		
983	*Pseudotsuga menziesii*	Douglas-fir	23.2	Good	Good	18		
984	*Arbutus menziesii*	Pacific madrone	16.3	Fair	Fair	15		Cavity in base of tree; suppressed

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
985	*Acer macrophyllum*	Bigleaf maple	16.0	Fair	Poor	19		Co-dominant: 9.7, 12.7
986	*Arbutus menziesii*	Pacific madrone	10.4	Poor	Fair	10		
987	*Acer macrophyllum*	Bigleaf maple	19.3	Good	Fair	30		
988	*Arbutus menziesii*	Pacific madrone	16.2	Poor	Poor	10		Large cavity with decay at base
989	*Arbutus menziesii*	Pacific madrone	14.0	Fair	Fair	14		
990	*Tsuga heterophylla*	Western hemlock	14.7	Fair	Good	13		
991	*Arbutus menziesii*	Pacific madrone	8.5	Fair	Good	7		Low live crown ratio
992	*Prunus emarginata*	Bitter cherry	10.4	Good	Good	7		
993	*Arbutus menziesii*	Pacific madrone	11.8	Good	Good	10		Decay throughout trunk
994	*Alnus rubra*	Red alder	14.2	Good	Good	15		
995	*Pseudotsuga menziesii*	Douglas-fir	19.4	Good	Good	15		
996	*Pseudotsuga menziesii*	Douglas-fir	23.4	Good	Good	12		
997	*Pseudotsuga menziesii*	Douglas-fir	20.3	Good	Good	15		
998	*Pseudotsuga menziesii*	Douglas-fir	25.8	Good	Fair	18		Broken top
999	*Thuja plicata*	Western redcedar	9.2	Good	Good	10		
1000	*Thuja plicata*	Western redcedar	8.9	Good	Good	10		
1001	*Populus trichocarpa*	Black cottonwood	16.5	Good	Good	15		
1002	*Populus trichocarpa*	Black cottonwood	14.0	Good	Poor	19		Lean into 1003
1003	*Populus trichocarpa*	Black cottonwood	14.2	Good	Poor	18		Lean into 1003
1004	*Populus trichocarpa*	Black cottonwood	19.8	Good	Fair	21		Old co-dominant stem dead
1005	*Populus trichocarpa*	Black cottonwood	17.7	Good	Good	25		

Table of Trees

2997 160th Ave SE
Bellevue, WA 98008

Date of Inventory: 10.6-27.2015
Table Prepared: 10.28.2015

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
1006	*Pseudotsuga menziesii*	Douglas-fir	10.1	Good	Good	12		
1007	*Pseudotsuga menziesii*	Douglas-fir	9.0	Good	Good	13		
1008	*Populus trichocarpa*	Black cottonwood	12.3	Good	Good	22		
1009	*Populus trichocarpa*	Black cottonwood	16.2	Good	Good	22		
1010	*Acer macrophyllum*	Bigleaf maple	13.9	Good	Good	28		
1011	*Populus trichocarpa*	Black cottonwood	20.3	Good	Good	22		
1012	*Populus trichocarpa*	Black cottonwood	8.5	Poor	Poor	27		Conks in stem at base
1013	*Populus trichocarpa*	Black cottonwood	11.2	Good	Poor	18		Phototropic lean
1014	*Populus trichocarpa*	Black cottonwood	16.5	Good	Good	21		
1015	*Arbutus menziesii*	Pacific madrone	9.5	Good	Fair	26		Phototropic lean
1016	*Populus trichocarpa*	Black cottonwood	19.7	Good	Fair	28		Co-dominant: 17.0, 10.0
1017	*Populus trichocarpa*	Black cottonwood	13.8	Good	Fair	24		Phototropic lean
1018	*Salix scouleriana*	Scouler's willow	13.5	Poor	Poor	11		Cracks in stem; failing parts
1019	*Populus trichocarpa*	Black cottonwood	26.0	Good	Good	25		
1020	*Pseudotsuga menziesii*	Douglas-fir	8.5	Good	Good	8		
1021	*Populus trichocarpa*	Black cottonwood	11.4	Good	Good	14		
1022	*Populus trichocarpa*	Black cottonwood	16.8	Good	Good	21		
1023	*Populus trichocarpa*	Black cottonwood	9.7	Fair	Good	16		

Tree ID	Scientific Name	Common Name	DSH (inches)	Health Condition	Structural Condition	Drip Line (feet)	Recommended Action	Notes
1024	*Populus trichocarpa*	Black cottonwood	10.9	Good	Good	15		
1025	*Populus trichocarpa*	Black cottonwood	21.6	Good	Good	23		
1026	*Populus trichocarpa*	Black cottonwood	11.5	Good	Good	15		
1027	*Pseudotsuga menziesii*	Douglas-fir	9.7	Good	Good	14		
1028	*Populus trichocarpa*	Black cottonwood	19.5	Good	Good	17		
1029	*Populus trichocarpa*	Black cottonwood	9.8	Good	Good	15		
1030	*Populus trichocarpa*	Black cottonwood	14.8	Good	Good	16		
1031	*Pseudotsuga menziesii*	Douglas-fir	18.2	Good	Good	22		

Additional notes:

Drip line is measured from the center of the tree to the outermost extent of the canopy

DSH (Diameter at Standard Height) is measured 4.5 feet above grade.

Multi-stem trees are noted, and a single stem equivalent is calculated using the method defined in the Guide for Plant Appraisal 9th Ed.

20081202001138
LAURA B FANDIN COV 81.00
PAGE001 OF 020
12/02/2008 14:38
KING COUNTY, WA

After Recording Return to:

State of Washington
Department of Ecology
Northwest Regional Office
Toxics Cleanup Program
3190 160th Ave. SE
Bellevue, WA 98008-5452
Attention: Mark Adams

CB# 43692 DATE 1-12-09 LOC 09-039

Environmental Covenant

Grantors: Advanta I, LLC
City of Bellevue
The Boeing Company

Grantee: State of Washington, Department of Ecology

Legal: Parcels 3, 4, 5, 6, 15 and 16 and Tract A of City of Bellevue BLA No. 03-114869LW, Recording No. 20040713900001; and Parcel 5 of Bellevue BLA No. 02-149004LW, Recording No. 20030305900019

Tax Parcel Nos.: 112405-9127, 112405-9128, 112405-9122, 112405-9129, 112405-9121, 112405-9120, 112405-9137, 112405-9123

Cross Reference: 20021223001529

Advanta I, LLC ("Advanta"), the City of Bellevue ("City"), and The Boeing Company ("Boeing") (hereafter, collectively, "Grantors") hereby bind themselves, their successors and assigns to the land use restrictions identified herein and grant such other rights under this environmental covenant (hereafter "Covenant") made this 12 day of ~~September~~ November RW, 2008 in favor of the State of Washington Department of Ecology ("Ecology"). Ecology shall have full right of enforcement of the rights conveyed under this Covenant pursuant to the Model Toxics Control Act, RCW 70.105D.030(1)(g), and the Uniform Environmental Covenants Act, 2007 Wash. Laws ch. 104, sec. 12.

This Declaration of Covenant is made pursuant to RCW 70.105D.030(1)(f) and (g) and WAC 173-340-440 by Grantors and their successors and assigns; and Ecology and its successors and assigns.

This Covenant supersedes and replaces the November 27, 2002 Restrictive Covenant, recorded December 23, 2002 in the office of Records and Elections of King County, Washington, under Recording No. 20021223001529.

A remedial action (hereafter "Remedial Action") occurred at the property that is the subject of this Covenant. The real property subject to this Covenant (the "Property") is legally described on **Appendix A** attached hereto, and depicted on **Figure 1**, attached hereto. The Remedial Action conducted on the Property is described in the following documents:

1. As-Built Plans titled "Boeing-Eastgate LFG Migration Control System," prepared by CH2M HILL for Boeing and dated May 1, 1987;

2. Report titled "Former Eastgate Landfill, Bellevue, Washington," prepared by Landau Associates, Inc. ("LAI"), Edmonds, WA for Boeing, Seattle, WA, and dated April 4, 2000;

3. Report titled "Draft Work Plan Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated June 12, 2000;

4. Report titled "Groundwater Investigation, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated September 26, 2000;

5. Report titled "Engineered Systems, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated September 26, 2000;

6. Report titled "Scope of Work, Continued Eastgate Landfill LFG Repair Work and Site Grading," prepared by The IT Group, Bothell, WA for Boeing, and dated May 8, 2001;

7. Report titled "Voluntary Cleanup Program for Former Eastgate Landfill – 2nd [Groundwater] Data Transmittal," prepared by LAI for Boeing, and dated May 14, 2001;

8. Report titled "Work Plan: Soil Investigation, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated June 6, 2001;

9. Report titled "Draft Work Plan: Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated June 6, 2001;

10. Report titled "Surficial Soil Investigation, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated August 13, 2001;

11. Report titled "Work Plan: Confirmational Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated September 6, 2001;

12. Report titled "Annual Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated September 6, 2001;

13. Work Plan titled "Confirmational Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing and dated March 13, 2002;

14. Technical Memorandum titled "Surficial Soil Sampling at Eastgate Landfill," prepared by LAI for Boeing, and dated May 31, 2002;

15. Report titled "Supplemental Surficial Soil Investigation, Eastgate Landfill Property/I-90 Business Park, Bellevue, Washington," prepared by LAI for Boeing, and dated July 17, 2002;

16. Technical Memorandum titled "Eastgate Landfill Terrestrial Ecological Evaluation," prepared by LAI for Boeing, and dated August 8, 2002;

17. Permit review plans titled "Building C, ADVANTA Office Commons @ I-90", prepared by Magnusson Klemencic Associates for Schnitzer Northwest, LLC, and dated May 26, 2006;

18. The "Landfill Gas System Modification Eastgate Landfill, Drawings and Project Manual (Final – Issued for Agency Review)," prepared by SCS Engineers for Boeing, and dated June 5, 2006;

19. Utility review plans titled "Shared Entrance Road, ADVANTA Office Commons @ I-90," prepared by Magnusson Klemencic Associates for Schnitzer Northwest, LLC, and dated June 16, 2006;

20. Report titled "Annual Ground Water Monitoring Report, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated June 27, 2006;

21. The "Final Methane Vapor Barrier Design for the Three Planned Office Buildings, ADVANTA Project – 3005 160th Avenue Southeast, Bellevue, Washington," prepared by GeoEngineers, Inc. for Schnitzer Northwest, LLC, and dated August 9, 2006;

22. The "Further Action Determination under WAC 173-340-515(5)," prepared by Ecology, and dated August 16, 2006;

23. The "Environmental Protection Plan, Former Eastgate Landfill," letter from SCS Engineers to Seattle & King County Public Health, dated October 2, 2006, and Approved by King County Public Health in a Letter to SCS Engineers, dated October 13, 2006;

24. The "Revised Final Methane Vapor Barrier Design for Three Planned Office Buildings," prepared by GeoEngineers, Inc. for Schnitzer West, LLC, and dated December 13, 2006;

25. The "Further Action Groundwater Monitoring Work Plan, Former Eastgate Landfill, Bellevue, Washington," prepared by LAI for Boeing, and dated December 14, 2006;

26. The "Response to Department of Ecology Further Action Letter Dated 08-16-06/email Dated 12-11-06 'Further Action Determination Under WAC 173-340-515(5) for the Following Hazardous Waste Site: Eastgate Landfill,'" prepared by the City with the assistance of Shaw Environmental and addressed to Ecology, dated January 2, 2007; and

27. The "Opinion Pursuant to WAC 173-340-515(5) on Proposed Remedial Action of the Following Hazardous Waste Site: Eastgate Landfill," Letter from Mark Adams, Ecology, to Carl Bach, Boeing, approving the workplan for the proposed modifications to the landfill management system, dated January 29, 2007;

28. Record documents titled "Shared Entrance Road, ADVANTA Office Commons @ I-90," prepared by Magnusson Klemencic Associates for Schnitzer Northwest, LLC, and dated April 15, 2008;

29. Record documents titled "Building A, B, and C, ADVANTA Office Commons @ I-90," prepared by Magnusson Klemencic Associates for Schnitzer Northwest, LLC, and dated April 15, 2008.

These documents are on file at Ecology's Northwest Regional Office.

Certain landfill management systems, as described in **Appendix B** attached hereto (the "Landfill Management Systems"), have been constructed and exist on the Property, including a Soil Cap Layer and Hardscape Areas, Infiltration Controls, a Leachate Collection System, a Ground Water Monitoring Well Network, and a Landfill Gas Migration Control System. These features are depicted in **Figure 1**, attached hereto, and described in **Appendix B.** This Covenant is required because the Remedial Action determined that there are residual concentrations at the Property of methane in soil and air; benzene, 1,2-dichlorobenze, 1,4-dichlorobenzene, and dieldrin in landfill refuse; and arsenic, iron, manganese, benzene, 1,2-dichlorobenze, 1,4-dichlorobenzene, and dieldrin in soil and groundwater which exceed the Model Toxics Control Act Method B Cleanup Levels for soil, groundwater, and air established under WAC 173-340-720, -740 and -750.

Advanta is the fee owner of a portion of the Property, and has improved its portion of the Property with a commercial office development. Advanta's property is legally described as Parcels 3, 4, 5, 6, 15 and 16 and Tract A of Bellevue Boundary Line Adjustment No. 03-114869LW, recorded under Recording No. 20040713900001.

The City is the fee owner of a portion of the Property. The City's property is legally described as Parcel 5 of Bellevue Boundary Line Adjustment No. 02-149004LW, recorded under Recording No. 20030305900019, Records of King County Washington.

Boeing is the former fee owner of the Property and retains, along with Advanta and the City, certain contractual rights and responsibilities for maintenance of certain Landfill Management Systems existing on the Property.

Grantors make the following declaration as to limitations, restrictions, and uses to which the Property may be put and specify that such declarations shall constitute covenants to run with the land, as provided by law and shall be binding on all parties and all persons claiming under them, including all current and future owners of any portion of or interest in the Property (hereafter "Owners").

Section 1.

1. A portion of the Property contains 1,2-dichlorobenze, 1,4-dichlorobenzene, and dieldrin in Landfill refuse; and arsenic, iron, manganese, benzene, 1,2-dichlorobenze, 1,4-dichlorobenzene, and dieldrin in groundwater. These constituents are likely a result of contaminants originating from refuse beneath the Soil Cap Layer, located within the area identified as the "Landfill" in the center of **Figure 1**. Any activity on the Property that may result in the release or exposure to the environment of the contaminated soil or refuse that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited. Some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any objects or use of any equipment which deforms or stresses the surface

beyond its load bearing capability, piercing the surface more than a few inches with a rod, spike or similar item, bulldozing or earthwork.

2. No groundwater may be taken for any use from the Property. Withdrawals for Ecology-required monitoring or remedial action and infiltration control systems are expressly authorized and permitted.

3. Grantors shall maintain the Soil Cap Layer on the Property and prevent the penetration, removal, erosion or degradation of the Soil Cap Layer and exposure of landfill debris.

4. Grantors shall maintain the Hardscape Areas on the Property. The Hardscape Areas are described in **Appendix B**.

5. Grantors shall maintain and monitor the Landfill Gas Migration Control System on the Property. The Landfill Gas Migration Control System is described in **Appendix B.**

6. Grantors shall maintain the Infiltration Controls on the Property. The Infiltration Controls are described in **Appendix B**.

7. Grantors shall maintain and monitor the Leachate Collection System on the Property. The Leachate Collection System is described in **Appendix B**.

8. Grantors shall maintain the Ground Water Monitoring Well Network and shall conduct all groundwater compliance monitoring in accordance with the Confirmational Groundwater Monitoring Work Plan, Former Eastgate Landfill, dated March 13, 2002 referenced as item 13 on page 3 of this Covenant and the Further Action Groundwater Monitoring Work Plan, Former Eastgate Landfill, dated December 14, 2006 referenced as item

25 on page 4 of this Covenant. The Ground Water Monitoring Well Network is described in **Appendix B.**

9. Nothing in this Covenant is intended to supersede, amend or otherwise modify or affect in any way, the rights and responsibilities of Grantors and their successors and assigns for maintenance and monitoring of the Landfill Management Systems under any other agreements between and among Grantors, which remain in full force and effect.

10. Nothing in Section 1 of this Covenant is intended to preclude Ecology from authorizing, as appropriate, specific uses and activities under Sections 3 and 6 below.

Section 2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.

Section 3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.

Section 4. Each Owner must give thirty (30) days advance written notice to Ecology of such Owner's intent to convey any interest in its respective property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by any Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.

Section 5. Owners must restrict leases to uses and activities consistent with this Covenant and notify all lessees of the restrictions on the use of the Property.

Section 6. Owners must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and comment.

Section 7. Each Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, to determine compliance with this Covenant, and to inspect records that are related to the Remedial Action.

Section 8. Each Owner reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Advanta I, LLC, a Washington limited liability company
By Its Managing Member:
SI Eastgate, LLC, a Washington limited liability company

____
Michael C. Nelson
Senior Investment Director

Dated: OCTOBER 20, 2008

The City of Bellevue, a municipal corporation

____
[Name of Signatory] Brad Miyake
[Title] Deputy City Attorney
Dated: October 28, 2008

The Boeing Company, a Delaware Corporation

S. Shestag

[Name of Signatory] Steven L. Shestag, Director
[Title] Environmental Remediation

Dated: October 15, 2008

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Bob Warren
Section Manager
Toxics Cleanup Program
Northwest Regional Office

Dated: 11-12-08

STATE OF WASHINGTON
COUNTY OF KING

On this 20th day of October, 2008, I certify that Michael C. Nelson personally appeared before me, acknowledged that he/she is the Sr. Investment Director of **Advanta I, LLC** that executed the within and foregoing instrument, and signed said instrument by free and voluntary act and deed of said limited liability company, for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument for said limited liability company.

LEAH K. ANDERSON
COMMISSION EXPIRES
NOTARY
PUBLIC
9-29-10
STATE OF WASHINGTON

Leah K. Anderson
Notary Public in and for the State of Washington, residing at Seattle 98103
My appointment expires 9-29-10.
Leah K. Anderson

STATE OF WASHINGTON
COUNTY OF KING

On this 28 day of October, 2008, I certify that Brad Miyake personally appeared before me, acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute this instrument, and acknowledged it as the Deputy City Manager of the **City of Bellevue**, a municipal corporation to be the free and voluntary act and deed of such party for the uses and purposes mentioned in the instrument.

JANNA DEE STEEDMAN
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES 12-20-08

Janna Dee Steedman
Notary Public in and for the State of Washington, residing at Sammamish
My appointment expires 12/20/08.

STATE OF Washington
COUNTY OF King

On this 15th day of October, 2008, I certify that Steven L. Shestag personally appeared before me, acknowledged that he/she is the Director, Environmental Remediation of The Boeing Company, **The Boeing Company, the corporation** that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he/she was authorized to execute said instrument for said corporation.

Susan L. Arnsperger
Notary Public in and for the State of Washington, residing at Seattle
My appointment expires 1-19-2009

Notary Public
State of Washington
SUSAN L ARNSPERGER
My Appointment Expires Jan 19, 2009

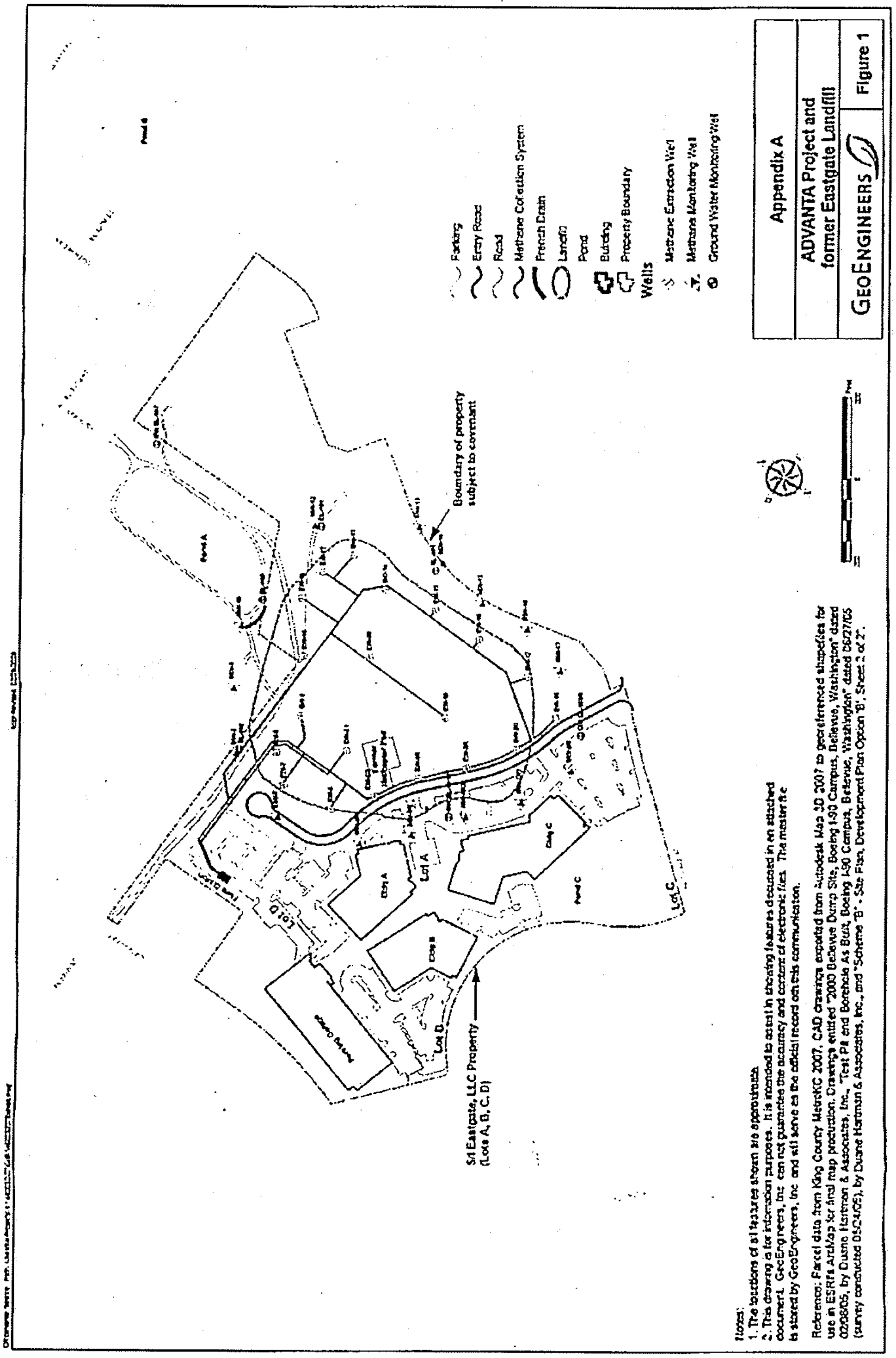
Appendix A

LEGAL DESCRIPTION OF THE PROPERTY

Parcels 3, 4, 5, 6, 15 and 16 and Tract A of Bellevue Boundary Line Adjustment No. 03-114869LW, recorded under Recording No. 20040713900001; and Parcel 5 of Bellevue Boundary Line Adjustment No. 02-149004LW, recorded under Recording No. 20030305900019.

Situate in the City of Bellevue, County of King, State of Washington.

Figure 1



Appendix A
ADVANTA Project and
former Eastgate Landfill
GeoEngineers
Figure 1
Parking
Emergency Road
Road
Methane Collection System
French Drain
Landfill
Pond
Building
Property Boundary
Wells
Methane Extraction Well
Methane Monitoring Well
Ground Water Monitoring Well
Boundary of property
subject to covenant
SH Eastgate, LLC Property
(Lots A, B, C, D)
Lot A
Lot B
Lot C
Lot D
Pond A
Pond C

Appendix B

DESCRIPTION OF LANDFILL MANAGEMENT SYSTEMS

SOIL CAP LAYER AND HARDSCAPE AREAS

A soil cap over the landfill prevents direct contact with landfill material and limits infiltration of stormwater into the area identified as the "Landfill" in the center of **Figure 1**. The cap material consists of silty, fine to medium sand. It appears that the thickness of fill overlying landfill refuse ranges from 1 to 19 ft. The cover was regraded, stormwater catch basins installed, and erosion control measures implemented in 1986 to minimize stormwater runoff from directly contacting landfill debris and to minimize stormwater infiltration into the Landfill. In addition to the soil cap, gravel surfaced paths cross the Landfill, and the asphalt-paved parking lot east of the Landfill extends slightly onto the Landfill.

In 2007, an asphalt-paved road with concrete sidewalks on both sides (the "Shared Entrance Road") was constructed over a portion of the Landfill. An asphalt-paved parking lot was also constructed adjacent to the road over a portion of the Landfill. These areas are shown in **Figure 1** and described in the record documents referenced as items 28 and 29 on page 5 of this Covenant.

INFILTRATION CONTROLS

An infiltration control system collects stormwater at the Landfill, reducing infiltration and associated generation of leachate. The infiltration control system at the Landfill and adjacent property consists of a network of catch basins, manholes, and conveyance pipes and two stormwater ponds, Ponds A and C, as shown on Figure 2.

The infiltration control system over the Landfill consists of six catch basins and associated manholes and piping that collect and convey stormwater runoff through a swale to Pond C, limiting infiltration into the Landfill.

Two catch basins collect runoff from the Shared Entrance Road and convey it to a detention vault located under the Shared Entrance Road. The catch basins and detention vault are located outside the Landfill. Stormwater from the Shared Entrance Road detention vault is conveyed directly to Pond A.

Pond A detains stormwater from nearby property, including Pond C, prior to discharge to Phantom Lake, which discharges to Lake Sammamish via Phantom Creek. The total basin area from which Pond A collects stormwater is approximately 91 acres.

Pond C is located within and treats a portion of the stormwater from Pond A's drainage basin before it enters detention Pond A. The Pond C drainage area includes the Landfill as well as several Boeing buildings. The infiltration control system collects runoff from the Pond C drainage area through a network of swales, storm drains, and catch basins. Pond C is a water quality treatment facility with an impermeable liner that prevents infiltration from occurring. Outflow from Pond C discharges into Pond A.

LEACHATE COLLECTION SYSTEM

A French drain was constructed north of the Landfill in the late 1970s or early 1980s to intercept landfill leachate into Pond A. The French drain is located between the north edge of the Landfill and the south edge of Pond A as shown on **Figure 1**. Based on the results of an investigation conducted in July 2001, the French drain is 196 ft long and, for at least the eastern 105 ft, is constructed of 6-inch perforated PVC pipe. It is likely that the remainder of the French drain is constructed of similar material. Leachate collected in the French drain discharges to the King County sanitary sewer.

LANDFILL GAS MIGRATION CONTROL SYSTEM

The landfill gas ("LFG") migration control system was completed in December 1986, and modified in 2007. The LFG migration control system was designed to prevent outward migration of LFG by creating an engineered subsurface air gradient toward the perimeter of the Landfill. The desired gradient is achieved by applying a vacuum to extraction wells constructed near the perimeter of the fill material. Use of these extraction wells induces a subsurface pressure gradient that causes air to migrate toward the extraction wells, controlling the flow of gas away from the site. Spacing of the extraction wells and applied vacuum to each well are specified so that the pressure gradient for each well overlaps the pressure gradients of adjacent wells. Overlapping the pressure gradients of perimeter extraction wells in this manner prevents migration of LFG away from the fill material and results in the capture of LFG for treatment by the LFG migration control system. Three additional LFG extraction wells were installed in the interior area of the Landfill to capture higher concentrations of LFG. LFG collected by the interior extraction wells supplements the fuel content of LFG collected by the perimeter wells to facilitate more efficient operation of the LFG combustion system.

Each LFG extraction well is connected to an underground header-pipe system. Cleanout wyes are arranged at eight locations on the header lines to allow location of damaged pipes. Thirteen condensate traps prevent accumulation of condensate in the header lines, which could otherwise block gas flow in the header lines. Surface vaults provide access to all of the well heads, cleanout wyes, and condensate traps. Locations of LFG extraction wells, cleanout wyes, condensate traps, and header lines are shown on **Figure 1**.

A blower in the LFG migration control system moves air from the header lines to the LFG combustion system (flare station). The combustion system is equipped with automatic ignition and blower-shutoff controls to prevent uncontrolled release of LFG if the flame goes out. Propane is used to fire the pilot light and to provide additional combustion gas, when necessary. The propane gas is controlled by a hand-operated valve and equipped with an automatic shutoff valve in case the LFG flare shuts down. The location of the LFG combustion system is shown on **Figure 1**.

Additional gas monitoring wells were installed beyond the perimeter of the fill material to monitor gas concentrations and vacuum pressure resulting from operation of the LFG migration control system. Locations of the monitoring wells are shown on **Figure 1**. Well-head valves are periodically adjusted to maintain an even distribution of vacuum to perimeter extraction wells. In areas where high vacuum pressures are identified in monitoring wells, the well-head valves in nearby extraction wells are throttled back. In areas where vacuum pressures are low or not present in monitoring wells, the well-head valves in nearby extraction wells are opened up to balance the system. These periodic adjustments help maintain appropriate levels of vacuum around the entire perimeter of the landfill, thereby inhibiting migration of LFG away from the fill material.

The LFG migration control system was modified in 2007. Modifications included relocating five (5) gas monitoring wells and four (4) LFG extraction wells to better monitor and capture methane gas.

GROUNDWATER MONITORING WELL NETWORK

Seven groundwater monitoring wells (EL-101 through EL-107) are used to evaluate groundwater elevations around the Landfill site. Four of these monitoring wells (EL-102, EL-103, EL-105, and EL-106) are used for evaluation of residual groundwater contamination including volatile organic compounds, dieldrin and metals. Locations of monitoring wells are shown on **Figure 1**. Groundwater monitoring activities are described in the Confirmational Groundwater Monitoring Work Plan, Former Eastgate Landfill, dated March 13, 2002 referenced as item 13 on page 3 of this Covenant and the Further Action Groundwater Monitoring Work Plan, Former Eastgate Landfill, dated December 14, 2006 referenced as item 25 on page 4 of this Covenant.

PROJECT DESCRIPTION

The following narrative outlines the general foundation conditions for assessing environmental implications of the construction of a new Aquatics Center at the Airfield Park Site in East Bellevue. The proposed Aquatic Center is as generally defined in the Bellevue Aquatic Center Feasibility Study Update dated June 2020 and as further refined by Walker Macy and ARC Architecture Concept #2 plan being the basis for development of preliminary structural foundation systems.

The Aquatic Center Concept #2 is comprised of an approximately 160,000 square foot mostly single story structure with multiple competition / diving / recreation pools, associated recreational spaces, and operational program spaces.

The proposed location for the Aquatic Center at the Airfield Park site has the balance of the new building placed on top of an existing municipal landfill. The landfill is of variable depth, plan geometry, and elevation. The landfill is presumed to contain contaminated soils, organic materials, variable types of debris, and decomposing materials. The landfill has been "capped" to contain and cover the existing landfill.

AQAUTIC CENTER STRUCTURAL FRAME CONCEPT

In general the new building for the Aquatics Complex will be constructed of traditional structural steel and concrete framing. Conventional structural steel framing is envisioned to support the roof and any elevated floor area. Lateral force resisting systems to address wind and seismic forces will likely include the integration of steel braced frames or concrete shear walls. Given spans over pools, poor soils conditions, and occupancy use, a lighter weight structure and enclosure is intended to be used.

AQAUTIC CENTER STRUCTURAL LANDFILL CONSIDERATIONS

Given the placement of the Aquatics Complex above the existing landfill, the following are special considerations:

Structural Gravity Load Resistance – The existing landfill materials are not suitable to support building loads (structural frame loads from roof, floors, pools, and slab.) The nature of aquatic pools require stringent limitations to settlement and the existing landfill soils are not capable of supporting the weight of slabs on grade and pool structures within the required limitations. Deep foundations consisting of steel piles will most likely be required to support gravity loads.

Increased Seismic Lateral Forces – The nature of the landfill materials results in greater seismic forces that the building structural systems will need to resist. These forces will result in greater demands on foundations both from a vertical and lateral foundation resistance standpoint.

Need for Methane Mitigation – As landfill materials continue to decompose, methane and potentially other vapors can escape the soils and will need to be captured, diverted, and disposed of through an appropriate mitigation system.

Special Construction Considerations – The new construction may result in excavation of portions of the existing landfill cap and even excavation into the landfill materials. This may require special handling and disposal of the materials and a repair of the existing cap.

AQAUTIC CENTER STRUCTURAL FOUNDATION CONCEPTS

Given the soil conditions of the landfill site, the entire building structure, pools, and slabs at grade will be designed to be supported by steel pile foundations. The building frame (columns and lateral systems) will land directly on deep foundations. The pools will be formed in structured concrete "shells" that are supported by pile foundations. All slabs on grade will also be designed as structural slabs that can span to pile foundations.

The slab on grade and pool shell structures are envisioned to be formed of concrete and will be comprised of variable thickness concrete slabs, walls, and grade beams that will span to concrete pile caps that engage the top of the steel pile foundations. It is assumed that this concrete work will be placed atop a suitable vapor barrier and under-slab methane / vapor mitigation system.

In some instances, the new construction will be placed on structural fill that is above the current landfill cap elevation. In other instances, the new construction will require that the existing cap and landfill materials be removed, disposed of, and the cap repaired in kind.

GENERAL STRUCTURAL FOUNDATION ENVIRONMENTAL CONSIDERATIONS

The structural environmental considerations associated with the new facility being placed above the existing landfill is primarily the potential disturbance of existing landfill cap or materials during project grading and construction of the pile foundations, pool shell structures, and slabs on grade.

Considerations may include the ongoing methane and vapor release from the landfill.

During construction, there will be noise associated with construction equipment and likely more significant noise during the driving of steel pile foundations. There will also be dust / debris during construction. There may be a need for construction mitigation measures to better address these conditions.

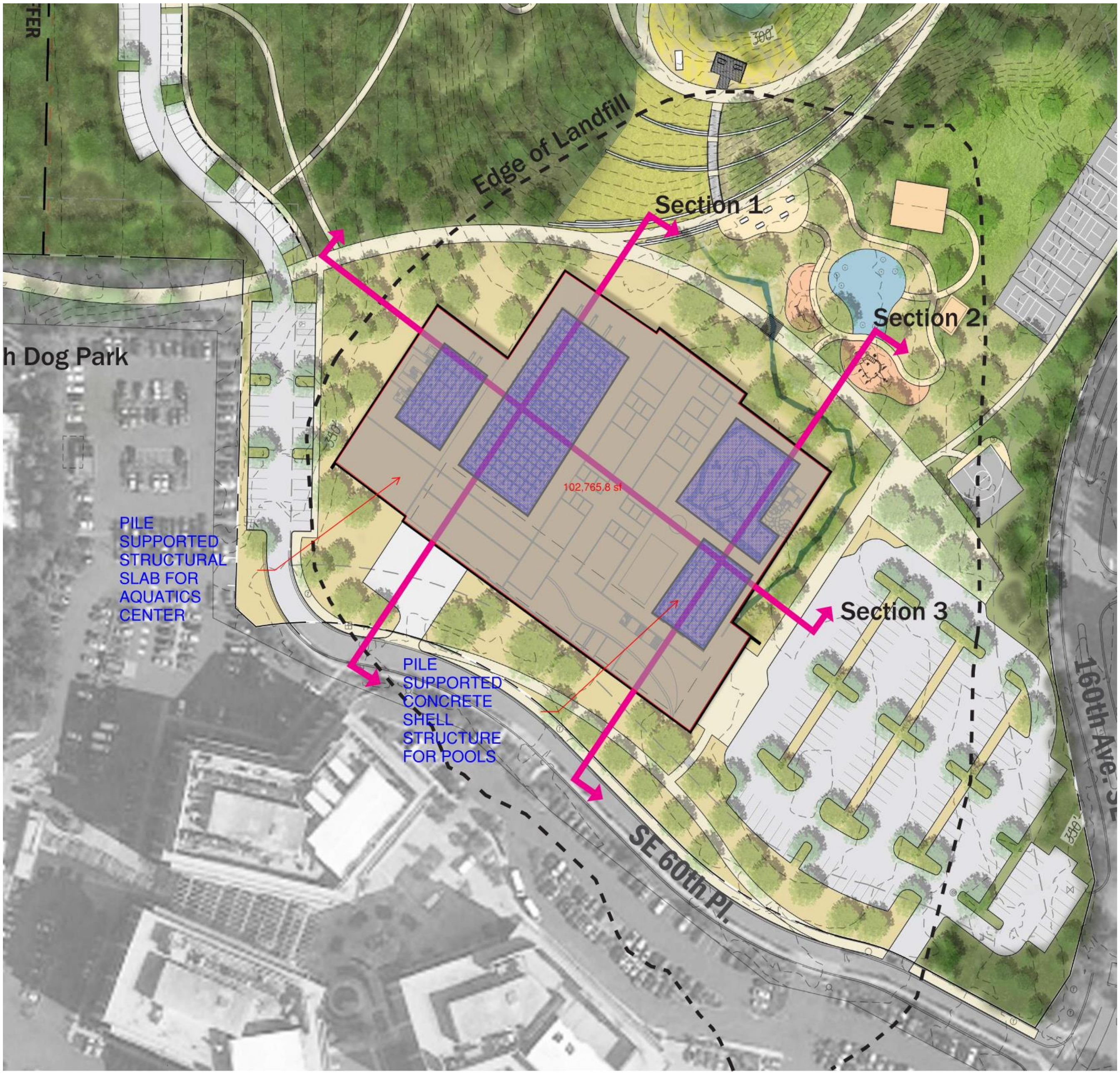


EXHIBIT 1 – AQUATIC CENTER OVERALL PLAN – CONCEPT #2

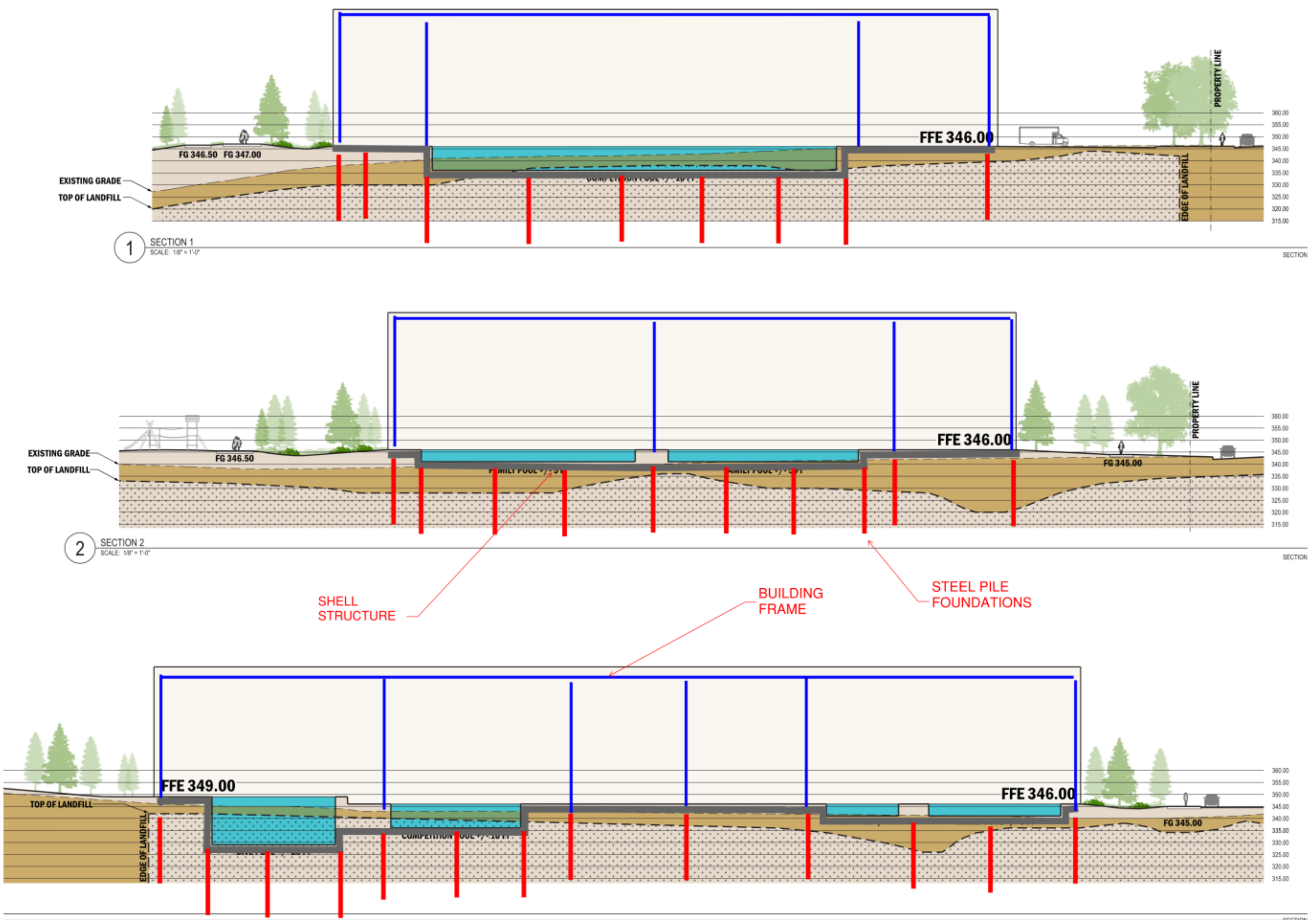


EXHIBIT 2 – AQUATIC CENTER GENERAL SECTIONS

FIRST AMERICAN W29807
17/0 88

Return Address:

City of Bellevue
Real Property/Civic Services
Attn: M Marinacci
PO Box 90012
Bellevue, WA 98009

20140505001225
FIRST AMERICAN EAS 88.00
PAGE-001 OF 017
05/05/2014 15:47
KING COUNTY, WA

Document Title(s) (or transactions contained therein)

1. **PARKING LOT EASMENT AGREEMENT**
2.

Reference Number(s) of Documents assigned or released:

Additional reference #s on page 8 of document

Grantor(s) Exactly as name(s) appear on document

1. **ADVANTA OFFICE HOLDINGS, LLC**
2.

☐ Additional names on page ___ of document.

Grantee(s)

1. **CITY OF BELLEVUE**
2.

☐ Additional names on page ___ of document.

COURTESY RECORDING ONLY
NO LIABILITY FOR VALIDITY AND / OR
ACCURACY ASSUMED BY FIRST AMERICAN
TITLE INSURANCE COMPANY

Legal description (abbreviated: i.e. lot, block, plat or section, township, range)

Lots A, B, C and D Advanta Office Commons AT I-90, BSP Rec. No. 20080904000529

Additional legal is on page 12, 13, and 14 of document.

Assessor's Property Tax Parcel/Account Number

006000-0030 & 006000-0040

EXCISE TAX NOT REQUIRED
King Co. Records Division
By [signature] Deputy

CR# 51183 DATE 4-2-14 LOC 516DOCS-00
AS 8628

PARKING LOT EASEMENT AGREEMENT
(Alternate Lot)

THIS PARKING LOT EASEMENT AGREEMENT (this "Easement Agreement") is made and entered into as of February 26, 2013, by and between ADVANTA OFFICE HOLDINGS, LLC, a Delaware Limited Liability Company ("Grantor"), and CITY OF BELLEVUE, a Washington municipal corporation ("Grantee").

RECITALS:

A. Grantor is the owner of the parcel of land legally described on EXHIBIT A attached hereto and incorporated herein (the "Servient Estate").

B. Grantee is the owner of the adjoining parcel of land legally described on EXHIBIT B attached hereto and incorporated herein (the "Dominant Estate").

C. A surface parking area containing approximately 400 stalls is located on the portion of the Servient Estate as depicted on EXHIBIT C attached hereto and incorporated herein (the "Easement Area").

D. Grantee wishes to obtain a nonexclusive perpetual easement over and across the Easement Area for parking serving uses on the Dominant Estate.

E. Grantor is willing to grant, declare, and convey to Grantee a nonexclusive perpetual easement over, across and through the Easement Area subject to the terms and conditions hereof.

AGREEMENT

NOW, THEREFORE, for and in consideration of the sum of One Dollar ($1.00) and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor hereby grants, declares, and conveys to Grantee, and its successors and assigns in title to the Dominant Estate, a nonexclusive perpetual easement over, across and through the Easement Area, subject to and conditioned upon the following terms, conditions and covenants which Grantee hereby promises to faithfully and fully observe and perform.

1. Use of and Access to Easement Area

Grantee and its agents, tenants, designees and invitees ("Grantee Parties") shall have the right to use and access the Easement Area for the purposes of vehicular parking, together with vehicular and pedestrian access, ingress and egress to and from the Easement Area via adjacent public rights of way for such purpose; provided that the Grantee Parties' parking stall use shall be limited to the number of stalls, time periods and locations specified in EXHIBIT D attached hereto and incorporated herein, as the same may be modified pursuant to Paragraphs 4, 6 and/or 7 below.

2. Compliance with Laws and Rules

Grantee shall at all times exercise its rights herein in accordance with the requirements (as from time to time amended) of any public authority having jurisdiction and all applicable statutes, orders, rules and regulations and the rules and regulations created pursuant to Section 4 below.

3. Grantor's Use of the Easement Area

Grantor and the tenants, occupants, licensees and invitees of the Servient Estate (the "Grantor Parties") shall have the right to use the Easement Area in such a way as is not inconsistent with Grantee's rights under this Easement Agreement.

Grantee may use the rights granted herein to the Easement Area in order to demonstrate Grantee's priority usage of 105 parking stalls within the Easement Area as required for compliance with the parking requirements under the Bellevue Land Use Code (the "Code") for any existing or future development on the Dominant Estate. In addition, Grantee may use the schedule of parking as provided on EXHIBIT D beyond the 105 stalls as shared use parking to satisfy Code requirements, to the extent such shared use parking does not compromise the Servient Estate's independent parking requirements under the Code. Grantor shall cooperate in executing any and all documents reasonably requested by Grantee in order to confirm the priority usage of Grantee to 105 stalls and shared use parking as contemplated in the preceding sentence; provided that such documents do not expand the rights of Grantee under this Easement Agreement.

4. Rules and Regulations/Enforcement of Easement Rights.

Grantor shall establish reasonable rules and regulations for the management of parking in the Easement Area to protect the rights of the parties hereunder. Grantor and Grantee shall reasonably cooperate in the establishment and enforcement of such rules and regulations. Such rules shall be in writing and at a minimum shall provide that:

- Grantor Parties' and Grantee Parties use of the Easement Area shall be through a system of parking lot management that ensures the rights of the parties pursuant to this Agreement;
- Grantor's and Grantor Parties' vehicles be identified by stickers, parking passes or other commercially reasonable methods that allows for visual identification of Grantor and Grantor Parties' vehicles;
- Upon written notice to Grantor that the schedule established in EXHIBIT D has been violated more than 3 times in the past 30 days by Grantor Parties or Grantee Parties, Grantor shall, at its expense, undertake a system of valet-assist parking for Grantor Parties, fining, towing, wheel booting, or other commercially reasonable methods to enforce the schedule established in EXHIBIT D; provided that Grantor may fine or tow vehicles of Grantee Parties which are parked in violation of this Easement Agreement and seek reimbursement from the owner of the applicable vehicle; and
- If Grantee determines in its reasonable discretion, following notice to Grantor and Grantor's opportunity to cure (as set forth above) that the enforcement measures undertaken by Grantor are not adequate to remedy the violations of this Easement, then

- Grantee may upon 48 hours' notice to Grantor, (which notice only needs to be given on one occasion at the commencement of undertaking the enforcement measures allowed herein) undertake a system of fining, towing, wheel booting, or other commercially reasonable methods to enforce the schedule established in EXHIBIT D and Grantor shall be obligated to reimburse Grantee for the reasonable costs thereof within thirty (30) days of demand and substantiation.

In addition to establishing reasonable rules and regulations, Grantor shall install and maintain signage at the location of each driveway entrance into Easement Area and at 3 other locations reasonably approved by Grantee along the shared entrance road, directing users to Grantee's parking areas and clearly establish times of permitted use of Easement Areas by Grantee Parties and Grantor Parties. It is understood that Grantee's approval shall include review and approval of the content of signage and location with respect to usage of the Dominant Estate. This approval shall not substitute for, nor is it intended to waive any permitting or other requirements of the City, as regulator of public rights of way, with respect to any signage placed in right of way. The review and approval from Grantee required by this section shall be obtained through providing notice and a request for review and approval to the Grantee contact information provided in Section 10, and shall be obtained prior to submitting for any regulatory permit or approval.

5. Grantor's Maintenance of the Easement Area

Grantor shall, at its sole cost and expense, maintain the Easement Area, including without limitation all paved surfaces, lighting, drainage systems, signage, landscaping and other improvements and appurtenances located thereon, in good, safe and sanitary condition and repair.

6. Relocation of Easement Area

Grantor shall have the right to relocate the parking areas covered by this Easement Agreement provided (a) the relocated Easement Area (i) meets all applicable standards of the Code and any development approval applicable to the Dominant Estate, (ii) provides not less than the number of parking stalls and the time periods of use contemplated by this Easement Agreement, (iii) is immediately adjacent to and has direct access to the access road shared by the Dominant Estate and the Servient Estate, which is located on the Servient Estate along the southern boundary of the Dominant Estate, (iv) provides for a suitable direct pedestrian connection to the Dominant Estate, and (v) is of a design and configuration reasonably approved by Grantee; (b) the relocation, including any necessary modification of improvements on the Dominant Estate to adjust for such relocation (such as pedestrian connections), shall be at Grantor's sole cost and expense and at no expense to Grantee; and (c) the original Easement Area and associated parking stalls remain accessible and available to Grantee Parties as required by this Easement Agreement at all times during the construction of the relocated parking lot. Upon such relocation, the parties shall enter into an amendment to this Easement Agreement revising EXHIBIT C so as to depict the location of the revised Easement Area.

7. Modification of Parking Rights.

Grantee and Grantor agree, as of the date on which Microsoft Corporation (or successor in interest under the existing Microsoft lease at the Servient Estate) leases less than 400,000 square feet of the rentable space on the Servient Estate, this Easement Agreement may be modified to revise the Easement Area to consist of a total of 105 parking stalls in a mutually acceptable location that meets the requirements set forth in 6 above, without any time restrictions pursuant to EXHIBIT D and for Grantee's priority use twenty-four hours a day, seven days a week, and grant Grantee a license as generally provided in EXHIBIT E attached hereto ("License Parking"). For purposes of this provision, the lease threshhold of 400,000 square feet shall include rentable areas of the Servient Estate which Microsoft or its successor in interest under the existing lease has assigned or subleased to third parties. Modification of the Easement Agreement as contemplated by this Paragraph 7 shall be subject to the approval of both Grantor and Grantee so long as Grantee's use of the Dominant Estate is that of a public park or city park with associated uses, including a community center use. In the event the use of the Dominant Estate is changed to some other use, Grantor shall have the right to require modification of the Easement Agreement pursuant and subject to this Paragraph 7. Any modification of the Easement Agreement and granting of the License Parking pursuant to this Paragraph 7 shall be in writing, recorded, and approved by Grantor and Grantee, which approval shall not be unreasonably withheld, conditioned or delayed. Grantee shall incur no costs with respect to any physical relocation of the Easement Area.

8. Indemnity

Grantee agrees to release, indemnify and hold harmless Grantor, its affiliates, and its successors and assigns in title to the Servient Estate, and each of their respective directors, officers, employees, agents, servants and representatives, (the "Grantor Indemnified Parties"), from any and all actions, liabilities, demands, claims, suits, judgments, liens, awards and damages of any kind or character whatsoever (hereinafter referred to as "Claims"), including claims for injury to or death of any person, loss of or damage to any property and costs, expenses and reasonable attorneys' fees incurred by any of the Grantor Indemnified Parties in connection therewith (including costs in connection with establishing the right to indemnification hereunder) asserted or arising directly or indirectly from, on account of or in connection with Grantee's operation, use or control of the Easement Area (and improvements thereon) or presence on the Servient Estate in connection therewith of Grantee, or any agent, employee or contractor of Grantee. Likewise, Grantor agrees to release, indemnify and hold harmless Grantee, its affiliates, and its successors and assigns in title to the Dominant Estate, and each of their respective directors, officers, employees, agents, servants and representatives, (the "Grantee Indemnified Parties"), from any and all Claims (as defined above), including claims for injury to or death of any person, loss of or damage to any property and costs, expenses and reasonable attorneys' fees incurred by any Grantee Indemnified Parties in connection therewith (including costs in connection with establishing the right to indemnification hereunder) asserted or arising directly or indirectly from, on account of or in connection with Grantor's operation, use or control of the Easement Area (and improvements thereon) or presence on the Servient Estate in connection therewith of Grantor, or any agent, or employee, or contractor of Grantor. The foregoing is not intended to require either party to indemnify the others with respect to any Claim to the extent that it was caused by the negligence or willful misconduct of the applicable indemnified parties. With respect to all or any portion of the foregoing obligation which may be held to be within the purview of RCW 4.24.115, such obligation shall apply only to the maximum extent permitted by RCW 4.24.115. The parties expressly waive any immunity under industrial insurance whether arising from any statute or other source, to the extent of the indemnity set forth in this Section. In the event that Grantor or Grantee is successful in proving that the foregoing indemnity is limited by applicable law, such party shall defend, indemnify and hold harmless the applicable parties to the full extent allowed by applicable law. In no event shall Grantor's or Grantee's obligations hereunder be limited to the extent of any insurance available to or provided by such party.

8. Insurance

Grantor and Grantee shall each maintain in full force and effect throughout the term of this Easement Agreement the following insurance coverage pertaining to the Easement Area and such party's rights and obligations pursuant to this Easement Agreement:

(a) One Million Dollars ($1,000,000) commercial general liability insurance for bodily injury or death to any one person; and

(b) Two Million Dollars ($2,000,000) commercial general liability insurance for bodily injury or death resulting from any one accident;

(c) One Million Dollars ($1,000,000) commercial general liability insurance for property damage resulting from any one accident; and

(d) The other party to this Easement Agreement shall be named as an additional insured to the extent of the insuring party's indemnity obligation set out in this Easement Agreement under any policy maintained pursuant to subsections (a) through (c) above.

Grantor and Grantee shall maintain the foregoing insurance requirements through coverage provided by an insurance company authorized to do business in the State of Washington. Notwithstanding the preceding sentence, so long as the Dominant Estate is owned by the City of Bellevue and the City maintains current assets in an amount reasonably approved by Grantor, Grantee shall be entitled to maintain such coverage through a program of self-insurance.

9. Abandonment

The rights herein granted shall continue until such time as Grantee gives ninety (90) days prior written notice to Grantor of Grantee's intention to abandon the easement(s) described in this Easement Agreement, in which event this Easement Agreement shall automatically terminate without an amendment to this Easement Agreement and all rights hereunder shall revert to Grantor. Upon such termination, Grantee agrees to promptly execute reasonable documentation requested by Grantor of such termination to be recorded in the real property records of King County.

10. Notices

Notices required to be in writing under this Easement Agreement shall be personally served or sent by U.S. mail. Any notice given by hand shall be deemed given when delivered and any notice sent by mail shall be deemed to have been received when three days have elapsed from the time such notice was deposited in the U.S. mail, postage prepaid, and addressed as follows:

To Grantor: Advanta Office Holdings LLC
c/o J.P. Morgan Asset Management
2029 Century Park East, Suite 4150
Los Angeles, CA 90067
Attention: Asset Manager

With a copy to: Advanta Office Holdings LLC
c/o Stroock & Stroock & Lavan LLP
2029 Century Park East, Suite 1600
Los Angeles, CA 90067
Attention: Stuart A. Graiwer, Esq

To Grantee: City of Bellevue
Patrick Foran
Director, Department of Parks & Community Services
City of Bellevue
450 110th Ave NE
P.O. Box 90012
Bellevue, WA 98009-9012

With a copy to: Lori M. Riordan
City Attorney
City of Bellevue
450 110th Ave NE
P.O. Box 90012
Bellevue, WA 98009-90 12

Either party may change the address to which notices may be given by giving notice as above provided.

11. Title

The rights granted herein are subject to all matters of record as of the date hereof.

12. Covenants Running with the Land

The terms and conditions of this Easement Agreement shall be covenants running with the land, and shall burden and benefit Grantor, Grantee and their respective successors and assigns in interest of the Servient Estate and the Dominant Estate, respectively.

13. Termination

No termination of this Easement Agreement shall release Grantee from any liability or obligation with respect to any matter occurring prior to such termination.

14. No Termination Upon Breach

It is expressly agreed that no breach of this Easement Agreement shall entitle any party to cancel, rescind or otherwise terminate this Easement Agreement; provided, however that this provision shall not limit or otherwise affect any other right or remedy which such party may have hereunder by reason of any breach of this Easement Agreement.

15. Attorneys' Fees

In the event either party brings a legal action against the other party to enforce its rights hereunder, the substantially prevailing party shall be entitled to receive reimbursement from the other party of such prevailing party's costs incurred in such legal action (including the costs of appeal), including the reasonable fees and disbursement of the prevailing party's attorneys, in addition to all other rights and remedies available to the prevailing party at law or in equity.

16. No Merger of Estates

The easement(s) granted herein shall not extinguish or terminate by operation of the doctrine of merger or otherwise due to the existing or future common ownership of the real property described herein.

17. Complete Agreement

This Easement Agreement contains the entire agreement of the parties with respect to this subject matter and supersedes all prior or contemporaneous writings or discussions relating to the easement(s) provided for herein. This Easement Agreement may not be amended except by a written document executed after the date hereof by the duly authorized representatives of Grantor and Grantee. This Easement Agreement includes Exhibits A, B, C, and D, which by this reference are incorporated into this Easement Agreement.

18. Choice of Law

This Easement Agreement shall be governed by the law of the State of Washington, exclusive of its choice of law rules.

19. Time of the Essence

Time is of the essence of this Easement Agreement and the performance of all obligations hereunder.

20. Warranty and Representation of Authority

The parties each represent to the other that the person or persons executing this Easement Agreement have authority to do so and to bind the parties hereunder. All consents, permissions and approvals related to entry into this Easement Agreement, and the obligations hereunder, have been obtained.

21. Negation of Partnership

None of the terms or provisions of this Easement Agreement shall be deemed to create a partnership between or among the parties, nor shall it cause them to be considered joint ventures or members of any joint enterprise. Each party shall be considered a separate owner, and no party shall have the right to act as an agent for another party, unless expressly authorized to do so herein or by separate written instrument signed by the party to be charged.

22. Singular and Plural

Whenever required by the context of this Easement Agreement, the singular shall include the plural, and vice versa, and the masculine shall include the feminine and neuter genders, and vice versa.

23. Severability

Invalidation of any of the provisions contained in this Easement Agreement, or of the application thereof to any person, by judgment or court order shall in no way affect any of the other provisions thereof or the application thereof to any other person and the same shall remain in full force and effect.

24. Captions and Capitalized Terms

The captions preceding the text of each section are included only for convenience of reference. Captions shall be disregarded in the construction and interpretation of this Easement Agreement. Capitalized terms are also selected only for convenience of reference and do not necessarily have any connection to the meaning that might otherwise be attached to such term in a context outside of this Easement Agreement.

25. Non-Waiver

The failure of any party to insist upon strict performance of any of the terms, covenants or conditions hereof shall not be deemed a waiver of any rights or remedies which that party may have hereunder or at law or equity and shall not be deemed a waiver of any subsequent breach or default in any of such terms, covenants or conditions.

26. Termination of Existing Covenants.

This Easement Agreement is intended to replace and supersede (a) the Declaration of Restrictive Covenant (Alternate Parking Lot) recorded against the Servient Estate and Dominant Estate under King County Recording No. 20030404000874, (b) the Declaration of Restrictive Covenant (Future New Boeing Campus Surface Lots) recorded against the Servient Estate and Dominant Estate under King County Recording No. 20030404000875, both of which shall be deemed to be terminated and no further force or effect from and after the recording of this Easement Agreement. Further, this Easement Agreement shall terminate any and all rights of the Servient Estate in that certain Declaration of Restrictive Covenant (Future City Surface Lots) recorded against the Dominant Estate under King County Recording No. 20030404000891, and it is acknowledged that Grantor hereunder shall have no rights to use of any parking developed on the Dominant Estate.

IN WITNESS WHEREOF, the parties have executed this Easement Agreement as of the date first above written.

Grantor:

ADVANTA HOLDINGS, LLC, a Delaware limited liability company
By ______________________
Name: Brian Okrent
Title: Vice President

Grantee:

CITY OF BELLEVUE, a Washington municipal corporation

By ______________________
Name: Nora Johnson
Title: Civic Services Director

Approved as to form:

By ______________________
Lori M. Riordan
City Attorney

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

CIVIL CODE § 1189

State of California

County of Los Angeles

On February 26, 2013 before me, Elizabeth Solano, Notary Public,
Date Here Insert Name and Title of the Officer

personally appeared Brian Okrent
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

ELIZABETH SOLANO
Commission # 1945545
Notary Public - California
Los Angeles County
My Comm. Expires Jul 25, 2015

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Elizabeth Solano
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Parking Lot Easement Agreement

Document Date: ____ Number of Pages: ____

Signer(s) Other Than Named Above: ____

Capacity(ies) Claimed by Signer(s)

Signer's Name: ____
- ☐ Corporate Officer — Title(s): ____
- ☐ Individual
- ☐ Partner — ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: ____

Signer Is Representing: ____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer's Name: ____
- ☐ Corporate Officer — Title(s): ____
- ☐ Individual
- ☐ Partner — ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: ____

Signer Is Representing: ____

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

STATE OF WASHINGTON)
) ss.
COUNTY OF KING)

On this 1st day of April, 2014, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared Nora Johnson, to me known to be the person who signed as Director Civic Services of THE CITY OF BELLEVUE, the entity that executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said entity for the uses and purposes therein mentioned, and on oath stated that She was duly qualified and acting as said officer of the entity, that She was authorized to execute said instrument.

IN WITNESS WHEREOF I have hereunto set my hand and official seal the day and year first above written.

MARLEY JO MARINACCI
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES
OCTOBER 30, 2015

Marley Jo Marinacci
(Signature of Notary)

Marley Jo Marinacci
(Print or Stamp name of Notary)

NOTARY PUBLIC in and for the State of Washington, residing at Renton
My appointment expires: 10-15

EXHIBIT A
Legal Description of Servient Estate

PARCELS A, B, C AND D OF ADVANTA OFFICE COMMONS AT I-90, BINDING SITE PLAN RECORDED SEPTEMBER 4, 2008 UNDER RECORDING NO. 20080904000529, IN KING COUNTY, WASHINGTON;

SUBJECT TO AND TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS AS DESCRIBED IN AND DISCLOSED BY THAT CERTAIN DOCUMENT ENTITLED "DECLARATION OF RESTRICTIVE COVENANT (SHARED ENTRANCE ROAD)", AND RECORDED APRIL 4, 2003 UNDER RECORDING NO. 20030404000878;

AND TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS AS DESCRIBED IN AND DISCLOSED BY THAT CERTAIN DOCUMENT ENTITLED "DECLARATION OF SHARED ACCESS AND UTILITIES EASEMENT", AND RECORDED JUNE 25, 2004 UNDER RECORDING NO. 20040625001230;

SAID "DECLARATION OF SHARED ACCESS AND UTILITIES EASEMENT" IS SUPERSEDED BY A NON-EXCLUSIVE EASEMENT FOR ACCESS AND UTILITIES AS DESCRIBED IN AND DISCLOSED BY INSTRUMENT RECORDED DECEMBER 15, 2005 UNDER RECORDING NO. 20051215000900.

SUBJECT TO AND TOGETHER WITH EASEMENTS AND AGREEMENTS OF RECORD.

SITUATE IN THE CITY OF BELLEVUE, WASHINGTON.

EXHIBIT B
Legal Description of Dominant Estate

RECORD DESCRIPTION FROM DEED REC. NO. 20030404000873:

PARCEL 5 OF CITY OF BELLEVUE BOUNDARY LINE ADJUSTMENT NO. 02-149004LW, RECORDED UNDER REDORDING NO. 20030305900019, RECORDS OF KING COUNTY WASHINGTON

SITUATE IN THE CITY OF BELLEVUE, COUNTY OF KING, STATE OF WASHINGTON

EXHIBIT C
Depiction of Easement Area
EXHIBIT C TO PARKING LOT EASEMENT AGREEMENT

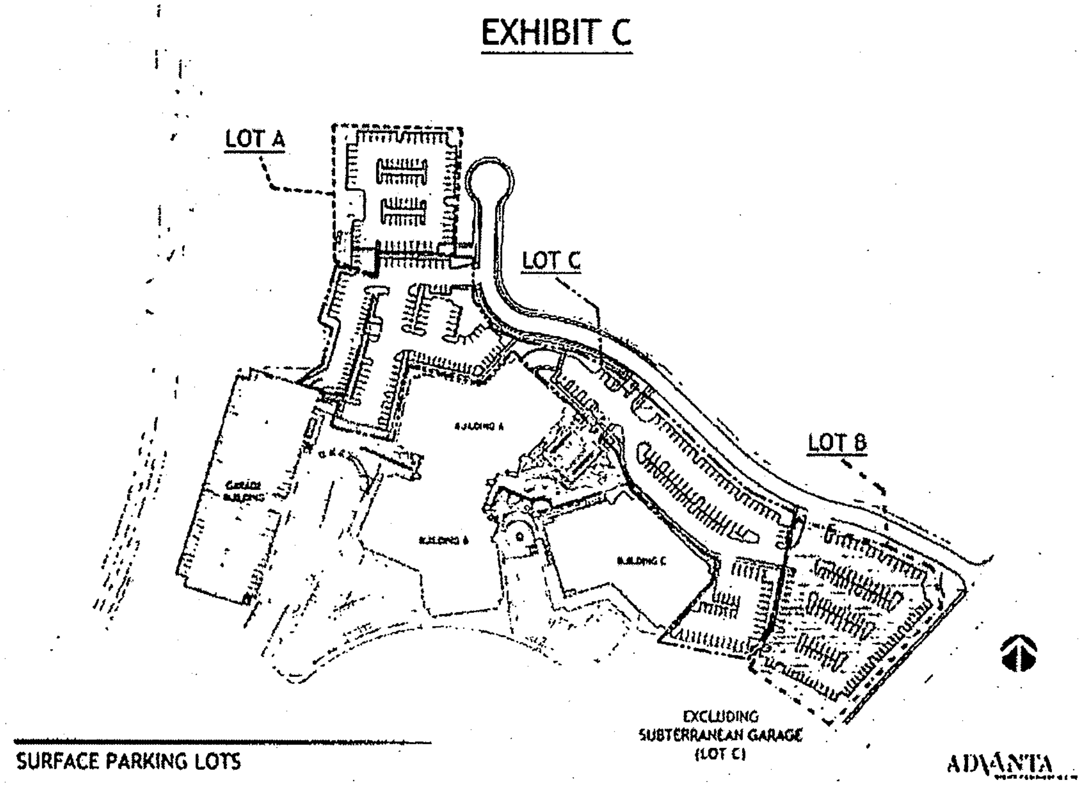


EXHIBIT D

SCHEDULE OF EASEMENT AREA STALL USAGE

1. Regular Useage: Grantee and its agents, tenants, designees and invitees shall be permitted to use only the maximum number of parking stalls located within the Easement Area during the specified time periods, each as identified in the following schedule, as conditioned pursuant to the Agreement:

Time Period of City Park Patron Easement Area Usage	**Maximum City Stall Usage**	**Stall Location** (as depicted on Exhibit C)
Between Midnight and 2:30 PM Weekdays	0 Stalls	Not Applicable
Between 2:30 PM and 5:00 PM Weekdays	50 Stalls	Signed stalls located in Lot A
Between 5:00 PM and 6:00 PM Weekdays	114 Stalls	Signed stalls located in Lot A and Lot B
Between 6:00 PM and Midnight Weekdays	200 Stalls	Signed stalls located in Lot A and Lot B
Weekends & Holidays Between 7:00 AM and Midnight	400 Stalls	Signed stalls located in Lot A, Lot B and Lot C

2. Special Event Usage: Grantee and its invitees may utilize the Easement Area for overflow public parking serving the uses established on the Dominant Estate for 255 cars on weekends and holiday between 11 PM and 7 AM four times per year (the "License Parking"). It is understood by the parties that the use of said License Parking to serve the uses established on the Dominant Estate will be allowed only to the extent it does not conflict with Grantor's anticipated parking demands. Grantor may establish rules and procedures for management of the License Parking hereunder (such as establishing noticing, scheduling, and coordination requirements) to protect the priority of Grantor's parking rights and Grantor and Grantee shall cooperate in the enforcement of the same. Grantee may use the License Parking in excess of four times per year with Grantor's agreement, which shall not be unreasonably withheld, in accordance with the considerations set forth in this paragraph.

EXHIBIT E

LICENSE PARKING PROVISIONS

Grantor would grant Grantee and its invitees a license recorded against the Easement Area for overflow public parking serving the uses established on the Dominant Estate for 150 cars four times per year (the "License Parking"). It is understood by the parties that the parking on the Easement Area is intended primarily to serve the needs of Grantor's development and that the use of said parking to serve the uses established on the Dominant Estate will be allowed only to the extent it does not conflict with Grantor's anticipated parking demands. Grantor may establish rules and procedures for management of the License Parking hereunder (such as restrictions on Grantee's use to evening hours and weekends) to protect the priority of Grantor's parking rights and Grantor and Grantee shall cooperate in the enforcement of the same.

March 11, 2024
File No. 07222003.00

Mr. Tomas Purcell
City of Bellevue
2901 115th Avenue NE
Bellevue, Washington 98004

Subject: 2023 Annual Summary Report for Operation and Monitoring of the Landfill Gas (LFG) Migration Control Facilities at the Closed Eastgate Area Properties Landfill, Bellevue, Washington

Dear Mr. Purcell:

SCS Field Services (SCS) is pleased to provide an annual summary report on operation and monitoring (O&M) activities on the subject system from the months of January 2023 through December 2023. SCS performed O&M services at the City of Bellevue (COB) Closed Eastgate Area Properties landfill gas collection and control system (GCCS).

The information provided in this 2023 Annual Summary Report was conducted in accordance with the COB and SCS contract work scope. We hope you find this information of value.

Should you have any questions, do not hesitate to contact either of the undersigned.

Sincerely,

Stephen Harquail
Project Manager
SCS Field Services

Anton Z. Svorinich
Region Manager / VP
SCS Field Services

cc: Tom Purcell, Mark Schwisow

Pamela Fehrman

Attachments:
LFG Monitoring Probe Data Table 1
LFG Extraction Well Data Table 2
LFG Sample Port and BFS Data Table 3
LFG Blower Vent Station Operational Runtime Data Table 4
Site Location Figure 1

Closed Eastgate Landfill 2023 Annual Summary Report

Mr. Tom Purcell
City of Bellevue
2901 115th Avenue NE
Bellevue, WA 98004

SCS FIELD SERVICES

07222003.00 March 11, 2024

Stephen Harquail, Project Manager
15940 SW 72nd Avenue
Portland, OR 97224
503-867-2369

Eastgate Landfill
Annual Summary Report
2023

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BACKGROUND

The Closed Eastgate Area Properties Landfill site is a closed municipal solid waste landfill located off of 160th Avenue SE. The City of Bellevue (COB) and Advanta Office Holdings LLC own the Eastgate landfill property. The property is undeveloped and the COB intends to develop the site as a Community Park. The closed landfill accepted household waste between 1951 and 1964 and occupies approximately 10 acres. In 1986 the original GCCS was designed and installed. The current site gas collection and control system (GCCS) consists of 2 Lampson blowers, 1 blower/carbon vent system, 20 vertical landfill gas (LFG) extraction wells, 14 subsurface gas migration monitoring wells, 13 condensate drain traps, and below grade lateral and main header piping systems.

Throughout 2023, when operating the GCCS and the carbon vent system, O&M was performed in accordance with the Discharge Confirmation Monitoring Program letter prepared by SCS Engineers, dated October 19, 2011.

Organic materials buried in a landfill decompose anaerobically (in the absence of oxygen) producing LFG a combustible gas that typically contains approximately 50 to 60 percent methane, 40 to 50 percent carbon dioxide, and trace amounts of various other gases, some of which are odorous. The Eastgate property contains a system to control the combustible gases generated in the landfill.

The LFG produced in a landfill will either vent vertically to the atmosphere or migrate horizontally through subsurface soil to locations on adjacent properties. If the soil surrounding a landfill consists of permeable materials, there is a greater likelihood that the LFG will migrate to off-site locations. If the methane gas component of LFG is allowed to accumulate in a confined area (i.e., utility lines, irrigation valve boxes, vaults, basements, wall spaces, etc.) and is exposed to an ignition source, it can be explosive at concentrations between 5 and 15 percent by volume. At higher concentrations, methane is flammable. However, the presence of methane gas in site soil does not mean there is an immediate threat of explosion because flames cannot typically propagate through soil.

GAS TESTING

Testing for methane gas (the combustible component of LFG), oxygen gas, carbon dioxide gas, and pressure were performed using either a Landtec GEM-5000 Gas Analyzer or comparable unit. These instruments measure combustible gas concentrations in air directly on one of two scales: the first as percent by volume of the lower explosive limit (LEL) of methane gas in air (5 percent); the second as percent by volume (0 to 100 percent) in the gas sampled. Pressure and temperature data were also collected utilizing the GEM-5000 Gas Analyzer. Testing for volatile organic compounds (VOC) at the blower vent station was performed using a MiniRAE 2000 portable VOC monitor. All instruments were calibrated prior to each monitoring event.

LFG monitoring probe testing procedures are as follows:

- Connect sample tubing, observe relative pressure and record data.
- Turn on sample pump, extract a minimum of one probe volume, observe and record/store methane, oxygen, and carbon dioxide gas concentrations (when readings have stabilized).
- Disconnect sample equipment and secure sample location.

Extraction well and blower vent station testing procedures are as follows:

- Connect sample tubing; observe pressure, temperature, and record data.
- Turn on sample pump, observe and record/store methane, oxygen, and carbon dioxide gas concentrations (when readings have stabilized).
- For blower vent station VOC monitoring, turn on sample pump, connect sample tubing, observe and record/store VOC concentrations (when readings have stabilized).
- Disconnect sample equipment and secure sample location.

LFG MONITORING WELLS

In accordance with the approved 2023 testing schedule, LFG perimeter monitoring wells were tested twice each month. During each month, all perimeter monitoring wells were tested for the presence of LFG.

With more reliable and daily timer- controlled operation of the blower vent station and on-going monthly GCCS and extraction well adjustments, the monthly testing indicated that, all monitoring wells exhibited methane gas concentrations below 5 percent by volume or no methane gas was detected.

SCS observed slightly elevated methane gas concentrations detected at MW-2S, M and D, MW-3S, M and D, and MW-4S, M and D but had remained below 5 percent by volume at all locations during all monthly testing events. Test results for the entire 2023-year and locations are shown on attached data Table 1 and location Figure 1, respectively.

Consistent with previous historical reports by the COB and other consulting firms, SCS continues to believe that any elevated methane gas concentrations detected in the perimeter monitoring wells during fall, winter and spring months are attributed to shallow water infiltration into the condensate drain traps and the gas collection piping system, restricting the amount of available vacuum to the LFG extraction wells.

As previously reported, the below grade GCCS repair project completed in 2020 resulted in allowing the condensate to drain properly to the new locations and is pumped out to a designated discharge point. This project also resulted in an increase of system vacuum across the West side LFG extraction wells resulting in an increase of negative relative pressure to Perimeter Monitoring Well Nos. MW-2, MW-3 and MW-4. The total amount of condensate manually pumped out of the Condensate Trap No. CT-5R was approximately 381.3 gallons for the year 2023.

During this reporting period, January 2023 through December 2023, no other major repairs or modifications were needed or required on the LFG perimeter monitoring well network.

LFG EXTRACTION WELLS

In accordance with the approved 2023 monitoring schedule, perimeter and interior LFG extraction wells were monitored and vacuum/flow adjustments made twice each month. Test results are shown in attached data Table 2 and locations on Figure 1, respectively. System adjustments were performed when an LFG extraction well exhibited an unacceptable change in methane and/or oxygen gas concentration (which could be due to an overpull or underpull condition).

In addition, each month all perimeter and interior LFG extraction well vacuum and flow adjustments were performed to help maintain observed fluctuating methane gas concentrations detected at perimeter Monitoring Well Nos. MW-2, MW-3, and MW-4 to below 5 percent by volume.

Twice each month, LFG temperatures at all perimeter and interior LFG extraction wells were monitored (see attached data Table 2). The observed temperatures for the 2023 reporting year are considered to be in the low to normal range for anaerobic decomposition. No indication (high temperatures in excess of 130 degrees) of subsurface oxidation was detected or observed at any LFG extraction wells during the monthly monitoring events.

During this reporting period, January 2023 through December 2023, no other additional repairs or modifications were needed or required on the LFG extraction well network.

LFG COLLECTION SYSTEM

In accordance with the approved 2023 monitoring schedule, visual observation of the LFG collection system was conducted at a minimum of twice each month. During these visits, observations were made to verify no pipe breakages had occurred and condensate drainage systems are working properly. Minor repairs were completed as required.

During monthly LFG extraction well monitoring activities, SCS conducts a pressure drop survey (i.e., measurement of pipeline pressure at various points throughout the LFG collection system). The results of this survey (where applicable) indicated that several partial below grade pipeline condensate restrictions within the LFG collection system existed during winter months and were causing decreased or no available vacuum to several extraction wells. SCS understands that, historically, groundwater levels at the site increase during winter/rain months which inhibits liquid to drain from some of the below grade pipeline condensate drain traps. In addition, SCS collected data in 2023 that indicates a below grade pipeline settlement issue along the East side that had resulted in a reduction of vacuum and as a result of this occurrence, had decreased or no available vacuum to some of the LFG extraction wells.

Review of vacuum profile data (during winter months) and liquid level data collected in 2023 continues to indicate that Condensate Drain Trap Nos. CT-1, CT-2, CT-3, CT-8 and CT-10 became inundated with liquid inhibiting condensate to drain freely from the main LFG pipelines. The results of this occurrence have historically been reduced vacuum to LFG Extraction Well Nos. EW-10 through EW-15, and subsequent increased LFG migration to perimeter Monitoring Well Nos. MW-2, MW-3, MW-4 and MW-15. With more consistent daily operation of the blower vent station, LFG collection system vacuum decreases were observed to be less during the 2023 winter months. This resulted in maintaining all perimeter monitoring well locations below 5 percent by volume methane gas concentrations throughout the entire 2023 reporting year.

During 2023, SCS observed an increase of available system vacuum to LFG Extraction Well Nos. EW-02R, EW-03R, EW-4R and EW-5R and this is allowing the condensate to drain properly from the main LFG pipelines to Condensate Drain Trap No. CT-5R which was installed and activated in 2020. In addition, an evaluation of Condensate Drain Trap Nos. CT-1 and CT-2 and potential below grade pipe sloping issues on the East side both resulted in reduced vacuum to LFG Extraction Well Nos. EW-10, EW-11, EW-12, EW-13, EW-14, EW-19, and EW-20. The re-sloping of East side below grade piping and CT-1 and CT-2 will be evaluated further in 2024.

LFG BLOWER VENT SYSTEM (BVS).

In accordance with the 2023 monitoring schedule, visual observation and testing of the LFG BVS was conducted at a minimum of twice each month. During these visits, operating parameters were monitored, and mechanical and electrical components were checked for functionality.

During the annual reporting period from January 1, 2023 through December 31, 2023, the BVS automatic time controller was set and operated on average 12 hours per day /7 days per week throughout the year.

BVS test port monitoring results are shown in data Table 3. Monthly operational runtime information provided in data Table 4 shows that the BVS operated a total of 4,381 hours during the 2023 reporting year.

Twice per month during 2023, SCS performed carbon vent system VOC breakthrough field monitoring and results are provided in Table 3. The carbon vent system (while in operation) maintained the outlet VOC concentrations below the prescribed operating criteria and no carbon vent drums were required to be replaced during the 2023 reporting year.

During this reporting period, January 2023 through December 2023, no other repairs or modifications were needed or required on the BVS.

SITE SURFACE OBSERVATION

In accordance with the 2023 monitoring schedule, visual observation of the landfill surface along the extent of the LFG extraction system is performed at a minimum of twice per month. Observations for erosion, surface cracks (that might allow LFG to escape or promote air intrusion) and settlement around wells, laterals, and pipelines are conducted.

During this reporting period, some significant/major settlement was observed around LFG Extraction Well No. EW-4. During this reporting period, the road and sidewalk was raised and re-sloped by others in this area to allow rain/storm water to flow to drains properly, this was the second repair done in this area. No other erosion or surface cracks that could adversely impact the LFG collection system operation was observed. Other minor surface erosion and cracks were repaired as needed.

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW02D	1/11/2023 10:26	0.00	3.30	16.20	80.50	-0.67	
MW02D	1/30/2023 13:44	0.00	4.00	15.10	80.90	0.01	
MW02D	2/16/2023 09:47	0.10	2.80	15.10	82.00	-0.32	
MW02D	2/27/2023 07:58	1.80	4.80	11.50	81.90	0.05	
MW02D	3/16/2023 12:49	0.00	2.50	13.00	84.50	-0.03	
MW02D	3/28/2023 09:37	0.20	3.80	18.70	77.30	-0.02	
MW02D	4/12/2023 09:57	0.00	0.20	20.90	78.90	-0.76	
MW02D	4/21/2023 08:23	0.00	0.30	20.30	79.40	-0.59	
MW02D	5/5/2023 07:06	0.00	0.30	19.80	79.90	-0.33	
MW02D	5/26/2023 12:33	0.00	0.20	20.10	79.70	-0.12	
MW02D	6/1/2023 10:01	0.00	3.70	18.50	77.80	-0.54	
MW02D	6/19/2023 10:54	0.00	2.50	19.30	78.20	-0.31	
MW02D	7/11/2023 15:17	0.00	0.20	20.80	79.00	-0.14	
MW02D	7/31/2023 17:35	0.10	1.60	18.20	80.10	-0.01	
MW02D	8/23/2023 16:08	0.00	2.20	17.90	79.90	-0.11	
MW02D	8/30/2023 10:05	0.00	2.70	17.50	79.80	-0.23	
MW02D	9/6/2023 09:34	0.20	2.30	18.20	79.30	-0.18	
MW02D	9/22/2023 11:01	0.00	1.50	19.10	79.40	-0.05	
MW02D	10/18/2023 14:09	1.80	1.30	18.20	78.70	-0.10	
MW02D	10/31/2023 12:53	0.00	3.20	15.40	81.40	-0.21	
MW02D	11/7/2023 14:35	0.00	1.00	17.40	81.60	-0.98	
MW02D	11/20/2023 12:48	0.00	0.20	20.90	78.90	0.08	
MW02D	12/6/2023 10:43	0.00	2.90	16.70	80.40	NT	
MW02D	12/19/2023 14:59	0.00	5.70	13.70	80.60	-0.77	
MW02M	1/11/2023 10:29	4.80	12.70	11.40	71.10	-1.53	
MW02M	1/30/2023 13:45	4.50	7.10	9.30	79.10	-1.45	
MW02M	2/16/2023 09:51	0.10	0.80	20.70	78.40	NT	
MW02M	2/27/2023 08:00	4.40	6.50	15.00	74.10	-1.04	
MW02M	3/16/2023 12:50	4.20	3.10	17.10	75.60	-0.31	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW02M	3/28/2023 09:39	3.80	9.90	9.90	76.40	-0.38	
MW02M	4/12/2023 10:01	4.30	15.00	1.60	79.10	-0.85	
MW02M	4/21/2023 08:26	1.20	3.60	6.20	89.00	-0.03	
MW02M	5/5/2023 07:09	4.20	9.50	6.00	80.30	0.02	
MW02M	5/26/2023 12:35	3.80	9.80	9.80	76.60	-0.01	
MW02M	6/1/2023 10:02	0.00	1.00	20.80	78.20	-0.11	
MW02M	6/19/2023 10:55	0.00	1.40	21.00	77.60	-0.65	
MW02M	7/11/2023 15:20	0.00	0.30	19.90	79.80	-0.06	
MW02M	7/31/2023 17:38	2.90	4.70	14.30	78.10	-0.33	
MW02M	8/23/2023 16:14	4.80	4.90	12.60	77.70	-0.06	
MW02M	8/30/2023 10:06	0.00	0.10	20.40	79.50	-0.06	
MW02M	9/6/2023 09:37	0.00	0.10	20.50	79.40	-0.09	
MW02M	9/22/2023 11:08	0.00	1.30	18.70	80.00	-0.01	
MW02M	10/18/2023 14:11	3.00	4.00	1.70	91.30	-0.27	
MW02M	10/31/2023 12:54	0.00	0.10	20.10	79.80	-0.08	
MW02M	11/7/2023 14:37	4.70	3.90	15.90	75.50	-2.38	
MW02M	11/20/2023 12:49	3.30	13.40	2.60	80.70	0.04	
MW02M	12/6/2023 10:45	0.00	3.20	14.60	82.20	0.15	
MW02M	12/19/2023 15:00	0.80	3.60	2.90	92.70	0.18	
MW02S	1/11/2023 10:30	0.30	8.50	3.90	87.30	-0.02	
MW02S	1/30/2023 13:46	2.70	8.60	0.60	88.10	-0.98	
MW02S	2/16/2023 09:55	1.60	5.50	15.30	77.60	-1.81	
MW02S	2/27/2023 08:02	4.00	6.10	10.70	79.20	-0.35	
MW02S	3/16/2023 12:51	1.40	6.90	1.10	90.60	-0.13	
MW02S	3/28/2023 09:40	2.20	6.80	1.60	89.40	-0.73	
MW02S	4/12/2023 10:02	3.50	7.60	5.90	83.00	-0.04	
MW02S	4/21/2023 08:27	0.20	0.70	20.40	78.70	-0.04	
MW02S	5/5/2023 07:10	0.80	5.50	4.20	89.50	0.01	
MW02S	5/26/2023 12:36	2.40	6.20	0.90	90.50	-0.06	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW02S	6/1/2023 10:04	0.30	0.80	19.50	79.40	0.00	
MW02S	6/19/2023 10:56	3.30	5.70	1.50	89.50	-0.19	
MW02S	7/11/2023 15:21	4.40	8.60	0.40	86.60	-0.24	
MW02S	7/31/2023 17:38	3.30	9.00	3.70	84.00	-0.36	
MW02S	8/23/2023 16:16	2.50	12.90	0.10	84.50	-0.13	
MW02S	8/30/2023 10:08	0.70	4.10	18.50	76.70	0.02	
MW02S	9/6/2023 09:38	1.80	9.00	8.10	81.10	-0.06	
MW02S	9/22/2023 11:10	0.00	1.60	17.70	80.70	-0.04	
MW02S	10/18/2023 14:14	1.80	2.70	5.50	90.00	-0.03	
MW02S	10/31/2023 12:55	3.40	13.10	0.60	82.90	-0.04	
MW02S	11/7/2023 14:38	4.00	10.80	2.20	83.00	-0.19	
MW02S	11/20/2023 12:49	2.90	13.00	0.00	84.10	-0.65	
MW02S	12/6/2023 10:47	0.10	3.50	14.50	81.90	-0.22	
MW02S	12/19/2023 15:01	4.50	9.50	2.20	83.80	-0.82	
MW03D	1/11/2023 10:36	0.00	0.20	20.50	79.30	-0.01	
MW03D	1/30/2023 13:50	0.20	9.00	9.60	81.20	0.02	
MW03D	2/16/2023 09:58	0.20	2.90	19.00	77.90	-0.17	
MW03D	2/27/2023 08:19	1.90	4.40	14.00	79.70	-0.12	
MW03D	3/16/2023 12:53	0.20	4.90	13.50	81.40	-0.01	
MW03D	3/28/2023 09:42	0.50	5.10	13.30	81.10	-0.50	
MW03D	4/12/2023 10:04	0.10	1.70	19.90	78.30	-0.04	
MW03D	4/21/2023 08:29	0.10	0.70	20.40	78.80	-0.01	
MW03D	5/5/2023 07:13	0.00	2.80	17.80	79.40	-0.04	
MW03D	5/26/2023 12:39	1.60	5.50	9.50	83.40	-0.09	
MW03D	6/1/2023 10:06	1.50	3.30	11.70	83.50	-0.50	
MW03D	6/19/2023 10:59	1.80	8.60	6.10	83.50	-0.14	
MW03D	7/11/2023 15:24	1.20	12.00	2.70	84.10	-0.15	
MW03D	7/31/2023 17:41	4.00	5.70	9.20	81.10	-0.07	
MW03D	8/23/2023 16:19	0.40	11.20	6.60	81.80	-0.23	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW03D	8/30/2023 10:10	0.60	12.20	6.30	80.90	-0.09	
MW03D	9/6/2023 09:41	0.80	12.00	7.40	79.80	-0.15	
MW03D	9/22/2023 11:16	0.00	0.20	20.40	79.40	-0.01	
MW03D	10/18/2023 14:16	2.20	9.00	9.70	79.10	-0.62	
MW03D	10/31/2023 12:57	0.10	0.70	19.70	79.50	-0.02	
MW03D	11/7/2023 14:40	0.00	1.80	8.90	89.30	-0.07	
MW03D	11/20/2023 12:51	0.10	1.60	18.10	80.20	0.08	
MW03D	12/6/2023 10:56	0.20	2.10	17.30	80.40	-0.05	
MW03D	12/19/2023 15:03	4.80	9.90	0.60	84.70	-0.09	
MW03M	1/11/2023 10:41	0.00	0.30	20.40	79.30	-0.03	
MW03M	1/30/2023 13:53	0.50	15.20	1.80	82.50	0.10	
MW03M	2/16/2023 09:59	0.10	1.90	19.40	78.60	-0.18	
MW03M	2/27/2023 08:21	3.60	14.80	5.00	76.60	-0.26	
MW03M	3/16/2023 12:54	0.00	11.30	2.00	86.70	-0.03	
MW03M	3/28/2023 09:43	0.80	5.90	9.80	83.50	-0.23	
MW03M	4/12/2023 10:05	3.70	12.20	6.80	77.30	-0.08	
MW03M	4/21/2023 08:34	0.00	6.40	14.30	79.30	0.01	
MW03M	5/5/2023 07:14	0.30	2.00	17.90	79.80	-0.09	
MW03M	5/26/2023 12:40	1.20	3.60	15.40	79.80	-0.07	
MW03M	6/1/2023 10:07	1.70	4.70	14.40	79.20	-0.42	
MW03M	6/19/2023 11:01	0.40	5.10	17.30	77.20	-2.76	
MW03M	7/11/2023 15:27	4.20	7.40	8.40	80.00	0.01	
MW03M	7/31/2023 17:42	0.10	0.50	13.60	85.80	-0.26	
MW03M	8/23/2023 16:20	4.90	9.90	8.60	76.60	-0.02	
MW03M	8/30/2023 10:12	0.00	0.30	20.00	79.70	-0.02	
MW03M	9/6/2023 09:42	0.00	0.50	19.90	79.60	-0.03	
MW03M	9/22/2023 11:19	0.00	1.20	19.10	79.70	-0.03	
MW03M	10/18/2023 14:18	1.90	3.10	7.30	87.70	0.00	
MW03M	10/31/2023 12:58	0.20	1.00	19.50	79.30	-0.05	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW03M	11/7/2023 14:41	3.40	8.60	7.70	80.30	-0.08	
MW03M	11/20/2023 12:55	4.20	18.10	0.10	77.60	0.07	
MW03M	12/6/2023 11:00	0.00	2.30	16.60	81.10	-0.06	
MW03M	12/19/2023 15:04	0.10	0.90	10.90	88.10	-0.08	
MW03S	1/11/2023 10:44	0.00	3.10	17.90	79.00	-0.05	
MW03S	1/30/2023 13:58	0.00	2.90	18.50	78.60	0.01	
MW03S	2/16/2023 10:01	0.10	1.70	20.00	78.20	-0.23	
MW03S	2/27/2023 08:25	2.10	2.20	20.30	75.40	-0.03	
MW03S	3/16/2023 12:55	0.00	3.00	18.90	78.10	-0.07	
MW03S	3/28/2023 09:43	0.20	4.50	17.00	78.30	-0.05	
MW03S	4/12/2023 10:07	0.00	0.70	20.70	78.60	-0.01	
MW03S	4/21/2023 08:34	0.00	0.70	20.50	78.80	-0.05	
MW03S	5/5/2023 07:15	0.00	1.50	20.00	78.50	-0.01	
MW03S	5/26/2023 12:41	0.00	0.70	20.00	79.30	-0.04	
MW03S	6/1/2023 10:09	0.30	3.00	19.10	77.60	-0.59	
MW03S	6/19/2023 11:02	0.00	2.10	20.60	77.30	-0.04	
MW03S	7/11/2023 15:28	2.10	8.70	9.70	79.50	-0.24	
MW03S	7/31/2023 17:42	0.10	0.50	19.90	79.50	-0.30	
MW03S	8/23/2023 16:22	0.00	3.20	18.00	78.80	-0.01	
MW03S	8/30/2023 10:13	0.00	0.20	20.30	79.50	-0.01	
MW03S	9/6/2023 09:43	0.00	0.30	20.10	79.60	-0.60	
MW03S	9/22/2023 11:21	0.00	5.10	16.20	78.70	-0.12	
MW03S	10/18/2023 14:20	1.80	3.80	16.30	78.10	0.00	
MW03S	10/31/2023 12:59	0.10	0.70	19.70	79.50	-0.02	
MW03S	11/7/2023 14:42	0.30	12.80	3.70	83.20	-0.09	
MW03S	11/20/2023 12:57	0.00	4.20	17.10	78.70	0.00	
MW03S	12/6/2023 11:01	0.00	13.90	7.90	78.20	-0.25	
MW03S	12/19/2023 15:09	0.00	0.50	20.00	79.50	-0.06	
MW04D	1/11/2023 10:46	0.00	0.80	19.60	79.60	0.04	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW04D	1/30/2023 14:00	0.00	0.70	20.20	79.10	0.02	
MW04D	2/16/2023 10:03	0.10	0.70	21.10	78.10	0.00	
MW04D	2/16/2023 10:08	0.00	0.20	20.90	78.90	-0.02	
MW04D	2/27/2023 08:27	2.20	6.80	10.70	80.30	-0.06	
MW04D	3/16/2023 12:57	0.00	1.20	20.30	78.50	-0.01	
MW04D	3/28/2023 09:45	0.00	1.60	19.60	78.80	-0.39	
MW04D	4/12/2023 10:12	0.00	0.30	20.80	78.90	-0.09	
MW04D	4/21/2023 08:39	0.00	0.10	20.90	79.00	NT	
MW04D	5/5/2023 07:16	0.00	0.60	20.50	78.90	-0.42	
MW04D	5/26/2023 12:44	0.00	0.40	20.00	79.60	-0.11	
MW04D	6/1/2023 10:10	0.00	1.50	20.50	78.00	-0.70	
MW04D	6/19/2023 11:07	0.00	0.80	21.20	78.00	-0.09	
MW04D	7/11/2023 15:31	0.00	1.00	20.00	79.00	-1.38	
MW04D	7/31/2023 17:46	0.10	0.10	20.70	79.10	-1.11	
MW04D	8/23/2023 16:27	0.00	0.00	20.30	79.70	-0.93	
MW04D	8/30/2023 10:15	0.00	0.40	20.10	79.50	-0.45	
MW04D	9/6/2023 09:46	0.00	15.90	0.20	83.90	-0.15	
MW04D	9/22/2023 11:52	0.00	0.20	20.40	79.40	-0.89	
MW04D	10/18/2023 14:23	1.80	1.20	19.10	77.90	0.02	
MW04D	10/31/2023 13:00	0.00	0.40	19.80	79.80	-0.01	
MW04D	11/7/2023 14:44	0.00	0.90	19.80	79.30	-0.08	
MW04D	11/20/2023 13:00	0.00	0.40	20.30	79.30	-2.87	
MW04D	12/6/2023 11:12	0.00	2.40	13.30	84.30	-0.04	
MW04D	12/19/2023 15:10	0.10	0.60	19.70	79.60	-0.44	
MW04M	1/11/2023 10:48	0.00	0.20	20.60	79.20	-0.09	
MW04M	1/30/2023 14:02	2.30	5.10	6.90	85.70	-0.13	
MW04M	2/16/2023 10:07	0.00	0.20	20.90	78.90	-0.03	
MW04M	2/27/2023 08:29	0.00	0.90	21.00	78.10	NT	
MW04M	3/16/2023 12:58	0.00	0.40	20.60	79.00	-0.03	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW04M	3/28/2023 09:45	0.10	1.40	14.50	84.00	0.16	
MW04M	4/12/2023 10:14	2.90	4.00	6.80	86.30	-0.17	
MW04M	4/21/2023 08:39	0.00	0.10	20.90	79.00	-0.03	
MW04M	5/5/2023 07:17	0.50	1.90	11.20	86.40	-0.15	
MW04M	5/26/2023 12:45	3.40	5.20	2.10	89.30	-0.11	
MW04M	6/1/2023 10:12	0.00	0.80	20.70	78.50	-0.05	
MW04M	6/19/2023 11:09	0.00	0.80	21.30	77.90	-0.17	
MW04M	7/11/2023 15:32	2.50	7.10	1.10	89.30	-0.06	
MW04M	7/31/2023 17:46	3.90	10.40	15.00	70.70	-0.26	
MW04M	8/23/2023 16:33	0.00	0.10	20.20	79.70	-0.01	
MW04M	8/30/2023 10:17	0.00	0.10	20.40	79.50	-0.04	
MW04M	9/6/2023 09:47	0.00	0.10	20.00	79.90	-0.03	
MW04M	9/22/2023 11:55	3.50	11.20	0.10	85.20	0.39	
MW04M	10/18/2023 14:25	4.40	8.80	5.50	81.30	-0.02	
MW04M	10/31/2023 13:01	0.00	0.10	20.30	79.60	-0.04	
MW04M	11/7/2023 14:45	0.20	1.60	15.80	82.40	-0.31	
MW04M	11/20/2023 13:05	2.20	11.10	0.00	86.70	0.01	
MW04M	12/6/2023 11:19	0.00	7.30	17.00	75.70	0.07	
MW04M	12/19/2023 15:11	0.00	0.10	20.40	79.50	-0.21	
MW04S	1/11/2023 10:49	0.00	0.20	20.60	79.20	-0.01	
MW04S	1/30/2023 14:03	0.00	1.40	14.80	83.80	-0.11	
MW04S	2/16/2023 10:10	0.00	4.80	12.90	82.30	-0.01	
MW04S	2/27/2023 08:30	0.00	0.70	21.00	78.30	-0.02	
MW04S	3/16/2023 12:59	0.00	0.30	20.60	79.10	-0.08	
MW04S	3/28/2023 09:46	0.00	1.20	17.70	81.10	-0.29	
MW04S	4/12/2023 10:17	0.10	6.50	10.80	82.60	-0.15	
MW04S	4/21/2023 08:40	0.00	7.20	11.10	81.70	-0.21	
MW04S	5/5/2023 07:18	0.00	5.50	10.40	84.10	-0.09	
MW04S	5/26/2023 12:46	0.10	8.30	8.50	83.10	-0.10	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW04S	6/1/2023 10:13	0.00	2.90	18.30	78.80	-0.48	
MW04S	6/19/2023 11:10	0.00	7.60	7.30	85.10	-0.14	
MW04S	7/11/2023 15:33	0.00	11.20	4.30	84.50	-0.21	
MW04S	7/31/2023 17:47	1.10	11.30	2.40	85.20	-0.23	
MW04S	8/23/2023 16:35	0.00	14.60	0.90	84.50	-0.04	
MW04S	8/30/2023 10:18	0.00	14.90	0.90	84.20	-0.01	
MW04S	9/6/2023 09:48	0.00	0.20	20.20	79.60	-0.09	
MW04S	9/22/2023 11:57	0.10	9.40	17.40	73.10	0.17	
MW04S	10/18/2023 14:26	1.90	15.80	0.30	82.00	-0.07	
MW04S	10/31/2023 13:02	0.00	16.20	1.40	82.40	-0.03	
MW04S	11/7/2023 14:47	0.00	12.70	3.60	83.70	-0.17	
MW04S	11/20/2023 13:07	0.00	1.50	18.80	79.70	-0.04	
MW04S	12/6/2023 11:20	0.00	12.40	6.90	80.70	-0.18	
MW04S	12/19/2023 15:13	0.00	0.10	20.40	79.50	-0.20	
MW05D	1/11/2023 10:51	0.00	0.70	2.20	97.10	1.58	
MW05D	1/30/2023 14:05	0.00	1.00	4.90	94.10	-6.74	
MW05D	2/16/2023 10:12	0.00	3.80	9.60	86.60	-1.15	
MW05D	2/27/2023 08:35	0.00	0.60	10.80	88.60	0.02	
MW05D	3/16/2023 13:01	0.00	0.50	9.80	89.70	-0.04	
MW05D	3/28/2023 09:48	0.00	0.90	13.80	85.30	-0.13	
MW05D	4/12/2023 10:27	0.00	1.60	13.40	85.00	0.02	
MW05D	4/21/2023 08:42	0.00	0.70	14.50	84.80	-0.03	
MW05D	5/5/2023 07:20	0.00	3.10	14.40	82.50	-0.06	
MW05D	5/26/2023 12:48	0.00	3.20	13.30	83.50	-0.05	
MW05D	6/1/2023 10:16	0.00	3.90	13.70	82.40	-0.12	
MW05D	6/19/2023 11:14	0.00	3.20	16.20	80.60	-0.48	
MW05D	7/11/2023 15:37	0.00	9.10	15.40	75.50	0.02	
MW05D	7/31/2023 17:49	0.00	1.20	19.00	79.80	-0.03	
MW05D	8/23/2023 16:38	0.00	0.80	15.30	83.90	-0.83	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW05D	8/30/2023 10:20	0.00	0.40	17.50	82.10	-0.48	
MW05D	9/6/2023 09:51	0.00	1.20	17.20	81.60	-0.23	
MW05D	9/22/2023 11:26	0.00	0.70	7.80	91.50	-0.05	
MW05D	10/18/2023 14:29	1.80	0.60	14.80	82.80	0.01	
MW05D	10/31/2023 13:04	0.00	0.60	4.80	94.60	0.01	
MW05D	11/7/2023 14:48	0.00	11.80	3.90	84.30	-0.06	
MW05D	11/20/2023 13:08	0.00	0.70	3.30	96.00	0.53	
MW05D	12/6/2023 11:23	0.00	1.20	3.40	95.40	5.55	
MW05D	12/19/2023 15:14	0.00	0.40	7.70	91.90	1.67	
MW05S	1/11/2023 10:52	0.00	6.10	3.40	90.50	0.01	
MW05S	1/30/2023 14:05	0.00	1.00	4.50	94.50	0.03	
MW05S	2/16/2023 10:14	0.00	5.90	6.40	87.70	0.01	
MW05S	2/27/2023 08:37	0.00	4.80	6.00	89.20	-0.01	
MW05S	3/16/2023 13:02	0.00	4.30	6.00	89.70	-0.08	
MW05S	3/28/2023 09:49	0.00	2.50	11.80	85.70	-0.26	
MW05S	4/12/2023 10:28	0.00	3.20	10.90	85.90	-0.20	
MW05S	4/21/2023 08:43	0.00	6.30	8.20	85.50	0.00	
MW05S	5/5/2023 07:21	0.00	4.50	7.90	87.60	-0.03	
MW05S	5/26/2023 12:48	0.00	2.90	12.50	84.60	0.00	
MW05S	6/1/2023 10:17	0.00	3.30	13.10	83.60	-0.13	
MW05S	6/19/2023 11:15	0.00	2.90	13.60	83.50	-0.60	
MW05S	7/11/2023 15:38	0.00	4.20	17.10	78.70	-0.06	
MW05S	7/31/2023 17:50	0.00	7.20	5.90	86.90	-0.32	
MW05S	8/23/2023 16:39	0.00	8.00	4.60	87.40	-0.01	
MW05S	8/30/2023 10:21	0.00	8.20	4.80	87.00	0.03	
MW05S	9/6/2023 09:52	0.00	8.10	5.70	86.20	0.00	
MW05S	9/22/2023 11:30	0.00	8.40	3.60	88.00	-0.46	
MW05S	10/18/2023 14:31	1.80	11.70	3.10	83.40	-0.01	
MW05S	10/31/2023 13:05	0.00	12.30	4.50	83.20	0.02	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW05S	11/7/2023 14:49	0.00	9.40	9.20	81.40	-0.04	
MW05S	11/20/2023 13:09	0.00	10.40	4.10	85.50	0.05	
MW05S	12/6/2023 11:24	0.00	10.50	3.60	85.90	-0.97	
MW05S	12/19/2023 15:14	0.00	0.50	2.20	97.30	-0.12	
MW06D	1/11/2023 10:55	0.00	1.60	13.10	85.30	0.01	
MW06D	1/30/2023 14:07	0.00	0.80	15.00	84.20	0.01	
MW06D	2/16/2023 10:16	0.00	3.50	16.20	80.30	0.01	
MW06D	2/27/2023 08:39	0.10	2.10	17.20	80.60	0.01	
MW06D	3/16/2023 13:04	0.00	4.30	11.70	84.00	0.06	
MW06D	3/28/2023 09:51	0.00	1.40	17.40	81.20	-0.04	
MW06D	4/12/2023 10:30	0.00	1.50	17.10	81.40	0.00	
MW06D	4/21/2023 08:45	0.00	0.70	19.20	80.10	-0.01	
MW06D	5/5/2023 07:24	0.00	2.30	18.90	78.80	-0.03	
MW06D	5/26/2023 12:51	0.00	1.80	18.50	79.70	-0.04	
MW06D	6/1/2023 10:20	0.00	3.10	15.80	81.10	-0.35	
MW06D	6/19/2023 11:17	0.00	2.70	16.80	80.50	-0.11	
MW06D	7/11/2023 15:43	0.00	1.30	20.00	78.70	-0.01	
MW06D	7/31/2023 17:55	0.10	0.30	10.40	89.20	-0.18	
MW06D	7/31/2023 17:56	0.00	3.30	17.70	79.00	-0.20	
MW06D	8/23/2023 16:42	0.00	1.10	19.10	79.80	-0.03	
MW06D	8/30/2023 10:23	0.00	0.80	19.60	79.60	0.00	
MW06D	9/6/2023 09:55	0.00	1.50	18.70	79.80	-0.05	
MW06D	9/22/2023 11:37	0.00	3.80	15.50	80.70	-0.16	
MW06D	10/18/2023 14:34	0.00	2.00	17.20	80.80	0.03	
MW06D	10/31/2023 13:07	0.00	2.50	17.90	79.60	-0.02	
MW06D	11/7/2023 14:50	0.00	8.50	16.00	75.50	-0.06	
MW06D	11/20/2023 13:12	0.00	1.00	18.00	81.00	0.05	
MW06D	12/6/2023 11:27	0.00	2.00	17.30	80.70	1.13	
MW06D	12/19/2023 15:17	0.00	0.10	17.30	82.60	-0.03	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW06S	1/11/2023 10:57	0.00	1.10	19.80	79.10	0.01	
MW06S	1/30/2023 14:08	0.00	0.60	20.20	79.20	0.09	
MW06S	2/16/2023 10:18	0.00	1.60	19.90	78.50	0.03	
MW06S	2/27/2023 08:40	0.10	1.60	19.60	78.70	-0.03	
MW06S	3/16/2023 13:04	0.00	2.40	18.60	79.00	-0.04	
MW06S	3/28/2023 09:52	0.00	1.40	18.80	79.80	-0.36	
MW06S	4/12/2023 10:31	0.00	1.50	18.90	79.60	0.03	
MW06S	4/21/2023 08:46	0.00	2.00	19.10	78.90	0.01	
MW06S	5/5/2023 07:25	0.00	1.70	18.40	79.90	-0.04	
MW06S	5/26/2023 12:52	0.00	2.00	16.40	81.60	-0.07	
MW06S	6/1/2023 10:22	0.00	2.40	19.30	78.30	-0.40	
MW06S	6/19/2023 11:20	0.00	2.30	19.50	78.20	-0.07	
MW06S	7/11/2023 15:44	0.00	0.80	20.30	78.90	0.01	
MW06S	7/31/2023 17:58	0.00	0.10	19.60	80.30	-0.14	
MW06S	8/23/2023 16:43	0.00	3.90	16.80	79.30	-0.08	
MW06S	8/30/2023 10:25	0.00	4.10	17.00	78.90	0.00	
MW06S	9/6/2023 09:56	0.00	4.60	16.30	79.10	-0.05	
MW06S	9/22/2023 11:41	0.00	5.20	14.90	79.90	0.13	
MW06S	10/18/2023 14:35	0.00	3.70	15.90	80.40	0.00	
MW06S	10/31/2023 13:08	0.00	3.10	17.80	79.10	0.06	
MW06S	11/7/2023 14:51	0.00	5.50	18.00	76.50	-0.06	
MW06S	11/20/2023 13:16	0.00	0.60	20.10	79.30	0.06	
MW06S	12/6/2023 11:28	0.00	1.80	18.10	80.10	-0.02	
MW06S	12/19/2023 15:17	0.00	0.10	18.90	81.00	0.04	
MW08D	1/11/2023 10:59	0.00	1.90	19.20	78.90	0.01	
MW08D	1/30/2023 14:10	0.00	0.40	20.50	79.10	0.04	
MW08D	2/16/2023 10:23	0.00	1.20	20.60	78.20	0.01	
MW08D	2/27/2023 08:44	0.00	0.50	20.70	78.80	0.00	
MW08D	3/16/2023 13:09	0.00	1.30	20.20	78.50	-0.01	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW08D	3/28/2023 10:01	0.00	0.90	19.90	79.20	0.02	
MW08D	4/12/2023 10:35	0.00	0.80	20.80	78.40	-0.01	
MW08D	4/21/2023 08:52	0.00	0.30	20.90	78.80	-0.04	
MW08D	5/5/2023 07:29	0.00	1.10	20.80	78.10	-0.03	
MW08D	5/26/2023 12:54	0.00	1.30	19.70	79.00	0.03	
MW08D	6/1/2023 10:25	0.00	1.00	20.70	78.30	-0.10	
MW08D	6/19/2023 12:23	0.00	3.40	19.90	76.70	-5.42	
MW08D	7/11/2023 15:59	0.00	2.80	18.40	78.80	-0.06	
MW08D	7/31/2023 17:59	0.00	0.10	20.80	79.10	-4.60	
MW08D	8/23/2023 16:46	0.00	0.10	20.50	79.40	-1.53	
MW08D	8/30/2023 10:30	0.00	0.10	20.50	79.40	-0.03	
MW08D	9/6/2023 10:04	0.00	0.10	20.00	79.90	0.01	
MW08D	9/22/2023 12:03	0.00	0.60	20.10	79.30	0.19	
MW08D	10/18/2023 14:39	0.00	0.50	19.50	80.00	0.00	
MW08D	10/31/2023 13:11	0.00	0.20	20.40	79.40	-0.01	
MW08D	11/7/2023 14:52	0.00	1.60	20.00	78.40	-1.25	
MW08D	11/20/2023 13:18	0.00	0.20	20.30	79.50	-0.01	
MW08D	12/6/2023 11:33	0.00	4.20	7.00	88.80	2.01	
MW08D	12/19/2023 15:19	0.00	0.10	20.00	79.90	0.10	
MW08M	1/11/2023 11:00	0.00	2.10	18.60	79.30	-0.88	
MW08M	1/30/2023 14:11	0.00	3.60	17.70	78.70	0.12	
MW08M	2/16/2023 10:25	0.00	1.30	19.40	79.30	-0.07	
MW08M	2/27/2023 08:45	0.00	1.30	18.70	80.00	0.02	
MW08M	3/16/2023 13:10	0.00	0.70	20.40	78.90	-0.41	
MW08M	3/28/2023 10:02	0.00	1.60	18.70	79.70	-0.49	
MW08M	4/12/2023 10:42	0.00	5.40	15.20	79.40	0.24	
MW08M	4/21/2023 08:53	0.00	0.20	21.00	78.80	-0.91	
MW08M	5/5/2023 07:30	0.00	1.90	18.40	79.70	-0.51	
MW08M	5/26/2023 12:55	0.00	2.30	17.00	80.70	0.06	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW08M	6/1/2023 10:27	0.00	0.60	20.70	78.70	-0.03	
MW08M	6/19/2023 12:25	0.00	2.30	18.60	79.10	-0.06	
MW08M	7/11/2023 16:00	0.00	0.60	20.30	79.10	-0.08	
MW08M	7/31/2023 18:01	0.00	2.20	19.00	78.80	-0.01	
MW08M	8/23/2023 16:47	0.00	0.00	20.60	79.40	-0.11	
MW08M	8/30/2023 10:31	0.00	0.10	20.50	79.40	-0.19	
MW08M	9/6/2023 10:05	0.00	0.10	20.00	79.90	-0.05	
MW08M	9/22/2023 12:05	0.00	1.80	18.50	79.70	0.95	
MW08M	10/18/2023 14:40	0.00	0.30	19.50	80.20	-0.02	
MW08M	10/31/2023 13:13	0.00	0.60	19.90	79.50	0.03	
MW08M	11/7/2023 14:53	0.00	0.20	20.40	79.40	-1.26	
MW08M	11/20/2023 13:21	0.00	2.40	18.20	79.40	0.04	
MW08M	12/6/2023 11:35	0.00	5.10	16.30	78.60	1.03	
MW08M	12/19/2023 15:20	0.00	0.10	20.20	79.70	0.08	
MW08S	1/11/2023 11:02	0.00	0.70	20.00	79.30	-0.32	
MW08S	1/30/2023 14:12	0.00	1.80	19.50	78.70	0.32	
MW08S	2/16/2023 10:26	0.00	3.10	17.90	79.00	-0.02	
MW08S	2/27/2023 08:46	0.00	2.80	17.90	79.30	-1.34	
MW08S	3/16/2023 13:10	0.00	1.60	18.00	80.40	-0.42	
MW08S	3/28/2023 10:04	0.00	3.30	17.50	79.20	0.35	
MW08S	4/12/2023 10:43	0.00	1.20	20.50	78.30	-0.10	
MW08S	4/21/2023 08:53	0.00	3.90	17.50	78.60	-0.15	
MW08S	5/5/2023 07:31	0.00	2.60	17.90	79.50	0.03	
MW08S	5/26/2023 12:56	0.00	3.40	16.10	80.50	0.34	
MW08S	6/1/2023 10:28	0.00	1.70	18.00	80.30	-0.61	
MW08S	6/19/2023 12:26	0.00	3.40	17.40	79.20	-0.10	
MW08S	7/11/2023 16:01	0.00	0.40	20.50	79.10	0.03	
MW08S	7/31/2023 18:02	0.00	0.10	20.30	79.60	-0.14	
MW08S	8/23/2023 16:49	0.00	2.10	18.80	79.10	-0.08	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW08S	8/30/2023 10:32	0.00	1.70	19.30	79.00	-0.11	
MW08S	9/6/2023 10:06	0.00	2.30	18.30	79.40	-0.02	
MW08S	9/22/2023 12:06	0.00	0.40	20.00	79.60	0.18	
MW08S	10/18/2023 14:42	0.00	1.60	17.70	80.70	-0.04	
MW08S	10/31/2023 13:13	0.00	2.80	17.80	79.40	0.01	
MW08S	11/7/2023 14:54	0.00	1.90	18.40	79.70	-0.79	
MW08S	11/20/2023 13:22	0.00	2.60	17.80	79.60	0.08	
MW08S	12/6/2023 11:36	0.00	2.30	19.80	77.90	1.42	
MW08S	12/19/2023 15:21	0.00	0.20	20.10	79.70	0.04	
MW09D	1/11/2023 11:05	0.00	0.50	19.10	80.40	0.01	
MW09D	1/30/2023 14:14	0.00	1.90	19.30	78.80	0.04	
MW09D	2/16/2023 10:29	0.00	1.80	20.30	77.90	0.02	
MW09D	2/27/2023 08:49	0.00	2.40	19.50	78.10	0.02	
MW09D	3/16/2023 13:13	0.00	1.80	19.50	78.70	-0.02	
MW09D	3/28/2023 10:12	0.00	1.80	19.40	78.80	-0.21	
MW09D	4/12/2023 10:46	0.00	0.70	20.30	79.00	0.04	
MW09D	4/21/2023 08:56	0.00	0.60	20.70	78.70	0.01	
MW09D	5/5/2023 07:34	0.00	1.80	20.00	78.20	0.00	
MW09D	5/26/2023 12:59	0.00	2.00	18.80	79.20	0.03	
MW09D	6/1/2023 10:32	0.00	1.80	19.60	78.60	-0.53	
MW09D	6/19/2023 11:36	0.00	3.50	18.70	77.80	-0.16	
MW09D	7/31/2023 18:05	0.00	0.10	20.90	79.00	-0.04	
MW09D	8/23/2023 16:52	0.00	0.60	20.10	79.30	0.01	
MW09D	8/30/2023 10:35	0.00	0.80	20.00	79.20	-0.09	
MW09D	9/6/2023 10:11	0.00	0.60	19.40	80.00	-0.03	
MW09D	9/22/2023 12:14	0.00	0.50	18.90	80.60	0.28	
MW09D	10/18/2023 14:45	0.00	1.00	18.90	80.10	0.00	
MW09D	10/31/2023 13:19	0.00	0.60	20.10	79.30	-0.08	
MW09D	11/7/2023 14:56	0.00	0.60	18.60	80.80	-0.07	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW09D	11/20/2023 13:37	0.00	2.80	17.50	79.70	0.07	
MW09D	12/6/2023 11:42	0.00	4.20	16.30	79.50	0.03	
MW09D	12/19/2023 15:22	0.00	0.20	20.10	79.70	0.01	
MW09M	1/11/2023 11:07	0.00	0.40	20.20	79.40	0.00	
MW09M	1/30/2023 14:16	0.00	0.50	19.80	79.70	0.05	
MW09M	2/16/2023 10:30	0.00	0.80	20.50	78.70	-0.01	
MW09M	2/27/2023 08:50	0.00	1.00	20.50	78.50	-0.19	
MW09M	3/16/2023 13:14	0.00	0.90	20.10	79.00	-0.04	
MW09M	3/28/2023 10:13	0.00	0.80	19.80	79.40	-0.06	
MW09M	4/12/2023 10:47	0.00	0.50	20.40	79.10	0.08	
MW09M	4/21/2023 08:57	0.00	0.40	20.80	78.80	0.04	
MW09M	5/5/2023 07:34	0.00	1.30	20.20	78.50	-0.05	
MW09M	5/26/2023 13:00	0.00	1.20	19.10	79.70	0.03	
MW09M	6/1/2023 10:33	0.00	1.20	20.00	78.80	-0.28	
MW09M	6/19/2023 11:37	0.00	2.20	20.10	77.70	-6.45	
MW09M	6/19/2023 11:37	0.00	1.70	20.20	78.10	-0.19	
MW09M	7/31/2023 18:05	0.00	0.10	21.00	78.90	-2.75	
MW09M	8/23/2023 16:53	0.00	3.00	11.90	85.10	-0.04	
MW09M	8/30/2023 10:36	0.00	2.20	16.30	81.50	0.00	
MW09M	9/6/2023 10:12	0.00	2.20	16.30	81.50	-0.04	
MW09M	9/22/2023 12:16	0.00	3.60	13.40	83.00	0.01	
MW09M	10/18/2023 14:46	0.00	0.80	18.80	80.40	-0.07	
MW09M	10/31/2023 13:20	0.00	1.70	18.90	79.40	-0.16	
MW09M	11/7/2023 14:57	0.00	0.60	20.20	79.20	-0.09	
MW09M	11/20/2023 13:38	0.00	0.10	20.00	79.90	0.10	
MW09M	12/6/2023 11:43	0.00	3.80	13.10	83.10	-20.68	
MW09M	12/19/2023 15:23	0.00	0.10	20.10	79.80	-0.01	
MW09S	1/11/2023 11:09	0.00	0.40	20.10	79.50	0.00	
MW09S	1/30/2023 14:17	0.00	0.40	20.60	79.00	0.05	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW09S	2/16/2023 10:32	0.00	0.50	20.70	78.80	0.01	
MW09S	2/27/2023 08:50	0.00	0.70	20.70	78.60	0.29	
MW09S	3/16/2023 13:14	0.00	0.60	20.20	79.20	-0.08	
MW09S	3/28/2023 10:14	0.00	0.60	19.90	79.50	-0.21	
MW09S	4/12/2023 10:48	0.00	0.40	20.50	79.10	0.04	
MW09S	4/21/2023 08:58	0.00	0.30	20.80	78.90	-0.26	
MW09S	5/5/2023 07:35	0.00	1.00	20.40	78.60	0.01	
MW09S	5/26/2023 13:01	0.00	1.80	16.70	81.50	0.05	
MW09S	6/1/2023 10:34	0.00	1.00	20.00	79.00	-0.54	
MW09S	6/19/2023 11:53	0.00	2.40	19.70	77.90	-0.27	
MW09S	7/31/2023 18:06	0.00	0.30	20.80	78.90	-0.07	
MW09S	8/23/2023 16:55	0.00	3.70	17.10	79.20	0.02	
MW09S	8/30/2023 10:37	0.00	1.70	19.20	79.10	-0.04	
MW09S	9/6/2023 10:13	0.00	2.30	18.00	79.70	-0.20	
MW09S	9/22/2023 12:17	0.00	1.70	18.50	79.80	0.12	
MW09S	10/18/2023 14:47	0.00	1.50	17.80	80.70	-0.03	
MW09S	10/31/2023 13:21	0.00	3.80	16.10	80.10	-0.22	
MW09S	11/7/2023 14:57	0.00	0.60	20.20	79.20	-0.05	
MW09S	11/20/2023 13:39	0.00	0.20	20.00	79.80	0.05	
MW09S	12/6/2023 11:46	0.00	1.10	19.60	79.30	0.08	
MW09S	12/19/2023 15:24	0.00	0.20	20.00	79.80	0.05	
MW10D	1/11/2023 11:11	0.00	0.40	20.00	79.60	0.03	
MW10D	1/30/2023 14:18	0.00	0.50	20.60	78.90	0.01	
MW10D	2/16/2023 10:34	0.00	0.40	20.70	78.90	0.00	
MW10D	2/27/2023 08:52	0.00	0.60	20.70	78.70	0.00	
MW10D	3/16/2023 13:16	0.00	0.50	20.30	79.20	-0.10	
MW10D	3/28/2023 10:16	0.00	0.50	20.10	79.40	-0.22	
MW10D	4/12/2023 10:49	0.00	0.40	20.60	79.00	0.02	
MW10D	4/21/2023 08:59	0.00	0.40	20.90	78.70	0.24	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW10D	5/5/2023 07:36	0.00	0.90	20.60	78.50	0.03	
MW10D	5/26/2023 13:03	0.00	1.40	19.10	79.50	0.05	
MW10D	6/1/2023 10:36	0.00	0.80	19.90	79.30	-0.08	
MW10D	6/19/2023 11:40	0.00	1.10	20.40	78.50	-3.66	
MW10D	7/11/2023 16:06	0.00	0.50	20.30	79.20	0.00	
MW10D	7/31/2023 18:08	0.00	0.50	20.40	79.10	-1.11	
MW10D	8/23/2023 16:57	0.00	0.30	20.40	79.30	0.03	
MW10D	8/30/2023 10:39	0.00	0.80	20.00	79.20	-0.02	
MW10D	9/6/2023 10:15	0.00	0.60	19.30	80.10	0.02	
MW10D	9/22/2023 12:26	0.00	0.80	19.50	79.70	-2.80	
MW10D	10/18/2023 14:49	0.00	7.80	11.00	81.20	-0.01	
MW10D	10/31/2023 13:22	0.00	5.70	15.70	78.60	0.01	
MW10D	11/7/2023 14:58	0.00	0.40	20.50	79.10	-0.06	
MW10D	11/20/2023 13:40	0.00	0.30	20.00	79.70	0.07	
MW10D	12/6/2023 11:50	0.00	5.90	14.70	79.40	-0.06	
MW10D	12/6/2023 11:57	0.00	2.40	18.20	79.40	-4.93	
MW10D	12/19/2023 15:26	0.00	0.20	19.90	79.90	-0.03	
MW10S	1/11/2023 11:12	0.00	0.20	20.10	79.70	0.06	
MW10S	1/30/2023 14:18	0.00	0.60	20.50	78.90	0.01	
MW10S	2/16/2023 10:35	0.00	0.30	20.70	79.00	0.03	
MW10S	2/27/2023 08:52	0.00	0.50	20.80	78.70	0.05	
MW10S	3/16/2023 13:16	0.00	0.40	20.30	79.30	-0.08	
MW10S	3/28/2023 10:16	0.00	0.40	20.10	79.50	-0.19	
MW10S	4/12/2023 10:50	0.00	0.40	20.60	79.00	-0.14	
MW10S	4/21/2023 09:00	0.00	0.30	20.90	78.80	-0.02	
MW10S	5/5/2023 07:37	0.00	0.70	20.80	78.50	0.23	
MW10S	5/26/2023 13:03	0.00	8.60	6.20	85.20	-0.08	
MW10S	6/1/2023 10:37	0.00	0.70	19.90	79.40	-0.21	
MW10S	6/19/2023 11:42	0.00	6.60	12.50	80.90	-0.13	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW10S	7/11/2023 16:08	0.00	13.70	8.00	78.30	-0.05	
MW10S	7/31/2023 18:09	0.00	9.50	11.50	79.00	-0.23	
MW10S	8/23/2023 16:59	0.00	10.80	10.40	78.80	0.00	
MW10S	8/30/2023 10:40	0.00	10.90	10.70	78.40	0.01	
MW10S	9/6/2023 10:16	0.00	11.00	10.10	78.90	0.00	
MW10S	9/22/2023 12:28	0.00	9.30	10.70	80.00	0.24	
MW10S	10/18/2023 14:50	0.00	12.20	7.50	80.30	0.01	
MW10S	10/31/2023 13:23	0.00	11.70	9.10	79.20	-0.03	
MW10S	11/7/2023 14:59	0.00	0.20	20.40	79.40	-0.06	
MW10S	11/20/2023 13:40	0.00	0.30	19.90	79.80	0.08	
MW10S	12/6/2023 11:56	0.00	2.30	19.50	78.20	-7.53	
MW10S	12/19/2023 15:27	0.00	0.20	19.90	79.90	-0.02	
MW12D	1/11/2023 11:15	0.00	1.70	18.10	80.20	0.00	
MW12D	1/30/2023 14:21	0.00	1.80	19.00	79.20	0.01	
MW12D	2/16/2023 10:40	0.00	1.60	19.20	79.20	-0.04	
MW12D	2/27/2023 09:06	0.00	1.70	19.10	79.20	0.03	
MW12D	3/16/2023 13:20	0.00	0.50	20.00	79.50	-1.35	
MW12D	3/28/2023 10:22	0.00	0.80	19.60	79.60	-0.10	
MW12D	4/12/2023 10:54	0.00	0.50	20.40	79.10	-0.02	
MW12D	4/21/2023 09:05	0.00	0.30	20.90	78.80	-0.08	
MW12D	5/5/2023 07:42	0.00	0.20	20.90	78.90	NT	
MW12D	5/26/2023 13:08	0.00	2.70	18.10	79.20	-0.12	
MW12D	6/1/2023 10:42	0.00	2.70	17.90	79.40	-0.12	
MW12D	6/19/2023 11:46	0.00	4.00	18.90	77.10	-0.17	
MW12D	7/11/2023 16:16	0.00	11.60	10.40	78.00	0.04	
MW12D	7/31/2023 18:12	0.00	1.50	17.70	80.80	-0.02	
MW12D	8/23/2023 17:02	0.00	2.00	18.70	79.30	0.01	
MW12D	8/30/2023 10:44	0.00	2.10	18.60	79.30	-0.11	
MW12D	9/6/2023 10:27	0.00	0.40	19.50	80.10	-0.08	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW12D	9/22/2023 12:32	0.00	0.50	19.80	79.70	0.18	
MW12D	10/18/2023 14:58	0.00	1.50	18.70	79.80	-0.08	
MW12D	10/31/2023 13:28	0.00	0.70	20.00	79.30	-0.07	
MW12D	11/7/2023 15:01	0.00	0.10	20.40	79.50	-0.10	
MW12D	11/20/2023 13:53	0.00	1.00	18.70	80.30	0.09	
MW12D	12/6/2023 12:01	0.00	1.80	20.00	78.20	0.00	
MW12D	12/19/2023 15:29	0.00	0.20	19.80	80.00	0.01	
MW12M	1/11/2023 11:16	0.00	4.90	14.70	80.40	-0.07	
MW12M	1/30/2023 14:22	0.00	5.30	14.80	79.90	0.04	
MW12M	2/16/2023 10:42	0.00	3.70	14.30	82.00	-0.02	
MW12M	2/27/2023 09:07	0.00	3.40	15.60	81.00	0.07	
MW12M	3/16/2023 13:21	0.00	2.30	16.40	81.30	-0.36	
MW12M	3/28/2023 10:22	0.00	2.30	16.20	81.50	-0.18	
MW12M	4/12/2023 10:55	0.00	4.40	15.40	80.20	-0.06	
MW12M	4/21/2023 09:06	0.00	3.50	17.30	79.20	-0.12	
MW12M	5/5/2023 07:43	0.00	3.30	15.30	81.40	-0.56	
MW12M	5/26/2023 13:09	0.00	4.80	13.60	81.60	0.00	
MW12M	6/1/2023 10:43	0.00	1.90	18.80	79.30	-0.81	
MW12M	6/19/2023 11:48	0.00	4.50	16.30	79.20	-0.15	
MW12M	6/19/2023 11:49	0.00	5.00	16.00	79.00	-0.01	
MW12M	7/11/2023 16:17	0.00	4.50	16.80	78.70	-0.10	
MW12M	7/31/2023 18:13	0.00	4.00	17.20	78.80	-0.23	
MW12M	8/23/2023 17:03	0.00	3.90	17.00	79.10	0.03	
MW12M	8/30/2023 10:45	0.00	3.90	17.20	78.90	-0.05	
MW12M	9/6/2023 10:28	0.00	2.30	17.60	80.10	0.01	
MW12M	9/22/2023 12:33	0.00	0.20	19.90	79.90	0.16	
MW12M	10/18/2023 14:59	0.00	3.90	15.80	80.30	-0.01	
MW12M	10/31/2023 13:29	0.00	3.50	17.10	79.40	-0.03	
MW12M	11/7/2023 15:02	0.00	1.60	18.80	79.60	-0.14	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW12M	11/20/2023 13:54	0.00	3.60	18.40	78.00	0.07	
MW12M	12/6/2023 12:05	0.00	4.70	14.10	81.20	-0.27	
MW12M	12/19/2023 15:30	0.00	0.10	19.80	80.10	0.01	
MW12S	1/11/2023 11:17	0.00	4.70	15.20	80.10	-0.03	
MW12S	1/30/2023 14:23	0.00	6.80	12.10	81.10	0.03	
MW12S	2/16/2023 10:44	0.00	6.00	14.20	79.80	0.02	
MW12S	2/27/2023 09:08	0.00	5.60	14.60	79.80	0.29	
MW12S	3/16/2023 13:21	0.00	3.70	16.30	80.00	-0.82	
MW12S	3/28/2023 10:23	0.00	4.10	15.30	80.60	-0.05	
MW12S	4/12/2023 10:56	0.00	5.00	16.00	79.00	0.03	
MW12S	4/21/2023 09:07	0.00	4.90	16.50	78.60	-0.05	
MW12S	5/5/2023 07:44	0.00	5.50	15.30	79.20	-0.08	
MW12S	5/26/2023 13:10	0.00	3.80	16.50	79.70	-0.06	
MW12S	6/1/2023 10:44	0.00	2.00	17.60	80.40	-0.64	
MW12S	6/19/2023 11:52	0.00	3.10	18.80	78.10	-0.39	
MW12S	7/11/2023 16:17	0.00	4.30	17.00	78.70	-0.01	
MW12S	7/31/2023 18:14	0.00	1.80	18.80	79.40	-0.13	
MW12S	8/23/2023 17:04	0.00	1.40	19.50	79.10	-0.02	
MW12S	8/30/2023 10:46	0.00	1.80	19.00	79.20	-0.01	
MW12S	9/6/2023 10:30	0.00	1.80	18.00	80.20	0.03	
MW12S	9/22/2023 12:35	0.00	0.10	20.10	79.80	0.07	
MW12S	10/18/2023 15:01	0.00	2.40	17.60	80.00	-1.51	
MW12S	10/31/2023 13:30	0.00	3.90	16.50	79.60	-0.04	
MW12S	11/7/2023 15:07	0.00	2.10	18.40	79.50	-0.10	
MW12S	11/20/2023 13:54	0.00	3.60	15.50	80.90	0.11	
MW12S	12/6/2023 12:06	0.00	5.60	16.20	78.20	-0.01	
MW12S	12/19/2023 15:33	0.00	0.20	19.70	80.10	0.00	
MW13D	1/11/2023 09:47	0.00	2.10	18.20	79.70	-1.19	
MW13D	1/30/2023 12:24	0.00	2.00	18.70	79.30	-0.01	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW13D	2/16/2023 11:00	0.00	2.10	18.20	79.70	-0.05	
MW13D	2/27/2023 09:17	0.00	1.10	18.30	80.60	-0.03	
MW13D	3/16/2023 13:25	0.00	2.20	18.10	79.70	-0.21	
MW13D	3/28/2023 10:29	0.00	2.70	18.20	79.10	-0.05	
MW13D	4/12/2023 11:05	0.00	0.70	20.50	78.80	-0.76	
MW13D	4/21/2023 09:13	0.00	0.40	20.90	78.70	-1.05	
MW13D	5/5/2023 07:54	0.00	2.60	20.10	77.30	-0.35	
MW13D	5/26/2023 13:14	0.00	1.30	19.30	79.40	-0.15	
MW13D	6/1/2023 09:50	0.00	2.40	20.20	77.40	-0.39	
MW13D	6/19/2023 10:10	0.00	2.10	20.20	77.70	-0.58	
MW13D	7/11/2023 14:27	0.00	1.20	19.90	78.90	0.00	
MW13D	8/1/2023 07:21	0.10	1.60	19.80	78.50	-0.25	
MW13D	8/23/2023 15:22	0.00	0.90	19.60	79.50	-0.11	
MW13D	8/30/2023 10:50	0.00	1.30	19.50	79.20	-0.30	
MW13D	9/6/2023 10:36	0.00	0.20	19.70	80.10	-0.04	
MW13D	9/22/2023 09:42	0.00	2.50	18.30	79.20	-0.27	
MW13D	10/18/2023 15:06	0.00	1.60	18.30	80.10	-0.06	
MW13D	10/31/2023 13:34	0.00	1.80	19.00	79.20	-0.12	
MW13D	11/7/2023 14:07	0.00	2.00	18.60	79.40	-1.85	
MW13D	11/20/2023 12:19	0.10	2.10	18.10	79.70	0.13	
MW13D	12/6/2023 09:45	0.00	2.50	19.40	78.10	0.52	
MW13D	12/19/2023 14:42	0.00	0.30	16.60	83.10	-0.95	
MW13M	1/11/2023 09:48	0.00	0.30	20.80	78.90	-1.01	
MW13M	1/30/2023 12:26	0.00	2.50	18.70	78.80	-0.01	
MW13M	2/16/2023 11:02	0.00	2.70	17.90	79.40	-0.05	
MW13M	2/27/2023 09:18	0.00	1.10	19.50	79.40	0.49	
MW13M	3/16/2023 13:26	0.00	1.90	18.40	79.70	-0.03	
MW13M	3/28/2023 10:30	0.00	2.50	18.00	79.50	-0.02	
MW13M	4/12/2023 11:06	0.00	2.80	18.30	78.90	-0.63	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW13M	4/21/2023 09:14	0.00	0.70	20.60	78.70	-0.88	
MW13M	5/5/2023 07:55	0.00	1.20	19.90	78.90	-0.46	
MW13M	5/26/2023 13:15	0.00	0.90	18.90	80.20	-0.06	
MW13M	6/1/2023 09:52	0.00	1.00	20.20	78.80	-0.30	
MW13M	6/19/2023 10:11	0.00	1.30	20.50	78.20	-0.69	
MW13M	7/11/2023 14:30	0.00	2.10	18.30	79.60	-0.07	
MW13M	8/1/2023 07:22	0.10	1.70	19.80	78.40	-0.21	
MW13M	8/23/2023 15:25	0.00	1.30	19.30	79.40	-0.11	
MW13M	8/30/2023 10:51	0.00	1.60	19.20	79.20	-0.08	
MW13M	9/6/2023 10:37	0.00	0.40	19.50	80.10	-0.46	
MW13M	9/22/2023 09:47	0.00	9.70	10.10	80.20	-0.04	
MW13M	10/18/2023 15:08	0.00	2.20	17.80	80.00	0.04	
MW13M	10/31/2023 13:35	0.00	2.40	18.60	79.00	-0.15	
MW13M	11/7/2023 14:10	0.00	0.70	20.20	79.10	-1.67	
MW13M	11/20/2023 12:21	0.10	2.10	18.40	79.40	0.29	
MW13M	12/6/2023 09:49	0.00	0.70	21.90	77.40	-3.23	
MW13M	12/19/2023 14:43	0.00	2.40	18.30	79.30	-0.88	
MW13S	1/11/2023 09:49	0.00	8.10	11.20	80.70	-0.05	
MW13S	1/30/2023 12:28	0.00	8.00	11.30	80.70	-0.01	
MW13S	2/16/2023 11:04	0.00	5.80	12.00	82.20	0.03	
MW13S	2/27/2023 09:19	0.00	4.70	12.40	82.90	-0.27	
MW13S	3/16/2023 13:27	0.00	3.90	12.90	83.20	-0.35	
MW13S	3/28/2023 10:31	0.00	5.80	11.80	82.40	-0.16	
MW13S	4/12/2023 11:07	0.00	7.10	11.70	81.20	0.02	
MW13S	4/21/2023 09:15	0.00	7.80	11.50	80.70	-0.06	
MW13S	5/5/2023 07:56	0.00	6.10	11.30	82.60	0.00	
MW13S	5/26/2023 13:16	0.00	4.60	11.20	84.20	0.03	
MW13S	6/1/2023 09:53	0.00	5.10	12.20	82.70	-0.01	
MW13S	6/19/2023 10:13	0.00	5.70	11.80	82.50	-0.12	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW13S	7/11/2023 14:31	0.00	7.30	10.50	82.20	-0.06	
MW13S	7/11/2023 14:31	0.00	8.10	10.30	81.60	-0.08	
MW13S	8/1/2023 07:23	0.10	9.80	10.40	79.70	-0.43	
MW13S	8/23/2023 15:27	0.00	8.90	10.40	80.70	0.00	
MW13S	8/30/2023 10:53	0.00	8.80	11.00	80.20	-0.03	
MW13S	9/6/2023 10:39	0.00	9.10	9.90	81.00	0.03	
MW13S	9/22/2023 09:53	0.00	2.50	18.60	78.90	-0.09	
MW13S	10/18/2023 15:09	0.00	8.80	10.40	80.80	0.01	
MW13S	10/31/2023 13:36	0.00	9.30	11.60	79.10	-0.01	
MW13S	11/7/2023 14:11	0.00	8.90	10.60	80.50	-0.25	
MW13S	11/20/2023 12:22	0.10	9.30	10.40	80.20	0.10	
MW13S	12/6/2023 09:51	0.00	2.60	19.50	77.90	0.34	
MW13S	12/19/2023 14:44	0.00	2.60	18.00	79.40	-0.07	
MW14D	1/11/2023 09:56	0.00	4.00	16.20	79.80	-1.31	
MW14D	1/30/2023 12:31	0.00	4.10	16.50	79.40	0.00	
MW14D	2/16/2023 11:06	0.00	4.00	16.50	79.50	-0.27	
MW14D	2/27/2023 09:21	0.00	1.40	20.00	78.60	0.46	
MW14D	3/16/2023 13:29	0.00	2.60	19.50	77.90	-0.17	
MW14D	3/28/2023 10:32	0.00	3.20	18.90	77.90	-0.33	
MW14D	4/12/2023 11:09	0.00	1.00	20.00	79.00	-1.09	
MW14D	4/21/2023 09:16	0.00	0.60	20.80	78.60	-0.03	
MW14D	5/5/2023 07:58	0.00	2.60	19.70	77.70	-0.55	
MW14D	5/26/2023 13:18	0.00	1.60	19.20	79.20	-0.06	
MW14D	6/1/2023 09:45	0.00	1.10	20.60	78.30	-0.69	
MW14D	6/19/2023 12:08	0.00	0.80	20.80	78.40	-0.04	
MW14D	7/11/2023 14:33	0.00	1.10	19.90	79.00	-0.17	
MW14D	7/31/2023 16:51	0.20	0.40	19.80	79.60	-0.04	
MW14D	8/23/2023 15:33	0.00	0.20	20.40	79.40	-0.13	
MW14D	8/30/2023 10:55	0.00	0.60	19.90	79.50	-0.39	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW14D	9/6/2023 10:41	0.00	0.20	19.80	80.00	-0.41	
MW14D	9/22/2023 10:02	0.00	3.80	16.40	79.80	-0.17	
MW14D	10/18/2023 15:11	0.00	1.70	18.40	79.90	0.05	
MW14D	10/31/2023 13:41	0.00	2.40	17.70	79.90	-0.06	
MW14D	11/7/2023 14:14	0.00	8.70	10.60	80.70	-2.00	
MW14D	11/20/2023 12:25	0.10	0.90	19.40	79.60	0.07	
MW14D	12/6/2023 09:55	0.00	3.40	17.70	78.90	0.60	
MW14D	12/19/2023 14:45	0.00	5.10	14.00	80.90	-0.97	
MW14M	1/11/2023 09:58	0.00	3.90	16.00	80.10	-1.16	
MW14M	1/30/2023 12:36	0.00	4.20	16.40	79.40	-0.04	
MW14M	2/16/2023 11:07	0.00	3.80	15.90	80.30	-0.50	
MW14M	2/27/2023 09:22	0.00	1.80	18.30	79.90	0.27	
MW14M	3/16/2023 13:29	0.00	1.10	20.10	78.80	-0.16	
MW14M	3/28/2023 10:34	0.00	0.70	20.00	79.30	-0.29	
MW14M	4/12/2023 11:10	0.00	1.00	19.20	79.80	-0.80	
MW14M	4/21/2023 09:18	0.00	0.80	20.00	79.20	-1.06	
MW14M	5/5/2023 07:59	0.00	1.30	19.00	79.70	-0.69	
MW14M	5/26/2023 13:19	0.00	1.30	17.60	81.10	-0.08	
MW14M	6/1/2023 09:47	0.00	0.70	20.40	78.90	-0.72	
MW14M	6/19/2023 12:09	0.00	0.80	19.70	79.50	-0.61	
MW14M	7/11/2023 14:34	0.00	1.20	18.40	80.40	-0.32	
MW14M	7/31/2023 16:53	0.20	2.20	17.30	80.30	-0.16	
MW14M	8/23/2023 15:30	0.00	2.20	17.50	80.30	-0.09	
MW14M	8/30/2023 10:56	0.00	2.40	17.80	79.80	-0.34	
MW14M	9/6/2023 10:42	0.00	0.70	19.10	80.20	-0.39	
MW14M	9/22/2023 10:05	0.00	10.60	11.10	78.30	-0.03	
MW14M	10/18/2023 15:13	0.00	0.40	20.00	79.60	-0.04	
MW14M	10/31/2023 13:42	0.00	2.60	17.60	79.80	-0.15	
MW14M	11/7/2023 14:16	0.00	0.20	20.60	79.20	-1.47	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW14M	11/20/2023 12:28	0.00	3.60	16.00	80.40	0.08	
MW14M	12/6/2023 09:59	0.00	2.20	19.70	78.10	0.12	
MW14M	12/19/2023 14:46	0.00	5.20	12.20	82.60	-0.92	
MW14S	1/11/2023 09:59	0.00	4.40	13.30	82.30	-0.05	
MW14S	1/30/2023 12:39	0.00	5.80	12.40	81.80	-1.11	
MW14S	2/16/2023 11:08	0.00	5.10	11.60	83.30	-0.02	
MW14S	2/27/2023 09:23	0.00	4.20	12.10	83.70	-0.21	
MW14S	3/16/2023 13:30	0.00	1.50	17.70	80.80	-0.42	
MW14S	3/28/2023 10:34	0.00	5.10	11.60	83.30	-0.11	
MW14S	4/12/2023 11:11	0.00	8.40	11.50	80.10	-0.26	
MW14S	4/21/2023 09:19	0.00	9.40	11.30	79.30	0.00	
MW14S	5/5/2023 08:00	0.00	5.00	12.40	82.60	0.00	
MW14S	5/26/2023 13:20	0.00	5.70	11.60	82.70	-0.12	
MW14S	6/1/2023 09:48	0.00	5.20	13.30	81.50	-0.29	
MW14S	6/19/2023 12:10	0.00	5.30	13.70	81.00	-0.03	
MW14S	7/11/2023 14:35	0.00	7.90	11.80	80.30	-0.15	
MW14S	7/31/2023 16:54	0.10	9.60	11.30	79.00	-0.02	
MW14S	8/23/2023 15:35	0.00	10.20	11.50	78.30	-0.03	
MW14S	8/30/2023 10:57	0.00	10.10	11.60	78.30	0.03	
MW14S	9/6/2023 10:44	0.00	10.30	10.80	78.90	0.04	
MW14S	9/22/2023 10:11	0.00	3.90	16.10	80.00	-0.45	
MW14S	10/18/2023 15:14	0.00	8.30	10.80	80.90	-0.41	
MW14S	10/31/2023 13:42	0.00	10.60	10.70	78.70	-0.88	
MW14S	11/7/2023 14:17	0.00	9.30	10.40	80.30	-0.06	
MW14S	11/20/2023 12:30	0.00	7.30	10.40	82.30	0.06	
MW14S	12/6/2023 10:01	0.00	4.10	16.70	79.20	0.31	
MW14S	12/19/2023 14:47	0.00	0.90	19.90	79.20	-1.72	
MW15D	1/11/2023 10:03	0.00	3.90	13.60	82.50	-1.32	
MW15D	1/30/2023 13:17	0.00	4.00	13.60	82.40	0.10	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW15D	2/16/2023 11:10	0.00	4.30	13.00	82.70	-0.43	
MW15D	2/27/2023 09:33	0.00	2.70	18.70	78.60	-0.01	
MW15D	3/16/2023 13:32	0.00	2.00	17.10	80.90	-0.04	
MW15D	3/28/2023 10:36	0.00	2.80	17.70	79.50	-0.26	
MW15D	4/12/2023 11:13	0.00	1.50	18.30	80.20	-1.02	
MW15D	4/21/2023 09:21	0.00	1.00	19.80	79.20	-1.18	
MW15D	5/5/2023 08:03	0.00	3.70	17.80	78.50	-0.81	
MW15D	5/26/2023 13:22	0.00	2.50	16.50	81.00	-0.09	
MW15D	6/1/2023 09:40	0.00	0.20	20.90	78.90	-0.68	
MW15D	6/19/2023 10:39	0.00	0.80	20.10	79.10	-0.77	
MW15D	7/11/2023 14:37	0.00	7.30	13.30	79.40	-0.52	
MW15D	7/31/2023 16:58	0.20	0.50	17.20	82.10	0.00	
MW15D	8/23/2023 15:39	0.00	1.30	16.50	82.20	-0.44	
MW15D	8/30/2023 10:59	0.00	2.00	15.90	82.10	-0.46	
MW15D	9/6/2023 10:47	0.00	0.40	19.40	80.20	-0.46	
MW15D	9/22/2023 10:17	0.00	3.60	14.30	82.10	-0.25	
MW15D	10/18/2023 15:16	0.00	3.10	14.00	82.90	-0.02	
MW15D	10/31/2023 13:45	0.00	1.00	18.80	80.20	-0.15	
MW15D	11/7/2023 14:20	0.00	0.60	19.50	79.90	-1.59	
MW15D	11/20/2023 12:32	0.00	2.20	15.60	82.20	0.05	
MW15D	12/6/2023 10:06	0.00	3.60	14.30	82.10	0.21	
MW15D	12/19/2023 14:48	0.00	0.30	20.20	79.50	-1.13	
MW15M	1/11/2023 10:04	0.20	2.10	0.80	96.90	8.79	
MW15M	1/30/2023 13:19	0.40	2.30	0.20	97.10	5.33	
MW15M	2/16/2023 11:12	0.50	2.10	0.30	97.10	0.05	
MW15M	2/27/2023 09:34	0.30	2.10	3.80	93.80	0.10	
MW15M	3/16/2023 13:33	0.30	1.80	1.30	96.60	-0.02	
MW15M	3/28/2023 10:37	0.00	2.10	3.70	94.20	0.40	
MW15M	4/12/2023 11:14	0.00	2.00	2.70	95.30	-0.42	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW15M	4/21/2023 09:22	0.10	2.10	1.80	96.00	-0.38	
MW15M	5/5/2023 08:04	0.00	2.10	3.00	94.90	-0.05	
MW15M	5/26/2023 13:23	0.10	1.80	1.10	97.00	-2.43	
MW15M	6/1/2023 09:42	0.00	0.20	20.90	78.90	-0.93	
MW15M	6/19/2023 10:40	0.00	0.90	18.90	80.20	-0.12	
MW15M	7/11/2023 14:39	0.00	3.00	17.70	79.30	-0.01	
MW15M	7/31/2023 16:58	0.10	1.50	4.40	94.00	-1.77	
MW15M	8/23/2023 15:42	0.00	1.40	2.80	95.80	-2.34	
MW15M	8/30/2023 11:01	0.00	1.40	5.70	92.90	-4.87	
MW15M	9/6/2023 10:48	0.00	0.70	12.80	86.50	-4.11	
MW15M	9/22/2023 10:23	0.00	2.40	18.40	79.20	0.00	
MW15M	10/18/2023 15:17	0.00	0.80	16.40	82.80	-0.06	
MW15M	10/31/2023 13:45	0.00	1.20	7.90	90.90	-0.97	
MW15M	11/7/2023 14:22	0.00	1.20	7.80	91.00	-1.93	
MW15M	11/20/2023 12:34	0.10	2.00	0.10	97.80	3.48	
MW15M	12/6/2023 10:08	0.00	0.70	8.70	90.60	9.37	
MW15M	12/19/2023 14:49	0.20	1.70	0.50	97.60	13.78	
MW15S	1/11/2023 10:05	0.00	2.90	8.70	88.40	0.00	
MW15S	1/30/2023 13:20	0.00	3.90	11.10	85.00	-0.02	
MW15S	2/16/2023 11:13	0.00	3.60	13.00	83.40	0.03	
MW15S	2/27/2023 09:35	0.00	2.60	11.50	85.90	-0.04	
MW15S	3/16/2023 13:34	0.00	2.30	12.90	84.80	-0.37	
MW15S	3/28/2023 10:38	0.00	2.20	16.00	81.80	-0.27	
MW15S	4/12/2023 11:16	0.00	3.40	14.20	82.40	-0.01	
MW15S	4/21/2023 09:23	0.00	4.10	13.50	82.40	-0.02	
MW15S	5/5/2023 08:05	0.00	3.20	12.90	83.90	-0.04	
MW15S	5/26/2023 13:28	0.00	3.00	14.70	82.30	-0.06	
MW15S	6/1/2023 09:43	0.00	1.60	17.30	81.10	-0.03	
MW15S	6/19/2023 10:41	0.00	2.40	17.30	80.30	-0.09	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW15S	7/11/2023 14:39	0.00	3.70	17.20	79.10	-0.09	
MW15S	7/31/2023 17:00	0.10	2.70	17.00	80.20	-0.01	
MW15S	8/23/2023 15:45	0.00	2.40	18.40	79.20	0.00	
MW15S	8/30/2023 11:02	0.00	2.50	18.30	79.20	-0.05	
MW15S	9/6/2023 10:50	0.00	2.50	17.80	79.70	0.03	
MW15S	9/22/2023 10:28	0.00	1.40	4.20	94.40	-1.58	
MW15S	10/18/2023 15:19	0.00	3.10	14.30	82.60	-0.01	
MW15S	10/31/2023 13:46	0.00	3.60	14.70	81.70	-0.04	
MW15S	11/7/2023 14:23	0.00	3.60	8.10	88.30	-0.04	
MW15S	11/20/2023 12:35	0.00	4.00	12.40	83.60	0.03	
MW15S	12/6/2023 10:21	0.00	3.10	16.70	80.20	-2.18	
MW15S	12/19/2023 14:49	0.00	0.30	7.00	92.70	-4.30	
MW16D	1/11/2023 10:07	0.00	0.90	19.70	79.40	-1.09	
MW16D	1/30/2023 13:22	0.00	2.40	17.30	80.30	0.10	
MW16D	2/16/2023 11:16	0.00	2.80	16.60	80.60	-0.22	
MW16D	2/27/2023 09:36	0.00	2.10	19.60	78.30	0.08	
MW16D	3/16/2023 13:36	0.00	3.20	15.90	80.90	-0.08	
MW16D	3/28/2023 10:39	0.00	3.00	15.50	81.50	-0.40	
MW16D	4/12/2023 11:17	0.00	1.20	20.10	78.70	-0.79	
MW16D	4/21/2023 09:25	0.00	0.50	20.70	78.80	-0.98	
MW16D	5/5/2023 08:07	0.00	2.20	19.30	78.50	-0.61	
MW16D	5/26/2023 13:30	0.00	1.30	20.60	78.10	-0.07	
MW16D	6/1/2023 09:36	0.00	0.30	20.80	78.90	-0.51	
MW16D	6/19/2023 10:31	0.00	0.70	21.00	78.30	-0.69	
MW16D	7/11/2023 14:42	0.00	1.10	19.20	79.70	-0.04	
MW16D	7/31/2023 17:03	0.10	1.00	18.40	80.50	-0.04	
MW16D	8/23/2023 15:50	0.00	1.90	16.90	81.20	-0.12	
MW16D	8/30/2023 11:06	0.00	2.70	16.50	80.80	-0.39	
MW16D	9/6/2023 11:02	0.00	0.60	19.90	79.50	-0.08	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW16D	9/22/2023 10:33	0.00	1.70	18.10	80.20	-0.11	
MW16D	10/18/2023 15:22	0.00	2.50	16.10	81.40	-0.02	
MW16D	10/31/2023 13:48	0.00	3.20	16.10	80.70	-0.06	
MW16D	11/7/2023 14:26	0.00	0.10	20.60	79.30	-1.45	
MW16D	11/20/2023 12:37	0.00	1.40	18.80	79.80	0.08	
MW16D	12/6/2023 10:23	0.00	2.40	18.00	79.60	0.22	
MW16D	12/19/2023 14:50	0.00	0.20	20.20	79.60	-1.00	
MW16M	1/11/2023 10:10	0.00	1.60	17.80	80.60	-1.16	
MW16M	1/30/2023 13:23	0.00	1.20	19.80	79.00	0.08	
MW16M	2/16/2023 11:18	0.00	1.00	19.80	79.20	0.02	
MW16M	2/27/2023 09:37	0.00	2.00	17.20	80.80	-0.01	
MW16M	3/16/2023 13:37	0.00	2.80	16.80	80.40	-0.02	
MW16M	3/28/2023 10:41	0.00	2.40	17.20	80.40	0.13	
MW16M	4/12/2023 11:18	0.00	2.40	15.80	81.80	-0.70	
MW16M	4/21/2023 09:26	0.00	0.80	19.90	79.30	-0.92	
MW16M	5/5/2023 08:08	0.00	1.20	19.00	79.80	-0.53	
MW16M	5/26/2023 13:31	0.00	0.80	18.60	80.60	-0.16	
MW16M	6/1/2023 09:37	0.00	0.30	20.90	78.80	-0.44	
MW16M	6/19/2023 10:32	0.00	0.80	19.60	79.60	-0.49	
MW16M	6/19/2023 10:34	0.00	0.90	19.50	79.60	-0.50	
MW16M	7/11/2023 14:43	0.00	1.20	18.10	80.70	-0.10	
MW16M	7/31/2023 17:04	0.10	1.90	17.40	80.60	-0.08	
MW16M	8/23/2023 15:51	0.00	1.90	18.10	80.00	-0.01	
MW16M	8/30/2023 11:07	0.00	2.10	18.40	79.50	-0.24	
MW16M	9/6/2023 11:03	0.00	0.40	20.40	79.20	-0.08	
MW16M	9/22/2023 10:36	0.00	2.40	18.70	78.90	-0.05	
MW16M	10/18/2023 15:23	0.00	1.80	17.80	80.40	-0.05	
MW16M	10/31/2023 13:49	0.00	2.00	18.40	79.60	-0.09	
MW16M	11/7/2023 14:28	0.00	0.50	19.90	79.60	-1.51	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW16M	11/20/2023 12:38	0.00	1.30	18.60	80.10	0.48	
MW16M	12/6/2023 10:25	0.00	1.90	18.80	79.30	0.49	
MW16M	12/19/2023 14:51	0.00	0.30	20.10	79.60	-1.06	
MW16S	1/11/2023 10:13	0.00	0.20	20.70	79.10	-0.24	
MW16S	1/30/2023 13:24	0.00	1.80	18.00	80.20	0.45	
MW16S	2/16/2023 11:20	0.00	1.60	18.10	80.30	-0.26	
MW16S	2/27/2023 09:38	0.00	1.50	19.90	78.60	0.12	
MW16S	3/16/2023 13:38	0.00	2.00	19.00	79.00	-0.02	
MW16S	3/28/2023 10:42	0.00	2.10	18.60	79.30	-0.08	
MW16S	4/12/2023 11:19	0.00	0.50	20.90	78.60	-0.59	
MW16S	4/21/2023 09:28	0.00	0.40	20.80	78.80	-0.20	
MW16S	5/5/2023 08:09	0.00	0.90	20.00	79.10	-0.15	
MW16S	5/26/2023 13:32	0.00	0.90	19.70	79.40	-0.17	
MW16S	6/1/2023 09:38	0.00	0.20	20.90	78.90	-0.09	
MW16S	6/19/2023 10:35	0.00	0.70	21.20	78.10	-0.25	
MW16S	7/11/2023 14:46	0.00	0.30	20.70	79.00	0.01	
MW16S	7/31/2023 17:05	0.10	0.10	19.90	79.90	-0.11	
MW16S	8/23/2023 15:54	0.00	0.90	20.00	79.10	-0.01	
MW16S	8/30/2023 11:08	0.00	0.10	20.80	79.10	-0.10	
MW16S	9/6/2023 11:04	0.00	0.20	20.60	79.20	-0.01	
MW16S	9/22/2023 10:40	0.00	1.90	19.10	79.00	-0.04	
MW16S	10/18/2023 15:25	0.00	0.60	19.90	79.50	0.01	
MW16S	10/31/2023 13:50	0.00	1.10	19.90	79.00	-0.53	
MW16S	11/7/2023 14:29	0.00	0.10	20.70	79.20	-0.57	
MW16S	11/20/2023 12:41	0.00	1.80	18.80	79.40	0.12	
MW16S	12/6/2023 10:27	0.00	2.40	19.30	78.30	-0.11	
MW16S	12/19/2023 14:52	0.00	0.30	20.40	79.30	-0.32	
MW17D	1/11/2023 10:15	0.00	3.40	16.90	79.70	-0.91	
MW17D	1/30/2023 13:39	0.00	4.00	16.30	79.70	0.04	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW17D	2/16/2023 11:30	0.00	3.10	16.90	80.00	-0.02	
MW17D	2/27/2023 09:40	0.00	1.80	18.10	80.10	-0.09	
MW17D	3/16/2023 13:39	0.00	2.60	16.80	80.60	-0.06	
MW17D	3/28/2023 10:43	0.00	3.00	16.50	80.50	-0.13	
MW17D	4/12/2023 11:24	0.00	3.70	16.80	79.50	-0.60	
MW17D	4/21/2023 09:30	0.00	1.20	20.00	78.80	-1.61	
MW17D	5/5/2023 08:11	0.00	0.80	20.30	78.90	-0.83	
MW17D	5/26/2023 13:34	0.00	1.10	19.60	79.30	-0.31	
MW17D	6/1/2023 09:31	0.00	0.20	20.80	79.00	-0.22	
MW17D	6/19/2023 10:17	0.00	5.80	13.70	80.50	-0.56	
MW17D	6/19/2023 10:18	0.00	4.20	19.30	76.50	-0.18	
MW17D	6/19/2023 10:18	0.00	3.30	20.50	76.20	-0.02	
MW17D	7/11/2023 14:49	0.00	0.80	19.60	79.60	-0.10	
MW17D	7/31/2023 17:08	0.10	2.40	17.40	80.10	-0.07	
MW17D	8/23/2023 15:57	0.00	3.20	16.70	80.10	-0.08	
MW17D	8/30/2023 11:10	0.00	3.80	16.60	79.60	-0.24	
MW17D	9/6/2023 11:07	0.00	0.40	20.70	78.90	-0.30	
MW17D	9/22/2023 10:45	0.00	2.00	18.80	79.20	-0.06	
MW17D	10/18/2023 15:28	0.00	2.90	16.50	80.60	0.00	
MW17D	10/31/2023 13:51	0.00	3.80	16.90	79.30	-0.09	
MW17D	11/7/2023 14:31	0.00	0.10	20.60	79.30	-1.25	
MW17D	11/20/2023 12:42	0.00	1.70	18.80	79.50	0.08	
MW17D	12/6/2023 10:30	0.00	4.00	17.50	78.50	-0.08	
MW17D	12/19/2023 14:54	0.00	0.30	20.20	79.50	-0.94	
MW17M	1/11/2023 10:16	0.00	0.40	20.50	79.10	-0.82	
MW17M	1/30/2023 13:40	0.00	0.70	19.90	79.40	0.07	
MW17M	2/16/2023 11:31	0.00	1.00	20.30	78.70	-0.03	
MW17M	2/27/2023 09:41	0.00	2.50	18.30	79.20	0.05	
MW17M	3/16/2023 13:40	0.00	1.50	20.50	78.00	-0.03	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW17M	3/28/2023 10:44	0.00	1.80	19.60	78.60	-0.19	
MW17M	4/12/2023 11:23	0.00	0.10	20.90	79.00	-0.52	
MW17M	4/21/2023 09:31	0.00	0.20	21.00	78.80	-0.66	
MW17M	5/5/2023 08:12	0.00	0.70	20.10	79.20	-1.26	
MW17M	5/26/2023 13:35	0.00	0.60	20.60	78.80	-0.10	
MW17M	6/1/2023 09:33	0.00	0.20	20.60	79.20	-0.14	
MW17M	6/19/2023 10:20	0.00	1.40	21.20	77.40	-0.49	
MW17M	7/11/2023 14:55	0.00	0.40	20.80	78.80	-0.19	
MW17M	7/31/2023 17:09	0.10	0.10	20.00	79.80	-0.25	
MW17M	8/23/2023 16:01	0.00	1.20	19.60	79.20	0.02	
MW17M	8/30/2023 11:11	0.00	0.70	20.30	79.00	-0.84	
MW17M	9/6/2023 11:08	0.00	0.10	20.80	79.10	-0.08	
MW17M	9/22/2023 10:47	0.00	3.30	18.30	78.40	-0.06	
MW17M	10/18/2023 15:29	0.00	1.60	18.60	79.80	-0.02	
MW17M	10/31/2023 13:52	0.00	0.60	20.30	79.10	-0.30	
MW17M	11/7/2023 14:31	0.00	1.30	18.90	79.80	-1.06	
MW17M	11/20/2023 12:43	0.10	0.60	20.10	79.20	0.14	
MW17M	12/6/2023 10:33	0.00	6.10	15.10	78.80	0.34	
MW17M	12/19/2023 14:54	0.00	0.20	20.50	79.30	-0.88	
MW17S	1/11/2023 10:18	0.00	3.70	16.80	79.50	-0.05	
MW17S	1/30/2023 13:41	0.00	4.40	15.50	80.10	0.06	
MW17S	2/16/2023 11:33	0.00	3.10	16.30	80.60	-0.04	
MW17S	2/27/2023 09:42	0.00	3.80	16.20	80.00	0.07	
MW17S	3/16/2023 13:41	0.00	2.10	17.60	80.30	-0.08	
MW17S	3/28/2023 10:44	0.00	2.50	17.00	80.50	-0.19	
MW17S	4/12/2023 11:25	0.00	4.80	15.60	79.60	0.06	
MW17S	4/21/2023 09:32	0.00	5.00	16.10	78.90	-0.14	
MW17S	5/5/2023 08:13	0.00	3.00	15.10	81.90	-0.76	
MW17S	5/26/2023 13:36	0.00	3.70	15.40	80.90	-0.20	

Table 1. LFG Monitoring Well Test Results January 2023 Through December 2023
Eastgate Area Properties Landfill

GEM ID	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Rel Press ("H2O)	Comments
MW17S	6/1/2023 09:34	0.00	0.20	20.60	79.20	-0.08	
MW17S	6/19/2023 10:21	0.00	0.80	21.40	77.80	-0.04	
MW17S	7/11/2023 14:58	0.00	0.20	20.90	78.90	-0.01	
MW17S	7/31/2023 17:10	0.10	3.40	17.50	79.00	-0.10	
MW17S	8/23/2023 16:02	0.00	2.70	18.70	78.60	-0.03	
MW17S	8/30/2023 11:12	0.00	2.80	18.60	78.60	-0.11	
MW17S	9/6/2023 11:10	0.00	2.90	18.50	78.60	-0.04	
MW17S	9/22/2023 10:51	0.00	4.80	16.20	79.00	-0.07	
MW17S	10/18/2023 15:30	0.00	3.00	17.10	79.90	-0.07	
MW17S	10/31/2023 13:54	0.00	3.8	17.4	78.8	-0.01	
MW17S	11/7/2023 14:32	0.00	3.4	16.8	79.8	-0.44	
MW17S	11/20/2023 12:44	0.00	4.6	16.2	79.2	0.11	
MW17S	12/6/2023 10:36	0.00	4.7	16.8	78.5	0.19	
MW17S	12/19/2023 14:56	0.00	5.7	14.1	80.2	-0.21	

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW06	1/11/2023 09:11	0.00	3.10	16.80	80.10	-10.01	-12.49	47.10	Comments:No Change,,,,,,,
EW06	1/30/2023 11:43	0.00	0.90	20.00	79.10	-11.85	-12.77	48.40	Comments:No Change,,,,,,,
EW06	2/16/2023 13:18	0.00	1.10	19.50	79.40	-10.92	-9.80	42.00	Comments:No Change,,,,,,,
EW06	2/27/2023 10:17	0.00	3.70	19.60	76.70	-7.03	-9.66	42.90	Comments:No Change,,,,,,,
EW06	3/16/2023 14:23	0.00	2.50	19.50	78.00	-9.83	-12.58	63.10	Comments:No Change,,,,,,,
EW06	3/28/2023 12:43	0.00	1.70	19.50	78.80	-1.06	-8.37	65.10	Comments:No Change,,,,,,,
EW06	4/12/2023 13:32	0.00	0.10	20.90	79.00	-2.08	-11.57	62.80	Comments:No Change,,,,,,,
EW06	4/21/2023 10:35	0.00	1.20	19.90	78.90	-9.50	-8.96	51.00	Comments:No Change,,,,,,,
EW06	5/5/2023 08:55	0.10	4.20	18.80	76.90	-5.69	-8.77	50.10	Comments:No Change,,,,,,,
EW06	5/26/2023 14:18	0.00	1.00	20.50	78.50	-0.65	-8.15	90.00	Comments:No Change,,,,,,,
EW06	6/1/2023 07:16	0.00	0.30	20.50	79.20	-0.35	-7.83	57.20	Comments:No Change,Valve Closed,,,,,,
EW06	6/19/2023 09:14	0.00	0.80	21.10	78.10	-0.81	-7.40	0.00	Comments:No Change,,,,,,,
EW06	7/11/2023 13:56	0.00	0.40	19.90	79.70	-0.42	-0.01	85.70	Comments:No Change,,,,,,,
EW06	8/1/2023 08:24	0.10	0.30	19.10	80.50	-2.28	-6.19	74.70	Comments:No Change,,,,,,,
EW06	8/23/2023 14:33	0.10	0.50	20.60	78.80	-0.49	-6.11	83.60	Comments:No Change,,,,,,,
EW06	8/30/2023 11:49	0.00	0.10	20.60	79.30	-5.57	-5.42	74.20	Comments:No Change,Valve Closed,,,,,,
EW06	9/6/2023 11:53	0.00	0.40	20.00	79.60	-0.41	-5.44	77.40	Comments:No Change,,,,,,,
EW06	9/22/2023 08:31	0.00	1.40	20.30	78.30	-1.26	-5.56	67.50	Comments:No Change,,,,,,,
EW06	10/18/2023 16:36	0.00	1.50	17.70	80.80	0.79	-1.26	67.60	Comments:No Change,,,,,,,
EW06	10/31/2023 14:25	0.00	2.30	16.60	81.10	-0.87	-3.51	66.00	Comments:No Change,,,,,,,
EW06	11/7/2023 13:39	0.30	4.20	13.80	81.70	-3.28	-13.35	59.80	Comments:No Change,,,,,,,
EW06	11/20/2023 11:40	0.10	0.50	20.80	78.60	-1.36	-8.83	50.70	Comments:No Change,,,,,,,
EW06	12/6/2023 08:52	0.00	0.20	21.70	78.10	-14.07	-15.12	65.60	Comments:No Change,,,,,,,
EW06	12/19/2023 14:03	0.20	1.10	18.00	80.70	-0.47	-12.09	52.70	Comments:No Change,,,,,,,
EW07	1/11/2023 09:13	0.00	2.30	18.40	79.30	-13.74	-13.90	46.70	Comments:No Change,,,,,,,
EW07	1/30/2023 11:46	0.00	0.90	19.50	79.60	-14.97	-15.06	50.20	Comments:No Change,,,,,,,
EW07	2/16/2023 13:20	0.00	1.00	19.00	80.00	-10.82	-11.05	43.90	Comments:No Change,Valve Closed,,,,,,
EW07	2/27/2023 10:19	0.00	2.40	19.40	78.20	-10.92	-10.85	42.90	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW07	3/16/2023 14:27	0.00	1.10	18.10	80.80	-13.52	-13.50	61.40	Comments:No Change,,,,,,,
EW07	3/28/2023 12:45	0.00	0.90	19.30	79.80	-9.63	-9.49	63.40	Comments:No Change,,,,,,,
EW07	4/12/2023 13:38	0.00	1.10	19.10	79.80	-12.76	-12.93	51.70	Comments:No Change,,,,,,,
EW07	4/21/2023 10:38	0.00	1.50	18.50	80.00	-11.82	-10.48	53.10	Comments:No Change,,,,,,,
EW07	5/5/2023 08:58	0.00	1.60	19.40	79.00	-10.57	-9.28	51.40	Comments:No Change,,,,,,,
EW07	5/26/2023 14:20	0.00	0.50	20.10	79.40	-8.91	-9.01	92.40	Comments:No Change,,,,,,,
EW07	6/1/2023 07:23	0.00	0.10	20.50	79.40	-7.88	-8.66	53.60	Comments:No Change,Valve Closed,,,,,,
EW07	6/19/2023 09:10	0.00	1.60	21.00	77.40	-7.65	-8.28	0.00	Comments:No Change,,,,,,,
EW07	7/11/2023 13:53	0.00	0.60	19.40	80.00	-7.55	-7.69	84.70	Comments:No Change,,,,,,,
EW07	8/1/2023 08:27	0.00	0.30	20.10	79.60	-7.53	-7.67	76.30	Comments:No Change,,,,,,,
EW07	8/23/2023 14:36	0.10	1.90	18.60	79.40	-6.71	-7.15	79.00	Comments:No Change,,,,,,,
EW07	8/30/2023 11:51	0.00	3.30	16.70	80.00	-6.17	-6.46	74.00	Comments:No Change,,,,,,,
EW07	9/6/2023 11:51	0.00	1.30	18.60	80.10	-6.41	-6.31	81.60	Comments:No Change,,,,,,,
EW07	9/22/2023 08:35	0.00	2.10	18.60	79.30	-5.75	-5.73	59.70	Comments:No Change,,,,,,,
EW07	10/18/2023 16:38	0.00	2.90	17.30	79.80	-3.66	-4.80	60.80	Comments:No Change,Valve Wide Open,,,,,,
EW07	10/31/2023 14:30	0.00	3.70	16.60	79.70	-5.15	-7.07	71.00	Comments:No Change,,,,,,,
EW07	11/7/2023 13:40	0.20	1.90	18.50	79.40	-12.12	-14.96	58.10	Comments:No Change,,,,,,,
EW07	11/20/2023 11:41	0.10	2.40	18.30	79.20	-8.34	-10.03	50.10	Comments:No Change,,,,,,,
EW07	12/6/2023 08:55	0.00	2.90	19.90	77.20	-13.50	-13.62	65.70	Comments:No Change,,,,,,,
EW07	12/6/2023 08:56	0.00	3.40	17.20	79.40	-11.12	-17.84	65.70	Comments:No Change,,,,,,,
EW07	12/19/2023 14:04	0.20	1.30	20.10	78.40	-11.44	-11.99	52.60	Comments:No Change,,,,,,,
EW08	1/11/2023 09:15	0.00	1.00	18.60	80.40	-15.15	-15.78	47.00	Comments:No Change,,,,,,,
EW08	1/30/2023 11:48	0.00	0.60	19.50	79.90	-14.61	-16.98	46.50	Comments:No Change,,,,,,,
EW08	2/16/2023 13:23	0.00	0.70	20.30	79.00	-9.66	-12.98	47.60	Comments:No Change,,,,,,,
EW08	2/27/2023 10:24	0.00	0.40	20.90	78.70	-3.84	-13.21	38.70	Comments:No Change,,,,,,,
EW08	3/16/2023 14:28	0.00	0.90	20.10	79.00	-10.09	-15.89	65.50	Comments:No Change,,,,,,,
EW08	3/28/2023 12:47	0.00	0.50	19.80	79.70	-8.89	-11.18	61.00	Comments:No Change,,,,,,,
EW08	4/12/2023 13:40	0.00	0.70	19.10	80.20	-14.05	-14.81	59.90	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW08	4/21/2023 10:50	0.00	0.30	20.70	79.00	-7.55	-11.86	59.50	Comments:No Change,,,,,,,
EW08	5/5/2023 09:01	0.00	0.90	20.90	78.20	-11.65	-6.57	48.90	Comments:No Change,,,,,,,
EW08	5/26/2023 14:22	0.00	0.20	20.80	79.00	-1.79	-10.42	94.30	Comments:No Change,,,,,,,
EW08	6/1/2023 07:26	0.00	0.10	20.60	79.30	-0.62	-10.26	54.60	Comments:No Change,Valve Closed,,,,,,
EW08	6/19/2023 09:07	0.10	4.50	19.20	76.20	-0.49	-9.65	0.00	Comments:No Change,,,,,,,
EW08	7/11/2023 13:51	0.00	0.90	19.70	79.40	-0.67	-9.01	87.50	Comments:No Change,,,,,,,
EW08	8/1/2023 08:31	0.10	0.20	20.30	79.40	-0.71	-2.59	75.90	Comments:No Change,,,,,,,
EW08	8/23/2023 14:38	0.10	0.20	20.90	78.80	-0.39	-8.56	84.30	Comments:No Change,,,,,,,
EW08	8/30/2023 11:54	0.00	0.20	20.50	79.30	-0.43	-7.97	78.30	Comments:No Change,Valve Closed,,,,,,
EW08	9/6/2023 11:58	0.00	0.20	20.20	79.60	-0.54	-7.72	79.80	Comments:No Change,,,,,,,
EW08	9/22/2023 08:39	0.00	0.40	20.60	79.00	-0.45	-0.19	64.30	Comments:Valve Closed,,,,,,,
EW08	10/18/2023 16:40	0.00	0.20	20.50	79.30	1.63	-6.31	67.20	Comments:No Change,,,,,,,
EW08	10/31/2023 14:31	0.00	0.30	20.80	78.90	-0.24	-8.92	72.00	Comments:No Change,,,,,,,
EW08	11/7/2023 13:42	0.20	0.90	17.20	81.70	-6.45	-17.58	57.30	Comments:No Change,,,,,,,
EW08	11/20/2023 11:43	0.10	1.20	14.20	84.50	-4.03	-12.16	49.00	Comments:No Change,,,,,,,
EW08	12/6/2023 09:00	0.00	0.30	19.20	80.50	-10.03	-10.06	65.50	Comments:No Change,,,,,,,
EW08	12/19/2023 14:06	0.20	0.70	16.90	82.20	-9.13	-15.17	51.40	Comments:No Change,,,,,,,
EW09	1/11/2023 09:17	1.80	8.40	11.80	78.00	-7.28	-13.96	47.20	Comments:No Change,,,,,,,
EW09	1/30/2023 11:50	1.70	7.10	12.80	78.40	-7.16	-15.26	46.60	Comments:No Change,,,,,,,
EW09	2/16/2023 13:26	1.70	6.40	13.30	78.60	-4.77	-11.16	50.40	Comments:No Change,,,,,,,
EW09	2/27/2023 10:26	2.40	4.80	12.00	80.80	-4.90	-11.09	45.10	Comments:No Change,,,,,,,
EW09	3/16/2023 14:18	1.30	4.50	12.70	81.50	-5.74	-14.07	68.30	Comments:No Change,,,,,,,
EW09	3/28/2023 12:40	2.30	8.50	10.50	78.70	-4.45	-9.35	67.70	Comments:No Change,,,,,,,
EW09	4/12/2023 13:42	3.10	8.80	11.10	77.00	-4.84	-12.98	54.70	Comments:No Change,Valve slightly Open,,,,,,
EW09	4/21/2023 10:22	2.40	9.30	11.50	76.80	-4.36	-11.50	53.50	Comments:No Change,,,,,,,
EW09	5/5/2023 09:08	2.00	7.00	11.80	79.20	-10.16	-3.85	50.30	Comments:No Change,,,,,,,
EW09	5/26/2023 14:25	2.50	6.30	10.50	80.70	-3.40	-9.17	93.80	Comments:No Change,,,,,,,
EW09	6/1/2023 07:29	2.70	5.60	11.20	80.50	-3.06	-8.82	54.40	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW09	6/19/2023 09:03	2.40	10.20	9.40	78.00	-2.77	-8.18	0.00	Comments:No Change,,,,,,,
EW09	7/11/2023 13:48	2.30	10.10	8.80	78.80	-2.46	-6.83	86.40	Comments:No Change,,,,,,,
EW09	8/1/2023 08:33	0.10	0.40	20.10	79.40	-12.80	-10.59	75.70	Comments:No Change,,,,,,,
EW09	8/23/2023 14:40	2.10	10.80	8.20	78.90	-2.09	-7.21	76.40	Comments:No Change,,,,,,,
EW09	8/30/2023 11:56	1.90	12.10	7.00	79.00	-2.01	-6.58	81.00	Comments:No Change,Valve slightly Open,,,,,,
EW09	9/6/2023 12:14	1.70	12.40	6.40	79.50	-2.08	-6.40	74.50	Comments:No Change,,,,,,,
EW09	9/22/2023 08:42	2.20	12.60	6.30	78.90	-1.86	-6.60	65.10	Comments:No Change,,,,,,,
EW09	10/18/2023 16:43	1.90	12.90	7.20	78.00	-0.91	-4.98	70.20	Comments:No Change,,,,,,,
EW09	10/31/2023 14:35	1.90	12.90	7.30	77.90	-2.41	-7.56	73.00	Comments:No Change,,,,,,,
EW09	11/7/2023 13:43	3.00	13.10	7.10	76.80	-3.81	-8.99	57.20	Comments:No Change,,,,,,,
EW09	11/20/2023 11:44	2.20	10.40	10.60	76.80	-4.99	-10.44	49.40	Comments:No Change,,,,,,,
EW09	12/6/2023 09:06	4.80	15.00	1.90	78.30	-10.20	-12.26	65.50	Comments:No Change,,,,,,,
EW09	12/19/2023 14:08	2.20	8.90	12.00	76.90	-4.88	-12.17	52.00	Comments:No Change,,,,,,,
EW10	1/11/2023 09:19	67.00	9.70	0.20	23.10	1.40	1.26	46.90	Comments:Watered In,,,,,,,
EW10	1/30/2023 11:52	74.10	10.40	0.80	14.70	-3.09	-2.77	45.90	Comments:Valve Wide Open,,,,,,,
EW10	2/16/2023 13:34	24.20	15.70	0.40	59.70	-9.74	-10.95	48.90	Comments:No Change,Valve Wide Open,,,,,,
EW10	2/27/2023 10:28	14.20	8.70	6.80	70.30	-13.27	-10.75	45.60	Comments:No Change,,,,,,,
EW10	3/16/2023 14:00	14.80	10.80	1.30	73.10	-6.34	-4.42	66.30	Comments:No Change,,,,,,,
EW10	3/28/2023 12:30	13.10	13.10	3.00	70.80	-9.01	-8.36	66.00	Comments:No Change,,,,,,,
EW10	4/12/2023 13:44	26.50	6.00	0.40	67.10	-0.92	0.05	59.50	Comments:No Change,Watered In,,,,,,
EW10	4/21/2023 09:56	13.80	15.60	1.90	68.70	-11.68	-10.57	48.70	Comments:No Change,,,,,,,
EW10	5/5/2023 09:12	18.20	15.40	0.00	66.40	-10.64	-8.76	51.20	Comments:No Change,,,,,,,
EW10	5/26/2023 14:29	11.10	12.60	1.80	74.50	-8.80	-7.63	94.20	Comments:No Change,,,,,,,
EW10	6/1/2023 07:32	13.30	14.10	0.90	71.70	-8.41	-6.93	55.90	Comments:No Change,,,,,,,
EW10	6/19/2023 08:59	14.20	15.40	0.30	70.10	-9.01	-8.89	0.00	Comments:No Change,,,,,,,
EW10	7/11/2023 13:45	10.90	16.50	0.70	71.90	-7.88	-6.14	82.60	Comments:No Change,,,,,,,
EW10	8/1/2023 08:46	4.80	10.60	9.20	75.40	-0.10	-6.00	79.90	Comments:No Change,,,,,,,
EW10	8/23/2023 14:43	9.80	17.80	0.40	72.00	-7.26	-5.42	75.60	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW10	8/30/2023 11:59	9.30	17.70	0.30	72.70	-6.41	-4.08	73.60	Comments:No Change,,,,,,,
EW10	9/6/2023 12:29	11.40	19.70	0.00	68.90	-5.87	-6.01	88.80	Comments:No Change,,,,,,,
EW10	9/22/2023 08:55	11.00	19.70	0.00	69.30	-6.16	-7.15	68.40	Comments:No Change,,,,,,,
EW10	10/18/2023 16:46	8.30	20.10	0.20	71.40	-5.24	-2.45	74.00	Comments:No Change,,,,,,,
EW10	10/31/2023 14:37	9.20	19.30	0.20	71.30	-7.29	-4.32	71.00	Comments:No Change,,,,,,,
EW10	11/7/2023 13:45	18.30	13.60	1.00	67.10	-2.25	-2.77	56.30	Comments:Valve Wide Open,,,,,,,
EW10	11/20/2023 11:46	9.20	19.00	0.20	71.60	-8.93	-8.94	51.00	Comments:Valve Wide Open,,,,,,,
EW10	12/6/2023 09:10	33.50	12.00	0.10	54.40	5.73	4.43	65.70	Comments:Watered In,,,,,,,
EW10	12/19/2023 14:11	61.50	14.30	2.40	21.80	-9.05	-9.38	51.70	Comments:No Change,,,,,,,
EW11	1/11/2023 09:21	59.30	17.40	1.00	22.30	-0.55	-0.60	47.10	Comments:Watered In,,,,,,,
EW11	1/30/2023 11:54	50.50	14.70	5.10	29.70	-1.90	-1.96	46.80	Comments:Valve Wide Open,,,,,,,
EW11	2/16/2023 13:37	47.30	16.20	1.40	35.10	-6.22	-5.75	49.20	Comments:No Change,Valve Wide Open,,,,,,
EW11	2/27/2023 10:31	29.00	17.40	0.00	53.60	-5.68	-4.80	43.70	Comments:No Change,Valve Wide Open,,,,,,
EW11	3/16/2023 14:02	17.50	13.60	1.20	67.70	-2.51	-1.92	70.70	Comments:No Change,,,,,,,
EW11	3/28/2023 12:28	15.20	14.20	0.00	70.60	-6.70	-8.01	71.60	Comments:Valve Wide Open,,,,,,,
EW11	4/12/2023 13:47	27.20	14.20	7.30	51.30	-1.25	-1.01	65.00	Comments:No Change,Watered In,,,,,,
EW11	4/21/2023 09:58	21.80	19.00	0.00	59.20	-6.94	-5.73	50.40	Comments:No Change,,,,,,,
EW11	5/5/2023 09:14	14.80	16.40	0.00	68.80	-8.68	-8.49	49.60	Comments:No Change,,,,,,,
EW11	5/26/2023 14:32	12.70	14.40	0.00	72.90	-7.24	-7.02	93.30	Comments:No Change,,,,,,,
EW11	6/1/2023 07:36	10.60	13.70	1.50	74.20	-6.68	-6.61	55.50	Comments:No Change,,,,,,,
EW11	6/19/2023 08:53	10.20	13.40	2.50	73.90	-6.37	-6.26	0.00	Comments:No Change,,,,,,,
EW11	7/11/2023 13:42	10.50	14.80	0.90	73.80	-5.91	-5.30	84.70	Comments:No Change,,,,,,,
EW11	8/1/2023 08:50	12.20	17.60	0.60	69.60	-5.95	-5.67	79.60	Comments:No Change,,,,,,,
EW11	8/23/2023 14:47	12.10	16.90	0.60	70.40	-5.26	-5.18	76.20	Comments:No Change,,,,,,,
EW11	8/30/2023 12:01	13.10	18.60	0.00	68.30	-4.24	-4.05	77.60	Comments:No Change,Valve Wide Open,,,,,,
EW11	9/6/2023 12:26	14.30	19.40	0.30	66.00	-3.96	-3.96	85.30	Comments:No Change,,,,,,,
EW11	9/22/2023 08:49	3.60	11.20	8.90	76.30	-3.79	-3.90	65.90	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW11	10/18/2023 16:48	14.40	21.20	0.10	64.30	-4.12	-0.99	72.50	Comments:No Change,,,,,,,
EW11	10/31/2023 14:40	14.90	20.10	0.10	64.90	-2.90	-1.80	64.00	Comments:No Change,,,,,,,
EW11	11/7/2023 13:46	5.90	5.40	15.80	72.90	-2.94	-0.79	55.60	Comments:Valve Wide Open,,,,,,,
EW11	11/20/2023 11:48	23.70	21.20	0.10	55.00	-7.28	-7.31	51.40	Comments:Valve Wide Open,,,,,,,
EW11	12/6/2023 09:13	18.80	19.70	0.00	61.50	-1.31	-0.64	65.60	Comments:No Change,,,,,,,
EW11	12/19/2023 14:13	10.70	9.90	7.50	71.90	-3.78	-2.69	50.90	Comments:No Change,,,,,,,
EW12	1/11/2023 09:23	7.30	11.10	1.80	79.80	-1.52	-1.49	47.70	Comments:Watered In,,,,,,,
EW12	1/30/2023 11:56	12.70	14.60	1.20	71.50	-0.33	-0.32	47.40	Comments:No Change,,,,,,,
EW12	2/16/2023 13:41	36.30	12.70	1.30	49.70	-0.32	-0.23	48.80	Comments:No Change,,,,,,,
EW12	2/27/2023 10:33	27.90	12.90	2.20	57.00	-0.17	-0.13	43.40	Comments:No Change,Watered In,,,,,,
EW12	3/16/2023 14:04	20.30	10.90	0.50	68.30	-0.27	-0.24	71.50	Comments:No Change,,,,,,,
EW12	3/28/2023 12:25	21.20	9.90	1.00	67.90	-0.36	-0.31	68.60	Comments:Watered In,,,,,,,
EW12	4/12/2023 13:49	29.20	9.90	1.40	59.50	-0.44	0.01	54.10	Comments:No Change,Watered In,,,,,,
EW12	4/21/2023 10:01	19.90	7.40	3.60	69.10	-0.91	-0.79	50.90	Comments:No Change,,,,,,,
EW12	5/5/2023 09:17	11.00	7.90	6.80	74.30	-0.77	-0.72	49.20	Comments:No Change,,,,,,,
EW12	5/26/2023 14:33	11.90	11.00	2.70	74.40	-2.51	-2.21	96.90	Comments:No Change,,,,,,,
EW12	6/1/2023 07:38	6.70	11.50	6.60	75.20	-6.51	-6.48	55.30	Comments:No Change,,,,,,,
EW12	6/19/2023 08:50	3.40	9.80	9.20	77.60	-6.22	-6.18	0.00	Comments:No Change,,,,,,,
EW12	7/11/2023 13:39	3.10	9.60	9.90	77.40	-5.68	-5.57	83.90	Comments:No Change,,,,,,,
EW12	8/1/2023 08:53	3.20	10.40	9.60	76.80	-5.73	-5.60	80.30	Comments:No Change,,,,,,,
EW12	8/23/2023 14:50	3.00	7.80	11.60	77.60	-5.07	-5.17	75.50	Comments:No Change,,,,,,,
EW12	8/30/2023 12:04	3.00	10.70	9.00	77.30	-3.83	-3.80	79.60	Comments:No Change,Valve slightly Open,,,,,,
EW12	9/6/2023 12:22	3.40	11.10	8.70	76.80	-3.56	-3.79	84.50	Comments:No Change,,,,,,,
EW12	9/22/2023 09:00	3.60	11.10	9.00	76.30	-3.80	-3.88	67.00	Comments:No Change,,,,,,,
EW12	10/18/2023 16:51	3.60	11.60	9.00	75.80	-2.05	-2.07	76.10	Comments:No Change,,,,,,,
EW12	10/31/2023 14:43	4.20	12.20	8.80	74.80	-4.15	-4.26	69.00	Comments:No Change,,,,,,,
EW12	11/7/2023 13:47	1.00	5.40	17.40	76.20	-0.46	-0.53	55.30	Comments:No Change,,,,,,,
EW12	11/20/2023 11:49	4.20	8.50	3.50	83.80	-0.34	-0.31	51.70	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW12	12/6/2023 09:15	7.80	12.50	1.20	78.50	0.31	0.24	65.30	Comments:Watered In,,,,,,,
EW12	12/19/2023 14:14	4.80	12.30	8.00	74.90	-0.69	-0.68	50.80	Comments:No Change,,,,,,,
EW13	1/11/2023 09:26	0.00	8.00	13.20	78.80	-0.82	-0.83	47.70	Comments:Watered In,,,,,,,
EW13	1/30/2023 11:58	0.30	8.40	10.60	80.70	-0.33	-0.35	49.80	Comments:No Change,,,,,,,
EW13	2/16/2023 13:43	0.70	6.10	14.70	78.50	-0.41	-0.42	46.80	Comments:No Change,,,,,,,
EW13	2/27/2023 10:36	0.10	9.40	10.50	80.00	-0.27	-0.16	48.50	Comments:No Change,Watered In,,,,,,
EW13	3/16/2023 14:06	0.30	7.60	11.40	80.70	-0.48	-0.33	69.80	Comments:No Change,,,,,,,
EW13	3/28/2023 12:22	0.30	6.60	11.70	81.40	-0.46	0.01	64.70	Comments:Watered In,,,,,,,
EW13	4/12/2023 13:52	0.10	6.20	14.00	79.70	-0.55	0.10	53.50	Comments:No Change,Watered In,,,,,,
EW13	4/21/2023 10:02	0.50	5.60	13.50	80.40	-0.79	0.01	49.90	Comments:No Change,Watered In,,,,,,
EW13	5/5/2023 09:19	1.00	3.50	17.90	77.60	-1.01	0.03	49.60	Comments:No Change,Watered In,,,,,,
EW13	5/26/2023 14:36	0.30	5.40	13.40	80.90	-0.70	-2.30	93.00	Comments:No Change,,,,,,,
EW13	6/1/2023 07:41	0.70	8.00	12.70	78.60	-0.65	-6.54	54.70	Comments:No Change,,,,,,,
EW13	6/19/2023 08:46	0.00	7.40	12.30	80.30	-0.68	-6.24	0.00	Comments:No Change,,,,,,,
EW13	7/11/2023 13:37	0.00	7.30	11.80	80.90	-0.49	-5.60	82.90	Comments:No Change,,,,,,,
EW13	8/1/2023 08:56	0.10	6.80	12.90	80.20	-1.19	-5.47	80.10	Comments:No Change,,,,,,,
EW13	8/23/2023 14:52	0.10	7.30	12.10	80.50	-0.49	-5.13	73.20	Comments:No Change,,,,,,,
EW13	8/30/2023 12:07	0.00	8.80	10.80	80.40	-0.44	-3.72	84.00	Comments:No Change,Valve slightly Open,,,,,,
EW13	9/6/2023 12:12	0.10	10.10	9.70	80.10	-0.40	-0.45	82.10	Comments:No Change,,,,,,,
EW13	9/22/2023 09:03	0.20	9.30	10.40	80.10	-0.49	-3.89	64.10	Comments:No Change,,,,,,,
EW13	10/18/2023 16:54	0.00	9.50	11.90	78.60	-1.16	-2.03	76.60	Comments:No Change,,,,,,,
EW13	10/31/2023 14:46	0.10	10.00	10.60	79.30	-1.49	-4.10	70.00	Comments:No Change,,,,,,,
EW13	11/7/2023 13:48	0.40	6.70	11.00	81.90	-1.97	-2.47	55.60	Comments:No Change,,,,,,,
EW13	11/20/2023 11:51	0.20	6.00	12.00	81.80	-0.32	-0.31	52.10	Comments:No Change,,,,,,,
EW13	12/6/2023 09:18	0.10	11.30	9.30	79.30	-1.44	-1.43	65.70	Comments:No Change,,,,,,,
EW13	12/19/2023 14:15	1.50	9.10	8.00	81.40	-2.04	-2.01	50.80	Comments:No Change,,,,,,,
EW14	1/11/2023 09:28	4.50	9.00	13.40	73.10	-5.50	-5.49	48.20	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW14	1/30/2023 11:59	4.20	8.40	13.00	74.40	-1.99	-2.00	51.70	Comments:No Change,,,,,,,
EW14	2/16/2023 13:46	6.50	8.20	11.20	74.10	-4.02	-7.92	48.60	Comments:No Change,,,,,,,
EW14	2/27/2023 10:39	4.80	9.40	10.70	75.10	-3.59	-7.55	46.40	Comments:No Change,,,,,,,
EW14	3/16/2023 14:08	2.60	7.30	12.60	77.50	-2.64	-6.05	65.90	Comments:No Change,,,,,,,
EW14	3/28/2023 12:20	3.70	7.30	11.10	77.90	-3.51	-7.84	61.70	Comments:No Change,,,,,,,
EW14	4/12/2023 13:54	4.10	7.80	12.90	75.20	-3.99	-9.41	69.70	Comments:No Change,,,,,,,
EW14	4/21/2023 10:05	3.40	7.10	14.10	75.40	-3.87	-8.83	48.70	Comments:No Change,,,,,,,
EW14	5/5/2023 09:22	3.00	6.30	13.60	77.10	-3.67	-8.48	50.40	Comments:No Change,,,,,,,
EW14	5/26/2023 14:38	2.80	6.20	12.30	78.70	-3.16	-7.25	91.40	Comments:No Change,,,,,,,
EW14	6/1/2023 07:44	1.60	6.60	14.50	77.30	-2.94	-6.46	53.50	Comments:No Change,,,,,,,
EW14	6/19/2023 08:38	0.00	2.40	18.10	79.50	-3.78	-6.55	0.00	Comments:No Change,,,,,,,
EW14	6/19/2023 08:42	2.40	4.50	14.70	78.40	-2.88	-6.14	0.00	Comments:No Change,,,,,,,
EW14	7/11/2023 13:29	3.20	7.20	12.30	77.30	-2.46	-5.15	82.00	Comments:No Change,,,,,,,
EW14	8/1/2023 08:59	3.10	7.30	12.50	77.10	-2.91	-5.65	78.80	Comments:No Change,,,,,,,
EW14	8/23/2023 14:54	2.70	6.20	13.20	77.90	-2.42	-5.01	71.20	Comments:No Change,,,,,,,
EW14	8/30/2023 12:10	3.40	8.20	11.30	77.10	-1.95	-3.98	69.90	Comments:No Change,Valve slightly Open,,,,,,
EW14	9/6/2023 12:08	4.00	8.70	10.80	76.50	-1.97	-1.87	82.20	Comments:No Change,,,,,,,
EW14	9/22/2023 09:06	3.80	8.50	10.90	76.80	-2.93	1.43	66.80	Comments:No Change,,,,,,,
EW14	10/18/2023 16:56	3.80	9.20	10.40	76.60	-1.21	2.80	74.90	Comments:No Change,,,,,,,
EW14	10/18/2023 16:58	3.70	9.20	10.30	76.80	-0.49	-2.05	66.10	Comments:No Change,,,,,,,
EW14	10/31/2023 14:48	4.80	10.00	10.00	75.20	-1.88	-4.40	73.00	Comments:No Change,,,,,,,
EW14	11/7/2023 13:50	4.30	7.80	13.60	74.30	-3.05	-6.60	55.80	Comments:No Change,,,,,,,
EW14	11/20/2023 11:53	5.90	9.90	11.40	72.80	-2.98	-8.34	54.50	Comments:No Change,,,,,,,
EW14	12/6/2023 09:24	19.70	20.90	0.70	58.70	-0.18	-0.22	66.50	Comments:No Change,,,,,,,
EW14	12/19/2023 14:16	4.80	10.40	11.20	73.60	-3.05	-3.04	51.00	Comments:No Change,,,,,,,
EW15	1/11/2023 09:30	0.00	1.70	20.30	78.00	-8.76	-8.76	47.70	Comments:No Change,,,,,,,
EW15	1/30/2023 12:01	2.70	7.70	12.40	77.20	-0.09	-0.08	50.00	Comments:No Change,,,,,,,
EW15	2/16/2023 14:15	0.00	4.00	16.80	79.20	-1.26	-7.83	47.70	Comments:No Change,,,,,,,
EW15	2/27/2023 10:41	0.20	4.80	17.10	77.90	-4.16	-6.84	47.10	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW15	3/16/2023 14:10	0.00	2.60	18.20	79.20	-1.17	-5.89	66.40	Comments:No Change,,,,,,,
EW15	3/28/2023 12:18	0.00	1.80	17.50	80.70	-1.41	-6.94	58.50	Comments:No Change,,,,,,,
EW15	4/12/2023 13:56	0.10	2.10	18.80	79.00	-2.02	-9.65	61.80	Comments:No Change,,,,,,,
EW15	4/21/2023 10:07	0.00	2.00	19.50	78.50	-1.49	-8.50	48.60	Comments:No Change,,,,,,,
EW15	5/5/2023 09:25	0.20	3.70	18.70	77.40	-1.26	-7.38	49.40	Comments:No Change,,,,,,,
EW15	5/26/2023 14:40	0.10	2.30	18.00	79.60	-1.04	-6.81	91.30	Comments:No Change,,,,,,,
EW15	6/1/2023 07:47	0.20	4.10	17.40	78.30	-0.85	-6.60	52.40	Comments:No Change,,,,,,,
EW15	6/19/2023 08:19	0.00	2.70	18.50	78.80	-9.08	-6.44	0.00	Comments:No Change,,,,,,,
EW15	7/11/2023 13:24	0.00	0.10	20.20	79.70	-5.95	-0.70	79.30	Comments:No Change,,,,,,,
EW15	8/1/2023 09:02	0.40	4.10	16.40	79.10	-0.82	-5.78	78.20	Comments:No Change,,,,,,,
EW15	8/23/2023 14:57	0.10	3.30	17.40	79.20	-0.59	-5.15	73.30	Comments:No Change,,,,,,,
EW15	8/30/2023 12:13	0.00	5.00	15.00	80.00	-0.47	-4.21	67.20	Comments:No Change,Valve slightly Open,,,,,,
EW15	9/6/2023 12:05	0.00	5.50	14.40	80.10	-0.49	-4.13	84.30	Comments:No Change,,,,,,,
EW15	9/22/2023 09:09	0.00	6.40	13.90	79.70	-0.74	-3.81	64.60	Comments:No Change,,,,,,,
EW15	10/18/2023 17:01	0.00	5.30	14.90	79.80	-2.07	-2.38	68.40	Comments:No Change,,,,,,,
EW15	10/31/2023 14:51	0.00	5.00	15.50	79.50	-3.13	-4.61	71.00	Comments:No Change,,,,,,,
EW15	11/7/2023 13:51	1.10	5.10	16.60	77.20	-3.56	-3.69	55.80	Comments:No Change,,,,,,,
EW15	11/20/2023 11:54	0.40	5.40	16.20	78.00	-2.25	-7.42	51.50	Comments:No Change,,,,,,,
EW15	12/6/2023 09:27	1.00	5.70	15.70	77.60	-3.11	-12.22	66.40	Comments:No Change,,,,,,,
EW15	12/19/2023 14:18	0.20	2.80	18.80	78.20	-0.66	-4.44	51.20	Comments:No Change,,,,,,,
EW16	1/11/2023 09:38	0.00	7.40	12.70	79.90	-8.53	-8.55	49.00	Comments:No Change,,,,,,,
EW16	1/30/2023 12:09	2.20	5.10	14.80	77.90	-0.04	-0.05	52.60	Comments:No Change,,,,,,,
EW16	2/16/2023 11:39	0.30	3.90	15.70	80.10	-0.35	-0.40	45.90	Comments:No Change,Watered In,,,,,,
EW16	2/27/2023 09:49	0.00	6.90	12.70	80.40	-8.35	-8.10	46.20	Comments:No Change,,,,,,,
EW16	3/16/2023 13:45	0.00	3.60	15.50	80.90	-5.57	-5.94	60.70	Comments:No Change,,,,,,,
EW16	3/28/2023 10:48	0.00	5.30	13.90	80.80	-1.96	-1.96	57.50	Comments:No Change,,,,,,,
EW16	3/28/2023 11:48	0.00	3.10	16.50	80.40	-1.52	-1.88	66.10	Comments:No Change,,,,,,,
EW16	4/12/2023 11:30	0.00	7.40	12.80	79.80	-9.52	-9.44	50.90	Comments:No Change,Valve slightly Open,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW16	4/21/2023 09:36	0.00	7.30	13.40	79.30	-8.56	-8.55	49.50	Comments:No Change,,,,,,,
EW16	5/5/2023 08:17	0.00	6.50	12.90	80.60	-7.47	-7.60	49.80	Comments:No Change,Valve slightly Open,,,,,,
EW16	5/26/2023 13:46	0.00	3.40	16.80	79.80	-6.91	-7.07	94.20	Comments:No Change,Valve slightly Open,,,,,,
EW16	6/1/2023 09:23	0.10	2.50	18.00	79.40	-6.62	-6.69	60.80	Comments:No Change,,,,,,,
EW16	6/19/2023 10:04	0.00	3.20	18.50	78.30	-6.32	-6.36	0.00	Comments:No Change,,,,,,,
EW16	7/11/2023 14:23	0.10	6.10	12.70	81.10	-5.82	-5.94	85.10	Comments:No Change,,,,,,,
EW16	8/1/2023 07:28	0.40	8.10	11.30	80.20	-6.24	-5.79	65.00	Comments:No Change,,,,,,,
EW16	8/23/2023 15:07	0.40	4.50	15.60	79.50	-5.12	-5.34	73.60	Comments:No Change,,,,,,,
EW16	8/30/2023 11:17	0.50	8.20	10.10	81.20	-4.41	-4.46	69.50	Comments:No Change,Valve slightly Open,,,,,,
EW16	9/6/2023 11:07	0.50	7.50	11.10	80.90	-4.19	-4.42	75.60	Comments:No Change,,,,,,,
EW16	9/22/2023 08:00	0.70	8.40	9.60	81.30	-4.36	-4.48	69.80	Comments:No Change,,,,,,,
EW16	10/18/2023 15:33	0.40	7.60	9.60	82.40	-4.71	-4.68	82.90	Comments:No Change,,,,,,,
EW16	10/31/2023 13:57	0.20	9.00	12.90	77.90	-4.78	-4.94	67.00	Comments:No Change,,,,,,,
EW16	11/7/2023 13:59	1.10	7.50	11.40	80.00	-7.01	-6.96	56.40	Comments:No Change,,,,,,,
EW16	11/20/2023 12:11	1.60	11.00	7.80	79.60	-7.74	-7.74	54.30	Comments:No Change,,,,,,,
EW16	12/6/2023 09:36	0.10	3.30	18.00	78.60	-11.94	-11.18	65.50	Comments:No Change,,,,,,,
EW16	12/19/2023 14:36	0.70	9.00	10.10	80.20	-5.12	-5.09	55.50	Comments:No Change,,,,,,,
EW17	1/11/2023 08:54	0.00	3.30	18.30	78.40	-5.70	-9.30	52.40	Comments:No Change,,,,,,,
EW17	1/30/2023 11:24	0.10	3.50	17.80	78.60	-2.06	-2.86	47.80	Comments:No Change,,,,,,,
EW17	2/16/2023 12:08	0.00	2.30	16.70	81.00	-4.69	-8.96	48.30	Comments:No Change,Valve slightly Open,,,,,,
EW17	2/27/2023 09:56	0.00	5.30	16.70	78.00	-4.99	-8.13	41.20	Comments:No Change,,,,,,,
EW17	3/16/2023 13:49	0.00	4.00	18.00	78.00	-3.85	-6.04	62.90	Comments:No Change,,,,,,,
EW17	3/28/2023 12:03	0.00	3.20	16.60	80.20	-4.44	-7.14	61.50	Comments:No Change,,,,,,,
EW17	4/12/2023 11:36	0.00	3.60	17.50	78.90	-6.53	-9.45	50.60	Comments:No Change,Valve slightly Open,,,,,,
EW17	4/21/2023 09:44	0.00	3.40	17.60	79.00	-5.62	-8.90	51.00	Comments:No Change,,,,,,,
EW17	5/5/2023 08:22	0.00	4.00	17.30	78.70	-4.85	-7.31	50.40	Comments:No Change,,,,,,,
EW17	5/26/2023 13:52	0.00	1.10	18.30	80.60	-4.22	-7.04	94.90	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW17	6/1/2023 07:52	0.10	2.80	19.10	78.00	-3.93	-6.69	51.90	Comments:No Change,,,,,,,
EW17	6/19/2023 08:15	0.00	3.10	17.50	79.40	-3.95	-6.19	0.00	Comments:No Change,,,,,,,
EW17	7/11/2023 13:19	0.00	1.50	19.20	79.30	-6.03	-3.00	82.90	Comments:No Change,,,,,,,
EW17	8/1/2023 07:39	0.10	3.10	18.00	78.80	-2.83	-6.08	64.90	Comments:No Change,,,,,,,
EW17	8/23/2023 14:05	0.10	2.80	18.20	78.90	-2.41	-5.68	80.40	Comments:No Change,,,,,,,
EW17	8/30/2023 11:33	0.00	2.40	18.70	78.90	-1.57	-4.45	81.70	Comments:No Change,,,,,,,
EW17	9/6/2023 12:25	0.00	1.80	18.30	79.90	-2.18	-4.42	67.70	Comments:No Change,,,,,,,
EW17	9/22/2023 08:11	0.00	3.30	17.10	79.60	-2.10	-4.48	62.10	Comments:No Change,,,,,,,
EW17	10/18/2023 15:39	0.00	3.90	15.90	80.20	-1.98	-4.74	82.80	Comments:No Change,Valve slightly Open,,,,,,
EW17	10/31/2023 14:01	0.00	2.60	18.20	79.20	-2.12	-4.72	71.00	Comments:No Change,,,,,,,
EW17	11/7/2023 13:27	0.30	3.80	16.20	79.70	-4.29	-4.28	65.70	Comments:No Change,,,,,,,
EW17	11/20/2023 11:23	0.10	4.10	16.50	79.30	-3.10	-3.09	51.40	Comments:No Change,,,,,,,
EW17	12/6/2023 08:20	0.00	3.90	17.70	78.40	-13.05	-11.33	62.80	Comments:No Change,,,,,,,
EW17	12/19/2023 13:44	0.20	3.50	17.60	78.70	-3.29	-5.07	55.70	Comments:No Change,,,,,,,
EW18	1/11/2023 08:57	0.00	3.50	17.50	79.00	-9.90	-10.72	48.80	Comments:No Change,,,,,,,
EW18	1/30/2023 11:26	0.10	3.20	18.10	78.60	-10.38	-11.72	47.20	Comments:Valve Wide Open,,,,,,,
EW18	2/16/2023 12:23	0.00	2.50	17.30	80.20	-7.35	-8.88	50.20	Comments:No Change,,,,,,,
EW18	2/27/2023 10:02	0.00	4.60	16.60	78.80	-7.12	-8.20	40.60	Comments:No Change,,,,,,,
EW18	3/16/2023 13:54	0.00	4.80	17.10	78.10	-8.69	-8.63	68.00	Comments:No Change,,,,,,,
EW18	3/28/2023 12:11	0.30	4.10	15.80	79.80	-6.34	-7.08	67.20	Comments:No Change,,,,,,,
EW18	4/12/2023 11:37	0.00	2.90	17.60	79.50	-7.78	-9.44	57.00	Comments:No Change,Valve Wide Open,,,,,,
EW18	4/21/2023 09:47	0.00	3.30	17.60	79.10	-7.38	-8.49	51.30	Comments:No Change,,,,,,,
EW18	5/5/2023 08:25	0.00	3.20	17.30	79.50	-6.59	-7.52	62.40	Comments:No Change,Valve Wide Open,,,,,,
EW18	5/26/2023 13:54	0.00	1.90	17.20	80.90	-5.74	-7.08	91.90	Comments:No Change,,,,,,,
EW18	6/1/2023 08:10	0.00	2.70	17.50	79.80	-5.23	-6.72	55.00	Comments:No Change,,,,,,,
EW18	6/19/2023 09:49	0.00	3.20	17.70	79.10	-5.01	-4.94	0.00	Comments:No Change,,,,,,,
EW18	7/11/2023 14:15	0.00	2.90	16.80	80.30	-4.31	-5.88	84.00	Comments:No Change,,,,,,,
EW18	8/1/2023 07:51	0.10	3.40	17.20	79.30	-4.34	-5.96	0.00	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW18	8/23/2023 14:11	0.10	2.80	17.60	79.50	-3.82	-4.91	79.20	Comments:Valve Wide Open,,,,,,,
EW18	8/30/2023 11:37	0.00	3.10	17.10	79.80	-3.25	-4.52	74.10	Comments:No Change,,,,,,,
EW18	9/6/2023 11:31	0.00	3.20	16.90	79.90	-3.16	-4.43	76.10	Comments:No Change,,,,,,,
EW18	9/22/2023 08:06	0.00	3.70	16.20	80.10	-3.24	-3.98	66.00	Comments:No Change,,,,,,,
EW18	10/18/2023 15:44	0.00	2.90	16.60	80.50	-3.79	-4.84	81.90	Comments:No Change,Valve Wide Open,,,,,,
EW18	10/31/2023 14:04	0.00	3.40	17.20	79.40	-3.98	-5.10	67.00	Comments:No Change,,,,,,,
EW18	11/7/2023 13:29	0.20	3.30	16.70	79.80	-9.74	-10.77	63.00	Comments:Valve Wide Open,,,,,,,
EW18	11/20/2023 11:25	0.10	3.50	17.20	79.20	-6.29	-7.20	50.20	Comments:Valve Wide Open,,,,,,,
EW18	12/6/2023 08:26	0.00	3.30	18.00	78.70	-13.06	-9.93	64.30	Comments:No Change,,,,,,,
EW18	12/6/2023 08:26	0.00	3.30	18.00	78.70	-13.06	-9.93	64.30	Comments:No Change,,,,,,,
EW18	12/19/2023 13:46	0.20	3.60	16.90	79.30	-8.12	-8.62	54.30	Comments:Valve Wide Open,,,,,,,
EW19	1/11/2023 09:34	0.10	1.60	18.00	80.30	-2.66	-2.62	47.00	Comments:Watered In,,,,,,,
EW19	1/30/2023 12:04	5.70	5.00	15.60	73.70	-1.06	-1.07	51.40	Comments:No Change,,,,,,,
EW19	2/16/2023 12:19	0.00	0.30	20.70	79.00	-14.11	-14.69	54.60	Comments:No Change,,,,,,,
EW19	2/27/2023 09:59	11.70	9.80	7.00	71.50	-14.20	-8.74	35.90	Comments:No Change,,,,,,,
EW19	3/16/2023 13:51	7.00	9.40	4.50	79.10	-3.42	-0.05	67.00	Comments:No Change,,,,,,,
EW19	3/28/2023 12:06	12.40	9.70	7.30	70.60	-12.96	-12.23	68.00	Comments:No Change,,,,,,,
EW19	4/12/2023 11:41	2.50	4.00	15.30	78.20	-1.03	-0.01	62.90	Comments:No Change,Watered In,,,,,,
EW19	4/21/2023 09:52	12.70	13.00	8.00	66.30	-13.82	-14.29	50.40	Comments:No Change,,,,,,,
EW19	5/5/2023 08:29	10.10	9.90	8.50	71.50	-12.63	-12.87	61.10	Comments:No Change,,,,,,,
EW19	5/26/2023 13:57	9.60	7.50	8.70	74.20	-11.55	-11.83	90.30	Comments:No Change,Valve slightly Open,,,,,,
EW19	6/1/2023 07:58	0.30	3.10	17.70	78.90	-11.24	-11.25	53.00	Comments:No Change,,,,,,,
EW19	6/19/2023 09:38	10.90	11.80	6.40	70.90	-10.37	-10.57	0.00	Comments:No Change,,,,,,,
EW19	7/11/2023 16:25	4.00	8.50	10.00	77.50	-0.01	-0.01	88.80	Comments:No Change,,,,,,,
EW19	8/1/2023 09:07	9.30	13.00	5.90	71.80	-9.95	-9.31	79.10	Comments:No Change,,,,,,,
EW19	8/23/2023 15:02	9.10	13.00	5.90	72.00	-9.12	-9.11	72.40	Comments:No Change,,,,,,,
EW19	8/30/2023 11:43	9.30	14.30	4.40	72.00	-8.69	-8.91	69.80	Comments:No Change,,,,,,,
EW19	9/6/2023 11:57	9.90	15.40	4.00	70.70	-8.56	-8.70	79.60	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW19	9/22/2023 09:19	10.40	14.50	4.10	71.00	-8.60	-8.60	71.40	Comments:No Change,,,,,,,
EW19	10/18/2023 16:14	10.80	15.90	3.50	69.80	-8.94	-9.10	77.30	Comments:No Change,,,,,,,
EW19	10/31/2023 14:07	11.90	16.40	4.60	67.10	-9.60	-9.82	70.00	Comments:No Change,,,,,,,
EW19	11/7/2023 13:55	0.80	1.70	20.00	77.50	-0.71	-0.71	54.90	Comments:No Change,,,,,,,
EW19	11/20/2023 11:58	8.00	10.60	10.20	71.20	-13.57	-13.57	50.50	Comments:No Change,,,,,,,
EW19	12/6/2023 08:31	10.80	15.20	3.30	70.70	-0.15	0.05	64.30	Comments:Watered In,,,,,,,
EW19	12/19/2023 14:22	16.50	15.90	1.60	66.00	-2.25	-2.25	51.60	Comments:No Change,,,,,,,
EW20	1/11/2023 09:32	9.10	6.60	10.80	73.50	-1.00	-1.03	47.00	Comments:Watered In,,,,,,,
EW20	1/30/2023 12:02	0.00	0.60	20.70	78.70	-0.09	-0.08	51.20	*Comments:No Change,,,,,,,*
EW20	2/16/2023 13:53	0.00	0.50	21.10	78.40	-14.18	-14.22	48.50	Comments:No Change,,,,,,,
EW20	2/27/2023 10:44	0.00	3.00	19.50	77.50	-14.83	-6.94	43.00	Comments:No Change,,,,,,,
EW20	3/16/2023 13:58	1.20	2.80	17.60	78.40	-0.63	-0.02	70.10	Comments:No Change,Watered In,,,,,,
EW20	3/28/2023 12:15	0.00	1.00	19.80	79.20	-12.93	-12.45	66.00	Comments:No Change,,,,,,,
EW20	4/12/2023 13:58	1.50	1.40	18.60	78.50	-0.20	-0.12	70.60	Comments:No Change,Watered In,,,,,,
EW20	4/21/2023 10:11	0.10	0.20	21.10	78.60	-14.58	-14.23	52.20	Comments:No Change,,,,,,,
EW20	5/5/2023 09:28	0.10	1.40	20.90	77.60	-12.91	-12.65	47.90	Comments:No Change,,,,,,,
EW20	5/26/2023 14:43	0.00	0.60	20.40	79.00	-11.84	-11.83	93.50	Comments:No Change,,,,,,,
EW20	6/1/2023 08:02	0.10	1.10	20.80	78.00	-11.53	-11.45	55.00	Comments:No Change,,,,,,,
EW20	6/19/2023 09:42	0.00	5.10	15.40	79.50	-7.56	-10.59	0.00	Comments:No Change,,,,,,,
EW20	7/11/2023 16:22	3.60	6.40	12.70	77.30	-0.09	-0.05	87.00	Comments:No Change,,,,,,,
EW20	8/1/2023 09:04	0.50	4.30	15.40	79.80	-5.57	-10.00	78.10	Comments:No Change,,,,,,,
EW20	8/23/2023 14:59	0.60	3.90	16.20	79.30	-4.77	-9.33	75.30	Comments:No Change,,,,,,,
EW20	8/30/2023 12:26	0.60	6.30	12.70	80.40	-4.49	-8.82	79.10	Comments:No Change,Valve slightly Open,,,,,,
EW20	9/6/2023 12:01	0.70	7.00	11.90	80.40	-4.32	-8.78	81.70	Comments:No Change,,,,,,,
EW20	9/22/2023 09:13	0.60	4.90	15.60	78.90	-8.91	-8.91	71.00	Comments:No Change,,,,,,,
EW20	10/18/2023 17:04	0.70	6.10	15.90	77.30	-5.26	-7.24	71.50	Comments:No Change,,,,,,,
EW20	10/31/2023 14:54	0.10	3.30	18.00	78.60	-12.37	-9.80	71.00	Comments:No Change,,,,,,,
EW20	11/7/2023 13:53	0.40	3.70	19.10	76.80	-0.65	-1.87	55.20	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW20	11/20/2023 11:56	3.40	5.70	13.20	77.70	-14.13	-13.74	50.80	Comments:No Change,,,,,,,
EW20	12/6/2023 09:22	1.20	2.80	19.50	76.50	-0.06	0.06	66.20	Comments:Watered In,,,,,,,
EW20	12/19/2023 14:20	0.30	0.50	20.70	78.50	-2.24	-2.24	50.70	Comments:No Change,,,,,,,
EW21	1/11/2023 09:09	0.80	9.70	10.60	78.90	-5.04	-17.13	47.70	Comments:No Change,,,,,,,
EW21	1/30/2023 11:40	0.10	0.80	20.90	78.20	-5.63	-18.38	51.30	Comments:No Change,,,,,,,
EW21	2/16/2023 12:44	0.20	2.80	18.40	78.60	-4.45	-14.55	51.20	Comments:No Change,,,,,,,
EW21	2/27/2023 10:54	0.70	5.50	11.40	82.40	-4.53	-14.55	44.40	Comments:No Change,,,,,,,
EW21	3/16/2023 14:21	0.10	4.60	15.90	79.40	-5.24	-17.05	71.40	Comments:No Change,,,,,,,
EW21	3/28/2023 12:41	0.30	3.90	16.70	79.10	-4.32	-12.51	67.90	Comments:No Change,,,,,,,
EW21	4/12/2023 13:34	0.20	2.20	18.60	79.00	-9.71	-16.45	64.10	Comments:No Change,,,,,,,
EW21	4/21/2023 10:25	0.60	9.80	10.80	78.80	-4.99	-14.52	50.10	Comments:No Change,,,,,,,
EW21	5/5/2023 08:52	0.60	8.40	10.10	80.90	-4.50	-12.95	50.20	Comments:No Change,,,,,,,
EW21	5/26/2023 14:16	0.10	2.00	18.70	79.20	-3.86	-11.84	87.10	Comments:No Change,,,,,,,
EW21	6/1/2023 09:08	0.10	1.30	20.30	78.30	-3.50	-11.52	60.50	Comments:No Change,,,,,,,
EW21	6/19/2023 11:26	0.00	2.50	19.10	78.40	-3.06	-11.02	0.00	Comments:No Change,,,,,,,
EW21	7/11/2023 15:51	0.20	3.80	15.00	81.00	-2.90	-5.12	88.20	Comments:No Change,,,,,,,
EW21	8/1/2023 08:38	2.40	11.50	7.70	78.40	-2.48	-7.82	75.70	Comments:No Change,,,,,,,
EW21	8/23/2023 14:30	0.40	5.60	14.10	79.90	-2.86	-10.05	78.30	Comments:No Change,,,,,,,
EW21	8/30/2023 11:46	0.50	10.80	7.80	80.90	-3.48	-4.76	75.10	Comments:No Change,,,,,,,
EW21	9/6/2023 12:30	0.10	6.20	13.10	80.60	-3.50	-8.96	70.30	Comments:No Change,,,,,,,
EW21	9/22/2023 09:16	0.50	7.20	11.80	80.50	-2.34	-9.17	68.90	Comments:No Change,,,,,,,
EW21	10/18/2023 16:28	0.70	11.20	6.10	82.00	-0.62	2.75	66.80	Comments:No Change,,,,,,,
EW21	10/31/2023 14:22	0.80	14.10	5.40	79.70	-2.68	-6.37	65.00	Comments:No Change,,,,,,,
EW21	11/7/2023 13:37	0.90	12.00	6.50	80.60	-3.95	-18.58	60.80	Comments:No Change,,,,,,,
EW21	11/20/2023 11:37	0.50	8.20	12.70	78.60	-3.43	-13.57	51.00	Comments:No Change,,,,,,,
EW21	12/6/2023 09:04	0.00	0.20	21.90	77.90	-24.73	-24.84	65.40	Comments:No Change,,,,,,,
EW21	12/19/2023 13:57	1.00	9.10	11.80	78.10	-5.54	-16.60	53.10	Comments:No Change,,,,,,,
EW02R	1/11/2023 08:59	0.70	5.40	15.20	78.70	-10.52	-11.01	47.90	Comments:No Change,,,,,,,
EW02R	1/30/2023 11:28	0.70	5.90	14.50	78.90	-11.77	-11.76	43.60	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW02R	2/16/2023 12:29	0.40	2.90	16.60	80.10	-7.65	-8.82	50.60	Comments:No Change,,,,,,,
EW02R	2/27/2023 10:05	0.10	4.40	16.00	79.50	-7.14	-8.28	59.40	Comments:No Change,,,,,,,
EW02R	3/16/2023 14:33	0.10	2.60	16.00	81.30	-8.64	-10.90	64.80	Comments:No Change,,,,,,,
EW02R	3/28/2023 13:36	0.40	4.70	15.10	79.80	-6.64	-7.05	67.70	Comments:No Change,,,,,,,
EW02R	4/12/2023 11:44	0.60	4.60	16.10	78.70	-7.61	-9.53	60.80	Comments:No Change,,,,,,,
EW02R	4/21/2023 10:15	0.60	4.20	16.90	78.30	-7.25	-8.83	50.70	Comments:No Change,,,,,,,
EW02R	5/5/2023 08:38	0.60	5.80	16.00	77.60	-6.41	-7.59	60.10	Comments:No Change,,,,,,,
EW02R	5/26/2023 14:04	0.70	5.30	14.80	79.20	-5.90	-7.11	89.10	Comments:No Change,,,,,,,
EW02R	6/1/2023 08:14	0.60	4.00	16.20	79.20	-5.59	-6.28	58.30	Comments:No Change,,,,,,,
EW02R	6/19/2023 09:30	0.50	6.00	14.70	78.80	-5.31	-6.34	0.00	Comments:No Change,,,,,,,
EW02R	7/11/2023 14:12	0.60	4.90	14.80	79.70	-4.96	-6.01	82.20	Comments:No Change,,,,,,,
EW02R	8/1/2023 08:03	0.80	5.60	14.60	79.00	-5.15	-6.00	67.00	Comments:No Change,,,,,,,
EW02R	8/23/2023 14:14	0.80	4.50	15.60	79.10	-4.58	-5.16	77.90	Comments:No Change,,,,,,,
EW02R	8/30/2023 12:31	0.70	5.10	14.20	80.00	-3.76	-4.44	67.40	Comments:No Change,,,,,,,
EW02R	9/6/2023 11:34	0.60	5.10	14.40	79.90	-3.78	-4.34	74.80	Comments:No Change,,,,,,,
EW02R	9/22/2023 08:15	0.90	5.90	13.20	80.00	-4.21	-3.76	62.30	Comments:No Change,,,,,,,
EW02R	10/18/2023 16:11	0.90	6.30	11.00	81.80	-3.76	-4.53	67.20	Comments:No Change,,,,,,,
EW02R	10/31/2023 14:09	0.90	6.90	13.40	78.80	-4.10	-5.07	69.00	Comments:No Change,,,,,,,
EW02R	11/7/2023 13:30	1.20	6.30	12.60	79.90	-9.16	-10.84	62.10	Comments:No Change,,,,,,,
EW02R	11/20/2023 11:27	0.70	5.80	14.50	79.00	-6.20	-7.11	49.30	Comments:No Change,,,,,,,
EW02R	12/6/2023 08:35	1.30	8.30	11.40	79.00	-9.83	-11.07	64.90	Comments:No Change,,,,,,,
EW02R	12/19/2023 13:48	0.80	5.40	15.60	78.20	-8.06	-8.83	52.80	Comments:No Change,,,,,,,
EW03R	1/11/2023 09:02	6.20	15.30	1.20	77.30	-11.87	-11.75	48.30	Comments:No Change,,,,,,,
EW03R	1/30/2023 11:30	6.70	14.60	1.50	77.20	-12.92	-13.05	42.20	Comments:Valve Wide Open,,,,,,,
EW03R	2/16/2023 12:33	7.60	17.10	1.10	74.20	-8.87	-8.85	49.50	Comments:No Change,,,,,,,
EW03R	2/27/2023 10:09	6.90	18.60	1.00	73.50	-8.66	-8.59	42.80	Comments:No Change,,,,,,,
EW03R	3/16/2023 14:37	3.80	13.00	3.20	80.00	-10.95	-10.94	67.00	Comments:No Change,,,,,,,
EW03R	3/28/2023 13:30	6.20	11.60	3.60	78.60	-6.45	-7.14	67.60	Comments:No Change,,,,,,,
EW03R	4/12/2023 11:47	6.40	15.70	4.20	73.70	-9.70	-9.73	63.80	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW03R	4/21/2023 10:17	3.00	15.10	5.20	76.70	-9.03	-8.94	52.90	Comments:No Change,,,,,,,
EW03R	5/5/2023 08:35	3.80	14.20	3.90	78.10	-7.82	-7.68	53.70	Comments:No Change,Valve Wide Open,,,,,,
EW03R	5/26/2023 14:01	4.70	12.10	4.50	78.70	-1.72	-7.07	90.90	Comments:No Change,,,,,,,
EW03R	6/1/2023 08:19	3.30	12.10	5.60	79.00	-6.92	-6.97	56.80	Comments:No Change,,,,,,,
EW03R	6/19/2023 09:26	2.20	9.20	8.00	80.60	-6.57	-6.47	0.00	Comments:No Change,,,,,,,
EW03R	7/11/2023 14:07	1.40	9.10	8.20	81.30	-7.20	-6.18	79.00	Comments:No Change,,,,,,,
EW03R	8/1/2023 08:08	2.00	10.50	8.30	79.20	-6.20	-6.17	69.70	Comments:No Change,,,,,,,
EW03R	8/23/2023 14:18	1.80	9.30	8.90	80.00	-5.69	-5.69	77.60	Comments:Valve Wide Open,,,,,,,
EW03R	8/30/2023 12:35	1.80	10.00	7.80	80.40	-4.56	-4.56	85.30	Comments:No Change,,,,,,,
EW03R	9/6/2023 11:38	1.90	10.20	7.80	80.10	-4.55	-4.56	77.10	Comments:No Change,,,,,,,
EW03R	9/22/2023 08:19	2.60	9.40	8.70	79.30	-4.69	-4.68	62.00	Comments:No Change,,,,,,,
EW03R	10/18/2023 16:18	2.40	9.50	8.30	79.80	-4.79	-4.79	67.50	Comments:No Change,,,,,,,
EW03R	10/31/2023 14:11	2.40	10.00	10.50	77.10	-5.21	-5.17	68.00	Comments:No Change,,,,,,,
EW03R	11/7/2023 13:32	2.90	9.90	10.70	76.50	-12.52	-12.08	60.80	Comments:Valve Wide Open,,,,,,,
EW03R	11/20/2023 11:29	1.30	10.10	9.50	79.10	-7.92	-7.92	49.10	Comments:Valve Wide Open,,,,,,,
EW03R	12/6/2023 08:37	5.30	13.40	5.40	75.90	-9.83	-11.14	65.00	Comments:No Change,,,,,,,
EW03R	12/19/2023 13:51	9.00	17.80	1.90	71.30	-9.69	-9.71	53.50	Comments:Valve Wide Open,,,,,,,
EW04R	1/11/2023 09:05	0.50	9.10	11.30	79.10	-2.29	-12.24	48.00	Comments:No Change,,,,,,,
EW04R	1/30/2023 11:32	0.90	8.40	12.30	78.40	-1.28	-13.58	43.60	Comments:Valve Wide Open,,,,,,,
EW04R	2/16/2023 12:36	0.30	8.60	12.20	78.90	-0.91	-8.75	50.80	Comments:No Change,,,,,,,
EW04R	2/27/2023 10:11	0.40	11.20	10.50	77.90	-3.45	-8.15	40.50	Comments:No Change,,,,,,,
EW04R	3/16/2023 14:40	0.20	8.80	11.90	79.10	-4.04	-10.67	65.60	Comments:No Change,,,,,,,
EW04R	3/28/2023 13:28	0.20	6.20	11.60	82.00	-5.09	-7.40	66.90	Comments:No Change,,,,,,,
EW04R	4/12/2023 11:49	0.40	8.80	11.90	78.90	-3.53	-9.86	64.80	Comments:No Change,,,,,,,
EW04R	4/21/2023 10:28	0.20	8.80	12.10	78.90	-3.00	-9.43	52.90	Comments:No Change,,,,,,,
EW04R	5/5/2023 08:45	0.30	7.30	11.20	81.20	-2.27	-7.89	50.80	Comments:No Change,,,,,,,
EW04R	5/26/2023 14:08	0.20	6.90	10.20	82.70	-3.81	-7.27	83.80	Comments:No Change,,,,,,,
EW04R	6/1/2023 08:23	0.30	8.90	9.70	81.10	-3.70	-7.81	56.60	Comments:No Change,,,,,,,
EW04R	6/19/2023 09:22	0.10	6.70	10.40	82.80	-3.46	-6.50	0.00	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW04R	7/11/2023 14:04	0.20	6.90	9.30	83.60	-2.53	-6.63	81.30	Comments:No Change,,,,,,,
EW04R	8/1/2023 08:17	0.40	12.10	6.20	81.30	-3.15	-6.78	71.30	Comments:No Change,,,,,,,
EW04R	8/23/2023 14:21	0.40	11.10	6.60	81.90	-2.07	-5.73	77.90	Comments:Valve Wide Open,,,,,,,
EW04R	8/30/2023 12:38	0.40	12.40	4.90	82.30	-3.54	-6.07	77.60	Comments:No Change,,,,,,,
EW04R	9/6/2023 11:43	0.20	13.10	4.50	82.20	-3.34	-4.73	80.90	Comments:No Change,,,,,,,
EW04R	9/22/2023 08:23	0.50	12.60	4.60	82.30	-4.30	-4.50	65.90	Comments:No Change,,,,,,,
EW04R	10/18/2023 16:22	0.40	13.10	5.60	80.90	-1.00	-3.83	68.60	Comments:No Change,Valve slightly Open,,,,,,
EW04R	10/31/2023 14:13	0.40	13.60	5.60	80.40	-2.46	-6.30	67.00	Comments:No Change,,,,,,,
EW04R	11/7/2023 13:34	0.50	9.10	10.80	79.60	-4.31	-13.02	59.70	Comments:Valve Wide Open,,,,,,,
EW04R	11/20/2023 11:32	0.30	9.80	12.80	77.10	-0.88	-8.28	51.20	Comments:Valve Wide Open,,,,,,,
EW04R	12/6/2023 08:42	0.50	10.30	9.50	79.70	-1.81	-0.06	65.60	Comments:Watered In,,,,,,,
EW04R	12/19/2023 13:53	0.60	8.80	11.40	79.20	-1.21	-10.10	52.70	Comments:Valve Wide Open,,,,,,,
EW05R	1/11/2023 09:07	0.10	5.20	16.40	78.30	-8.22	-11.82	47.70	Comments:No Change,,,,,,,
EW05R	1/30/2023 11:36	0.00	3.20	18.00	78.80	-8.85	-13.13	50.10	Comments:Valve Wide Open,,,,,,,
EW05R	2/16/2023 12:39	0.00	4.60	17.40	78.00	-6.29	-9.31	51.00	Comments:No Change,,,,,,,
EW05R	2/27/2023 10:15	0.00	4.70	17.10	78.20	-6.40	-8.69	42.00	Comments:No Change,,,,,,,
EW05R	3/16/2023 14:42	0.00	5.70	16.80	77.50	-7.81	-11.35	67.40	Comments:No Change,,,,,,,
EW05R	3/28/2023 13:25	0.00	3.40	17.00	79.60	-5.72	-7.75	71.50	Comments:No Change,,,,,,,
EW05R	4/12/2023 11:52	0.00	3.40	17.40	79.20	-6.93	-10.78	64.10	Comments:Decreased Flow,,,,,,,
EW05R	4/21/2023 10:30	0.00	4.30	16.30	79.40	-4.32	-8.22	50.70	Comments:No Change,,,,,,,
EW05R	5/5/2023 08:48	0.00	4.80	15.40	79.80	-3.40	-8.25	50.50	Comments:No Change,,,,,,,
EW05R	5/26/2023 14:11	0.00	4.60	14.40	81.00	-3.24	-7.62	81.60	Comments:No Change,,,,,,,
EW05R	6/1/2023 09:11	0.10	1.50	19.30	79.10	-2.91	-7.24	59.10	Comments:No Change,,,,,,,
EW05R	6/19/2023 09:18	0.00	3.80	14.20	82.00	-2.76	-6.93	0.00	Comments:No Change,,,,,,,
EW05R	7/11/2023 13:59	0.00	5.20	12.30	82.50	-2.56	-6.43	84.00	Comments:No Change,,,,,,,
EW05R	8/1/2023 08:21	0.20	4.50	10.30	85.00	-2.63	-6.38	73.10	Comments:No Change,,,,,,,
EW05R	8/23/2023 14:25	0.10	8.40	10.70	80.80	-2.17	-5.52	84.30	Comments:Valve Wide Open,,,,,,,
EW05R	8/30/2023 12:42	0.00	8.40	10.90	80.70	-3.26	-4.88	89.10	Comments:No Change,,,,,,,
EW05R	9/6/2023 11:46	0.00	8.50	10.80	80.70	-3.27	-4.80	90.60	Comments:No Change,,,,,,,

Table 2. LFG Extraction Well Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Init Static Pressure ("H2O)	System Pressure ("H20)	Init Temp (F)	Comments
EW05R	9/22/2023 08:27	0.00	8.30	11.40	80.30	-3.28	-3.25	67.80	Comments:No Change,,,,,,,
EW05R	10/18/2023 16:25	0.00	7.80	12.10	80.10	-1.42	-3.07	69.40	Comments:No Change,Valve slightly Open,,,,,,
EW05R	10/31/2023 14:15	0.00	7.70	14.20	78.10	-3.99	-6.47	69.00	Comments:No Change,,,,,,,
EW05R	11/7/2023 13:35	0.20	6.50	14.60	78.70	-8.50	-12.90	59.40	Comments:Valve Wide Open,,,,,,,
EW05R	11/20/2023 11:35	0.10	5.20	16.40	78.30	-5.54	-8.41	50.60	Comments:No Change,,,,,,,
EW05R	12/6/2023 08:44	0.90	6.70	13.20	79.20	-11.07	-13.05	65.50	Comments:No Change,,,,,,,
EW05R	12/19/2023 13:55	0.20	5.10	16.60	78.10	-6.86	-10.16	53.10	Comments:Valve Wide Open,,,,,,,

Table 3. LFG Sample Port and Blower Vent Station Monitoring Results January 2023 Through December 2023

Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	VOC (PPM)	Init Static Pressure ("H2O)	Init Flow (scfm)	Comments
Blower Inlet-4	1/11/2023 08:42	0.80	9.60	10.20	79.40	NA	-17.26	14.00	
Blower Inlet-4	1/30/2023 11:03	0.80	8.00	12.20	79.00	NA	-18.65	15.00	
Blower Inlet-4	2/16/2023 14:17	5.00	8.10	11.40	75.50	NA	-14.55	25.00	
Blower Inlet-4	2/27/2023 10:55	4.90	8.60	10.20	76.30	NA	-14.98	24.00	
Blower Inlet-4	3/16/2023 14:47	0.30	8.30	11.70	79.70	NA	-17.36	15.00	
Blower Inlet-4	3/28/2023 13:04	4.70	6.10	12.10	77.10	NA	-13.23	90.00	
Blower Inlet-4	4/12/2023 14:04	0.60	8.20	11.50	79.70	NA	-16.58	10.00	
Blower Inlet-4	4/21/2023 11:00	5.40	9.60	10.90	74.10	NA	-14.68	26.00	
Blower Inlet-4	5/5/2023 09:33	4.00	7.00	11.50	77.50	NA	-13.27	24.00	
Blower Inlet-4	5/26/2023 14:48	4.30	7.20	10.20	78.30	NA	-12.11	25.00	
Blower Inlet-4	6/1/2023 12:12	4.20	7.80	9.70	78.30	NA	-12.15	26.00	
Blower Inlet-4	6/19/2023 12:31	0.00	2.20	20.20	77.60	NA	-11.22	35.00	
Blower Inlet-4	7/11/2023 16:48	1.30	6.50	12.70	79.50	NA	-10.67	39.00	
Blower Inlet-4	8/1/2023 09:13	2.60	8.30	10.70	78.40	NA	-10.82	40.00	
Blower Inlet-4	8/23/2023 13:43	2.60	8.70	10.20	78.50	NA	-10.33	40.00	
Blower Inlet-4	8/30/2023 12:47	2.40	9.60	8.90	79.10	NA	-9.54	37.00	
Blower Inlet-4	9/6/2023 12:00	2.10	9.80	8.90	79.20	NA	-9.55	37.00	
Blower Inlet-4	9/22/2023 07:35	2.90	10.90	8.20	78.00	NA	-9.62	37.00	
Blower Inlet-4	10/18/2023 17:09	2.90	10.30	9.90	76.90	NA	-7.93	38.00	
Blower Inlet-4	10/31/2023 15:01	3.20	10.60	9.40	76.80	NA	-10.58	37.00	
Blower Inlet-4	11/7/2023 12:03	0.90	13.50	6.60	79.00	NA	-19.19	16.00	
Blower Inlet-4	11/20/2023 10:55	5.10	13.60	7.10	74.20	NA	-14.67	26.00	
Blower Inlet-4	12/6/2023 07:50	0.30	1.70	18.90	79.10	NA	-28.89	112.00	
Blower Inlet-4	12/19/2023 13:31	1.80	10.00	10.00	78.20	NA	-16.84	16.00	
Blower Inlet-6	1/11/2023 08:44	0.70	4.60	16.50	78.20	NA	-16.89	129.00	
Blower Inlet-6	1/30/2023 11:04	0.70	4.20	17.00	78.10	NA	-18.23	110.00	
Blower Inlet-6	2/16/2023 14:19	1.20	4.80	16.60	77.40	NA	-14.05	112.00	
Blower Inlet-6	2/27/2023 10:57	1.00	4.80	16.00	78.20	NA	-14.46	112.00	

Table 3. LFG Sample Port and Blower Vent Station Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	VOC (PPM)	Init Static Pressure ("H2O)	Init Flow (scfm)	Comments
Blower Inlet-6	3/16/2023 04:48	0.30	5.70	16.30	77.70	NA	-16.91	112.00	
Blower Inlet-6	3/28/2023 13:06	0.70	3.30	17.20	78.80	NA	-12.74	90.00	
Blower Inlet-6	4/12/2023 14:06	0.80	4.20	16.40	78.60	NA	-16.13	103.00	
Blower Inlet-6	4/21/2023 11:02	1.10	4.40	16.50	78.00	NA	-14.11	123.00	
Blower Inlet-6	5/5/2023 09:35	0.90	4.60	16.70	77.80	NA	-12.72	143.00	
Blower Inlet-6	5/26/2023 14:50	1.00	4.00	15.90	79.10	NA	-11.66	135.00	
Blower Inlet-6	6/1/2023 12:15	1.20	0.30	15.10	78.70	NA	-11.78	136.00	
Blower Inlet-6	6/19/2023 12:33	0.70	2.10	17.70	79.50	NA	-10.78	120.00	
Blower Inlet-6	7/11/2023 16:50	0.80	4.80	14.50	79.90	NA	-10.21	164.00	
Blower Inlet-6	8/1/2023 09:15	1.20	5.30	14.70	78.80	NA	-10.41	162.00	
Blower Inlet-6	8/23/2023 13:46	1.30	5.40	14.70	78.60	NA	-9.89	152.00	
Blower Inlet-6	8/30/2023 12:49	1.00	5.00	14.70	79.30	NA	-9.06	198.00	
Blower Inlet-6	9/6/2023 12:02	0.90	5.10	14.50	79.50	NA	-9.06	196.00	
Blower Inlet-6	9/22/2023 07:37	1.10	5.10	15.40	78.40	NA	-9.15	203.00	
Blower Inlet-6	10/18/2023 17:12	1.00	5.40	14.60	79.00	NA	-7.48	198.00	
Blower Inlet-6	10/31/2023 15:02	1.10	5.30	15.00	78.60	NA	-10.04	192.00	
Blower Inlet-6	11/7/2023 12:05	1.10	5.70	15.20	78.00	NA	-18.91	170.00	
Blower Inlet-6	11/20/2023 10:57	1.60	6.00	14.60	77.80	NA	-14.19	184.00	
Blower Inlet-6	12/6/2023 07:53	1.00	4.90	15.60	78.50	NA	-27.54	10.00	
Blower Inlet-6	12/19/2023 13:32	0.90	4.40	16.30	78.40	NA	-16.27	116.00	
Carbon Inlet	1/11/2023 08:46	0.70	4.60	16.40	78.30	5.20	17.78	143.00	
Carbon Inlet	1/30/2023 11:05	0.70	4.00	17.10	78.20	5.40	17.56	125.00	
Carbon Inlet	2/16/2023 14:22	1.50	4.60	16.20	77.70	5.60	19.82	137.00	
Carbon Inlet	2/27/2023 11:00	1.40	4.90	15.50	78.20	5.80	18.88	136.00	
Carbon Inlet	3/16/2023 14:50	0.30	3.60	16.90	79.20	6.00	17.83	127.00	
Carbon Inlet	3/28/2023 13:08	1.10	3.70	16.10	79.10	6.10	20.68	115.00	
Carbon Inlet	4/12/2023 14:07	0.80	3.90	16.50	78.80	6.50	18.53	113.00	
Carbon Inlet	4/21/2023 11:04	1.30	4.40	16.40	77.90	6.60	20.15	149.00	

Table 3. LFG Sample Port and Blower Vent Station Monitoring Results January 2023 Through December 2023
Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	VOC (PPM)	Init Static Pressure ("H2O)	Init Flow (scfm)	Comments
Carbon Inlet	5/5/2023 09:37	1.10	4.30	16.30	78.30	9.10	20.45	167.00	
Carbon Inlet	5/26/2023 14:51	1.20	3.80	15.50	79.50	9.20	20.68	160.00	
Carbon Inlet	6/1/2023 11:07	1.30	4.00	15.40	79.30	10.70	20.80	162.00	
Carbon Inlet	6/1/2023 11:49	NA	NA	NA	NA	3.00	NA	NA	
Carbon Inlet	6/19/2023 12:37	1.10	4.30	15.20	79.40	3.10	20.57	155.00	
Carbon Inlet	7/11/2023 16:52	1.10	5.10	14.20	79.60	3.20	20.91	203.00	
Carbon Inlet	8/1/2023 09:18	1.40	5.80	13.80	79.00	3.10	21.14	202.00	
Carbon Inlet	8/23/2023 13:49	1.50	5.70	14.20	78.60	3.20	21.17	192.00	
Carbon Inlet	8/30/2023 12:51	1.10	5.40	14.10	79.40	3.30	21.96	235.00	
Carbon Inlet	9/6/2023 12:04	1.00	5.60	13.90	79.50	3.30	22.00	233.00	
Carbon Inlet	9/22/2023 07:44	1.50	6.50	13.70	78.30	3.30	22.06	240.00	
Carbon Inlet	10/18/2023 17:18	1.20	6.10	14.00	78.70	3.40	23.90	236.00	
Carbon Inlet	10/31/2023 15:04	1.30	5.90	14.40	78.40	3.50	22.19	229.00	
Carbon Inlet	11/7/2023 12:06	1.10	5.90	14.90	78.10	3.50	16.00	186.00	
Carbon Inlet	11/20/2023 10:58	1.80	6.20	14.60	77.40	3.60	19.89	210.00	
Carbon Inlet	12/6/2023 07:57	0.90	4.90	15.50	78.70	4.30	7.44	122.00	
Carbon Inlet	12/19/2023 13:33	0.80	4.30	16.60	78.30	4.40	17.57	132.00	
Carbon Middle	1/11/2023 08:47	0.70	4.60	16.50	78.20	0.00	11.59	NA	
Carbon Middle	1/30/2023 11:06	0.70	4.10	17.10	78.10	0.00	11.51	NA	
Carbon Middle	2/16/2023 14:24	1.50	4.60	16.20	77.70	0.00	13.12	NA	
Carbon Middle	2/27/2023 11:01	1.40	5.00	15.50	78.10	0.00	12.57	NA	
Carbon Middle	3/16/2023 14:51	0.40	3.90	16.80	78.90	0.00	11.74	NA	
Carbon Middle	3/28/2023 13:09	1.20	4.10	16.00	78.70	0.00	13.52	NA	
Carbon Middle	4/12/2023 14:09	0.80	3.80	16.60	78.80	0.00	12.17	NA	
Carbon Middle	4/21/2023 11:05	1.20	4.30	16.50	78.00	0.00	12.88	NA	
Carbon Middle	5/5/2023 09:38	1.10	4.40	16.60	77.90	0.00	13.41	NA	
Carbon Middle	5/26/2023 14:52	1.20	4.00	15.60	79.20	0.00	13.58	NA	
Carbon Middle	6/1/2023 11:08	1.40	4.20	15.30	79.10	0.00	12.48	NA	

Table 3. LFG Sample Port and Blower Vent Station Monitoring Results January 2023 Through December 2023

Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	VOC (PPM)	Init Static Pressure ("H2O)	Init Flow (scfm)	Comments
Carbon Middle	6/1/2023 11:56	NA	NA	NA	NA	0.00	NA	NA	
Carbon Middle	6/19/2023 12:38	1.00	4.60	15.10	79.30	0.00	13.37	NA	
Carbon Middle	7/11/2023 16:53	1.20	5.30	14.30	79.20	0.00	13.74	NA	
Carbon Middle	8/1/2023 09:19	1.40	5.90	13.80	78.90	0.00	5.83	NA	
Carbon Middle	8/23/2023 13:50	1.40	5.70	14.20	78.70	0.00	13.67	NA	
Carbon Middle	8/30/2023 12:52	1.20	5.40	14.10	79.30	0.00	14.13	NA	
Carbon Middle	9/6/2023 12:05	1.00	5.70	13.90	79.40	0.00	13.54	NA	
Carbon Middle	9/22/2023 07:46	1.40	6.30	13.70	78.60	0.00	13.76	NA	
Carbon Middle	10/18/2023 17:19	1.20	6.10	14.20	78.50	0.00	16.11	NA	
Carbon Middle	10/31/2023 15:05	1.30	5.90	14.50	78.30	0.00	14.19	NA	
Carbon Middle	11/7/2023 12:07	1.10	6.10	14.90	77.90	0.00	10.11	NA	
Carbon Middle	11/20/2023 10:59	1.80	6.30	14.50	77.40	0.00	12.76	NA	
Carbon Middle	12/6/2023 07:58	1.00	4.90	15.60	78.50	0.00	4.43	NA	
Carbon Middle	12/19/2023 13:34	0.80	4.30	16.70	78.20	0.00	11.25	NA	
Carbon Outlet	1/11/2023 08:49	0.70	4.60	16.50	78.20	0.00	4.56	NA	
Carbon Outlet	1/30/2023 11:09	0.60	4.00	17.10	78.30	0.00	4.57	NA	
Carbon Outlet	2/16/2023 14:25	1.50	4.40	16.30	77.80	0.00	5.15	NA	
Carbon Outlet	2/27/2023 11:06	1.40	5.00	15.50	78.10	0.00	5.10	NA	
Carbon Outlet	3/16/2023 14:53	0.40	3.90	16.80	78.90	0.00	4.59	NA	
Carbon Outlet	3/28/2023 13:10	1.20	4.10	16.10	78.60	0.00	5.31	NA	
Carbon Outlet	4/12/2023 14:10	0.80	3.80	16.50	78.90	0.00	4.82	NA	
Carbon Outlet	4/21/2023 11:06	1.20	4.40	16.50	77.90	0.00	3.48	NA	
Carbon Outlet	5/5/2023 09:39	1.00	4.30	16.70	78.00	0.00	5.34	NA	
Carbon Outlet	5/26/2023 14:54	1.30	4.00	15.60	79.10	0.00	5.27	NA	
Carbon Outlet	6/1/2023 11:10	1.40	4.50	15.30	78.80	0.00	5.39	NA	
Carbon Outlet	6/1/2023 11:57	NA	NA	NA	NA	0.00	NA	NA	
Carbon Outlet	6/19/2023 12:40	1.10	4.80	15.10	79.00	0.00	5.93	NA	
Carbon Outlet	7/11/2023 16:55	1.20	5.30	14.30	79.20	0.00	-0.02	NA	

Table 3. LFG Sample Port and Blower Vent Station Monitoring Results January 2023 Through December 2023

Eastgate Area Properties Landfill

Name	Date Time	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	VOC (PPM)	Init Static Pressure ("H2O)	Init Flow (scfm)	Comments
Carbon Outlet	8/1/2023 09:21	1.40	5.70	14.20	78.70	0.00	-0.05	NA	
Carbon Outlet	8/23/2023 13:54	1.40	5.70	14.20	78.70	0.00	5.79	NA	
Carbon Outlet	8/30/2023 12:54	1.20	5.40	14.10	79.30	0.00	6.06	NA	
Carbon Outlet	9/6/2023 12:06	1.00	5.70	13.80	79.50	0.00	5.83	NA	
Carbon Outlet	9/22/2023 07:48	1.50	6.30	13.70	78.50	0.00	6.06	NA	
Carbon Outlet	10/18/2023 17:20	1.20	6.10	14.00	78.70	0.00	7.96	NA	
Carbon Outlet	10/31/2023 15:07	1.30	5.90	14.40	78.40	0.00	6.07	NA	
Carbon Outlet	11/7/2023 12:08	1.20	6.10	14.90	77.80	0.00	4.17	NA	
Carbon Outlet	11/20/2023 11:01	1.80	6.30	14.60	77.30	0.00	5.35	NA	
Carbon Outlet	12/6/2023 08:00	1.00	5.00	15.70	78.30	0.00	1.23	NA	
Carbon Outlet	12/19/23 13:36	0.80	4.30	16.70	78.20	0.00	4.64	NA	

NA=Not Applicable

Table 4. LFG Blower Vent Station Operational Runtime Data
January 2023 through December 2023
Eastgate Area Properties Landfill

Month	Manual or Automatic Operation	Total Monthly Runtime (Hours)	Comments
January 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
February 28, 2023	Automatic	336	Operated 28 days for 12 hours each day
March 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
April 30, 2023	Automatic	360	Operated 30 days for 12 hours each day
May 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
June 30, 2023	Automatic	360	Operated 30 days for 12 hours each day
July 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
August 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
September 30, 2023	Automatic	360	Operated 30 days for 12 hours each day
October 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
November 30, 2023	Automatic	360	Operated 30 days for 12 hours each day
December 31, 2023	Automatic	372	Operated 31 days for 12 hours each day
	Total Operational Runtime for 2023:	**4380.00**	

FINAL ANNUAL GROUNDWATER MONITORING REPORT

Former Eastgate Landfill
Bellevue, Washington

September 25, 2023

Prepared for

The Boeing Company
Seattle, Washington

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Annual Groundwater Monitoring Report
Former Eastgate Landfill
Bellevue, Washington

This document was prepared by, or under the direct supervision of, the technical professionals noted below.

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LANDAU ASSOCIATES

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
Advanta	Advanta Office Holdings
BCF	bioaccumulation factor
bgs	below ground surface
Boeing	The Boeing Company
City	City of Bellevue
COC	chain of custody
COD	chemical oxygen demand
CSF	cancer slope factor
Ecology	Washington State Department of Ecology
EPA	US Environmental Protection Agency
ft	feet
I-90	Interstate 90
Landau	Landau Associates, Inc.
LLI	Eurofins Lancaster Laboratories Environmental
MCL	maximum contaminant level
mg/L	milligrams per liter
NFA	no further action
PVC	polyvinylchloride
Schnitzer	Schnitzer Northwest LLC
SDWA	Safe Drinking Water Act
Site	former Eastgate Landfill
TOC	total organic carbon
VCP	Voluntary Cleanup Program
VOCs	volatile organic compounds

1.0 INTRODUCTION

On behalf of The Boeing Company (Boeing), this report summarizes the results of groundwater monitoring in 2023 at the former Eastgate Landfill (the Site). The Site is located within and adjacent to the Interstate 90 (I 90) Business Park in Bellevue, Washington. The location of the Site is shown on Figure 1, and the approximate area of the former landfill is shown on Figure 2. This monitoring report includes a description of groundwater monitoring activities conducted in 2023, an evaluation of the data, and recommendations for continued interim groundwater monitoring.

1.1 Background

The former Eastgate Landfill was operated by King County from about 1951 until 1964. After closure of the landfill, Cabot, Cabot, & Forbes developed a portion of the property to the east of the former landfill as the I-90 Business Park. In about 1980, Boeing purchased developed and undeveloped property at the I-90 Business Park, as well as most of the 9.6-acre former landfill. In April 2003, the City of Bellevue (City) purchased approximately 16 acres of the undeveloped portion of the business park property from Boeing, as well as a majority of the former landfill. In December 2005, Schnitzer Northwest LLC (Schnitzer) purchased approximately 13.3 acres of the undeveloped portion of the business park property, as well as a small portion of the southern edge of the landfill. Schnitzer constructed three office buildings in 2007–2008 to the south of the former landfill; the property was sold to Advanta Office Holdings (Advanta) in 2010. Current ownership of the landfill is split between three owners: Boeing, the City, and Advanta.

Closure activities were performed at the landfill by King County, the City, and Boeing and included construction of a cover system, a groundwater monitoring network, a leachate collection system, and a landfill gas collection and control system. Under the 2003 purchase and sale agreement for the property between Boeing and the City, the City agreed to assume operation of the landfill gas extraction system, and Boeing agreed to retain responsibility for continued groundwater monitoring activities at the Site, including groundwater monitoring wells located on property that is now owned by Advanta. These closure activities were conducted with oversight from the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP; VCP Site No. NW0471) through October 2019. Ecology terminated the VCP agreement in October 2019 as activities at the Site did not satisfy Ecology's VCP participation requirement of active cleanup; however, closure activities have continued in accordance with the applicable work plans since termination of the VCP agreement.

Groundwater monitoring activities at the former landfill began in 2000 and included installation of monitoring wells and collection and analysis of groundwater samples on a quarterly, semiannual, or annual groundwater monitoring schedule. In 2000, Boeing requested a no-further-action (NFA) determination from Ecology for the Boeing-owned portion of the landfill. Based on requests from Ecology in a response to the NFA request, six monitoring wells (EL-101 through EL-106) were installed around the perimeter of the landfill in July 2000, and four quarterly groundwater monitoring events were conducted in 2000–2001. Results for the four quarterly groundwater monitoring events were submitted to Ecology (Landau Associates, Inc. [Landau] 2001). Based on those results, Ecology agreed to the initiation of a groundwater compliance monitoring program, and a work plan for the groundwater compliance monitoring program was prepared and submitted to Ecology in March 2002 (Landau 2002). The monitoring program outlined in the Ecology-approved work plan included 1 year of semiannual monitoring (completed in 2002) followed by annual groundwater monitoring (ongoing). Monitoring will continue until groundwater cleanup levels are met for four consecutive sampling events or a change in frequency is agreed to by Ecology. The work plan also allows for reduction in the number of wells sampled, and lists of constituents analyzed for, if a constituent or group of constituents is not detected or is detected at concentrations less than or equal to the groundwater cleanup levels for four consecutive sampling events at a particular well.

In 2003, Ecology issued an NFA determination under Ecology's VCP for soil and groundwater at the former landfill Site (Ecology 2003), but required continued annual performance groundwater compliance monitoring, in accordance with the work plan (Landau 2002). A requirement was also included for confirmational groundwater compliance monitoring, which is to be performed after the conclusion of performance groundwater compliance monitoring.

In 2006, Ecology determined that further action was required to refine the conceptual model of groundwater flow beneath the Site and to monitor the impacts on groundwater, if any, due to the development of the office complex by Schnitzer (Ecology 2006). Boeing prepared a work plan (Landau 2006) to address the further action requirements. The work plan included installation of a piezometer north of the landfill and modification to the frequency and locations of groundwater elevation monitoring. Also, because of construction activities related to development of the Schnitzer-owned portion of the landfill, the work plan included decommissioning and replacement of wells EL 101 and EL-106. Boeing implemented the replacement of two monitoring wells, installation of the new piezometer (EL-107), and adjustments to groundwater compliance monitoring in 2007.

This report describes performance groundwater compliance monitoring performed in 2023. For clarity, this stage of monitoring is defined as interim groundwater monitoring in this report. The results for the interim groundwater monitoring conducted since 2002 are documented in previous annual reports.

1.2 Site Description

The former Eastgate Landfill consists of an approximately 9.6-acre area located adjacent to the I-90 Business Park in Bellevue, Washington. Several office buildings are located in the surrounding business park; however, no buildings have been constructed on the former landfill. In 2008, an office building complex (including three buildings: designated buildings A, B, and C) was constructed by Schnitzer adjacent to the southern end of the landfill, which included low-permeability surfaces (asphalt roadways and parking areas) over a small portion of the south end of the landfill.

The landfill is capped with soil and has leachate and active landfill gas collection systems in place, along with landfill gas and groundwater monitoring networks. Leachate is collected on the north side of the landfill in the French Drain (located on City-owned property) and is discharged to the sanitary sewer. Six monitoring wells (EL-101R, EL 102, EL-103, EL 104, EL-105, and EL-106R), ranging in depth from 26.5 to 75 feet (ft) below ground surface (bgs), are located along the perimeter of the landfill. A piezometer, EL-107, is located approximately 450 ft north of the landfill on City-owned property. Monitoring well and piezometer locations are shown on Figure 2. Landfill gas extraction wells are also located within the limits of the solid waste landfill and landfill gas monitoring wells are located along the perimeter of the landfill, as shown on Figure 2.

Previous investigations identified two aquifers below the Site: a shallow perched aquifer and a deeper intermediate aquifer. The shallow perched aquifer is encountered in the solid waste and alluvial materials and, in some locations, the glacial till underlying the fill and alluvial materials. The deeper intermediate aquifer (advance outwash aquifer) is encountered in the advance outwash. The Site monitoring wells and piezometer are screened in the advance outwash aquifer.

2.0 GROUNDWATER MONITORING ACTIVITIES

This section describes annual interim groundwater monitoring event activities conducted on April 28, 2023. Monitoring was conducted in accordance with the planned scope for interim groundwater monitoring presented in the 2022 annual report (Landau 2022); onsite monitoring activities were completed by Landau under Boeing's regional groundwater monitoring contract.

2.1 Water Level Measurements

Static water levels were measured prior to groundwater sampling at each of the six monitoring wells (EL-101R, EL-102, EL-103, EL 104, EL-105, and EL-106R); at piezometer EL-107; and at stormwater Pond A. The depth to groundwater was measured to the nearest 0.01 ft from the top of the north side of the polyvinyl chloride (PVC) well casing to groundwater using an electric water level indicator. Depth to water measurements at each well and the piezometer were converted to groundwater elevations using surveyed elevations for the top of the PVC casing. At Pond A, the water level was measured utilizing the staff gauge installed in the pond. This measurement was converted to a surface water elevation using the surveyed elevation for the top of the staff gauge. Groundwater and surface water elevations are listed in Table 1. Groundwater and surface water elevations, and groundwater elevation contours, are shown on Figure 3.

2.2 Groundwater Sampling

Groundwater monitoring was conducted in accordance with the *Confirmational Groundwater Sampling Work Plan* (Landau 2002), the *Further Action Groundwater Monitoring Work Plan* (Landau 2006), and the subsequent scope reduction described in the 2010 Annual Groundwater Monitoring report (Landau 2011). Groundwater samples were collected from wells EL-103, EL-105, and EL-106R, and a surface water sample was collected from the French Drain. Dedicated bladder pumps were used to purge and collect groundwater samples from EL-103 and EL-105; a disposable bailer was used to purge and collect a groundwater sample from EL-106R. The surface water sample collected from the French Drain was collected using a peristaltic pump. Samples for dissolved metals analysis (iron, manganese, and arsenic) were field-filtered using a 0.45 micron filter.

The groundwater samples and the surface water sample were collected in appropriate containers, labeled, logged on a chain-of-custody (COC) document, and kept on ice until delivered to the laboratory. Sample containers, preservatives, and holding times were appropriate for the types of samples collected and the specified analytical methods. Sample custody and documentation in the field and during transportation to the laboratory was conducted in general conformance with the procedures described in the *Confirmational Groundwater Monitoring Work Plan* (Landau 2002).

One blind field duplicate sample, EL-100, was collected at well EL-103. A field trip blank was provided by the analytical laboratory, stored with the collected samples, and analyzed for volatile organic compounds (VOCs).

2.3 Groundwater Analysis

In accordance with the current approved scope of interim groundwater monitoring (Landau 2006) and the scope reductions described in the 2010 *Annual Groundwater Monitoring Report* (Landau 2011), chemical analysis of the samples collected at the three monitoring wells consisted of the following:

- VOCs by US Environmental Protection Agency (EPA) Method 8260C at well EL-103
- Dissolved metals (iron and manganese) by EPA Method 6010B at wells EL-103, EL 105, and EL 106R
- Dissolved metals (arsenic) by EPA Method 200.8 at wells EL-103 and EL-105.

The surface water sample collected from the French Drain was analyzed for the following compounds:

- VOCs by EPA Method 8260C
- Dissolved metals (iron, manganese) by EPA Method 6010B
- Chloride by EPA Method 300.0
- N-Ammonia by Standard Method SM20 4500D
- N-Nitrate calculated
- N-Nitrite by EPA Method 353.2
- Nitrate + Nitrite by EPA Method 353.2
- Sulfate by EPA Method 300.0
- Total organic carbon (TOC) by Standard Method SM20 5310C
- Chemical oxygen demand (COD) by EPA Method 410.4.

3.0 GROUNDWATER MONITORING RESULTS

This section presents the results of the 2023 interim groundwater monitoring event, which consists of groundwater level data and groundwater quality data.

3.1 Groundwater Levels

Groundwater elevations calculated using water level measurements collected from each monitoring well and piezometer and a surface water level measurement at the staff gauge in Pond A in April 2023 were used to evaluate groundwater flow direction in the advance outwash aquifer. The calculated groundwater elevations are presented in Table 1. Groundwater elevation contours were plotted using the calculated groundwater elevations and are shown on Figure 3. The contours indicate the groundwater at the landfill has a generally easterly flow, which is consistent with flow directions previously observed at the landfill. Monitoring well EL-105 is located directly hydraulically downgradient of the former landfill; wells EL-103 and EL-106R are also hydraulically downgradient of the outer boundaries of the landfill.

3.2 Groundwater Quality

Eurofins Lancaster Laboratories Environmental (LLI) located in Lancaster, Pennsylvania, conducted the analyses of the groundwater samples using the analytical procedures referenced in Section 2.3. Following receipt of the analytical results, the data was validated as described in Section 4.2 of the *Confirmational Groundwater Monitoring Work Plan* (Landau 2002). A summary of the analytical results (with data qualifiers added as appropriate) for the 2023 annual sampling event and historical events at each well are provided in Table 2. Concentrations of detected constituents in the groundwater and surface water samples for the last four sampling events (April 2020, April 2021, April 2022, and April 2023) at wells EL-103, EL-105, EL-106R, and the French Drain were tabulated and are presented in Table 3. The laboratory data reports for the 2023 sampling event are provided in Appendix A. A data quality evaluation for the 2023 sampling event is provided in Appendix B.

The groundwater analytical results for the 2023 annual sampling event are consistent with previous sampling events. At well EL-103, and at downgradient wells EL-105 and EL-106R, analytical results indicate the presence of dissolved iron and dissolved manganese at concentrations greater than the cleanup levels of 0.3 milligrams per liter (mg/L), and 0.05 mg/L, respectively. The dissolved iron concentration at well EL 103 was 28.1 mg/L, and the concentrations were 2.48 mg/L and 3.55 mg/L at downgradient wells EL-105 and EL-106R, respectively. Dissolved manganese concentrations at all three wells ranged between 2.48 mg/L and 9.07 mg/L. Dissolved arsenic was detected at EL-103 (0.0316 mg/L) which is greater than the cleanup level of 0.004 mg/L, but at downgradient well EL-105 dissolved arsenic was not detected at a concentration greater than the laboratory reporting limit of 0.00206 mg/L, which is less than the cleanup level. At EL-103, the detected concentration of 1,4 dichlorobenzene (2.08 micrograms per liter [μg/L]) was slightly greater than the cleanup level (1.8 μg/L); concentrations have ranged between 1.66 μg/L and 2.40 μg/L at this well during the past four annual monitoring events.

At the French Drain, dissolved iron, dissolved manganese, and 1,4-dichlorobenzene were detected at concentrations above cleanup levels, which is also consistent with previous results. Concentrations of conventional analyses were all below the respective cleanup levels and were also consistent with previous results.

4.0 SCOPE OF CONTINUED INTERIM GROUNDWATER MONITORING

Prior to initiating confirmational groundwater compliance monitoring sampling (which will include analysis for a larger list of constituents), interim groundwater monitoring is being conducted on an annual schedule. Analytical results from this interim monitoring event are used to evaluate the likelihood of achieving the confirmational groundwater cleanup levels and to adjust the scope of continued monitoring events, as needed.

As shown in Table 3, dissolved arsenic, iron, and manganese have been detected at concentrations above the cleanup level at each location (EL-103, EL-105, and EL-106R) where they have been monitored during the last four annual monitoring events. Dissolved arsenic has also been detected at concentrations above the cleanup level at EL 103 during the last four monitoring events, and at EL-105 during one of the last four monitoring events. Although arsenic cleanup levels should be re-evaluated because detections may be representative of naturally occurring background concentrations, arsenic remains elevated at EL-103 above 10 µg/L.[1] At well EL-103, 1,4-dichlorobenzene has also been detected above the cleanup level during two of the last four monitoring events. These results suggest that achieving confirmational groundwater cleanup levels is unlikely at this time. As a result, groundwater monitoring at the landfill will continue as an interim program for 2023; the analyte list recommended for 2024 will remain unchanged.

The scope for the 2024 annual interim groundwater monitoring is summarized below and is presented in Table 4:

- Groundwater elevation measurement at monitoring wells EL-101R, EL-102, EL 103, EL 104, EL 105, and EL-106R, and at piezometer EL-107
- Surface water elevation measurement at Pond A
- Chemical analysis as follows:
  - EL-103 for VOCs and dissolved metals (arsenic, iron, and manganese)
  - EL-105 for dissolved metals (arsenic, iron, and manganese)
  - EL-106R for dissolved metals (iron and manganese)
  - French Drain for VOCs, dissolved metals (iron and manganese), and conventional parameters.

The scope of groundwater monitoring will be re-evaluated following the 2024 sampling event.

[1] The Site-specific cleanup level for arsenic is 4.0 µg/L. Ecology reverted to a surface water criterion for arsenic of 10 µg/L, which is the Safe Drinking Water Act (SDWA) maximum contaminant level (MCL) for groundwater (Ecology 2016). This was done for three primary reasons: 1) there are elevated natural background concentrations of arsenic in groundwater in many areas of Washington State (Ecology 2016, page 70); 2) EPA has acknowledged that the cancer slope factor (CSF) for arsenic is unreliable (Ecology 2016, page 73); and 3) EPA's bioaccumulation factor (BCF) for arsenic should be based on inorganic arsenic (the toxic portion) rather than total arsenic (Ecology 2016, page 73).

5.0 SCHEDULE AND REPORTING

The annual groundwater monitoring will be conducted in April or May 2024 and, in accordance with the *Further Action Groundwater Monitoring Work Plan* (Landau 2006), annual groundwater monitoring activities and results will be documented in a report to be retained by Boeing.

6.0 USE OF THIS REPORT

This annual report has been prepared for the exclusive use of Boeing for specific application to the former Eastgate Landfill. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

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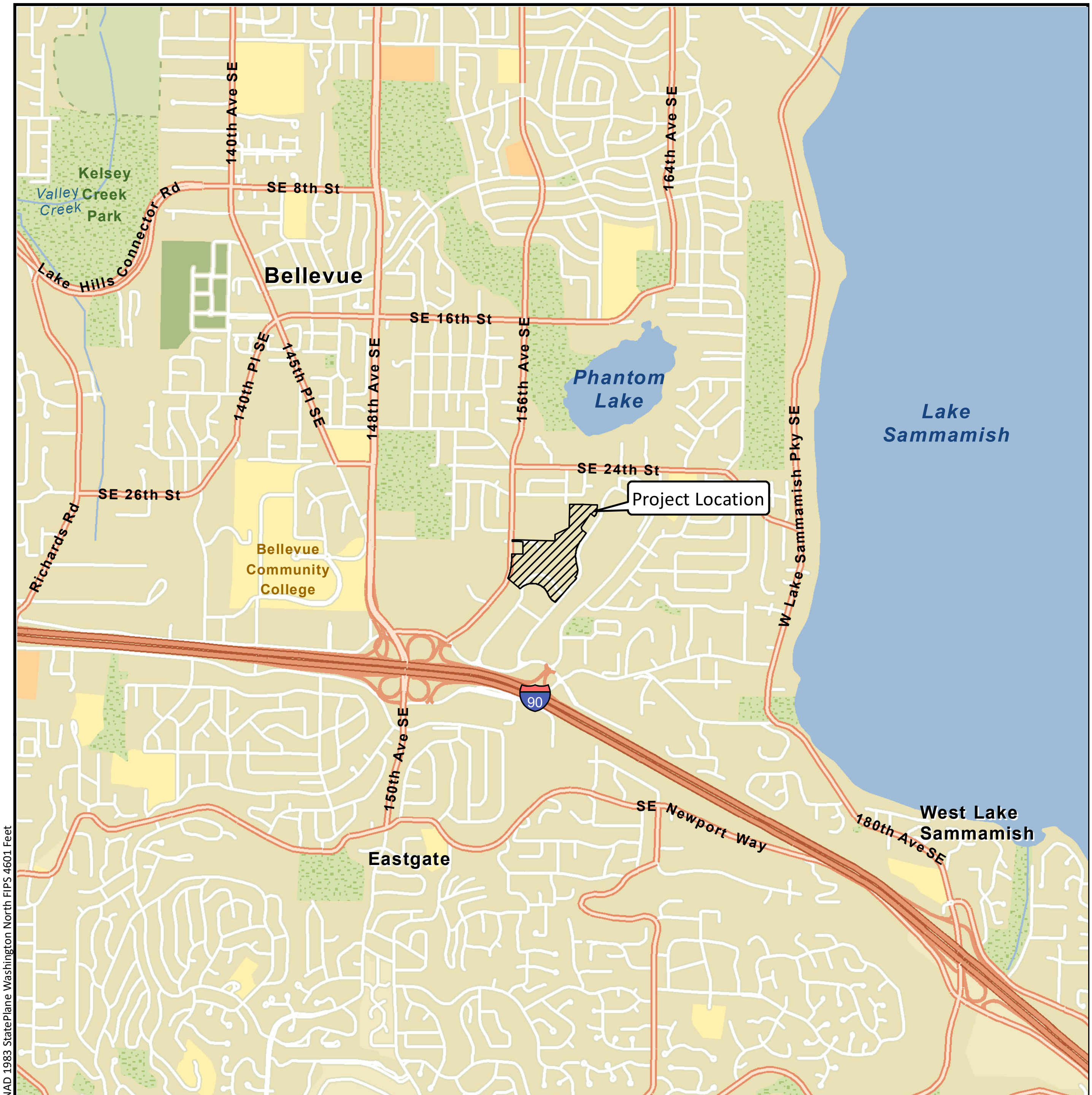

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Data Source: Esri.

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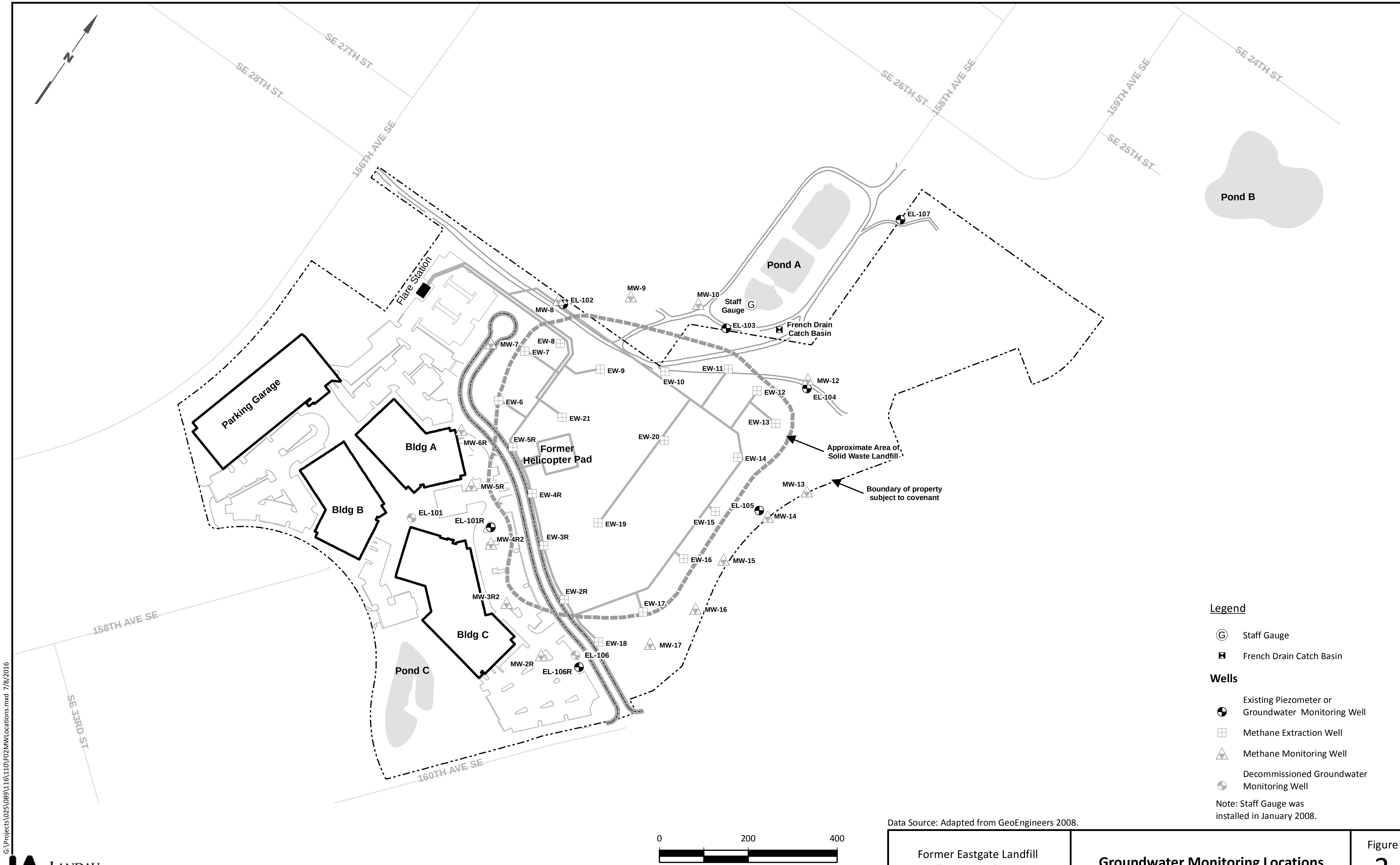
Former Eastgate Landfill Bellevue, Washington	**Vicinity Map**	Figure 1



Data Source: Adapted from GeoEngineers 2008.

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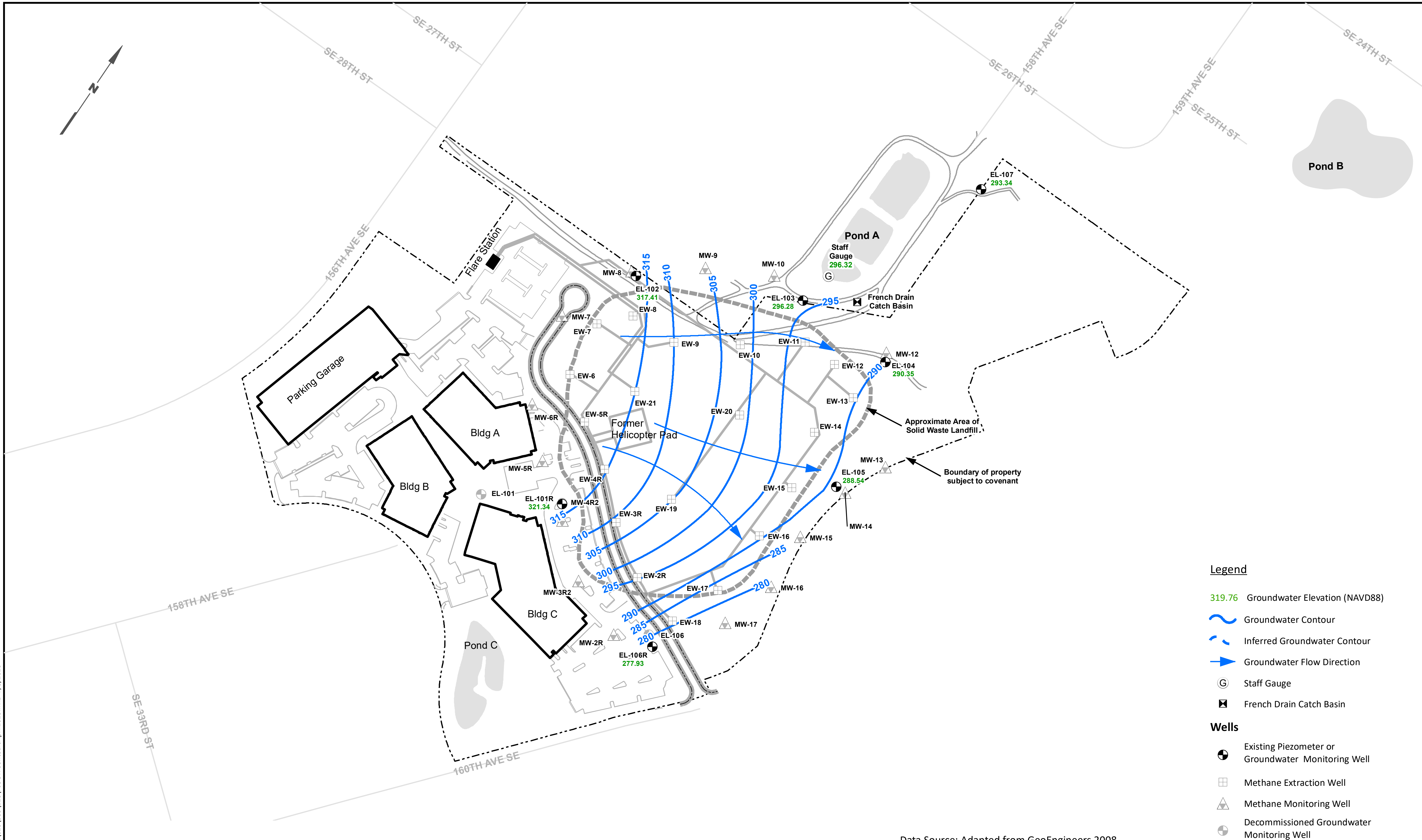
Former Eastgate Landfill Bellevue, Washington	**Groundwater Monitoring Locations**	Figure 2



Data Source: Adapted from GeoEngineers 2008.

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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Former Eastgate Landfill Bellevue, Washington	**Groundwater Elevations Contours** **April 28, 2023**	Figure 3

Table 1
Summary of Groundwater Elevations
Former Eastgate Landfill

Well Name	Top of Casing Elevation	Water Elevation																				
		3/18/2002 Water Elevation	8/28/2002 Water Elevation	4/17/2003 Water Elevation	4/8/2004 Water Elevation	5/9/2005 Water Elevation	5/9/2006 Water Elevation	10/9/2007 Water Elevation	1/29/2008 Water Elevation	4/10/2008 Water Elevation	7/9/2008 Water Elevation	10/21/2008 Water Elevation	2/13/2009 Water Elevation	6/24/2009 Water Elevation	9/24/2009 Water Elevation	11/11/2009 Water Elevation	5/13/2010 Water Elevation	5/23/2011 Water Elevation	5/8/2012 Water Elevation	5/13/2013 Water Elevation	5/13/2014 Water Elevation	5/7/2015 Water Elevation
EL-101	349.56	NM	322.42	317.05	326.06	323.81	326.21	-- (a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EL-101R	347.20	--	--	--	--	--	--	317.04	319.61	--	318.52	319.66	302.02	317.74	317.97	318.30	319.02	320.94	320.30	319.83	320.17	319.76
EL-102	352.83	315.41	318.13	313.81	316.63	313.42	317.01	316.01	313.35	314.38	315.03	313.72	313.45	315.06	313.03	311.83	317.16	322.38	317.22	319.85	317.34	318.34
EL-103	310.07	293.49	292.90	293.47	293.94	294.90	295.43	295.05	295.98	296.03	294.64	294.65	295.33	295.24	294.49	294.85	295.48	296.47	296.68	296.05	296.11	295.86
EL-104	345.33	NM	289.50	288.55	289.33	288.60	289.68	289.51	289.26	289.45	289.42	288.52	288.69	288.95	288.42	288.11	289.32	291.13	290.66	290.53	289.95	290.29
EL-105	343.69	287.25	287.39	286.91	287.48	286.65	287.87	287.47	287.21	287.45	287.19	286.59	286.79	287.05	286.49	286.14	287.47	289.27	288.56	288.59	288.14	288.44
EL-106	345.55	288.93	278.77	278.89	279.15	277.99	279.68	-- (a)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EL-106R	346.17	--	--	--	--	--	--	276.78	276.48	276.73	276.66	276.38	276.41	276.71	276.37	276.25	277.23	278.78	277.76	277.95	277.73	277.84
EL-107	313.43	--	--	--	--	--	--	291.90	292.20	292.74	292.11	291.51	291.39	291.96	291.15	291.05	292.54	292.95	292.92	292.80	292.28	293.24
Pond A/Staff Gauge (b)	301.52	--	--	--	--	--	--	NM	296.30	296.52	296.20	296.22	296.24	296.20	296.18	296.31	296.24	296.23	295.92	296.07	296.02	296.03

Table 1
Summary of Groundwater Elevations
Former Eastgate Landfill

Well Name	Top of Casing Elevation	Water Elevation 5/13/2016 Water Elevation	5/4/2017 Water Elevation	4/26/2018 Water Elevation	4/24/2019 Water Elevation	4/28/2020 Water Elevation	4/20/2021 Water Elevation	4/27/2022 Water Elevation	4/28/2023 Water Elevation
EL-101	349.56	--	--	--	--	--	--	--	--
EL-101R	347.20	320.11	322.51	321.05	318.36	318.32	318.31	318.39	321.34
EL-102	352.83	321.16	323.60	321.31	314.22	313.71	314.87	317.79	317.41
EL-103	310.07	295.85	296.97	296.92	295.60	295.63	296.14	296.39	296.28
EL-104	345.33	290.83	293.10	291.45	289.26	289.25	289.89	290.84	290.35
EL-105	343.69	289.02	290.36	289.53	287.52	287.60	288.28	289.12	288.54
EL-106	345.55	--	--	--	--	--	--	--	--
EL-106R	346.17	278.48	279.54	278.61	276.97	277.38	277.71	278.36	277.93
EL-107	313.43	293.57	295.10	294.29	292.33	292.33	293.06	293.82	293.34
Pond A/Staff Gauge (b)	301.52	295.99	296.06	296.02	296.02	296.06	296.36	296.33	296.32

Abbreviations and Acronyms:
NM = not measured.
-- = location does not exist on this date

Notes:
(a) Monitoring wells EL-101 and EL-106 were abandoned in 2007.
(b) Staff Gauge Top of Casing Elevation is the surveyed elevation of the top of the staff guage, which measures 6.4 feet in length.

Horizontal Datum: NAD 83(91)
Vertical Datum: NAVD 88
To convert elevation shown herein to NGVD 29 Datum subtract 3.48 feet.

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																
	EL-103 BY07C BY07 7/28/2000	EL-103-Dup BY07G BY07 7/28/2000	EL-103 CO72D CO72 12/13/2000	EL-103-SDup B0L0365-02 B0L0365 12/13/2000	EL-103 CX61C CX61 3/29/2001	EL-103 DG04C DG04 6/14/2001	EL-103-SDup DG04G DG04 6/14/2001	EL-103 EE52C EE52 3/18/2002	EL-103 ER96C ER96 8/28/2002	EL-103 FK21D FK21 4/17/2003	EL-103 GN17B GN17 4/8/2004	EL-103-DUP GN17C GN17 4/8/2004	EL-103 IA68D IA68 5/9/2005	EL-103 JI58D JI58 5/9/2006	EL-103-DUP JI58F JI58 5/9/2006	EL-103 LT43D LT43 10/10/2007	EL-103-DUP LT43B LT43 10/10/2007
Volatiles (µg/L; Method SW8260B/C/D)																	
1,1,1,2-Tetrachloroethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	5.0 U	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	3.0 U	3.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	5.0 U	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	1.0 U	1.0 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.4	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-chloropropane	5.0 U	5.0 U	1.0 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0 U	4.0 U	2.0 U	2.0 U	2.0 U	0.5 U	0.5 U
1,2-Dichlorobenzene	1.0 U	1.0 U	1.0	0.939	1.3	1.3	1.4	1.9	1.9	1.8	1.9	1.7	1.8	1.7	1.7	1.4	1.4
1,2-Dichloroethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	1.0 U	1.0 U	0.7	0.674	1.1	1.0	1.1	2.0	1.8	2.3	2.4	2.2	2.4	1.7	1.7	1.7	1.7
2,2-Dichloropropane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone	5.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethylvinylether	R	R	0.5 U	NA	R	R	R	R	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Hexanone	5.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	3.0 U	3.0 U
4-Chlorotoluene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Isopropyltoluene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	5.0 U	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.7	2.1	3.6	4.4	3.7	1.8	2.9 U	3.5 U	3 U	3 U
Acrolein	50 U	50 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acrylonitrile	5.0 U	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	6.1	6.5	4.7	4.98	4.9	4.4	4.7	5.8 J	5.3	5.3	5.5	5.1	5.6	6.4	6.2	6.3	6.3
Bromobenzene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoethane	2.0 U	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoform	1.0 U	1.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromomethane	1.0 U	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Disulfide	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	12	12	9.6	9.50	14	11	11	15 J	17	21 J	23	22	22	19	19	19	19
Chloroethane	1.0 U	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroform	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	1.0 U	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	1.0 U	1.0 U	0.4	0.353	0.4	0.3	0.3	0.3	0.2	0.4 U	0.4 U	0.4 U	0.2	0.2	0.2	0.2 U	0.2 U
cis-1,3-Dichloropropene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromomethane	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	NA	NA	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.0 U	1.0 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylene Dibromide	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	5.0 U	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	1.1	1.1	0.7	0.906	0.9	0.8	0.9	1.6	1.5	1.5	1.4	1.2	1.2	1.4	1.3	1.8	1.8

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																
	EL-103 BY07C BY07 7/28/2000	EL-103-Dup BY07G BY07 7/28/2000	EL-103 CO72D CO72 12/13/2000	EL-103-SDup B0L0365-02 B0L0365 12/13/2000	EL-103 CX61C CX61 3/29/2001	EL-103 DG04C DG04 6/14/2001	EL-103-SDup DG04G DG04 6/14/2001	EL-103 EE52C EE52 3/18/2002	EL-103 ER96C ER96 8/28/2002	EL-103 FK21D FK21 4/17/2003	EL-103 GN17B GN17 4/8/2004	EL-103-DUP GN17C GN17 4/8/2004	EL-103 IA68D IA68 5/9/2005	EL-103 JI58D JI58 5/9/2006	EL-103-DUP JI58F JI58 5/9/2006	EL-103 LT43D LT43 10/10/2007	EL-103-DUP LT43B LT43 10/10/2007
m,p-Xylene	1.0 U	1.0 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.8 U	0.8 U	0.8 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Methyl Iodide	1.0 U	1.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene Chloride	2.0 U	2.0 U	0.3 U	5.0 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.6 U	0.6 U	0.6 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Naphthalene	5.0 U	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.3	0.3	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2	0.2
o-Xylene	1.0 U	1.0 U	0.2 U	0.25 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
sec-Butylbenzene	1.0 U	1.0 U	0.4	0.550	0.6	0.5	0.5	1.0	0.9	1.1	0.9	0.8	0.8	0.8	0.8	1	1
Styrene	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	1.0 U	1.0 U	0.2 U	0.5 U	0.2	0.2 U	0.2 U	0.3	0.2	0.4 U	0.4 U	0.4 U	0.3	0.3	0.3	0.3	0.3
Tetrachloroethene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,4-Dichloro-2-butene	5.0 U	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	1.0 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	1.0 U	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Acetate	5.0 U	5.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.4 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Vinyl Chloride	1.0 U	1.0 U	0.2 U	0.968	0.5	0.4	0.4	0.3	0.2 U	0.4 U	0.4 U	0.4 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U
Pesticides (µg/L; Method 8081A)																	
Dieldrin	0.10 U	0.10 U	0.10 U	0.07 U	0.10 U	0.10 U	0.10 U	0.0033 U	0.010 U	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																	
Arsenic (7060A/200.8)	0.044	0.044	0.039	0.0516	0.040	0.036	0.036	0.028	0.033	0.030	0.031	0.031	0.030	0.037	0.037	0.0152	0.0157
Cadmium (6010)	0.002 U	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA	NA	NA	NA
Chromium (6010)	0.005 U	0.005 U	0.005 U	0.00352	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA	NA	NA
Iron (6010B/200.8)	14.8	14.7	11.7	13.1	12.1	11.9	12.1	16.6	14.4	16.8	18.8	17.7	19.7	26.5	26.2	6.7	7.25
Manganese (6010B/200.8)	3.97	3.91	2.81	0.520	2.84	2.53	2.51	3.36	2.72	3.01	3.16	3.00	3.03	4.66	4.69	3.40	3.54
Conventionals																	
Chloride (mg/L) (325.2, 300.0)	23	24	13	16.0	18	16	17	30	22	26	23.3	23.0	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	100	98	87	85.4	67	62	65	76	81	72	82.6	74.6	NA	NA	NA	NA	NA
N-Nitrate (mg-N/L) (calc.)	0.010 U	0.010 U	0.010 U	0.1 U	0.019	0.022	0.015	0.010 U	0.026	0.011	0.010 U	0.010 U	NA	NA	NA	NA	NA
N-Nitrite (mg-N/L) (353.2)	0.010 U	0.012	0.011	0.1 U	0.010 U	0.010 U	0.010 U	0.045	0.010	0.010 U	0.049	0.038	NA	NA	NA	NA	NA
Nitrate + Nitrite (mg-N/L) (353.2)	0.010 U	0.010 U	0.015	NA	0.019	0.022	0.015	0.032	0.036	0.011	0.032	0.023	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	19	18	11	2.37	9.2	8.8	9.2	6.1	9.5	6.3	8.6 J	7.8 J	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/L) (410.4)	64	70	50 UJ	22.5	37	47	47	55	53	NA	54	55	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	24	22	22	20.0 U	20	16	18	19	18	NA	18.7	18.9	NA	NA	NA	NA	NA
Un-ionized Ammonia (µg NH_3/L) (a)																	
Minimum (b)	40	39	34	34	26	24	26	30	32	28	32.6	29.5	NC	NC	NC	NC	NC
Maximum (c)	36,000	36,000	32,000	31,000	24,000	22,000	24,000	28,000	29,000	26,000	30,000	27,100	NC	NC	NC	NC	NC
Field Parameters																	
pH	6.24	6.24	6.8	6.8	6.54	6.93	6.93	6.71	6.49	6.59	6.65	6.65	6.72	6.58	6.58	7.51	7.51
Temperature (ºC)	20.9	20.9	11.7	11.7	14.0	15.3	15.3	10.6	13.3	11.0	11.1	11.1	11.3	11.0	11.0	11.9	11.9
Specific Conductivity (µS)	1,129	1,129	1,385	1,385	1,348	1,334	1,334	1,179	1,112	1,133	1,158	1,158	1,138	1,126	1,126	1,074	1,074

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date															
	EL-103 NV83F NV83 10/21/2008	EL-108 EL-103-DUP NV83C NV83 10/21/2008	EL-103 PE53C PE53 6/24/2009	EL-108 EL-103-DUP PE53B PE53 6/24/2009	EL-103 QW57D QW57 5/13/2010	EL-100 EL-103-DUP QW57F QW57 5/13/2010	EL-103 SY24A SY24 05/23/2011	EL-100 EL-103-DUP SY24B SY24 05/23/2011	EL-103 6644943 1307589 5/8/2012	EL-100 EL-103-DUP 6644945 1307589 5/8/2012	EL-103 7055035 1389676 05/13/2013	EL-100 EL-103-DUP 7055037 1389676 05/13/2013	EL-103 7462651 1474176 5/13/2014	EL-100 EL-103-DUP 7462647 1474176 5/13/2014	EL-103 7879583 1559679 5/7/2015	EL-100 EL-103-DUP 7879581 1559679 5/7/2015
Volatiles (µg/L; Method SW8260B/C/D)																
1,1,1,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-chloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	1.3	1.2	1.4	1.4	1.3	1.3	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.4	1.3
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3,5-Trimethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	1.5	1.5	2.1	2.0	1.9	1.7	1.8	1.9	2.3	2.2	2.3	2.2	1.9	2.0	2.2	2.1
2,2-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone	2.5 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Chloroethylvinylether	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Hexanone	2.5 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Chlorotoluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Isopropyltoluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
4-Methyl-2-Pentanone (MIBK)	2.5 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	3.0 U	3.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	16	15	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acrolein	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	25 U	25 U	25 UJ	25 UJ	25 U	25 U
Acrylonitrile	1.0 U	1 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.1	4.8	4.2	4.1	3.3	3.2	2.8	2.7	2.2	2.2	2.1	2.0	2.1	2.1	1.9	1.9
Bromobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U
Carbon Tetrachloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	23	23	22	22	21	20	19	20	24	23	24	24	23	23	24	23
Chloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dibromomethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylene Dibromide	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	1.7	1.6	1.3	1.3	1.0	1.0	1.0	1.1	1.2	1.1	1.0	1.0	0.9	0.8	0.8	0.7

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date															
	EL-103 NV83F NV83 10/21/2008	EL-108 EL-103-DUP NV83C NV83 10/21/2008	EL-103 PE53C PE53 6/24/2009	EL-108 EL-103-DUP PE53B PE53 6/24/2009	EL-103 QW57D QW57 5/13/2010	EL-100 EL-103-DUP QW57F QW57 5/13/2010	EL-103 SY24A SY24 05/23/2011	EL-100 EL-103-DUP SY24B SY24 05/23/2011	EL-103 6644943 1307589 5/8/2012	EL-100 EL-103-DUP 6644945 1307589 5/8/2012	EL-103 7055035 1389676 05/13/2013	EL-100 EL-103-DUP 7055037 1389676 05/13/2013	EL-103 7462651 1474176 5/13/2014	EL-100 EL-103-DUP 7462647 1474176 5/13/2014	EL-103 7879583 1559679 5/7/2015	EL-100 EL-103-DUP 7879581 1559679 5/7/2015
m,p-Xylene	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl Iodide	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Naphthalene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
o-Xylene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
sec-Butylbenzene	0.8	0.8	0.7	0.8	0.6	0.5	0.6	0.7	0.8	0.8	0.7	0.7	0.5	0.5	0.6	0.6
Styrene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
tert-Butylbenzene	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,4-Dichloro-2-butene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Acetate	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl Chloride	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Pesticides (µg/L; Method 8081A)																
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																
Arsenic (7060A/200.8)	0.038	0.037	0.035	0.0351	0.0337	0.0345	0.0349	0.0362	0.0338	0.0348	0.0289	0.0282	0.0332	0.0335	0.0352	0.0363
Cadmium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	18.5	18.2	22.3	23.1	21.8	21.9	22.9	22.2	20.2	20.5	20.8	20.4	23.2	20.9	22.6	21.1
Manganese (6010B/200.8)	3.04	3.02	3.18	3.21	2.95	3.04	3.3	3.19	2.93	3.26	3.64	3.68	3.78	3.41	2.97	2.83
Conventionals																
Chloride (mg/L) (325.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrate (mg-N/L) (calc.)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/L) (410.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Un-ionized Ammonia (µg NH_3/L) (a)																
Minimum (b)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Maximum (c)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Field Parameters																
pH	7.26	7.26	6.93	6.93	7.59	7.59	6.51	6.51	5.99	5.99	6.01	6.01	7.59	7.59	6.36	6.36
Temperature (ºC)	11.6	11.6	11.5	11.5	12.1	12.1	10.7	10.7	10.7	10.7	10.7	10.7	10.9	10.9	11.3	11.3
Specific Conductivity (µS)	1,172	1,172	225	225	2,402	2,402	950	950	1,071	1,071	886	886	996	996	1,054	1,054

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date															
	EL-103 8382537 1661845 5/13/2016	EL-100 EL-103-DUP 8382532 1661845 5/13/2016	EL-103 8977635 1797829 5/4/2017	EL-100 EL-103-DUP 8977628 1797829 5/4/2017	EL-103 9580974 1936930 4/26/2018	EL-100 EL-103-DUP 9580972 1936930 4/26/2018	EL-103 2040573 1041948 4/24/2019	EL-100 EL-103-DUP 2040573 1041950 4/24/2019	EL-103 1306499 2097790 4/28/2020	EL-100 EL-103-DUP 1306501 2097790 4/28/2020	EL-103 410-36712-4 410-36712-1 4/20/2021	EL-100 EL-103-DUP 410-36712-3 410-36712-1 4/20/2021	EL-103 410-81936-4 410-81936-1 4/27/2022	EL-100 EL-103-DUP 410-81936-3 410-81936-1 4/27/2022	EL-103 410-124751-4 410-124751-1 4/28/2023	EL-100 EL-103-DUP 410-124751-3 410-124751-1 4/28/2023
Volatiles (µg/L; Method SW8260B/C/D)																
1,1,1,2-Tetrachloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1,2-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
1,1-Dichloropropene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 UJ	0.500 UJ	0.500 U	0.500 U
1,2,3-Trichloropropane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 UJ	0.500 UJ	0.500 U	0.500 U
1,2,4-Trimethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dibromo-3-chloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	1.6	1.6	1.3	1.4	1.2	1.2	1.4 J	1.4	1.4	1.4	1.35	1.22	1.07	1.12	1.38	1.56
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
1,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3,5-Trimethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,3-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
1,4-Dichlorobenzene	2.3	2.3	2.1	2.2	2.0	2.0	2.0 J	2.0	2.0	2.1	1.73	1.57	1.66	1.78	2.08	2.40
2,2-Dichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
2-Chloroethylvinylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
2-Hexanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
4-Chlorotoluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
4-Isopropyltoluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
4-Methyl-2-Pentanone (MIBK)	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Acrolein	25 U	25 U	25 U	25 U	25 U	25 U	25 UJ	25 U	25 UJ	25 UJ	25.0 UJ	25.0 UJ	25.0 UJ	25.0 UJ	25.0 UJ	25.0 UJ
Acrylonitrile	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 UJ	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ	5.00 UJ
Benzene	2.0	2.0	1.6	1.6	1.4	1.5	1.6 J	1.6	1.5	1.6	1.25	1.19	1.04	1.13	0.935	1.04
Bromobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromodichloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Bromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Bromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Carbon Disulfide	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Carbon Tetrachloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Chlorobenzene	24	21	23	23	20	20	22 J	22	22	23	19.3	18.4	17.6	19.3	21.9	24.3
Chloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Chloroform	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Chloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
cis-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Dibromochloromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dibromomethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Ethylene Dibromide	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Hexachlorobutadiene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 UJ	0.500 UJ	0.500 U	0.500 U
Isopropylbenzene	0.9	0.9	0.9	0.9	0.9	0.9	0.6 J	0.6	0.7	0.7	0.579	0.520	0.607	0.663	0.709	0.795

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date															
	EL-103 8382537 1661845 5/13/2016	EL-100 EL-103-DUP 8382532 1661845 5/13/2016	EL-103 8977635 1797829 5/4/2017	EL-100 EL-103-DUP 8977628 1797829 5/4/2017	EL-103 9580974 1936930 4/26/2018	EL-100 EL-103-DUP 9580972 1936930 4/26/2018	EL-103 2040573 1041948 4/24/2019	EL-100 EL-103-DUP 2040573 1041950 4/24/2019	EL-103 1306499 2097790 4/28/2020	EL-100 EL-103-DUP 1306501 2097790 4/28/2020	EL-103 410-36712-4 410-36712-1 4/20/2021	EL-100 EL-103-DUP 410-36712-3 410-36712-1 4/20/2021	EL-103 410-81936-4 410-81936-1 4/27/2022	EL-100 EL-103-DUP 410-81936-3 410-81936-1 4/27/2022	EL-103 410-124751-4 410-124751-1 4/28/2023	EL-100 EL-103-DUP 410-124751-3 410-124751-1 4/28/2023
m,p-Xylene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Methyl Iodide	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Naphthalene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 UJ	0.500 UJ	0.500 U	0.500 U
n-Butylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
n-Propylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
o-Xylene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
sec-Butylbenzene	0.6	0.6	0.6	0.6	0.5 U	0.5	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Styrene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
tert-Butylbenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Tetrachloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
trans-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
trans-1,4-Dichloro-2-butene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.00 UJ	5.00 UJ	5.00 U	5.00 U	5.00 UJ	5.00 UJ
Trichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
Trichlorofluoromethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
Vinyl Acetate	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.500 UJ	0.500 UJ	0.500 U	0.500 U	1.00 U	1.00 U
Vinyl Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 UJ	0.2 U	0.2 U	0.2 U	0.254	0.217	0.200 U	0.200 U	0.200 U	0.200 U
Pesticides (µg/L; Method 8081A)																
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																
Arsenic (7060A/200.8)	0.0329	0.0353	0.0320	0.0306	0.0362	0.0340	0.0365	0.0345	0.0314	0.0330	0.0291	0.0293	0.0342	0.0353	0.0316	0.0318
Cadmium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	22.9	24.2	24.1	23.7	24.1	24.3	25.5	23.3	25.3	25.4	21.7	21.5	32.8	31.0	28.1	27.7
Manganese (6010B/200.8)	3.69	3.83	3.82	3.81	3.85	3.91	3.75	3.50	3.76	3.71	3.72	3.71	4.38	4.16	4.04	3.94
Conventionals																
Chloride (mg/L) (325.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrate (mg-N/L) (calc.)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/L) (410.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Un-ionized Ammonia (µg NH_3/L) (a)																
Minimum (b)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Maximum (c)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Field Parameters																
pH	6.4	6.4	6.43	6.43	6.41	6.42	6.42	6.42	6.43	6.43	6.36	6.4	6.49	6.49	6.48	6.48
Temperature (ºC)	12.1	12.1	12.4	12.4	15.6	7.0	13.6	13.7	13.5	13.5	14.2	14.1	11.3	11.3	13.9	13.5
Specific Conductivity (µS)	1,120	1,119	1,430	1,433	1,164	1,165	1,085	1,086	1,080	1,067	1,098	1,097	1,134	1,134	1,494	1,494

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																	
	EL-105 BY07E BY07 7/28/2000	EL-105 CO72C CO72 12/13/2000	EL-105-SDup B0L0365-03 B0L0365 12/13/2000	EL-105 CX61E CX61 3/29/2001	EL-105-Dup CX61G CX61 3/29/2001	EL-105 DG04E DG04 6/14/2001	EL-105 EE52F EE52 3/18/2002	EL-105 ER96A ER96 8/28/2002	EL-105 FK21A FK21 4/17/2003	EL-105 GN17F GN17 4/8/2004	EL-105 IA68A IA68 5/9/2005	EL-105 JI58A JI58 5/9/2006	EL-105 LT43A LT43 10/10/2007	EL-105 NV83B NV83 10/21/2008	EL-105 PE53G PE53 6/25/2009	EL-105 QW57A QW57 5/13/2010	EL-105 SY24C SY24 05/23/2011	EL-105 6644947 1307589 5/8/2012
Volatiles (µg/L; Method SW8260B/C/D)																		
1,1,1,2-Tetrachloroethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	3.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	5.0 U	1.0 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	1.0 U	0.2 U	0.227	0.2 U	0.2 U	0.2	0.2	0.2	0.2	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	R	0.5 U	NA	R	R	R	R	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone (MIBK)	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3 U	1.1	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	50 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.0 U	0.3	0.304	0.3	0.2	0.3	0.3	0.2	0.2	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromoethane	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	1.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.0 U	0.2	0.2 U	0.2	0.2	0.3	0.3	0.2	0.3 J	0.3	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	1.4	2.0	2.10	1.8	1.8	1.7	1.6	1.7	1.7	1.4	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene Dibromide	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																	
	EL-105 BY07E BY07 7/28/2000	EL-105 CO72C CO72 12/13/2000	EL-105-SDup B0L0365-03 B0L0365 12/13/2000	EL-105 CX61E CX61 3/29/2001	EL-105-Dup CX61G CX61 3/29/2001	EL-105 DG04E DG04 6/14/2001	EL-105 EE52F EE52 3/18/2002	EL-105 ER96A ER96 8/28/2002	EL-105 FK21A FK21 4/17/2003	EL-105 GN17F GN17 4/8/2004	EL-105 IA68A IA68 5/9/2005	EL-105 JI58A JI58 5/9/2006	EL-105 LT43A LT43 10/10/2007	EL-105 NV83B NV83 10/21/2008	EL-105 PE53G PE53 6/25/2009	EL-105 QW57A QW57 5/13/2010	EL-105 SY24C SY24 05/23/2011	EL-105 6644947 1307589 5/8/2012
m,p-Xylene	1.0 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Iodide	1.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	2.0 U	0.3 U	5.0 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	1.0 U	0.2 U	0.25 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.0 U	0.2 U	0.230	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2	0.2	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	1.0 U	0.2 U	0.201	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	1.0 U	0.2	0.323	0.3	0.3	0.2	0.3	0.3	0.3	0.4	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Acetate	5.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	1.0 U	0.2	0.2 U	0.2 U	0.2 U	0.2	0.8	0.5	0.3	0.2	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L; Method 8081A)																		
Dieldrin	0.10 U	0.10 U	0.07 U	0.10 U	0.10 U	0.10 U	0.0033 U	0.010 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																		
Arsenic (7060A/200.8)	0.008	0.009	0.00994	0.010	0.011	0.010	0.005	0.005	0.007	0.005	0.008	0.006	0.004	0.0071	0.0098	0.0086	0.0048	0.0088
Cadmium (6010)	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	0.005 U	0.005 U	0.001 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	5.61	6.34	6.91	7.63	7.77	7.08	3.78	3.25	6.23	3.44	6.30	4.27	2.92	7.10	7.92	6.93	3.20	6.9
Manganese (6010B/200.8)	6.04	5.64	5.27	5.75	5.80	5.11	4.17	3.56	4.66	3.66	4.19	3.92	3.76	4.7	4.70	4.03	3.06	4.26
Conventionals																		
Chloride (mg/L) (325.2, 300.0)	4.9	3.7	3.82	4.9	4.5	4.1	5.4	4.7	4.0	3.7	NA	NA	NA	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	2.9	3.8	6.35	2.7	2.7	2.4	1.8	1.6	2.0	1.47	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrate (mg-N/L) (calc.)	0.010 U	0.010 U	0.1 U	0.013	0.014	0.13	0.22	0.040	0.026	0.112	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrite (mg-N/L) (353.2)	0.010 U	0.010 U	0.1 U	0.010 U	0.010 U	0.010 U	0.026	0.010 U	0.010 U	0.013	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (mg-N/L) (353.2)	0.010 U	0.010 U	NA	0.013	0.014	0.13	0.25	0.040	0.026	0.125	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	26	28	28.1	24	24	27	23	31	23	24.8 J	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/L) (410.4)	13	7.6 UJ	10.0 U	10	7.2	16	14	10	NA	9.80	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	4.1	3.7	8.61	5.5	5.2	3.7	3.9	1.6	NA	4.42	NA	NA	NA	NA	NA	NA	NA	NA
Un-ionized Ammonia (µg NH_3/L) (a)																		
Minimum (b)	1.1	1.5	2.5	1.1	1.1	0.95	0.71	0.63	0.79	0.6	NC	NC	NC	NC	NC	NC	NC	NC
Maximum (c)	1,100	1,400	2,300	979	979	870	653	580	725	533	NC	NC	NC	NC	NC	NC	NC	NC
Field Parameters																		
pH	5.78	6.4	6.4	6.24	6.24	6.52	6.47	6.84	6.38	6.32	6.75	6.1	6.92	6.16	6.88	6.63	6.08	5.22
Temperature (ºC)	19.6	12.6	12.6	16.4	16.4	18.4	12.9	14.1	13.2	13.6	13.4	13.7	14.3	13.6	13.9	15.4	13.9	13.5
Specific Conductivity (µS)	244	360	360	359	359	375	242	252	289	245	301	285	271	347	66	8	303	339

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2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																
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Volatiles (µg/L; Method SW8260B/C/D)																	
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	0.5 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U
2-Chloroethylvinylether	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	R	0.5 U	NA	R	R	R
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Acrolein	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50 U	5.0 U	NA	5.0 U	5.0 U	5.0 U
Acrylonitrile	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Bromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.5 U	0.2 U	0.5 U	0.5 U	0.2 U
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	1.0 U	0.2 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.8	0.85	0.7	0.6	0.5
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U

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m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U
Methyl Iodide	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.0 U	0.3 U	5.0 U	0.3 U	0.3 U	0.3 U
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0	0.5 U	0.5 U	0.5 U	0.5 U
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.25 U	0.2 U	0.2 U	0.2 U
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	NA	1.0 U	1.0 U	1.0 U
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
Vinyl Acetate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.0 U	0.2 U	NA	0.2 U	0.2 U	0.2 U
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Pesticides (µg/L; Method 8081A)																	
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.07 U	0.10 UJ	0.10 U	0.0033 U
Dissolved Metals (mg/L)																	
Arsenic (7060A/200.8)	0.0072	0.009	0.0076	0.0020 U	0.0070	0.0023	0.0025	0.0021 U	0.00252	0.00528	0.00206 U	0.006	0.008	0.00912	0.007	0.008	0.001
Cadmium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002 U	0.002 U	0.001 U	0.002 U	0.002 U	0.002 U
Chromium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	0.00169	0.005 U	0.005 U	0.005 U
Iron (6010B/200.8)	6.12	6.42	5.47	2.01	5.49	4.35	3.53	1.20	2.71	3.25	2.54	1.52	8.71	8.88	7.15	6.97	0.46
Manganese (6010B/200.8)	4.60	4.49	4.11	3.07	3.40	3.23	2.93	2.22	2.39	2.53	2.48	5.56	11.3	9.77	10.4	8.00	0.621
Conventionals																	
Chloride (mg/L) (325.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.0	18	18.5	8.7	4.5	3.4
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.7	4.1	5.83	4.3	4.1	0.20
N-Nitrate (mg-N/L) (calc.)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.2	0.20	0.393	0.072	0.073	3.0
N-Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022	0.021	0.1 U	0.021	0.010 U	0.012
Nitrate + Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.3	0.22	NA	0.093	0.073	3.0
Sulfate (mg/L) (375.2, 300.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22	30	25.7	18	17	24
Chemical Oxygen Demand (mg/L) (410.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	32 UJ	56.5	34	25	9.8
Total Organic Carbon (mg/L) (415.1, SM5310C)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.6	12	14	12	9.3	4.4
Un-ionized Ammonia (µg NH_3/L) (a)																	
Minimum (b)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1.1	1.6	2.3	1.7	1.6	0.08
Maximum (c)	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	979	1,500	2,100	1,600	1,500	73
Field Parameters																	
pH	5.54	6.43	6.17	6.21	6.16	6.07	6.21	6.25	6.06	6.40	6.31	5.95	6.5	6.5	6.27	6.81	6.37
Temperature (ºC)	13.5	13.3	14.0	15.4	14.1	13.9	14.8	14.3	15.3	14.0	15.0	18.8	15.1	15.1	15.4	19.1	12.4
Specific Conductivity (µS)	273	274	251	248	332	251	255	196	219	218	293.1	379	764	764	734	624	207

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																
	EL-106 ER96B ER96 8/28/2002	EL-106 FK21B FK21 4/17/2003	EL-106 GN17E GN17 4/8/2004	EL-106 IA68B IA68 5/9/2005	EL-106-DUP IA68F IA68 5/9/2005	EL-106 JI58B JI58 5/9/2006	EL-106R LT21B LT21 10/10/2007	EL-106R NV83A NV83 10/21/2008	EL-106R PE53E PE53 6/24/2009	EL-106R QW57B QW57 5/13/2010	EL-106R SY24D SY24 5/23/2011	EL-106R 6644940 1307589 5/8/2012	EL-106R 7055032 1389676 05/13/2013	EL-106R 7462649 1474176 5/13/2014	EL-106R 7879585 1559679 5/7/2015	EL-106R 8382534 1661845 5/13/2016	EL-106R 8977630 1797829 5/4/2017
Volatiles (µg/L; Method SW8260B/C/D)																	
1,1,1,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	1.0 U	2.0 U	2.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloroethylvinylether	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone (MIBK)	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	1.0 U	1.2	1.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrolein	5.0 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acrylonitrile	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	0.2 U	0.2 UJ	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	0.4	0.4	0.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylene Dibromide	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Laboratory Sample ID, Lab Data Package ID, Sample Date																
	EL-106 ER96B ER96 8/28/2002	EL-106 FK21B FK21 4/17/2003	EL-106 GN17E GN17 4/8/2004	EL-106 IA68B IA68 5/9/2005	EL-106-DUP IA68F IA68 5/9/2005	EL-106 JI58B JI58 5/9/2006	EL-106R LT21B LT21 10/10/2007	EL-106R NV83A NV83 10/21/2008	EL-106R PE53E PE53 6/24/2009	EL-106R QW57B QW57 5/13/2010	EL-106R SY24D SY24 5/23/2011	EL-106R 6644940 1307589 5/8/2012	EL-106R 7055032 1389676 05/13/2013	EL-106R 7462649 1474176 5/13/2014	EL-106R 7879585 1559679 5/7/2015	EL-106R 8382534 1661845 5/13/2016	EL-106R 8977630 1797829 5/4/2017
m,p-Xylene	0.4 U	0.4 U	0.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Iodide	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.3 U	0.3 U	0.3 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,4-Dichloro-2-butene	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Acetate	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L; Method 8081A)																	
Dieldrin	0.010 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																	
Arsenic (7060A/200.8)	0.002	0.002	0.001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	0.002 U	0.002 U	0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	0.005 U	0.005 U	0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	3.47	3.41	0.12	1.13	1.37	1.29	0.25	2.12	2.13	2.54	2.69	3.39	2.49	2.75	2.04	2.01	2.40
Manganese (6010B/200.8)	4.55	4.08	0.550	2.18	2.15	0.079	6.43	8.3	8.59	6.48	7.39	8.28	7.85	6.74	6.36	6.52	6.05
Conventionals																	
Chloride (mg/L) (325.2, 300.0)	8.9	7.4	3.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	0.46	1.7	0.277	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrate (mg-N/L) (calc.)	1.3	1.1	1.98	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Nitrite (mg-N/L) (353.2)	0.010 U	0.010 U	0.016	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate + Nitrite (mg-N/L) (353.2)	1.3	1.1	2.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	23	19	22.5 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand (mg/L) (410.4)	13	NA	15.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	3.7	NA	6.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Un-ionized Ammonia (µg NH_3/L) (a)																	
Minimum (b)	0.18	0.67	0.1	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Maximum (c)	167	617	100	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Field Parameters																	
pH	6.44	6.31	6.23	6.57	NM	6.21	6.84	6.94	7.02	6.78	6.36	6.56	5.76	6.00	6.23	6.52	NA
Temperature (ºC)	13.6	12.7	12.9	13.0	NM	12.7	13.6	12.6	13.6	14.0	13.8	16.9	13.8	12.7	12.7	13.7	NA
Specific Conductivity (µS)	270	359	247	330	NM	252	469	645	121	19	500	564	515	476	405	349	NA

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Lab ID, Lab Data Package ID, Sample Date																
	EL-106R 9580970 1936930 4/26/2018	EL-106R 2040573 1041946 4/24/2019	EL-106R 1306497 2097790 4/28/2020	EL-106R 410-36712-1 410-36712-1 4/20/2021	EL-106R 410-81936-1 410-81936-1 4/27/2022	EL-106R 410-124751-1 410-124751-1 4/28/2023	French Drain CB90 CB90 9/1/2000	French Drain CO72E CO72 12/13/2000	French Drain CX61H CX61 3/29/2001	French Drain DG04H DG04 6/14/2001	French Drain EE52B EE52 3/18/2002	French Drain EE52A EE52 3/18/2002	French Drain ER96D ER96 8/28/2002	French Drain FK21E FK21 4/17/2003	French Drain GN17D GN17 4/087/2004	French Drain IA68E IA68 5/9/2005	French Drain JI58E JI58 5/9/2006
Volatiles (µg/L; Method SW8260B/C/D)																	
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA	NA	NA	NA	NA	NA	2.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	3.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2	0.2 U	0.3	0.3	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2
1,2-Dibromo-3-chloropropane	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	4.0 U	2.0 U	2.0 U
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	1.0 J	1.8	0.9	1.9	1.6	0.2 U	1.7	1.3	1.7	1.8	1.3
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	3.8	7.0	5.6	8.8	7.0	0.2 U	6.6	6.3	8.3	8.6	6.0
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
2-Butanone	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
2-Chloroethylvinylether	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	R	R	R	R	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
2-Hexanone	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
4-Methyl-2-Pentanone (MIBK)	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Acetone	NA	NA	NA	NA	NA	NA	10	1.0 U	1.0 U	1.0 U	2.4	3.1	4.5	4.3	4.4	3.3	2.7 U
Acrolein	NA	NA	NA	NA	NA	NA	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	10 U	10 U	5.0 U	5.0 U
Acrylonitrile	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Benzene	NA	NA	NA	NA	NA	NA	2.2	6.0	3.3	6.6	4.0	0.2 U	4.3	3.5	5.2	5.2	3.8
Bromobenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Bromochloromethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Bromodichloromethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Bromoethane	NA	NA	NA	NA	NA	NA	2.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Bromoform	NA	NA	NA	NA	NA	NA	1.0 U	0.5 U	0.5 U	0.5 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Bromomethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Carbon Disulfide	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Chlorobenzene	NA	NA	NA	NA	NA	NA	12	24	12	22	19	0.2 U	19	17 J	27	26	20
Chloroethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Chloroform	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Chloromethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Dibromochloromethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Dibromomethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Ethylene Dibromide	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	5.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.5 U
Isopropylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	3.1	1.4	3.3	3.3	0.2 U	2.1	2.3	2.8	3.0	2.7

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Lab ID, Lab Data Package ID, Sample Date																
	EL-106R 9580970 1936930 4/26/2018	EL-106R 2040573 1041946 4/24/2019	EL-106R 1306497 2097790 4/28/2020	EL-106R 410-36712-1 410-36712-1 4/20/2021	EL-106R 410-81936-1 410-81936-1 4/27/2022	EL-106R 410-124751-1 410-124751-1 4/28/2023	French Drain CB90 CB90 9/1/2000	French Drain CO72E CO72 12/13/2000	French Drain CX61H CX61 3/29/2001	French Drain DG04H DG04 6/14/2001	French Drain EE52B EE52 3/18/2002	French Drain EE52A EE52 3/18/2002	French Drain ER96D ER96 8/28/2002	French Drain FK21E FK21 4/17/2003	French Drain GN17D GN17 4/087/2004	French Drain IA68E IA68 5/9/2005	French Drain JI58E JI58 5/9/2006
m,p-Xylene	NA	NA	NA	NA	NA	NA	1.0 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.8 U	0.8 U	0.4 U	0.4 U
Methyl Iodide	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Methylene Chloride	NA	NA	NA	NA	NA	NA	2.0 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.6 U	0.6 U	0.3 U	0.3 U
Naphthalene	NA	NA	NA	NA	NA	NA	4.7 J	18	5.1	17	17	0.5 U	12	9.9	12	15	11
n-Butylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.8	0.4	1.1	1.2	0.2 U	0.7	0.6 M	0.9	1.0	0.8
n-Propylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	2.4	1.1	3.0	3.6	0.2 U	1.8	2.3	2.6	2.9	2.8
o-Xylene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	1.1	0.7	1.3	1.4	0.2 U	0.9	1.0	1.2	1.3	1.1
Styrene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	1.0 U	0.2	0.2 U	0.3	0.2	0.2 U	0.2 U	0.4 U	0.4 U	0.3	0.2
Tetrachloroethene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Toluene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
trans-1,4-Dichloro-2-butene	NA	NA	NA	NA	NA	NA	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Trichloroethene	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Vinyl Acetate	NA	NA	NA	NA	NA	NA	5.0 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2 U
Vinyl Chloride	NA	NA	NA	NA	NA	NA	1.0 U	0.2 U	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.4 U	0.4 U	0.2 U	0.2
Pesticides (µg/L; Method 8081A)																	
Dieldrin	NA	NA	NA	NA	NA	NA	0.10 U	0.10 U	0.10 U	0.10 U	0.0033 U	0.0033 U	0.010 U	NA	NA	NA	NA
Dissolved Metals (mg/L)																	
Arsenic (7060A/200.8)	NA	NA	NA	NA	NA	NA	0.001 U	0.001	0.002	0.001 U	0.001 U	0.0007	0.001	0.001 U	0.002	0.001 U	0.001 U
Cadmium (6010)	NA	NA	NA	NA	NA	NA	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	NA
Chromium (6010)	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA
Iron (6010B/200.8)	1.94	1.97	2.62	2.55	2.31	3.55	2.76	35.1	35.9	42.8	45.8	0.76	15.8	38.9	62.9	66.7	54.3
Manganese (6010B/200.8)	7.02	6.62	7.97	9.21	9.40	9.07	0.361	0.645	0.767	0.575	0.719	1.35	0.385	0.700	0.777	0.812	0.741
Conventionals																	
Chloride (mg/L) (325.2, 300.0)	NA	NA	NA	NA	NA	NA	76	22	12	25	8.8	1.7	61	8.7	12.4	11.6	11.1
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	NA	NA	NA	NA	NA	NA	100	61	33	60	28	0.67	100	38	46.3	46.4	44.5
N-Nitrate (mg-N/L) (calc.)	NA	NA	NA	NA	NA	NA	0.72	0.021	0.010 U	0.010	0.010 U	0.34	0.031	0.012	0.010 U	0.050 U	0.020 UJ
N-Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	0.05	0.035	0.038	0.043	0.070	0.010 U	0.052	0.032	0.075	0.092	0.024 J
Nitrate + Nitrite (mg-N/L) (353.2)	NA	NA	NA	NA	NA	NA	0.77	0.056	0.046	0.042	0.035	0.34	0.083	0.044	0.010 U	0.050 U	0.020 U
Sulfate (mg/L) (375.2, 300.0)	NA	NA	NA	NA	NA	NA	23	19	18	12	11	8.5	8.5	12	29.0 J	7.6	3.8 U
Chemical Oxygen Demand (mg/L) (410.4)	NA	NA	NA	NA	NA	NA	88	54 UJ	39	66	40	16	83	NA	48.8	45.8	44.8
Total Organic Carbon (mg/L) (415.1, SM5310C)	NA	NA	NA	NA	NA	NA	28	18	14	20	12	6.4	30	NA	16.0	16.3	13.5
Un-ionized Ammonia (µg NH_3/L) (a)																	
Minimum (b)	NC	NC	NC	NC	NC	NC	40	24	13	24	11	0.26	40	15	18.3	18.3	17.6
Maximum (c)	NC	NC	NC	NC	NC	NC	36,000	22,000	12,000	22,000	10,000	243	36,000	14,000	16,800	16,800	16,100
Field Parameters																	
pH	6.45	6.55	6.77	6.30	6.61	6.64	6.96 J	NM	6.46	6.82	NM	NM	7.03	6.64	6.53	6.71	6.73
Temperature (ºC)	14.3	13.8	14.1	14.3	13.8	14.9	NM	NM	11.9	15.2	NM	NM	16.4	10.3	10.2	11.5	10.3
Specific Conductivity (µS)	555	538	499	723	741	798	2,000	NM	628	1,529	NM	NM	1,665	700	917	949	778

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Former Eastgate Landfill

Analyte	Sample Location, Lab ID, Lab Data Package ID, Sample Date																
	French Drain LT21A LT21 10/10/2007	French Drain NV83E NV83 10/21/2008	French Drain PE53A PE53 6/24/2009	French Drain QW57E QW57 5/14/2010	French Drain SY24E SY24 05/23/2011	French Drain 6644941 1307589 5/8/2012	French Drain 7055033 1389676 05/13/2013	French Drain 7462653 1474176 5/13/2014	French Drain 7879586 1559679 5/7/2015	French Drain 8382539 1661845 5/13/2016	French Drain 8977633 1797829 5/4/2017	French Drain 9580976 1936930 4/26/2018	French Drain 2040573 1041952 4/24/2019	French Drain 1306503 2097790 4/28/2020	French Drain 410-36712-5 410-36712-1 4/20/2021	French Drain 410-81936-5 410-81936-1 4/27/2022	French Drain 410-124751-5 410-124751-1 4/28/2023
Volatiles (µg/L; Method SW8260B/C/D)																	
1,1,1,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,1,1-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,1,2,2-Tetrachloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,1,2-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
1,1-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,2,3-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 UJ	0.500 U
1,2,3-Trichloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.00 U	1.00 U	1.00 U
1,2,4-Trichlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 UJ	0.500 U
1,2,4-Trimethylbenzene	0.2 U	8.2	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,2-Dibromo-3-chloropropane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.500 U	0.500 U	0.500 U
1,2-Dichlorobenzene	0.5	1.0	1.6	1.4	0.9	0.9	1.2	0.9	1.2	1.3	0.9	0.9	0.9	1.0	1.02	0.693	0.801
1,2-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
1,2-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,3,5-Trimethylbenzene	0.2 U	3.1	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,3-Dichlorobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,3-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
1,4-Dichlorobenzene	1.9	4.1	5.9	5.1	3.8	3.7	4.5	3.6	4.5	4.4	3.1	3.2	3.1	3.7	3.58	2.76	3.29
2,2-Dichloropropane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
2-Butanone	1.0 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
2-Chloroethylvinylether	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
2-Hexanone	3.0 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
4-Chlorotoluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
4-Isopropyltoluene	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
4-Methyl-2-Pentanone (MIBK)	1.0 U	2.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U
Acetone	4.3	3.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.00 U	5.00 U	5.21
Acrolein	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	25 U	25 U	25 UJ	25 U	25 U	25 U	25 U	25 UJ	25 UJ	25.0 UJ	25.0 UJ	25.0 UJ
Acrylonitrile	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.00 UJ	5.00 UJ	5.00 UJ
Benzene	0.8	2.3	3.2	2.4	1.5	1.5	1.5	1.1	1.2	1.2	0.9	0.8	0.6	0.7	0.643	0.630	0.465
Bromobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Bromochloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Bromodichloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Bromoethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.00 U	1.00 U	1.00 U
Bromomethane	0.2 U	0.5 U	0.5 U	0.5 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Carbon Disulfide	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Carbon Tetrachloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
Chlorobenzene	5.1	16	24	22	15	16	21	18	21	23	16	16	16	18	17.6	13.7	14.8
Chloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Chloroform	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
Chloromethane	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
cis-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.4	0.2 U	0.2 U	0.4	0.6	0.2 U	0.3	0.200 U	0.350	0.227
cis-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
Dibromochloromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Dibromomethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Ethylene Dibromide	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Hexachlorobutadiene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 UJ	0.500 U
Isopropylbenzene	0.2	0.6	3.0	2.6	1.9	1.9	2.5	2.2	2.2	2.0	1.6	1.5	1.2	1.3	1.52	1.09	1.15

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Analyte	Sample Location, Lab ID, Lab Data Package ID, Sample Date																
	French Drain LT21A LT21 10/10/2007	French Drain NV83E NV83 10/21/2008	French Drain PE53A PE53 6/24/2009	French Drain QW57E QW57 5/14/2010	French Drain SY24E SY24 05/23/2011	French Drain 6644941 1307589 5/8/2012	French Drain 7055033 1389676 05/13/2013	French Drain 7462653 1474176 5/13/2014	French Drain 7879586 1559679 5/7/2015	French Drain 8382539 1661845 5/13/2016	French Drain 8977633 1797829 5/4/2017	French Drain 9580976 1936930 4/26/2018	French Drain 2040573 1041952 4/24/2019	French Drain 1306503 2097790 4/28/2020	French Drain 410-36712-5 410-36712-1 4/20/2021	French Drain 410-81936-5 410-81936-1 4/27/2022	French Drain 410-124751-5 410-124751-1 4/28/2023
m,p-Xylene	0.4 U	1.1	0.4 U	0.4 U	0.4 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Methyl Iodide	0.2 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Methylene Chloride	0.3 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Naphthalene	0.5	1.6 J	11	7.5	3.6	3.3	4.1	2.9	2.5	1.3	0.8	0.8	0.5 U	0.5 U	0.500 U	0.500 UJ	0.500 U
n-Butylbenzene	0.2 U	0.7	0.9	0.9	0.6	0.6	0.8	0.7	0.7	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.500 U	0.500 U	0.500 U
n-Propylbenzene	0.2	1.1	2.7	2.8	1.9	1.8	2.3	1.9	1.9	1.5	1.4	1.3	1.0	1.1	1.24	0.864	1.01
o-Xylene	0.2 U	1.0	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
sec-Butylbenzene	0.2 U	0.4	1.3	1.2	0.9	0.9	1.2	1	1.1	0.9	0.8	0.8	0.7	0.7	0.843	0.593	0.732
Styrene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
tert-Butylbenzene	0.2 U	0.2 U	0.3	0.2	0.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Tetrachloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2	0.2	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
trans-1,2-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
trans-1,3-Dichloropropene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
trans-1,4-Dichloro-2-butene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.00 UJ	5.00 U	5.00 UJ
Trichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U
Trichlorofluoromethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U
Vinyl Acetate	0.2 U	1.0 U	1.0 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.500 UJ	0.500 U	1.00 U
Vinyl Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3	0.2 U	0.2 U	0.5	0.3	0.2 U	0.4	0.200 U	0.243	0.200 U
Pesticides (µg/L; Method 8081A)																	
Dieldrin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Metals (mg/L)																	
Arsenic (7060A/200.8)	0.001	0.0006	0.0016	0.0017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	2.0	3.86	60.6	62.5	54.1	48.6	65.1	53.1	60.9	62.7	55.2	59.3	55.4	55.1	56.1	68.9	51.4
Manganese (6010B/200.8)	0.352	0.373	0.629	0.748	0.835	0.668	0.747	0.778	0.657	0.600	0.777	0.908	0.673	0.654	0.741	0.783	0.704
Conventionals																	
Chloride (mg/L) (325.2, 300.0)	21.7	28.1	12.0	8.5	5.2	5.9	8.0	5.7	6.5	12.6	6.7	6.6	4.3	8.2	9.06	6.94	7.50 U
N-Ammonia (mg-N/L) (350.1M, SM4500-NH3D)	40.8	70.9	45.7	34.1	24.9	25.4	30.2	24.9	43.8	47.8	25.3	24.7	34.7	36.4	40.4	28.9 J	18.7
N-Nitrate (mg-N/L) (calc.)	0.225	0.177	0.500 U	0.500 U	0.500 U	0.100 U	0.060	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.100 U	0.100 U	0.100 U
N-Nitrite (mg-N/L) (353.2)	0.012	0.111	0.500 U	0.500 U	0.100 U	0.073	0.070	0.065	0.18	0.089	0.10	0.050 U	0.050 U	0.050 U	0.0500 U	0.0500 U	0.0500 U
Nitrate + Nitrite (mg-N/L) (353.2)	0.237 J	0.288	0.500 U	0.500 U	0.500 UJ	0.10 U	0.13	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	NA	0.100 U	0.100 U
Sulfate (mg/L) (375.2, 300.0)	537	24.5	9.5	14.1	0.6	2.1	1.0 U	3.0	1.8	1.2	1.8	4.2	10.3	5.8	5.00 U	9.41	7.50 U
Chemical Oxygen Demand (mg/L) (410.4)	NA	57.1	48.3	40.1	43.5	55.5	59.4	50.0 U	50.0 U	64.7	50.0 U	50.0 U	50.0 U	75.0 U	75.0 U	75.0 U	75.0 U
Total Organic Carbon (mg/L) (415.1, SM5310C)	14.9	19.2	16.1	13.0	13.7	24.4	17.9	12.8	14.0	14.2	10.6	9.8	10.6	11.6	11.4	15.5	8.33
Un-ionized Ammonia (µg NH_3/L) (a)																	
Minimum (b)	16.1	28.0	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Maximum (c)	14,800	25,700	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Field Parameters																	
pH	7.41	7.75	6.96	7.65	7.09	5.91	6.42	7.32	6.35	6.43	6.43	6.38	6.35	6.43	6.48	6.60	6.52
Temperature (ºC)	14.2	12.9	13.1	11.0	11.8	11.3	13.6	10.8	11.2	13.0	12.0	12.1	11.5	11.6	11.6	10.3	12.1
Specific Conductivity (µS)	741	1,193	188	1,697	537	666	664	637	775	923	859	647	692	760	794	752	853

Table 2
Summary of Groundwater and Surface Water Analytical Results
2023 Annual and Historical Sampling Events
Former Eastgate Landfill

Abbreviations and Acronyms:

°C = degrees Celsius
µg/L = micrograms per liter
µg/S = micrograms per Siemen
µg NH_3/L = micrograms ammonia per liter
Calc = calculated
ID = identification
mg/L = milligrams per liter
mg-N/L = milligrams nitrate per liter
NA = not analyzed.
NC = not calculated
NM = not measured
SDup = Split sample collected by Dalton, Olmsted & Fuglevand, Inc. for Spieker Properties, prospective purchaser of property and analyzed by North Creek Analytical, Inc.

Notes:

U = Indicates compound was analyzed for, but was not detected at the given reporting limit.
UJ = Indicates the analyte was not detected in the sample; the sample reporting limit is an estimate.
M = Indicates an estimated value of analyte found and confirmed by analyst, but with low spectral match.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
R = The sample results are rejected due to deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

(a) Un-ionized ammonia concentrations calculated for T = 5 - 25 ºC, and pH = 6.5 - 9 in Lake Sammamish.
(b) Minimum un-ionized ammonia concentrations calculated based on a temperature of 5 ºC and a pH of 6.5.
(c) Maximum un-ionized ammonia concentrations calculated based on a temperature of 25 ºC and a pH of 9.

Table 3
Summary of Groundwater and Surface Water Analytical Results
for Detected Constituents for Last Four Consecutive Sampling Events
Former Eastgate Landfill

1/3/1900	Screening Levels (a)	Sample Location, Lab Sample ID, Lab SDG, and Sample Date											
		EL-103 1306499 2097790 4/28/2020	EL-100 EL-103-DUP 1306501 2097790 4/28/2020	EL-103 410-36712-4 410-36712-1 4/20/2021	EL-100 EL-103-DUP 410-36712-3 410-36712-1 4/20/2021	EL-103 410-81936-4 410-81936-1 4/27/2022	EL-100 EL-103-DUP 410-81936-3 410-81936-1 4/27/2022	EL-103 410-124751-4 410-124751-1 4/28/2023	EL-100 EL-103-DUP 410-124751-3 410-124751-1 4/28/2023	EL-105 1306498 2097790 4/28/2020	EL-105 410-36712-2 410-36712-1 4/20/2021	EL-105 410-81936-2 410-81936-1 4/27/2022	EL-105 410-124751-2 410-124751-1 4/28/2023
Volatiles (µg/L; Method SW8260B/C)													
1,2-Dichlorobenzene	600	1.4	1.4	1.35	1.22	1.07	1.12	1.38	1.56	NA	NA	NA	NA
1,4-Dichlorobenzene	1.8	**2.0**	**2.1**	1.73	1.57	1.66	1.78	**2.08**	**2.40**	NA	NA	NA	NA
Acetone	800	5.0 U	5.0 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	NA	NA	NA	NA
Benzene	5	1.5	1.6	1.25	1.19	1.04	1.13	0.935	1.04	NA	NA	NA	NA
Chlorobenzene	100	22	23	19.3	18.4	17.6	19.3	21.9	24.3	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	0.2 U	0.2 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	NA	NA	NA	NA
Isopropylbenzene	1600	0.7	0.7	0.579	0.520	0.607	0.663	0.709	0.795	NA	NA	NA	NA
n-Propylbenzene	--	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	NA	NA	NA	NA
sec-Butylbenzene	--	0.5 U	0.5 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	NA	NA	NA	NA
Vinyl Chloride	0.8	0.2 U	0.2 U	0.254	0.217	0.200 U	0.200 U	0.200 U	0.200 U	NA	NA	NA	NA
Dissolved Metals (mg/L)													
Arsenic (7060A/200.8)	0.004	**0.0314**	**0.0330**	**0.0291**	**0.0293**	**0.0342**	**0.0353**	**0.0316**	**0.0318**	0.0021 U	0.00252	**0.00528**	0.00206 U
Iron (6010B/200.8)	0.3	**25.3**	**25.4**	**21.7**	**21.5**	**32.8**	**31.0**	**28.1**	**27.7**	**1.2**	**2.71**	**3.25**	**2.54**
Manganese (6010B/200.8)	0.05	**3.76**	**3.71**	**3.72**	**3.71**	**4.38**	**4.16**	**4.04**	**3.94**	**2.22**	**2.39**	**2.53**	**2.48**
Conventionals													
Chloride (mg/L) (325.2, 300.0)	230	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N-Ammonia (mg-N/L) (350.1M, SM4500NH3D)	--(b)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/L) (375.2, 300.0)	250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (mg/L) (415.1, SM5310C)	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters													
pH	--	6.43	6.43	6.36	6.4	6.49	6.49	6.48	6.48	6.25	6.06	6.4	6.31
Temperature (°C)	--	13.5	13.5	14.2	14.1	11.3	11.3	13.9	13.5	14.3	15.3	14.0	15.0
Specific Conductivity (µS)	--	1,080	1,067	1,098	1,097	1,134	1,134	1,494	1,494	196	218.8	217.9	293.1

Table 3
Summary of Groundwater and Surface Water Analytical Results
for Detected Constituents for Last Four Consecutive Sampling Events
Former Eastgate Landfill

1/3/1900	Screening Levels (a)	Sample Location, Lab Sample ID, Lab SDG, and Sample Date							
		EL-106R 1306497 2097790 4/28/2020	EL-106R 410-36712-1 410-36712-1 4/20/2021	EL-106R 410-81936-1 410-81936-1 4/27/2022	EL-106R 410-124751-1 410-124751-1 4/28/2023	French Drain 1306503 2097790 4/28/2020	French Drain 410-36712-5 410-36712-1 4/20/2021	FrenchDrain 410-81936-5 410-81936-1 4/27/2022	French Drain 410-124751-5 410-124751-1 4/28/2023
Volatiles (µg/L; Method SW8260B/C)									
1,2-Dichlorobenzene	600	NA	NA	NA	NA	1	1.02	0.693	0.801
1,4-Dichlorobenzene	1.8	NA	NA	NA	NA	**3.7**	**3.58**	**2.76**	**3.29**
Acetone	800	NA	NA	NA	NA	5.0 U	5.00 U	5.00 U	5.21
Benzene	5	NA	NA	NA	NA	0.7	0.643	0.630	0.465
Chlorobenzene	100	NA	NA	NA	NA	18	17.6	13.7	14.8
cis-1,2-Dichloroethene	70	NA	NA	NA	NA	0.3	0.200 U	0.350	0.227
Isopropylbenzene	1600	NA	NA	NA	NA	1.3	1.52	1.09	1.15
n-Propylbenzene	--	NA	NA	NA	NA	1.1	1.24	0.864	1.01
sec-Butylbenzene	--	NA	NA	NA	NA	0.7	0.843	0.593	0.732
Vinyl Chloride	0.8	NA	NA	NA	NA	0.4	0.200 U	0.243	0.200 U
Dissolved Metals (mg/L)									
Arsenic (7060A/200.8)	0.004	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010B/200.8)	0.3	**2.62**	**2.55**	**2.31**	**3.55**	**55.1**	**56.1**	**68.9**	**51.4**
Manganese (6010B/200.8)	0.05	**7.97**	**9.21**	**9.40**	**9.07**	**0.654**	**0.741**	**0.783**	**0.704**
Conventionals									
Chloride (mg/L) (325.2, 300.0)	230	NA	NA	NA	NA	8.2	9.06	6.94	7.50 U
N-Ammonia (mg-N/L) (350.1M, SM4500NH3D)	--(b)	NA	NA	NA	NA	36.4	40.4	28.9 J	18.7
Sulfate (mg/L) (375.2, 300.0)	250	NA	NA	NA	NA	5.8	5.00 U	9.41	7.50 U
Total Organic Carbon (mg/L) (415.1, SM5310C)	--	NA	NA	NA	NA	11.6	11.4	15.5	8.33
Field Parameters									
pH	--	6.77	6.30	6.61	6.64	6.43	6.48	6.6	6.52
Temperature (°C)	--	14.1	14.3	13.8	14.9	11.6	11.6	10.3	12.1
Specific Conductivity (µS)	--	498.5	723	741	798	760	794	752	853

Abbreviations and Acronyms:

°C = degrees Celsius
µg/L = micrograms per liter
µg/S = micrograms per Siemen
ID = identification
mg/L = milligrams per liter
mg-N/L = milligrams nitrate per liter
NA = not analyzed
SDG = sample delivery group

Notes:

U = Indicates compound was analyzed for, but was not detected at the given reporting limit.
Bold = Exceedance of screening level.
(a) Screening levels were developed based on federal criteria for drinking water and fresh surface water and practical quantitation limits.
(b) Cleanup level is based on un-ionized ammonia, which is calculated based on total ammonia, pH, and temperature.

Table 4
Groundwater Monitoring Scope
Former Eastgate Landfill

Groundwater Monitoring Event and Activity	Location and Planned Scope of Groundwater Monitoring								
	EL-101R	EL-102	EL-103	EL-104	EL-105	EL-106R	EL-107	French Drain	Pond A
Groundwater Sampling	--	--	VOCs (a), Dissolved Metals (b)	--	Dissolved Metals (b)	Dissolved Metals (c)	--	VOCs (a), Dissolved Metals (c), and Conventional Parameters (d)	--
Water Level Measurements	X	X	X	X	X	X	X		X

Notes:

(a) US Environmental Protection Agency (EPA) Method 8260C, Boeing 69.

(b) Dissolved metals include arsenic, iron, and manganese. Dissolved metals will be filtered in the field.

(c) Dissolved metals include only iron and manganese. Dissolved metals will be filtered in the field.

(d) Conventionals include chloride, N-ammonia, N-nitrate, N-nitrite, nitrate + nitrite, sulfate, total organic carbon, and chemical oxygen demand.

Abbreviations and Acronyms:

VOCs = volatile organic compounds

APPENDIX A

Laboratory Data Reports

Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Jennifer A Parsons
The Boeing Company
Support Services
PO BOX 34083
Seattle, Washington 98124

Generated 6/6/2023 9:43:44 AM Revision 1

JOB DESCRIPTION

Boeing: Eastgate Landfill

JOB NUMBER

410-124751-1

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster PA 17601

See page two for job notes and contact information.

Eurofins Lancaster Laboratories Environment Testing, LLC

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Vanessa N. Badman

Generated
6/6/2023 9:43:44 AM
Revision 1

Authorized for release by
Vanessa Badman, Project Manager
Vanessa.Badman@et.eurofinsus.com
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Eurofins Lancaster Laboratories Environment Testing, LLC

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Vanessa N. Badman

Table of Contents

Definitions/Glossary

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-124751-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative
410-124751-1

REVISION

The report being provided is a revision of the original report sent on 5/22/2023. The report (revision 1) is being revised due to the reporting of Nitrate/Nitrite.

Receipt
The samples were received on 4/29/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.2°C

GC/MS VOA
Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 410-374079 recovered outside acceptance criteria, low biased, for trans-1,4-Dichloro-2-butene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260D_LL: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following samples were received preserved with hydrochloric acid: EL-103-230428 (410-124751-4), French Drain-230428 (410-124751-5) and Trip Blank-230428 (410-124751-6). The requested target analyte list includes Acrolein and Acrylonitrile , an acid-labile compound that degrades in an acidic medium.

Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 410-374079 recovered above the upper control limit for Carbon disulfide, Styrene and Vinyl acetate. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260D_LL: The continuing calibration verification (CCV) associated with batch 410-374904 recovered outside acceptance criteria, low biased, for trans-1,4-Dichloro-2-butene. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Non-detections of the affected analytes are reported. Any detections are considered estimated.

Method 8260D_LL: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample was received preserved with hydrochloric acid: EL-100-230428 (410-124751-3). The requested target analyte list includes Acrolein and Acrylonitrile , an acid-labile compound that degrades in an acidic medium.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: The Boeing Company	Job ID: 410-124751-1
Project/Site: Boeing: Eastgate Landfill

## Client Sample ID: EL-106R-230428	Lab Sample ID: 410-124751-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	3.55		0.206		mg/L	1		6010D	Dissolved
Manganese	9.07		0.0103		mg/L	1		6010D	Dissolved

## Client Sample ID: EL-105-230428	Lab Sample ID: 410-124751-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2.54		0.206		mg/L	1		6010D	Dissolved
Manganese	2.48		0.0103		mg/L	1		6010D	Dissolved

## Client Sample ID: EL-100-230428	Lab Sample ID: 410-124751-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.56		0.500		ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	2.40		0.500		ug/L	1		8260D	Total/NA
Benzene	1.04		0.200		ug/L	1		8260D	Total/NA
Chlorobenzene	24.3		0.500		ug/L	1		8260D	Total/NA
Isopropylbenzene	0.795		0.500		ug/L	1		8260D	Total/NA
Arsenic	31.8		2.06		ug/L	1		200.8 Rev 5.4	Dissolved
Iron	27.7		0.206		mg/L	1		6010D	Dissolved
Manganese	3.94		0.0103		mg/L	1		6010D	Dissolved

## Client Sample ID: EL-103-230428	Lab Sample ID: 410-124751-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	1.38		0.500		ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	2.08		0.500		ug/L	1		8260D	Total/NA
Benzene	0.935		0.200		ug/L	1		8260D	Total/NA
Chlorobenzene	21.9		0.500		ug/L	1		8260D	Total/NA
Isopropylbenzene	0.709		0.500		ug/L	1		8260D	Total/NA
Arsenic	31.6		2.06		ug/L	1		200.8 Rev 5.4	Dissolved
Iron	28.1		0.206		mg/L	1		6010D	Dissolved
Manganese	4.04		0.0103		mg/L	1		6010D	Dissolved

## Client Sample ID: French Drain-230428	Lab Sample ID: 410-124751-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,2-Dichlorobenzene	0.801		0.500		ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	3.29		0.500		ug/L	1		8260D	Total/NA
Acetone	5.21		5.00		ug/L	1		8260D	Total/NA
Benzene	0.465		0.200		ug/L	1		8260D	Total/NA
Chlorobenzene	14.8		0.500		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.227		0.200		ug/L	1		8260D	Total/NA
Isopropylbenzene	1.15		0.500		ug/L	1		8260D	Total/NA
N-Propylbenzene	1.01		0.500		ug/L	1		8260D	Total/NA
sec-Butylbenzene	0.732		0.500		ug/L	1		8260D	Total/NA
Iron	51.4		0.206		mg/L	1		6010D	Dissolved
Manganese	0.704		0.0103		mg/L	1		6010D	Dissolved
Ammonia-N	18.7	^2	1.20		mg/L	5		4500 NH3 D-2011	Total/NA
Total Organic Carbon	8.33		1.00		mg/L	1		5310C-2011	Total/NA

## Client Sample ID: Trip Blank-230428	Lab Sample ID: 410-124751-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Client Sample ID: EL-106R-230428

Lab Sample ID: 410-124751-1
Date Collected: 04/28/23 09:49
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.55**		0.206		mg/L		05/04/23 09:12	05/05/23 07:35	1
Manganese	**9.07**		0.0103		mg/L		05/04/23 09:12	05/05/23 07:35	1

Client Sample ID: EL-105-230428

Lab Sample ID: 410-124751-2
Date Collected: 04/28/23 12:06
Matrix: Water
Date Received: 04/29/23 10:00

Method: EPA 200.8 Rev 5.4 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.06	U	2.06		ug/L		05/04/23 09:18	05/04/23 15:03	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**2.54**		0.206		mg/L		05/04/23 09:18	05/04/23 20:36	1
Manganese	**2.48**		0.0103		mg/L		05/04/23 09:18	05/04/23 20:36	1

Client Sample ID: EL-100-230428

Lab Sample ID: 410-124751-3
Date Collected: 04/28/23 13:21
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/12/23 00:52	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/12/23 00:52	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/12/23 00:52	1
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/12/23 00:52	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,2-Dichlorobenzene	**1.56**		0.500		ug/L			05/12/23 00:52	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/12/23 00:52	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/12/23 00:52	1
1,4-Dichlorobenzene	**2.40**		0.500		ug/L			05/12/23 00:52	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/12/23 00:52	1
2-Butanone	5.00	U	5.00		ug/L			05/12/23 00:52	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/12/23 00:52	1
2-Hexanone	5.00	U	5.00		ug/L			05/12/23 00:52	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/12/23 00:52	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/12/23 00:52	1
Acetone	5.00	U	5.00		ug/L			05/12/23 00:52	1
Acrolein	25.0	U cn	25.0		ug/L			05/12/23 00:52	1
Acrylonitrile	5.00	U cn	5.00		ug/L			05/12/23 00:52	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Client Sample ID: EL-100-230428

Date Collected: 04/28/23 13:21
Date Received: 04/29/23 10:00

Lab Sample ID: 410-124751-3

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.04**		0.200		ug/L			05/12/23 00:52	1
Bromobenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Bromochloromethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Bromoform	1.00	U	1.00		ug/L			05/12/23 00:52	1
Bromomethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Carbon disulfide	0.500	U	0.500		ug/L			05/12/23 00:52	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/12/23 00:52	1
Chlorobenzene	**24.3**		0.500		ug/L			05/12/23 00:52	1
Chloroethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Chloroform	0.200	U	0.200		ug/L			05/12/23 00:52	1
Chloromethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/12/23 00:52	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/12/23 00:52	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Dibromomethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Ethylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Freon 113	0.500	U	0.500		ug/L			05/12/23 00:52	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Isopropylbenzene	**0.795**		0.500		ug/L			05/12/23 00:52	1
m&p-Xylene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Methyl iodide	0.500	U	0.500		ug/L			05/12/23 00:52	1
Methylene Chloride	0.500	U	0.500		ug/L			05/12/23 00:52	1
Naphthalene	0.500	U	0.500		ug/L			05/12/23 00:52	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
N-Propylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
o-Xylene	0.500	U	0.500		ug/L			05/12/23 00:52	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/12/23 00:52	1
sec-Butylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Styrene	0.500	U	0.500		ug/L			05/12/23 00:52	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/12/23 00:52	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/12/23 00:52	1
Toluene	0.200	U	0.200		ug/L			05/12/23 00:52	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/12/23 00:52	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/12/23 00:52	1
trans-1,4-Dichloro-2-butene	5.00	U cn	5.00		ug/L			05/12/23 00:52	1
Trichloroethene	0.200	U	0.200		ug/L			05/12/23 00:52	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/12/23 00:52	1
Vinyl acetate	1.00	U	1.00		ug/L			05/12/23 00:52	1
Vinyl chloride	0.200	U	0.200		ug/L			05/12/23 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*		*05/12/23 00:52*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*05/12/23 00:52*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*05/12/23 00:52*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/12/23 00:52*	*1*

Method: EPA 200.8 Rev 5.4 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**31.8**		2.06		ug/L		05/04/23 09:18	05/04/23 15:05	1

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Client Sample ID: EL-100-230428

Lab Sample ID: 410-124751-3

Date Collected: 04/28/23 13:21
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**27.7**		0.206		mg/L		05/04/23 09:18	05/04/23 20:40	1
Manganese	**3.94**		0.0103		mg/L		05/04/23 09:18	05/04/23 20:40	1

Client Sample ID: EL-103-230428

Lab Sample ID: 410-124751-4

Date Collected: 04/28/23 13:56
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/10/23 16:35	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/10/23 16:35	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 16:35	1
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/10/23 16:35	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,2-Dichlorobenzene	**1.38**		0.500		ug/L			05/10/23 16:35	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/10/23 16:35	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:35	1
1,4-Dichlorobenzene	**2.08**		0.500		ug/L			05/10/23 16:35	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:35	1
2-Butanone	5.00	U	5.00		ug/L			05/10/23 16:35	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 16:35	1
2-Hexanone	5.00	U	5.00		ug/L			05/10/23 16:35	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 16:35	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/10/23 16:35	1
Acetone	5.00	U	5.00		ug/L			05/10/23 16:35	1
Acrolein	25.0	U cn	25.0		ug/L			05/10/23 16:35	1
Acrylonitrile	5.00	U cn	5.00		ug/L			05/10/23 16:35	1
Benzene	**0.935**		0.200		ug/L			05/10/23 16:35	1
Bromobenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Bromochloromethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Bromoform	1.00	U	1.00		ug/L			05/10/23 16:35	1
Bromomethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Carbon disulfide	0.500	U cn	0.500		ug/L			05/10/23 16:35	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/10/23 16:35	1
Chlorobenzene	**21.9**		0.500		ug/L			05/10/23 16:35	1
Chloroethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Chloroform	0.200	U	0.200		ug/L			05/10/23 16:35	1
Chloromethane	0.500	U	0.500		ug/L			05/10/23 16:35	1

Client Sample Results

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Client Sample ID: EL-103-230428

Lab Sample ID: 410-124751-4
Matrix: Water

Date Collected: 04/28/23 13:56
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 16:35	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 16:35	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Dibromomethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Ethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Freon 113	0.500	U	0.500		ug/L			05/10/23 16:35	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Isopropylbenzene	**0.709**		0.500		ug/L			05/10/23 16:35	1
m&p-Xylene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Methyl iodide	0.500	U	0.500		ug/L			05/10/23 16:35	1
Methylene Chloride	0.500	U	0.500		ug/L			05/10/23 16:35	1
Naphthalene	0.500	U	0.500		ug/L			05/10/23 16:35	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
N-Propylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
o-Xylene	0.500	U	0.500		ug/L			05/10/23 16:35	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/10/23 16:35	1
sec-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Styrene	0.500	U cn	0.500		ug/L			05/10/23 16:35	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 16:35	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/10/23 16:35	1
Toluene	0.200	U	0.200		ug/L			05/10/23 16:35	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 16:35	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 16:35	1
trans-1,4-Dichloro-2-butene	5.00	U cn	5.00		ug/L			05/10/23 16:35	1
Trichloroethene	0.200	U	0.200		ug/L			05/10/23 16:35	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/10/23 16:35	1
Vinyl acetate	1.00	U cn	1.00		ug/L			05/10/23 16:35	1
Vinyl chloride	0.200	U	0.200		ug/L			05/10/23 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*05/10/23 16:35*	*1*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*05/10/23 16:35*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*05/10/23 16:35*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*05/10/23 16:35*	*1*

Method: EPA 200.8 Rev 5.4 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**31.6**		2.06		ug/L		05/04/23 09:18	05/04/23 14:50	1

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**28.1**		0.206		mg/L		05/04/23 09:18	05/04/23 20:17	1
Manganese	**4.04**		0.0103		mg/L		05/04/23 09:18	05/04/23 20:17	1

Client Sample ID: French Drain-230428

Lab Sample ID: 410-124751-5
Matrix: Water

Date Collected: 04/28/23 14:49
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/10/23 16:56	1

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Client Sample ID: French Drain-230428
Date Collected: 04/28/23 14:49
Date Received: 04/29/23 10:00

Lab Sample ID: 410-124751-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/10/23 16:56	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/10/23 16:56	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 16:56	1
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/10/23 16:56	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,2-Dichlorobenzene	**0.801**		0.500		ug/L			05/10/23 16:56	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/10/23 16:56	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:56	1
1,4-Dichlorobenzene	**3.29**		0.500		ug/L			05/10/23 16:56	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 16:56	1
2-Butanone	5.00	U	5.00		ug/L			05/10/23 16:56	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 16:56	1
2-Hexanone	5.00	U	5.00		ug/L			05/10/23 16:56	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 16:56	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/10/23 16:56	1
Acetone	**5.21**		5.00		ug/L			05/10/23 16:56	1
Acrolein	25.0	U cn	25.0		ug/L			05/10/23 16:56	1
Acrylonitrile	5.00	U cn	5.00		ug/L			05/10/23 16:56	1
Benzene	**0.465**		0.200		ug/L			05/10/23 16:56	1
Bromobenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
Bromochloromethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Bromoform	1.00	U	1.00		ug/L			05/10/23 16:56	1
Bromomethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Carbon disulfide	0.500	U cn	0.500		ug/L			05/10/23 16:56	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/10/23 16:56	1
Chlorobenzene	**14.8**		0.500		ug/L			05/10/23 16:56	1
Chloroethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Chloroform	0.200	U	0.200		ug/L			05/10/23 16:56	1
Chloromethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
cis-1,2-Dichloroethene	**0.227**		0.200		ug/L			05/10/23 16:56	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 16:56	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Dibromomethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Ethylbenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
Freon 113	0.500	U	0.500		ug/L			05/10/23 16:56	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/10/23 16:56	1
Isopropylbenzene	**1.15**		0.500		ug/L			05/10/23 16:56	1
m&p-Xylene	0.500	U	0.500		ug/L			05/10/23 16:56	1

Client: The Boeing Company
Job ID: 410-124751-1
Project/Site: Boeing: Eastgate Landfill

Client Sample ID: French Drain-230428
Lab Sample ID: 410-124751-5
Date Collected: 04/28/23 14:49
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl iodide	0.500	U	0.500		ug/L			05/10/23 16:56	1
Methylene Chloride	0.500	U	0.500		ug/L			05/10/23 16:56	1
Naphthalene	0.500	U	0.500		ug/L			05/10/23 16:56	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
N-Propylbenzene	**1.01**		0.500		ug/L			05/10/23 16:56	1
o-Xylene	0.500	U	0.500		ug/L			05/10/23 16:56	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/10/23 16:56	1
sec-Butylbenzene	**0.732**		0.500		ug/L			05/10/23 16:56	1
Styrene	0.500	U cn	0.500		ug/L			05/10/23 16:56	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 16:56	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/10/23 16:56	1
Toluene	0.200	U	0.200		ug/L			05/10/23 16:56	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 16:56	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 16:56	1
trans-1,4-Dichloro-2-butene	5.00	U cn	5.00		ug/L			05/10/23 16:56	1
Trichloroethene	0.200	U	0.200		ug/L			05/10/23 16:56	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/10/23 16:56	1
Vinyl acetate	1.00	U cn	1.00		ug/L			05/10/23 16:56	1
Vinyl chloride	0.200	U	0.200		ug/L			05/10/23 16:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*		*05/10/23 16:56*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*05/10/23 16:56*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*05/10/23 16:56*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/10/23 16:56*	*1*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.50	U	7.50		mg/L			05/19/23 07:58	5
Chloride	7.50	U	7.50		mg/L			05/19/23 07:58	5

Method: SW846 6010D - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**51.4**		0.206		mg/L		05/04/23 09:12	05/05/23 07:22	1
Manganese	**0.704**		0.0103		mg/L		05/04/23 09:12	05/05/23 07:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N (EPA 353.2)	0.100	U	0.100		mg/L			05/01/23 10:36	1
Nitrate Nitrite as N (EPA 353.2)	0.100	U	0.100		mg/L			05/13/23 14:15	1
Nitrite as N (EPA 353.2)	0.0500	U	0.0500		mg/L			04/29/23 14:34	1
Chemical Oxygen Demand (EPA 410.4)	75.0	U	75.0		mg/L			05/04/23 05:50	1
Ammonia-N (SM 4500 NH3 D-2011)	**18.7**	**^2**	1.20		mg/L			05/08/23 16:11	5
Total Organic Carbon (SM 5310C-2011)	**8.33**		1.00		mg/L			05/05/23 07:02	1

Client Sample Results

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Client Sample ID: Trip Blank-230428

Lab Sample ID: 410-124751-6

Date Collected: 04/28/23 00:00
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/10/23 12:36	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/10/23 12:36	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 12:36	1
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/10/23 12:36	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/10/23 12:36	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 12:36	1
1,4-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 12:36	1
2-Butanone	5.00	U	5.00		ug/L			05/10/23 12:36	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 12:36	1
2-Hexanone	5.00	U	5.00		ug/L			05/10/23 12:36	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 12:36	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/10/23 12:36	1
Acetone	5.00	U	5.00		ug/L			05/10/23 12:36	1
Acrolein	25.0	U cn	25.0		ug/L			05/10/23 12:36	1
Acrylonitrile	5.00	U cn	5.00		ug/L			05/10/23 12:36	1
Benzene	0.200	U	0.200		ug/L			05/10/23 12:36	1
Bromobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Bromochloromethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Bromoform	1.00	U	1.00		ug/L			05/10/23 12:36	1
Bromomethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Carbon disulfide	0.500	U cn	0.500		ug/L			05/10/23 12:36	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/10/23 12:36	1
Chlorobenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Chloroethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Chloroform	0.200	U	0.200		ug/L			05/10/23 12:36	1
Chloromethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 12:36	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 12:36	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Dibromomethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Ethylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Freon 113	0.500	U	0.500		ug/L			05/10/23 12:36	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Isopropylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Client Sample ID: Trip Blank-230428

Lab Sample ID: 410-124751-6
Date Collected: 04/28/23 00:00
Matrix: Water
Date Received: 04/29/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m&p-Xylene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Methyl iodide	0.500	U	0.500		ug/L			05/10/23 12:36	1
Methylene Chloride	0.500	U	0.500		ug/L			05/10/23 12:36	1
Naphthalene	0.500	U	0.500		ug/L			05/10/23 12:36	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
N-Propylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
o-Xylene	0.500	U	0.500		ug/L			05/10/23 12:36	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/10/23 12:36	1
sec-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Styrene	0.500	U cn	0.500		ug/L			05/10/23 12:36	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 12:36	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/10/23 12:36	1
Toluene	0.200	U	0.200		ug/L			05/10/23 12:36	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 12:36	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 12:36	1
trans-1,4-Dichloro-2-butene	5.00	U cn	5.00		ug/L			05/10/23 12:36	1
Trichloroethene	0.200	U	0.200		ug/L			05/10/23 12:36	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/10/23 12:36	1
Vinyl acetate	1.00	U cn	1.00		ug/L			05/10/23 12:36	1
Vinyl chloride	0.200	U	0.200		ug/L			05/10/23 12:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*		*05/10/23 12:36*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*05/10/23 12:36*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*05/10/23 12:36*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/10/23 12:36*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)	(80-120)
410-124751-3	EL-100-230428	106	102	94	96
410-124751-4	EL-103-230428	104	102	96	96
410-124751-5	French Drain-230428	102	103	95	97
410-124751-6	Trip Blank-230428	110	105	91	98
LCS 410-374079/6	Lab Control Sample	104	102	98	100
LCS 410-374079/7	Lab Control Sample	108	104	92	99
LCS 410-374904/5	Lab Control Sample	104	103	97	100
LCS 410-374904/6	Lab Control Sample	110	104	91	98
LCSD 410-374079/8	Lab Control Sample Dup	106	104	92	98
LCSD 410-374904/7	Lab Control Sample Dup	108	104	92	97
MB 410-374079/10	Method Blank	107	105	93	98
MB 410-374904/9	Method Blank	107	105	91	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-374079/10
Matrix: Water
Analysis Batch: 374079

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/10/23 11:53	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/10/23 11:53	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 11:53	1
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/10/23 11:53	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/10/23 11:53	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 11:53	1
1,4-Dichlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/10/23 11:53	1
2-Butanone	5.00	U	5.00		ug/L			05/10/23 11:53	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 11:53	1
2-Hexanone	5.00	U	5.00		ug/L			05/10/23 11:53	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/10/23 11:53	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/10/23 11:53	1
Acetone	5.00	U	5.00		ug/L			05/10/23 11:53	1
Acrolein	25.0	U	25.0		ug/L			05/10/23 11:53	1
Acrylonitrile	5.00	U	5.00		ug/L			05/10/23 11:53	1
Benzene	0.200	U	0.200		ug/L			05/10/23 11:53	1
Bromobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Bromochloromethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Bromoform	1.00	U	1.00		ug/L			05/10/23 11:53	1
Bromomethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Carbon disulfide	0.500	U	0.500		ug/L			05/10/23 11:53	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/10/23 11:53	1
Chlorobenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Chloroethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Chloroform	0.200	U	0.200		ug/L			05/10/23 11:53	1
Chloromethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 11:53	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 11:53	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Dibromomethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Ethylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Freon 113	0.500	U	0.500		ug/L			05/10/23 11:53	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/10/23 11:53	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-374079/10
Matrix: Water
Analysis Batch: 374079

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
m&p-Xylene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Methyl iodide	0.500	U	0.500		ug/L			05/10/23 11:53	1
Methylene Chloride	0.500	U	0.500		ug/L			05/10/23 11:53	1
Naphthalene	0.500	U	0.500		ug/L			05/10/23 11:53	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
N-Propylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
o-Xylene	0.500	U	0.500		ug/L			05/10/23 11:53	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/10/23 11:53	1
sec-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Styrene	0.500	U	0.500		ug/L			05/10/23 11:53	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/10/23 11:53	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/10/23 11:53	1
Toluene	0.200	U	0.200		ug/L			05/10/23 11:53	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/10/23 11:53	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/10/23 11:53	1
trans-1,4-Dichloro-2-butene	5.00	U	5.00		ug/L			05/10/23 11:53	1
Trichloroethene	0.200	U	0.200		ug/L			05/10/23 11:53	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/10/23 11:53	1
Vinyl acetate	1.00	U	1.00		ug/L			05/10/23 11:53	1
Vinyl chloride	0.200	U	0.200		ug/L			05/10/23 11:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*05/10/23 11:53*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*05/10/23 11:53*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*05/10/23 11:53*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*05/10/23 11:53*	*1*

Lab Sample ID: LCS 410-374079/6
Matrix: Water
Analysis Batch: 374079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	5.00	5.177		ug/L		104	71 - 134
1,1,1-Trichloroethane	5.00	4.928		ug/L		99	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.077		ug/L		102	75 - 123
1,1,2-Trichloroethane	5.00	4.851		ug/L		97	80 - 120
1,1-Dichloroethane	5.00	4.845		ug/L		97	74 - 120
1,1-Dichloroethene	5.00	4.839		ug/L		97	80 - 131
1,1-Dichloropropene	5.00	4.964		ug/L		99	74 - 120
1,2,3-Trichlorobenzene	5.00	4.578		ug/L		92	68 - 125
1,2,3-Trichloropropane	5.00	5.067		ug/L		101	80 - 125
1,2,4-Trichlorobenzene	5.00	4.577		ug/L		92	68 - 122
1,2,4-Trimethylbenzene	5.00	5.103		ug/L		102	80 - 120
1,2-Dibromo-3-Chloropropane	5.00	5.260		ug/L		105	56 - 148
1,2-Dibromoethane	5.00	4.980		ug/L		100	80 - 120
1,2-Dichlorobenzene	5.00	5.015		ug/L		100	80 - 120
1,2-Dichloroethane	5.00	4.465		ug/L		89	69 - 122

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-374079/6
Matrix: Water
Analysis Batch: 374079

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloropropane	5.00	4.935		ug/L		99	80 - 120
1,3,5-Trimethylbenzene	5.00	5.053		ug/L		101	80 - 120
1,3-Dichlorobenzene	5.00	4.988		ug/L		100	80 - 120
1,3-Dichloropropane	5.00	5.006		ug/L		100	80 - 120
1,4-Dichlorobenzene	5.00	5.169		ug/L		103	80 - 120
2,2-Dichloropropane	5.00	5.242		ug/L		105	61 - 141
2-Butanone	62.5	48.89		ug/L		78	59 - 141
2-Chlorotoluene	5.00	5.077		ug/L		102	80 - 120
2-Hexanone	62.5	44.78		ug/L		72	52 - 140
4-Chlorotoluene	5.00	5.231		ug/L		105	80 - 120
4-Methyl-2-pentanone	62.5	45.68		ug/L		73	55 - 140
Acetone	62.5	48.45		ug/L		78	60 - 146
Acrolein	37.5	27.77		ug/L		74	45 - 140
Acrylonitrile	25.0	18.62		ug/L		74	64 - 139
Benzene	5.00	5.030		ug/L		101	80 - 120
Bromobenzene	5.00	5.038		ug/L		101	80 - 120
Bromochloromethane	5.00	5.319		ug/L		106	80 - 120
Bromodichloromethane	5.00	5.011		ug/L		100	73 - 124
Bromoform	5.00	4.875		ug/L		98	49 - 144
Bromomethane	5.00	4.564		ug/L		91	60 - 136
Carbon disulfide	5.00	5.494		ug/L		110	67 - 130
Carbon tetrachloride	5.00	4.999		ug/L		100	64 - 141
Chlorobenzene	5.00	4.850		ug/L		97	80 - 120
Chloroethane	5.00	4.561		ug/L		91	63 - 120
Chloroform	5.00	4.906		ug/L		98	80 - 120
Chloromethane	5.00	4.164		ug/L		83	56 - 124
cis-1,2-Dichloroethene	5.00	5.097		ug/L		102	80 - 122
cis-1,3-Dichloropropene	5.00	4.823		ug/L		96	67 - 121
Dibromochloromethane	5.00	5.087		ug/L		102	64 - 138
Dibromomethane	5.00	5.069		ug/L		101	80 - 122
Ethylbenzene	5.00	4.905		ug/L		98	80 - 120
Freon 113	5.00	5.067		ug/L		101	75 - 133
Hexachlorobutadiene	5.00	4.626		ug/L		93	72 - 132
Isopropylbenzene	5.00	5.164		ug/L		103	80 - 120
m&p-Xylene	10.0	10.67		ug/L		107	80 - 120
Methyl iodide	5.00	5.118		ug/L		102	77 - 120
Methylene Chloride	5.00	5.086		ug/L		102	80 - 120
Naphthalene	5.00	4.702		ug/L		94	64 - 122
n-Butylbenzene	5.00	5.145		ug/L		103	74 - 123
N-Propylbenzene	5.00	4.915		ug/L		98	74 - 122
o-Xylene	5.00	5.282		ug/L		106	80 - 120
p-Isopropyltoluene	5.00	5.199		ug/L		104	80 - 120
sec-Butylbenzene	5.00	5.151		ug/L		103	80 - 120
Styrene	5.00	5.444		ug/L		109	80 - 120
tert-Butylbenzene	5.00	5.256		ug/L		105	79 - 120
Tetrachloroethene	5.00	4.793		ug/L		96	80 - 120
Toluene	5.00	5.069		ug/L		101	80 - 120
trans-1,2-Dichloroethene	5.00	4.926		ug/L		99	80 - 122
trans-1,3-Dichloropropene	5.00	4.823		ug/L		96	61 - 129

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-374079/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374079

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,4-Dichloro-2-butene	25.0	7.884		ug/L		32	10 - 172
Trichloroethene	5.00	4.731		ug/L		95	80 - 120
Trichlorofluoromethane	5.00	3.590		ug/L		72	62 - 136
Vinyl chloride	5.00	4.182		ug/L		84	60 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-374079/7 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374079

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl acetate	12.5	16.76		ug/L		134	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 410-374079/8 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374079

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl acetate	12.5	14.66		ug/L		117	38 - 145	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: MB 410-374904/9 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374904

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,1,1-Trichloroethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,1,2,2-Tetrachloroethane	0.200	U	0.200		ug/L			05/11/23 20:50	1
1,1,2-Trichloroethane	0.200	U	0.200		ug/L			05/11/23 20:50	1
1,1-Dichloroethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,1-Dichloroethene	0.200	U	0.200		ug/L			05/11/23 20:50	1

Client: The Boeing Company	Job ID: 410-124751-1
Project/Site: Boeing: Eastgate Landfill

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-374904/9
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2,3-Trichlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2,3-Trichloropropane	1.00	U	1.00		ug/L			05/11/23 20:50	1
1,2,4-Trichlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2,4-Trimethylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2-Dibromo-3-Chloropropane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2-Dibromoethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2-Dichlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,2-Dichloroethane	0.200	U	0.200		ug/L			05/11/23 20:50	1
1,2-Dichloropropane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,3,5-Trimethylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,3-Dichlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,3-Dichloropropane	0.500	U	0.500		ug/L			05/11/23 20:50	1
1,4-Dichlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
2,2-Dichloropropane	0.500	U	0.500		ug/L			05/11/23 20:50	1
2-Butanone	5.00	U	5.00		ug/L			05/11/23 20:50	1
2-Chlorotoluene	0.500	U	0.500		ug/L			05/11/23 20:50	1
2-Hexanone	5.00	U	5.00		ug/L			05/11/23 20:50	1
4-Chlorotoluene	0.500	U	0.500		ug/L			05/11/23 20:50	1
4-Methyl-2-pentanone	5.00	U	5.00		ug/L			05/11/23 20:50	1
Acetone	5.00	U	5.00		ug/L			05/11/23 20:50	1
Acrolein	25.0	U	25.0		ug/L			05/11/23 20:50	1
Acrylonitrile	5.00	U	5.00		ug/L			05/11/23 20:50	1
Benzene	0.200	U	0.200		ug/L			05/11/23 20:50	1
Bromobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Bromochloromethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Bromodichloromethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Bromoform	1.00	U	1.00		ug/L			05/11/23 20:50	1
Bromomethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Carbon disulfide	0.500	U	0.500		ug/L			05/11/23 20:50	1
Carbon tetrachloride	0.200	U	0.200		ug/L			05/11/23 20:50	1
Chlorobenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Chloroethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Chloroform	0.200	U	0.200		ug/L			05/11/23 20:50	1
Chloromethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
cis-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/11/23 20:50	1
cis-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/11/23 20:50	1
Dibromochloromethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Dibromomethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Ethylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Freon 113	0.500	U	0.500		ug/L			05/11/23 20:50	1
Hexachlorobutadiene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Isopropylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
m&p-Xylene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Methyl iodide	0.500	U	0.500		ug/L			05/11/23 20:50	1
Methylene Chloride	0.500	U	0.500		ug/L			05/11/23 20:50	1
Naphthalene	0.500	U	0.500		ug/L			05/11/23 20:50	1
n-Butylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
N-Propylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 410-374904/9
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.500	U	0.500		ug/L			05/11/23 20:50	1
p-Isopropyltoluene	0.500	U	0.500		ug/L			05/11/23 20:50	1
sec-Butylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Styrene	0.500	U	0.500		ug/L			05/11/23 20:50	1
tert-Butylbenzene	0.500	U	0.500		ug/L			05/11/23 20:50	1
Tetrachloroethene	0.200	U	0.200		ug/L			05/11/23 20:50	1
Toluene	0.200	U	0.200		ug/L			05/11/23 20:50	1
trans-1,2-Dichloroethene	0.200	U	0.200		ug/L			05/11/23 20:50	1
trans-1,3-Dichloropropene	0.200	U	0.200		ug/L			05/11/23 20:50	1
trans-1,4-Dichloro-2-butene	5.00	U	5.00		ug/L			05/11/23 20:50	1
Trichloroethene	0.200	U	0.200		ug/L			05/11/23 20:50	1
Trichlorofluoromethane	0.500	U	0.500		ug/L			05/11/23 20:50	1
Vinyl acetate	1.00	U	1.00		ug/L			05/11/23 20:50	1
Vinyl chloride	0.200	U	0.200		ug/L			05/11/23 20:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*05/11/23 20:50*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*05/11/23 20:50*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*05/11/23 20:50*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*05/11/23 20:50*	*1*

Lab Sample ID: LCS 410-374904/5
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	5.00	5.584		ug/L		112	71 - 134
1,1,1-Trichloroethane	5.00	5.171		ug/L		103	78 - 126
1,1,2,2-Tetrachloroethane	5.00	5.324		ug/L		106	75 - 123
1,1,2-Trichloroethane	5.00	5.220		ug/L		104	80 - 120
1,1-Dichloroethane	5.00	4.955		ug/L		99	74 - 120
1,1-Dichloroethene	5.00	4.956		ug/L		99	80 - 131
1,1-Dichloropropene	5.00	5.091		ug/L		102	74 - 120
1,2,3-Trichlorobenzene	5.00	4.713		ug/L		94	68 - 125
1,2,3-Trichloropropane	5.00	5.496		ug/L		110	80 - 125
1,2,4-Trichlorobenzene	5.00	5.007		ug/L		100	68 - 122
1,2,4-Trimethylbenzene	5.00	5.425		ug/L		109	80 - 120
1,2-Dibromo-3-Chloropropane	5.00	5.024		ug/L		100	56 - 148
1,2-Dibromoethane	5.00	5.303		ug/L		106	80 - 120
1,2-Dichlorobenzene	5.00	5.341		ug/L		107	80 - 120
1,2-Dichloroethane	5.00	4.975		ug/L		100	69 - 122
1,2-Dichloropropane	5.00	5.118		ug/L		102	80 - 120
1,3,5-Trimethylbenzene	5.00	5.379		ug/L		108	80 - 120
1,3-Dichlorobenzene	5.00	5.294		ug/L		106	80 - 120
1,3-Dichloropropane	5.00	5.220		ug/L		104	80 - 120
1,4-Dichlorobenzene	5.00	5.582		ug/L		112	80 - 120
2,2-Dichloropropane	5.00	5.306		ug/L		106	61 - 141
2-Butanone	62.5	56.70		ug/L		91	59 - 141

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-374904/5
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Chlorotoluene	5.00	5.438		ug/L		109	80 - 120
2-Hexanone	62.5	53.32		ug/L		85	52 - 140
4-Chlorotoluene	5.00	5.576		ug/L		112	80 - 120
4-Methyl-2-pentanone	62.5	52.53		ug/L		84	55 - 140
Acetone	62.5	57.98		ug/L		93	60 - 146
Acrolein	37.5	35.89		ug/L		96	45 - 140
Acrylonitrile	25.0	24.73		ug/L		99	64 - 139
Benzene	5.00	5.185		ug/L		104	80 - 120
Bromobenzene	5.00	5.399		ug/L		108	80 - 120
Bromochloromethane	5.00	5.606		ug/L		112	80 - 120
Bromodichloromethane	5.00	5.408		ug/L		108	73 - 124
Bromoform	5.00	5.336		ug/L		107	49 - 144
Bromomethane	5.00	5.021		ug/L		100	60 - 136
Carbon disulfide	5.00	5.570		ug/L		111	67 - 130
Carbon tetrachloride	5.00	5.128		ug/L		103	64 - 141
Chlorobenzene	5.00	5.197		ug/L		104	80 - 120
Chloroethane	5.00	4.724		ug/L		94	63 - 120
Chloroform	5.00	5.180		ug/L		104	80 - 120
Chloromethane	5.00	4.338		ug/L		87	56 - 124
cis-1,2-Dichloroethene	5.00	5.284		ug/L		106	80 - 122
cis-1,3-Dichloropropene	5.00	5.093		ug/L		102	67 - 121
Dibromochloromethane	5.00	5.562		ug/L		111	64 - 138
Dibromomethane	5.00	5.356		ug/L		107	80 - 122
Ethylbenzene	5.00	5.166		ug/L		103	80 - 120
Freon 113	5.00	5.100		ug/L		102	75 - 133
Hexachlorobutadiene	5.00	5.038		ug/L		101	72 - 132
Isopropylbenzene	5.00	5.421		ug/L		108	80 - 120
m&p-Xylene	10.0	11.29		ug/L		113	80 - 120
Methyl iodide	5.00	5.441		ug/L		109	77 - 120
Methylene Chloride	5.00	5.208		ug/L		104	80 - 120
Naphthalene	5.00	4.854		ug/L		97	64 - 122
n-Butylbenzene	5.00	5.215		ug/L		104	74 - 123
N-Propylbenzene	5.00	5.095		ug/L		102	74 - 122
o-Xylene	5.00	5.538		ug/L		111	80 - 120
p-Isopropyltoluene	5.00	5.500		ug/L		110	80 - 120
sec-Butylbenzene	5.00	5.394		ug/L		108	80 - 120
Styrene	5.00	5.816		ug/L		116	80 - 120
tert-Butylbenzene	5.00	5.724		ug/L		114	79 - 120
Tetrachloroethene	5.00	5.109		ug/L		102	80 - 120
Toluene	5.00	5.313		ug/L		106	80 - 120
trans-1,2-Dichloroethene	5.00	5.194		ug/L		104	80 - 122
trans-1,3-Dichloropropene	5.00	5.148		ug/L		103	61 - 129
trans-1,4-Dichloro-2-butene	25.0	10.24		ug/L		41	10 - 172
Trichloroethene	5.00	4.943		ug/L		99	80 - 120
Trichlorofluoromethane	5.00	3.664		ug/L		73	62 - 136
Vinyl chloride	5.00	4.247		ug/L		85	60 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 410-374904/5
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCS 410-374904/6
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl acetate	12.5	14.56		ug/L		116	38 - 145

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*
Toluene-d8 (Surr)	*98*		*80 - 120*

Lab Sample ID: LCSD 410-374904/7
Matrix: Water
Analysis Batch: 374904

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl acetate	12.5	13.31		ug/L		106	38 - 145	9	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*
Toluene-d8 (Surr)	*97*		*80 - 120*

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 410-377605/5
Matrix: Water
Analysis Batch: 377605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.50	U	1.50		mg/L			05/19/23 04:09	1
Chloride	1.50	U	1.50		mg/L			05/19/23 04:09	1

Lab Sample ID: LCS 410-377605/3
Matrix: Water
Analysis Batch: 377605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	7.50	7.212		mg/L		96	90 - 110
Chloride	3.00	2.936		mg/L		98	90 - 110

Method: EPA 300.0 R2.1 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 410-377605/4
Matrix: Water
Analysis Batch: 377605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	7.50	7.224		mg/L		96	90 - 110	0	20
Chloride	3.00	2.934		mg/L		98	90 - 110	0	20

Method: 200.8 Rev 5.4 - Metals (ICP/MS)

Lab Sample ID: MB 410-372077/1-A
Matrix: Water
Analysis Batch: 372417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.06	U	2.06		ug/L		05/04/23 09:18	05/04/23 14:08	1

Lab Sample ID: LCS 410-372077/2-A
Matrix: Water
Analysis Batch: 372417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	500	519.4		ug/L		104	85 - 115

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-372072/1-A
Matrix: Water
Analysis Batch: 372652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372072

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		05/04/23 09:12	05/05/23 06:56	1
Manganese	0.0103	U	0.0103		mg/L		05/04/23 09:12	05/05/23 06:56	1

Lab Sample ID: LCS 410-372072/2-A
Matrix: Water
Analysis Batch: 372652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372072

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	5.00	4.941		mg/L		99	80 - 120
Manganese	0.500	0.5061		mg/L		101	80 - 120

Lab Sample ID: MB 410-372077/1-A
Matrix: Water
Analysis Batch: 372444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.206	U	0.206		mg/L		05/04/23 09:18	05/04/23 19:58	1
Manganese	0.0103	U	0.0103		mg/L		05/04/23 09:18	05/04/23 19:58	1

Method: 6010D - Metals (ICP) (Continued)

Lab Sample ID: LCS 410-372077/2-A
Matrix: Water
Analysis Batch: 372444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	5.00	4.928		mg/L		99	80 - 120
Manganese	0.500	0.5165		mg/L		103	80 - 120

Method: 353.2 - Nitrogen, Nitrite

Lab Sample ID: MB 410-370223/13
Matrix: Water
Analysis Batch: 370223

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	0.0500	U	0.0500		mg/L			04/29/23 14:33	1

Lab Sample ID: LCS 410-370223/14
Matrix: Water
Analysis Batch: 370223

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	0.700	0.6323		mg/L		90	90 - 110

Lab Sample ID: LCSD 410-370223/15
Matrix: Water
Analysis Batch: 370223

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	0.700	0.6293		mg/L		90	90 - 110	0	20

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: LCS 410-375504/85
Matrix: Water
Analysis Batch: 375504

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	2.50	2.395		mg/L		96	90 - 110

Lab Sample ID: LCSD 410-375504/86
Matrix: Water
Analysis Batch: 375504

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate Nitrite as N	2.50	2.430		mg/L		97	90 - 110	1	20

Lab Sample ID: 410-124751-5 MS
Matrix: Water
Analysis Batch: 375504

Client Sample ID: French Drain-230428
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate Nitrite as N	0.100	U	1.00	0.9943		mg/L		99	90 - 110

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: 410-124751-5 DU
Matrix: Water
Analysis Batch: 375504

Client Sample ID: French Drain-230428
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate Nitrite as N	0.100	U	0.100	U	mg/L		NC	10

Method: 410.4 - COD

Lab Sample ID: MB 410-371957/4
Matrix: Water
Analysis Batch: 371957

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	75.0	U	75.0		mg/L			05/04/23 05:50	1

Lab Sample ID: LCS 410-371957/5
Matrix: Water
Analysis Batch: 371957

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	500	496.1		mg/L		99	90 - 110

Lab Sample ID: 410-124751-5 MS
Matrix: Water
Analysis Batch: 371957

Client Sample ID: French Drain-230428
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	75.0	U	400	411.5		mg/L		103	90 - 110

Lab Sample ID: 410-124751-5 DU
Matrix: Water
Analysis Batch: 371957

Client Sample ID: French Drain-230428
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chemical Oxygen Demand	75.0	U	75.0	U	mg/L		NC	10

Method: 4500 NH3 D-2011 - Ammonia

Lab Sample ID: MB 410-373595/3
Matrix: Water
Analysis Batch: 373595

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia-N	0.240	U	0.240		mg/L			05/08/23 14:01	1

Lab Sample ID: LCS 410-373595/4
Matrix: Water
Analysis Batch: 373595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia-N	5.00	5.220		mg/L		104	88 - 122

Method: 5310C-2011 - Total Organic Carbon/Persulfate - Ultrav

Lab Sample ID: MB 410-372546/36
Matrix: Water
Analysis Batch: 372546

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			05/04/23 20:46	1

Lab Sample ID: MB 410-372546/6
Matrix: Water
Analysis Batch: 372546

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			05/04/23 13:27	1

Lab Sample ID: MB 410-372546/68
Matrix: Water
Analysis Batch: 372546

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.00	U	1.00		mg/L			05/05/23 04:37	1

Lab Sample ID: LCS 410-372546/35
Matrix: Water
Analysis Batch: 372546

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	25.0	24.40		mg/L		98	91 - 113

Lab Sample ID: LCS 410-372546/67
Matrix: Water
Analysis Batch: 372546

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	25.0	24.05		mg/L		96	91 - 113

GC/MS VOA

Analysis Batch: 374079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-4	EL-103-230428	Total/NA	Water	8260D	
410-124751-5	French Drain-230428	Total/NA	Water	8260D	
410-124751-6	Trip Blank-230428	Total/NA	Water	8260D	
MB 410-374079/10	Method Blank	Total/NA	Water	8260D	
LCS 410-374079/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 410-374079/7	Lab Control Sample	Total/NA	Water	8260D	
LCSD 410-374079/8	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 374904

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-3	EL-100-230428	Total/NA	Water	8260D	
MB 410-374904/9	Method Blank	Total/NA	Water	8260D	
LCS 410-374904/5	Lab Control Sample	Total/NA	Water	8260D	
LCS 410-374904/6	Lab Control Sample	Total/NA	Water	8260D	
LCSD 410-374904/7	Lab Control Sample Dup	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 377605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	EPA 300.0 R2.1	
MB 410-377605/5	Method Blank	Total/NA	Water	EPA 300.0 R2.1	
LCS 410-377605/3	Lab Control Sample	Total/NA	Water	EPA 300.0 R2.1	
LCSD 410-377605/4	Lab Control Sample Dup	Total/NA	Water	EPA 300.0 R2.1	

Metals

Prep Batch: 372072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-1	EL-106R-230428	Dissolved	Water	Non-Digest Prep	
410-124751-5	French Drain-230428	Dissolved	Water	Non-Digest Prep	
MB 410-372072/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-372072/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Prep Batch: 372077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-2	EL-105-230428	Dissolved	Water	Non-Digest Prep	
410-124751-3	EL-100-230428	Dissolved	Water	Non-Digest Prep	
410-124751-4	EL-103-230428	Dissolved	Water	Non-Digest Prep	
MB 410-372077/1-A	Method Blank	Total/NA	Water	Non-Digest Prep	
LCS 410-372077/2-A	Lab Control Sample	Total/NA	Water	Non-Digest Prep	

Analysis Batch: 372417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-2	EL-105-230428	Dissolved	Water	200.8 Rev 5.4	372077
410-124751-3	EL-100-230428	Dissolved	Water	200.8 Rev 5.4	372077
410-124751-4	EL-103-230428	Dissolved	Water	200.8 Rev 5.4	372077
MB 410-372077/1-A	Method Blank	Total/NA	Water	200.8 Rev 5.4	372077
LCS 410-372077/2-A	Lab Control Sample	Total/NA	Water	200.8 Rev 5.4	372077

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

QC Association Summary

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Metals

Analysis Batch: 372444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-2	EL-105-230428	Dissolved	Water	6010D	372077
410-124751-3	EL-100-230428	Dissolved	Water	6010D	372077
410-124751-4	EL-103-230428	Dissolved	Water	6010D	372077
MB 410-372077/1-A	Method Blank	Total/NA	Water	6010D	372077
LCS 410-372077/2-A	Lab Control Sample	Total/NA	Water	6010D	372077

Analysis Batch: 372652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-1	EL-106R-230428	Dissolved	Water	6010D	372072
410-124751-5	French Drain-230428	Dissolved	Water	6010D	372072
MB 410-372072/1-A	Method Blank	Total/NA	Water	6010D	372072
LCS 410-372072/2-A	Lab Control Sample	Total/NA	Water	6010D	372072

General Chemistry

Analysis Batch: 370223

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	353.2	
MB 410-370223/13	Method Blank	Total/NA	Water	353.2	
LCS 410-370223/14	Lab Control Sample	Total/NA	Water	353.2	
LCSD 410-370223/15	Lab Control Sample Dup	Total/NA	Water	353.2	

Analysis Batch: 370540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	353.2	

Analysis Batch: 371957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	410.4	
MB 410-371957/4	Method Blank	Total/NA	Water	410.4	
LCS 410-371957/5	Lab Control Sample	Total/NA	Water	410.4	
410-124751-5 MS	French Drain-230428	Total/NA	Water	410.4	
410-124751-5 DU	French Drain-230428	Total/NA	Water	410.4	

Analysis Batch: 372546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	5310C-2011	
MB 410-372546/36	Method Blank	Total/NA	Water	5310C-2011	
MB 410-372546/6	Method Blank	Total/NA	Water	5310C-2011	
MB 410-372546/68	Method Blank	Total/NA	Water	5310C-2011	
LCS 410-372546/35	Lab Control Sample	Total/NA	Water	5310C-2011	
LCS 410-372546/67	Lab Control Sample	Total/NA	Water	5310C-2011	

Analysis Batch: 373595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	4500 NH3 D-2011	
MB 410-373595/3	Method Blank	Total/NA	Water	4500 NH3 D-2011	
LCS 410-373595/4	Lab Control Sample	Total/NA	Water	4500 NH3 D-2011	

QC Association Summary

Client: The Boeing Company Job ID: 410-124751-1
Project/Site: Boeing: Eastgate Landfill

General Chemistry

Analysis Batch: 375504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-124751-5	French Drain-230428	Total/NA	Water	353.2	
LCS 410-375504/85	Lab Control Sample	Total/NA	Water	353.2	
LCSD 410-375504/86	Lab Control Sample Dup	Total/NA	Water	353.2	
410-124751-5 MS	French Drain-230428	Total/NA	Water	353.2	
410-124751-5 DU	French Drain-230428	Total/NA	Water	353.2	

Client Sample ID: EL-106R-230428
Lab Sample ID: 410-124751-1
Date Collected: 04/28/23 09:49
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	Non-Digest Prep			372072	HUH3	ELLE	05/04/23 09:12
Dissolved	Analysis	6010D		1	372652	MT26	ELLE	05/05/23 07:35

Client Sample ID: EL-105-230428
Lab Sample ID: 410-124751-2
Date Collected: 04/28/23 12:06
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	200.8 Rev 5.4		1	372417	UCIG	ELLE	05/04/23 15:03
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	6010D		1	372444	MT26	ELLE	05/04/23 20:36

Client Sample ID: EL-100-230428
Lab Sample ID: 410-124751-3
Date Collected: 04/28/23 13:21
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	374904	JS6E	ELLE	05/12/23 00:52
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	200.8 Rev 5.4		1	372417	UCIG	ELLE	05/04/23 15:05
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	6010D		1	372444	MT26	ELLE	05/04/23 20:40

Client Sample ID: EL-103-230428
Lab Sample ID: 410-124751-4
Date Collected: 04/28/23 13:56
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	374079	DVW2	ELLE	05/10/23 16:35
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	200.8 Rev 5.4		1	372417	UCIG	ELLE	05/04/23 14:50
Dissolved	Prep	Non-Digest Prep			372077	HUH3	ELLE	05/04/23 09:18
Dissolved	Analysis	6010D		1	372444	MT26	ELLE	05/04/23 20:17

Client Sample ID: French Drain-230428
Lab Sample ID: 410-124751-5
Date Collected: 04/28/23 14:49
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	374079	DVW2	ELLE	05/10/23 16:56
Total/NA	Analysis	EPA 300.0 R2.1		5	377605	W3XT	ELLE	05/19/23 07:58
Dissolved	Prep	Non-Digest Prep			372072	HUH3	ELLE	05/04/23 09:12
Dissolved	Analysis	6010D		1	372652	MT26	ELLE	05/05/23 07:22
Total/NA	Analysis	353.2		1	375504	Q3HN	ELLE	05/13/23 14:15

Client Sample ID: French Drain-230428
Lab Sample ID: 410-124751-5

Date Collected: 04/28/23 14:49
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	353.2		1	370223	Q3HN	ELLE	04/29/23 14:34
Total/NA	Analysis	353.2		1	370540	UKJF	ELLE	05/01/23 10:36
Total/NA	Analysis	410.4		1	371957	USAE	ELLE	05/04/23 05:50
Total/NA	Analysis	4500 NH3 D-2011		5	373595	UML5	ELLE	05/08/23 16:11
Total/NA	Analysis	5310C-2011		1	372546	P684	ELLE	05/05/23 07:02

Client Sample ID: Trip Blank-230428
Lab Sample ID: 410-124751-6

Date Collected: 04/28/23 00:00
Matrix: Water
Date Received: 04/29/23 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	374079	DVW2	ELLE	05/10/23 12:36

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
353.2		Water	Nitrate as N
353.2		Water	Nitrate Nitrite as N
353.2		Water	Nitrite as N
5310C-2011		Water	Total Organic Carbon
EPA 300.0 R2.1		Water	Chloride
EPA 300.0 R2.1		Water	Sulfate

Method Summary

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
EPA 300.0 R2.1	Anions, Ion Chromatography	EPA	ELLE
200.8 Rev 5.4	Metals (ICP/MS)	EPA	ELLE
6010D	Metals (ICP)	SW846	ELLE
353.2	Nitrate by Calculation	EPA	ELLE
353.2	Nitrogen, Nitrate-Nitrite	EPA	ELLE
353.2	Nitrogen, Nitrite	EPA	ELLE
410.4	COD	EPA	ELLE
4500 NH3 D-2011	Ammonia	SM	ELLE
5310C-2011	Total Organic Carbon/Persulfate - Ultrav	SM	ELLE
5030C	Purge and Trap	SW846	ELLE
Non-Digest Prep	Preparation, Non-Digested Aqueous Metals	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: The Boeing Company
Project/Site: Boeing: Eastgate Landfill

Job ID: 410-124751-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-124751-1	EL-106R-230428	Water	04/28/23 09:49	04/29/23 10:00
410-124751-2	EL-105-230428	Water	04/28/23 12:06	04/29/23 10:00
410-124751-3	EL-100-230428	Water	04/28/23 13:21	04/29/23 10:00
410-124751-4	EL-103-230428	Water	04/28/23 13:56	04/29/23 10:00
410-124751-5	French Drain-230428	Water	04/28/23 14:49	04/29/23 10:00
410-124751-6	Trip Blank-230428	Water	04/28/23 00:00	04/29/23 10:00

LANDAU ASSOCIATES

Chain-of-Custody Record

- [x] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] ______

Date 4/28/2023

Page 1 of 1

410-124751 Chain of Custody

Project Name Boeing Regional GW   Project No. 025217.007.042.042

Project Location/Event Bellevue, WA / Eastgate Landfill April 2023

Sampler's Name Adam Toroak

Project Contact Chris Kimmel, Jen Parsons

Send Results To C. Kimmel, J. Parsons

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (8260C) Boeing 969	Dissolved Metals (200.8) FF	Dissolved Metals (Fe, Mn, 6010B) FF	Chloride/Sulfate (300.0)	Nitrate, Nitrite N+N Nitrogen (353.2)	N-Ammonia (SM-4500-NH3-1997)	COD (410.4)	TOC (SM5310C-2000)				
EL-106R-230428	4/28/2023	949	AQ	1			X									
EL-105-230428	|	1206	|	1		X	X									
EL-100-230428	|	1321	|	4	X	X	X									
EL-103-230428	|	1356	|	4	X	X	X									
French Drain-230428	|	1449	|	11	X		X	X	X	X	X	X				
Trip Blank-230428	|	—	|	2	X											

Special Handling Requirements: ______

Shipment Method: FedEx

Stored on ice: Yes / No

Observations/Comments

- [ ] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx - Acid wash cleanup
  - [ ] Silica gel cleanup
- [x] Dissolved metal samples were field filtered

Other ______

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature	Signature	Signature [signature]
Printed Name Adam Toroak	Printed Name	Printed Name	Printed Name Zane Hollinger
Company LAI	Company	Company	Company EUET
Date 4/28/2023 Time 1537	Date Time	Date Time	Date 4/29/23 Time 10:00

SR

AEH

Temp = °C

WHITE COPY - Laboratory   YELLOW COPY - Project File   PINK COPY - Client Representative   10/2018

LANDAU ASSOCIATES

Chain-of-Custody Record

- [ ] North Seattle (206) 631-8660
- [ ] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] AT

Date ________ Page ____ of ____

Turnaround Time:
Standard ________
Accelerated ________

Project Name: Boeing Regional Gw
Project No.: 025217.003.099.049
Project Location/Event: Bellevue, WA / Eastgate Landfill April 2023
Sampler's Name: Adam Tiegtie
Project Contact: Chris Kimmel, Jen Parsons
Send Results To: C. Kimmel, J. Parsons

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers													Observations/Comments
EL-[illegible]-230418	4/28/2023	949	W	1													
EL-125-230428	|	1206	|	1		X	X										
EL-100-230428	|	1321	|	4	X	X	X										
EL-103-230428	|	1356	|	4	X	X	X										
French Drain-230428	|	1449	|	11	X		X	X	X	X	X	X					
Top Tank-230428	|	—	|	2	X												

Special Handling Requirements: ________

Shipment Method: ________

Stored on ice Yes / No

Observations/Comments

Allow water samples to settle, collect aliquot from clear portion ☐

NWTPH-Dx - Acid wash cleanup ☐
- Silica gel cleanup ☐

X Dissolved metal samples were field filtered

Other ________

816491531709

Relinquished by	Received by	Relinquished by	Received by
Signature [illegible]	Signature	Signature	Signature [illegible]
Printed Name Adam Tiegtie	Printed Name	Printed Name	Printed Name Zane Hollinger
Company LAI	Company	Company	Company ELET
Date 4/28/2023 Time 1537	Date Time	Date Time	Date 4/29/23 Time 10:00

WHITE COPY - Laboratory   YELLOW COPY - Project File   PINK COPY - Client Representative

10/2018

Login Sample Receipt Checklist

Client: The Boeing Company

Job Number: 410-124751-1

Login Number: 124751
List Number: 1
Creator: Roth, Stephanie

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	True	

APPENDIX B

Laboratory Data Quality Evaluation

TECHNICAL MEMORANDUM

TO: Project File

FROM: Kristi Schultz

DATE: June 15, 2023

RE: Former Boeing Eastgate Landfill
April 28, 2023 Interim Groundwater Monitoring Sample Results
Laboratory Data Quality Evaluation
Project No. 0025089.123.110

This technical memorandum provides the results of a data quality evaluation for five groundwater samples and one trip blank collected at the former Eastgate Landfill on April 28, 2023. A data quality evaluation was performed on the following analyses:

- Volatile organic compounds (VOCs; US Environmental Protection Agency [EPA] Method SW-846 8260D)
- Dissolved metals (EPA Method 200.8 Rev 5.4 [arsenic] and Method SW6010D [iron and manganese])
- Ammonia as nitrogen (EPA Method SM 4500-NH3 D-2011)
- Total Organic Carbon (TOC; Method SM 5310 C-2011)
- Chemical Oxygen Demand (COD; EPA Method 410.4)
- Chloride and sulfate (EPA Method 300.0)
- Nitrate as nitrogen and Nitrite as nitrogen (EPA Method 353.2).

All of the above analyses were performed by Eurofins Lancaster Laboratories Environmental, LLC (ELLE) located in Lancaster, Pennsylvania. This data quality evaluation covers ELLE data package 410-124751-1.

The Stage 2A verification and validation check was conducted in accordance with the Confirmational Groundwater Monitoring Former Eastgate Landfill Work Plan (LAI 2002), and with guidance from applicable portions of EPA's *National Functional Guidelines for Organic Superfund Methods Data Review* (EPA 2020b) and the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (EPA 2020a).

The Stage 2A verification and validation check for each laboratory data package included the following:

- Verification that the laboratory data package contained all necessary documentation (including chain-of-custody records; identification of samples received by the laboratory; date and time of receipt of the samples at the laboratory; sample conditions upon receipt at the laboratory; date and time of sample analysis; and, if applicable, date of extraction, definition of laboratory data qualifiers, all sample-related quality control data, and quality control acceptance criteria).

- Verification that all requested analyses, special cleanups, and special handling methods were performed.
- Verification that quality control samples were performed as specified in the project Work Plan.
- Evaluation of sample holding times.
- Evaluation of quality control data compared to acceptance criteria, including method blanks, field trip blanks, surrogate recoveries, laboratory control sample results, and blind field duplicate pair relative percent differences (RPD).
- Evaluation of reporting limits compared to target reporting limits specified in the project Work Plan.

Data validation qualifiers are added to sample results based on the evaluation of data quality. The absence of a data qualifier indicates that the data is acceptable without qualification. Data qualifiers are summarized in Table 1. The data quality evaluation is summarized below.

Laboratory Data Package Completeness

Each laboratory data package contained a signed chain-of-custody, a cooler receipt form documenting the condition of the samples upon receipt at the laboratory, a cooler temperature compliance form, sample analytical results, and quality control results (method blanks, field trip blanks, surrogate recoveries, and laboratory control sample results). A case narrative identifying any complications was also provided with each laboratory data package. Definitions of laboratory qualifiers and quality control acceptance criteria were provided, as appropriate.

Sample Conditions and Analysis

A signed COC record was attached to the data packages. The laboratory received all samples in good condition, with the following exception:

- Preservation requirements for acrolein and acrylonitrile associated with the VOC samples were not met (samples were preserved with hydrochloric acid; these compounds degrade in acidic mediums). The results for the associated compounds were qualified as estimated (UJ), as indicated in Table 1.

All analyses were performed as requested. No special cleanups or handling methods were requested.

Upon receipt by ELLE, the sample container information was compared to the associated chain-of-custody and the cooler temperatures were recorded. One cooler was received with a temperature of 0.2°C, which is within the EPA-recommended limit of ≤6°C. No qualification of the data was necessary.

Holding Times

For all analyses and all samples, the time between sample collection, extraction (if applicable), and analysis was determined to be within EPA- and project-specified holding times. No qualification of the data was necessary.

Blank Results

Method Blanks

At least one method blank was analyzed with each batch of samples. Target analytes were not detected at concentrations greater then than reporting limits in the associated method blanks. No qualification of the data was necessary.

Field Trip Blanks

At least one field (trip) blank was analyzed with each batch of samples submitted to the laboratory. Target analytes were not detected at concentrations greater than the reporting limits in the associated field blanks. No qualification of the data was necessary.

Surrogate Spike Recoveries

Appropriate compounds were used as surrogate spikes. Recovery values for the surrogate spikes were within the current laboratory-specified control limits for all project samples. No qualification of the data was necessary.

Matrix Spike and Laboratory Duplicate Results

A project sample-specific matrix spike (MS) and/or laboratory duplicate was analyzed for nitrate+nitrite and COD. Recoveries and relative percent differences (RPDs) for the MS and laboratory duplicates were within the current laboratory-specified control limits. No qualification of the data was necessary.

Laboratory Control Sample (Blank Spike) Results

At least one laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) was analyzed with this batch of samples for each analysis. Recoveries and relative percent differences (RPDs) for the laboratory control samples and associated duplicates were within the current laboratory-specified control limits. No qualification of the data was necessary.

Blind Field Duplicate Results

One blind field duplicate sample pair (EL-100-230428/EL-103-230428) was collected with the groundwater samples meeting the requirement specified in the work plan of one duplicate per 20 samples, but no less than one blank per sampling round. RPDs between the blind field duplicate sample and parent results were within the project-specified control limit of 20 percent. No qualification of the data was necessary.

Quantitation Limits

Method and/or project-specified reporting limits were met for each sample for each analysis.

Audit/Corrective Action Records

No corrective action records were generated for these sample batches. Based on the laboratory's case narratives, continuing calibration verification (CCV) recovery results were within laboratory-specified control limits, with the following exceptions:

- The CCV recoveries for batches 410-374079 and 410-374904 were low for trans-1,4-dichloro-2-butene. The associated sample results were qualified as estimated (J, UJ), as indicated in Table 1.
- The CCV recoveries for batch 410-374079 were high for carbon disulfide, styrene, and vinyl acetate. Associated samples were non-detect for the affected compounds; no qualification of the data was necessary.

Overall Data Quality and Completeness

The completeness for this data set is 100 percent, which meets the project-specified goal of 95 percent minimum.

Data precision was evaluated through laboratory control duplicate samples, laboratory duplicates, and blind field duplicate samples. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. Based on this Stage 2A data quality verification and validation, all of the data were determined to be acceptable. No data were rejected.

LANDAU ASSOCIATES, INC.

Kristi Schultz
Senior Data Specialist

KES/DRJ/ljl
[P:\025\089\FILERM\T\DATA\DV MEMOS\2023 APRIL DV_TM.DOCX]

Attachments

Table 1. Summary of Data Qualifiers

References

EPA. 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. OLEM 9240.1-66; EPA-542-R-20-006. US Environmental Protection Agency. November. https://www.epa.gov/sites/default/files/2021-03/documents/nfg_for_inorganic_superfund_methods_data_review_november_2020.pdf.

EPA. 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9240.0-51; EPA-540-R-20-005. US Environmental Protection Agency. November. https://www.epa.gov/sites/default/files/2021-03/documents/nfg_for_organic_superfund_methods_data_review_november_2020.pdf.

LAI. 2002. Work Plan, Confirmational Groundwater Monitoring, Former Eastgate Landfill, Bellevue, Washington. Edmonds, Washington: Landau Associates.

Table 1
Summary of Data Qualifiers
April 2023 Event Water Sampling Results
Boeing Eastgate

Lab SDG	Sample ID	Analyte	Conc.	Lab Qualifier	Data Qualifier	Reason Code
410-124751-1	EL-100-230428	trans-1,4-Dichloro-2-butene	5.00	U	UJ	Low continuing calibration recovery
410-124751-1	EL-100-230428	Acrolein	25.0	U	UJ	Sample improperly preserved
410-124751-1	EL-100-230428	Acrylonitrile	5.00	U	UJ	Sample improperly preserved
410-124751-1	EL-103-230428	trans-1,4-Dichloro-2-butene	5.00	U	UJ	Low continuing calibration recovery
410-124751-1	EL-103-230428	Acrolein	25.0	U	UJ	Sample improperly preserved
410-124751-1	EL-103-230428	Acrylonitrile	5.00	U	UJ	Sample improperly preserved
410-124751-1	French Drain-230428	trans-1,4-Dichloro-2-butene	5.00	U	UJ	Low continuing calibration recovery
410-124751-1	French Drain-230428	Acrolein	25.0	U	UJ	Sample improperly preserved
410-124751-1	French Drain-230428	Acrylonitrile	5.00	U	UJ	Sample improperly preserved

Notes:

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Abbreviations/Acronyms:

ID = identification

SDG = sample delivery group

MEMORANDUM

Date:	May 28, 2024	**TG:**	1.22058.00
To:	Aaron Maples – Walker Macy		
From:	Brandon Alvarado, PTP and Dan McKinney Jr. – Transpo Group		
Subject:	Bellevue Airfield Park – Aquatics Center Programmatic Assessment		

This memorandum summarizes the programmatic assessment completed for the proposed Bellevue Airfield Park – Aquatics Center development. This memorandum includes a project description and a review of the street network, non-motorized facilities, transit service, trip generation, and parking.

Project Description

The project is located at the Bellevue Airfield Park on the northwest corner of 160th Avenue SE and SE 30th Place in Bellevue. The project includes the development of an aquatics center, pickleball courts, basketball courts, and a picnic area. The approximate land use summary for the overall project is provided below. The project would replace a portion of the parking lot on the west side of 160th Avenue SE.

Land Use	Approximate Project Total
Public Park (includes picnic area and basketball courts)	15.75 acres
Pickleball/Tennis Courts	8 courts
Aquatics Center	1 facility

The project would include on-site parking with access to SE 30th Place and at the proposed extension of SE 30th Place west of 160th Avenue SE. Approximately 250 parking spaces will be provided on site. There is also a parking lot easement agreement between Advanta Office Holdings, LLC and the City of Bellevue that provides access to up to 400 additional spaces for a total of approximately 650 parking spaces. The preliminary site plan and estimated land use quantities are shown in Figure 1.

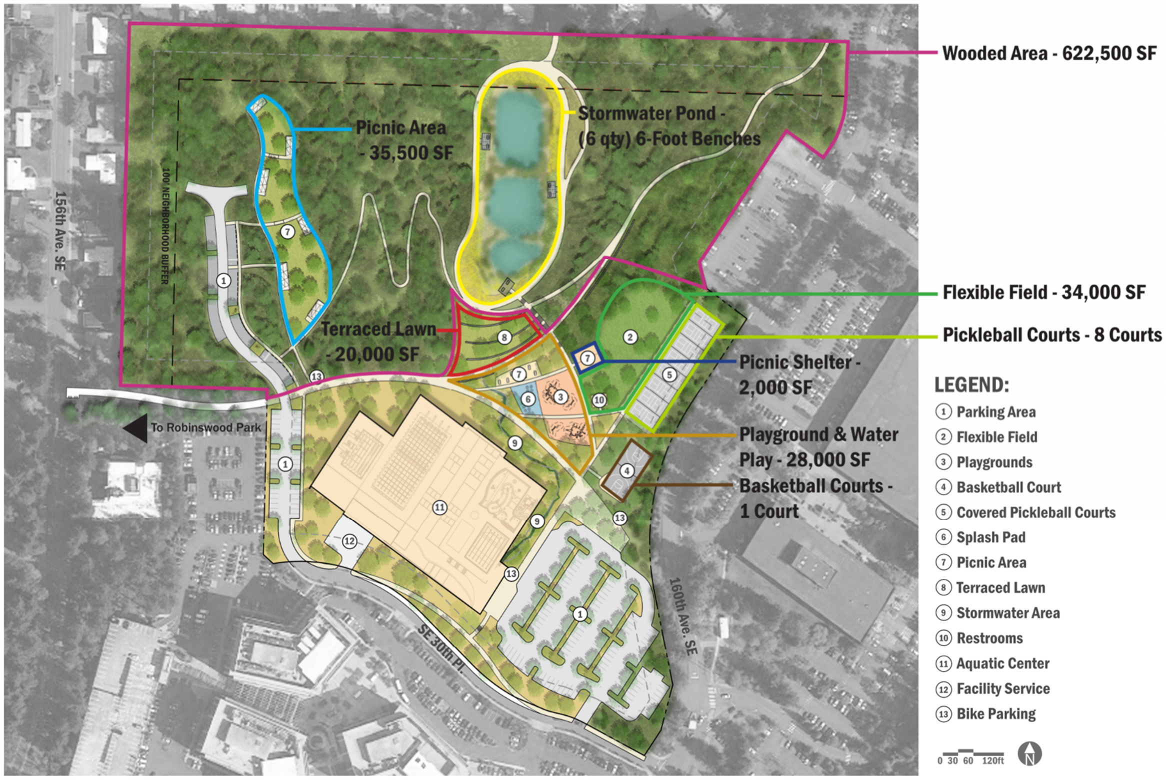

Figure 1: Preliminary Site Plan

Street Network

The following describes the existing street network within the vicinity of the proposed project and anticipated changes resulting from planned improvements.

Existing Inventory

156th Avenue SE is a 4-lane Collector Arterial in the vicinity of the project site with a posted speed limit of 30 miles per hour (mph). Sidewalks are provided on both sides of the street, but no bicycle facilities exist. Parking is not permitted along the roadway adjacent to the project site.

160th Avenue SE is a two-lane unclassified roadway in the vicinity of the project with a posted speed limit of 30 mph. North of SE 30th Place, 160th Avenue SE has a checkpoint for access to the Boeing facility. Sidewalks are provided on both sides of the street, but no bicycle facilities exist. There is no parking along 160th Avenue SE.

161st Avenue SE is a 2-lane unclassified roadway in the vicinity of the project site with a posted speed limit of 25 mph. Sidewalks and bicycle shared-lane pavement markings are provided on the east side of the street. Parking is not permitted along the roadway adjacent to the project site.

SE 30th Place is a two-lane unclassified roadway in the vicinity of the project with no posted speed limit. Sidewalks are provided on both sides of the street, but no bicycle facilities exist. Parking is not permitted along the roadway adjacent to the project site.

SE Eastgate Way is a 3-4 lane Minor Arterial roadway in the vicinity of the project with a posted speed limit of 30 mph. Sidewalks are provided on the north side of the street, and bike lanes are provided on both sides of the street. Parking is not permitted along the roadway adjacent to the project site. King County Metro Route 271 (Issaquah, Eastgate, Bellevue College, Bellevue Transit

Center, Medina, University District) runs along SE Eastgate Way in the project vicinity. A bus stop shelter is provided at the intersection of 160th Ave SE/SE Eastgate Way in the westbound direction, and bus stop signage is provided at 158th Ave SE/SE Eastgate Way for both travel directions. Route 271 provides service from 5:38 a.m. to 11:35 p.m. with 15-minute headways.

Planned Improvements

Based on a review of the City of Bellevue *2024 – 2029 Transportation Improvement Program* (TIP), the following improvements are planned near the project site:

2029 TIP Reference 72 – Downtown, Eastgate Transit Connection. Evaluate, design, and implement transit speed and reliability improvements along Frequent Transit Network corridors connecting the Downtown and Eastgate activity centers. Consistent with the Transit Master Plan, the Downtown Transportation Plan and King County Metro Connects long range plan. Examples of potential project locations include Main Street from 108th to 116th Avenue and intersections along 116th Avenue SE, Lake Hills Boulevard, 145th Place SE and the Metro K-Line.

2029 TIP Reference 77 – Eastgate, Overlake Transit Connection. Evaluate, design, and implement transit speed and reliability improvements along Frequent Transit Network corridors connecting the Downtown and Crossroads activity centers. Consistent with the Transit Master Plan, the Downtown Transportation Plan and King County Metro Connects long range plan. Examples of potential project locations include 148th Avenue NE from Bel-Red Road to NE 24th Street.

2029 TIP Reference 82 – I-90 Tunnel, SE 37th Street to SE Eastgate Way. Increase sidewalk width on south side of I-90 tunnel to offer cyclists improved accommodation from SE 37th Street under I-90 to Eastgate Way/SE 35th Place intersection. Coordinate with WSDOT to improve lighting within the tunnel. Improve signing to the tunnel to increase awareness of cyclists. Component of priority bike corridor; NS-5: Spirit Ridge-Sammamish River Connection.

Non-Motorized Facilities

As described previously, sidewalks are provided on both sides of 160th Avenue SE and SE 30th Place adjacent to the project site and crosswalks are provided at all nearby signalized study intersections. Bike lanes are also provided along both sides of SE Eastgate Way in the project vicinity.

Currently pedestrians would need to cross SE 30th Place at 160th Avenue SE to go from the parking lots provided by the easement agreement to the project site. An option for improving pedestrian access to the project site from these parking lots could be a pedestrian crossing on SE 30th Place. New bicycle facilities along 160th Avenue SE and SE 30th Place could also provide complete bicycle access from SE Eastgate Way to the site.

Transit Service

As described previously, King County Metro Route 271 (Issaquah, Eastgate, Bellevue College, Bellevue Transit Center, Medina, University District) runs along SE Eastgate Way in the project vicinity. A bus stop shelter is provided at the intersection of 160th Ave SE/SE Eastgate Way in the westbound direction, and bus stop signage is provided at 158th Ave SE/SE Eastgate Way for both travel directions. Route 271 provides service from 5:38 a.m. to 11:35 p.m. with 15-minute headways.

Route 271 in the project vicinity is anticipated to continue operations as normal after the construction of the project, and no impacts are expected to the stops at 160th Ave SE/SE Eastgate Way and 158th Ave SE/SE Eastgate Way. The master plan does not propose any changes to transit operations and does not propose changes to the locations or type of bus stops in the vicinity of the site.

Trip Generation

Trip generation for the non-aquatics center uses was estimated using rates obtained from the Institute of Transportation Engineers' (ITE) Trip Generation Manual (11th Edition, 2021). Public Park (LU #411) and Tennis Courts (LU #490) were utilized to estimate the trip generation for the park area facilities and the pickleball courts respectively. These are unspecified uses in the City of Bellevue trip rate schedule effective January 2024.

The aquatics center program information provided by the developer contained estimates for weekdays during the school year, weekends during the school year, weekdays during the summer, and weekends during the summer. To calculate the number of trips in and out of the facility during the peak hours, it was assumed that people will stay at the facility for 1 hour. Based on review of the trip generation for the 4 scenarios, weekdays during the summer are anticipated to generate the most trips to and from the aquatics center. As such, trip generation for the project has been estimated using aquatics center program information for weekdays during the summer along with weekday trip generation rates for the park and pickleball court uses. Detailed aquatics center program information and a comparison of trip generation for the 4 scenarios is attached for reference.

The AM peak hour trip generation rates for the park and pickleball courts are nominal, and the AM peak hour trip generation for the aquatics center is significantly lower than the PM peak hour trip generation. As such, Table 1 summarizes the summer weekday PM peak hour trip generation for the proposed project. Because the land use quantities and aquatic center programs may change at a later date, a range of trips has been provided to estimate the trip generation of the completed master plan.

Table 1. Estimated Trip Generation Summary – Weekday PM Peak Hour

			New Trips[2]		
Land Uses[1]	**Preliminary Size**	**Trip Rate[1]**	**In**	**Out**	**Total**
Proposed					
Public Park (LU #411)	~15.76 AC	0.11 /AC	2 - 5	2 - 5	4 - 10
Tennis Courts (LU #490)	~8 courts	4.21 /court	8 - 25	8 - 25	16 - 50
Aquatics Center	1 facility	-	350 - 425	350 - 425	700 - 850
Total			**360 - 455**	**360 - 455**	**720 - 910**

Note: AC = acres
1. Trip generation rate based on ITE Trip Generation, 11th Edition, except for the aquatics center. Program information for the aquatics center is attached for reference.
2. Because the land use quantities and aquatic center programs may change at a later date, a range of trips has been provided to estimate the trip generation of the completed master plan.

As shown in Table 1, the development would generate 720 to 910 trips to the area during the weekday PM peak hour.

Parking Analysis

The parking analysis includes a review of the parking supply as compared to the estimated parking demand.

Supply

Approximately 250 parking spaces will be provided on site. There is also a parking lot easement agreement between Advanta Office Holdings, LLC and the City of Bellevue that provides access to up to 400 additional spaces for a total of approximately 650 parking spaces. The parking lot easement agreement schedule is provided in Table 2, and a map of the parking lot areas available for use are shown in Figure 2.

Table 2. Parking Lot Easement Agreement Schedule

Time Period of City Park Patron Easement Area Usage	Maximum City Stall Usage	Stall Location
Between Midnight and 2:30 PM Weekdays	0 Stalls	Not Applicable
Between 2:30 PM and 5:00 PM Weekdays	50 Stalls	Signed stalls located in Lot A
Between 5:00 PM and 6:00 PM Weekdays	114 Stalls	Signed stalls located in Lot A and Lot B
Between 6:00 PM and Midnight Weekdays	200 Stalls	Signed stalls located in Lot A and Lot B
Weekends & Holidays Between 7:00 AM and Midnight	400 Stalls	Signed stalls located in Lot A, Lot B, Lot C

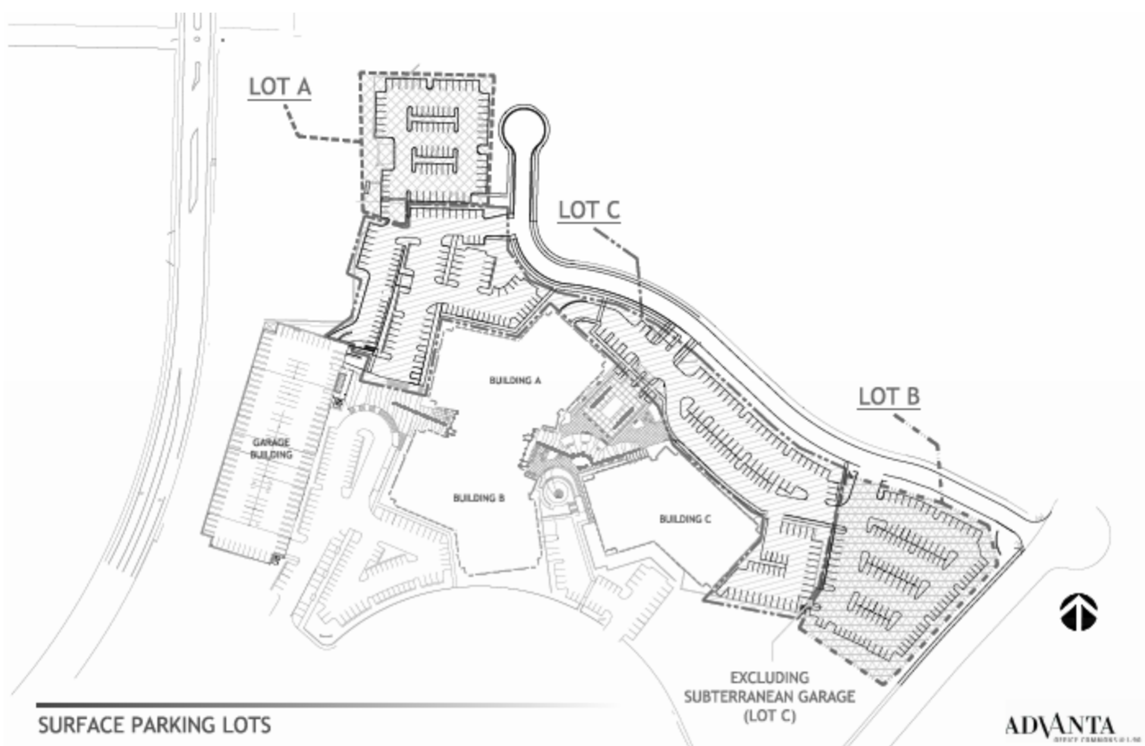

Figure 2: Depiction of Easement Area

Demand

Parking demand was calculated for the three main uses on site, which includes the aquatic center, the park, and the pickleball courts.

The program information for the aquatic center was provided by the Parks Department and includes estimates for the number of people at the aquatic center for different uses throughout the day for four different time periods. The time periods included weekdays during the school year, weekends during the school year, weekdays during the summer, and weekends during the summer. The different uses and activities included team sports (swimming, diving, and water polo), leisure pool, swim lessons, deep water fitness, therapy, and special needs. To calculate the parking demand, it was assumed that people will stay at the facility for 1 hour and that 60 percent of them are dropped off. The remaining 40 percent were assumed to stay at the facility and park their vehicle. Parking calculations and assumptions for the aquatic center are attached for reference.

Based on review of the parking demand for the 4 scenarios, weekends during the summer are anticipated to generate the highest parking demand for the aquatic center. Detailed aquatics center program information and a comparison of parking demand for the 4 scenarios is attached for reference.

Parking demand for the park area facilities was estimated using Public Park (LU #411) rates and time-of-day distributions obtained from the ITE Parking Generation Manual (6th Edition, 2023). Because the ITE Parking Generation Manual does not have sufficient data for pickleball courts, a programmatic approach was used to estimate parking demand for the pickleball courts. Pickleball games involve up to 4 players; therefore, peak parking demand for the pickleball courts was estimated using a conservative rate of 4 vehicles per court. Time-of-day distributions for Public Park (LU #411) were applied to the pickleball court parking demand.

Supply vs. Demand

The available parking supply is anticipated to meet the demands of the proposed project for three of the four conditions evaluated. Weekdays during the school year as well as weekends during both the school year and during the summer will have enough parking to meet the anticipated demands. The only condition that is anticipated to have a deficit in parking would be during summer weekday conditions. This is when daytime activity levels of the aquatic center are anticipated to be higher and when additional shared parking from the adjacent uses is not available. Based on the current summer program during the summer weekday condition, implementing parking management strategies to reduce parking demands or exploring adding more parking is likely needed.

The parking deficit is anticipated to occur on summer weekdays between 9:00 a.m. and 5:00 p.m. The highest deficit is approximately 115 parking spaces, which is expected to occur between 11:00 a.m. and 12:00 p.m. when a demand of approximately 365 vehicles has access to the 250 on-site parking spaces only. Graphs comparing demand to supply are provided on the next page. Detailed parking demand and parking surplus/deficit worksheets are attached for reference.

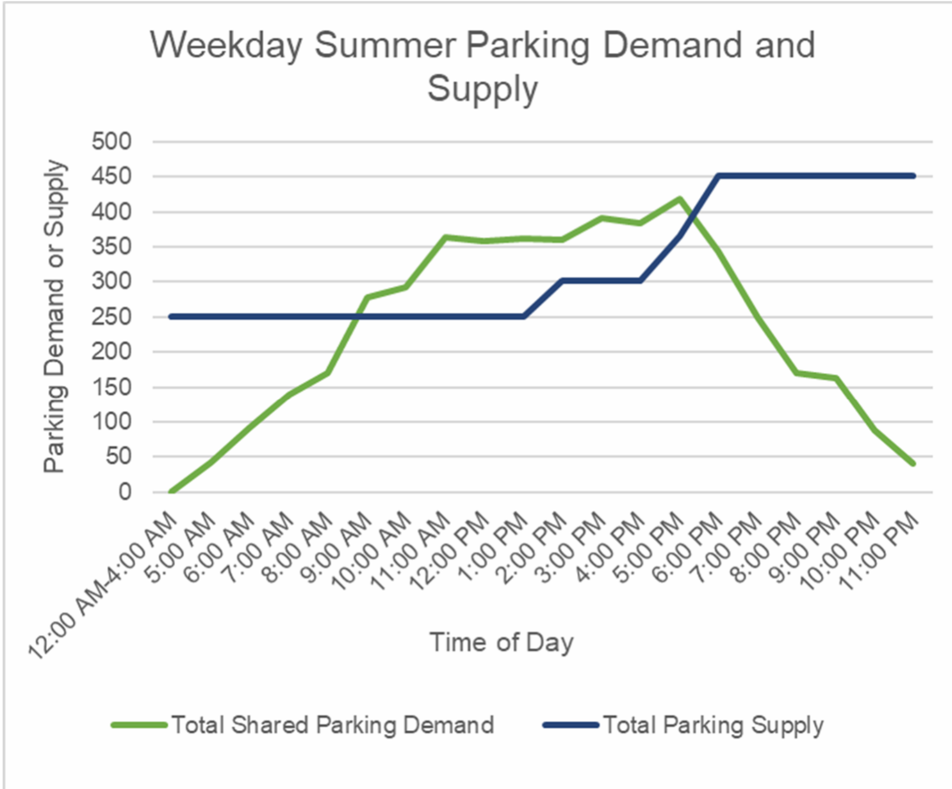

Figure 3: Weekday Summer Parking Demand and Supply

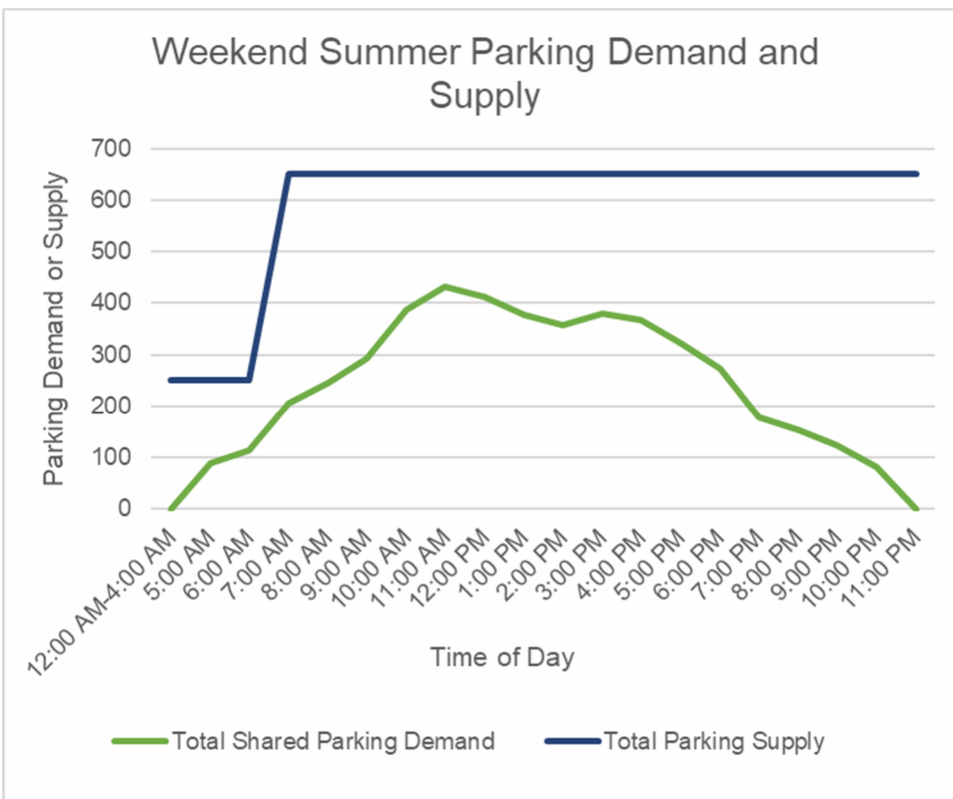

Figure 4: Weekend Summer Parking Demand and Supply

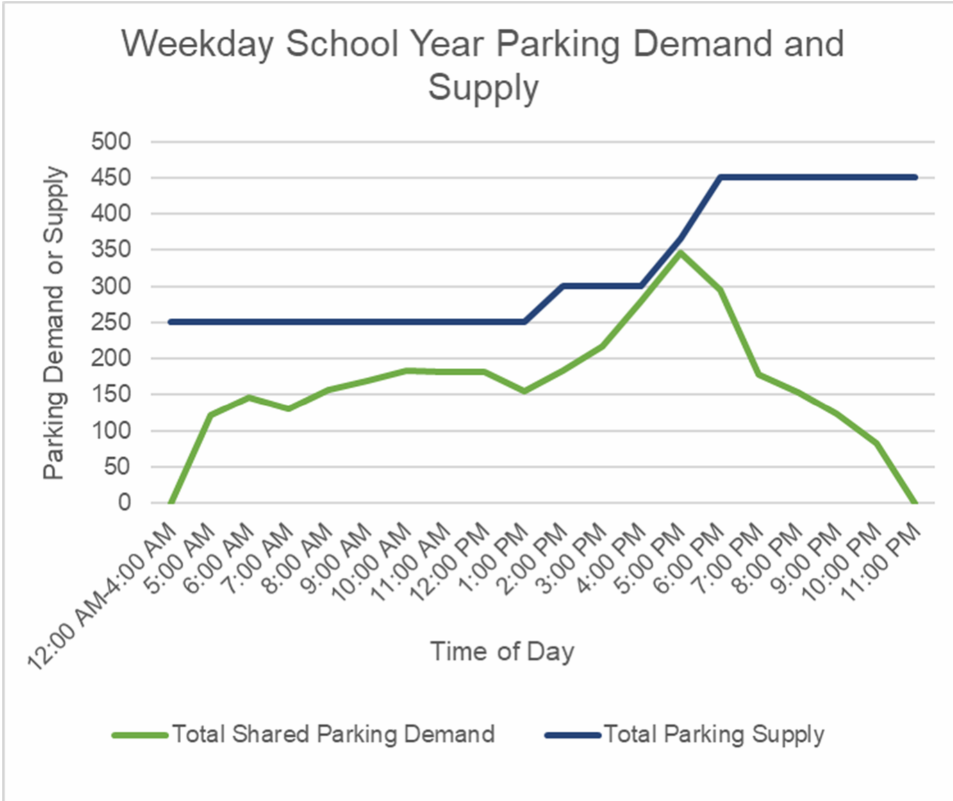

Figure 5: Weekday School Parking Demand and Supply

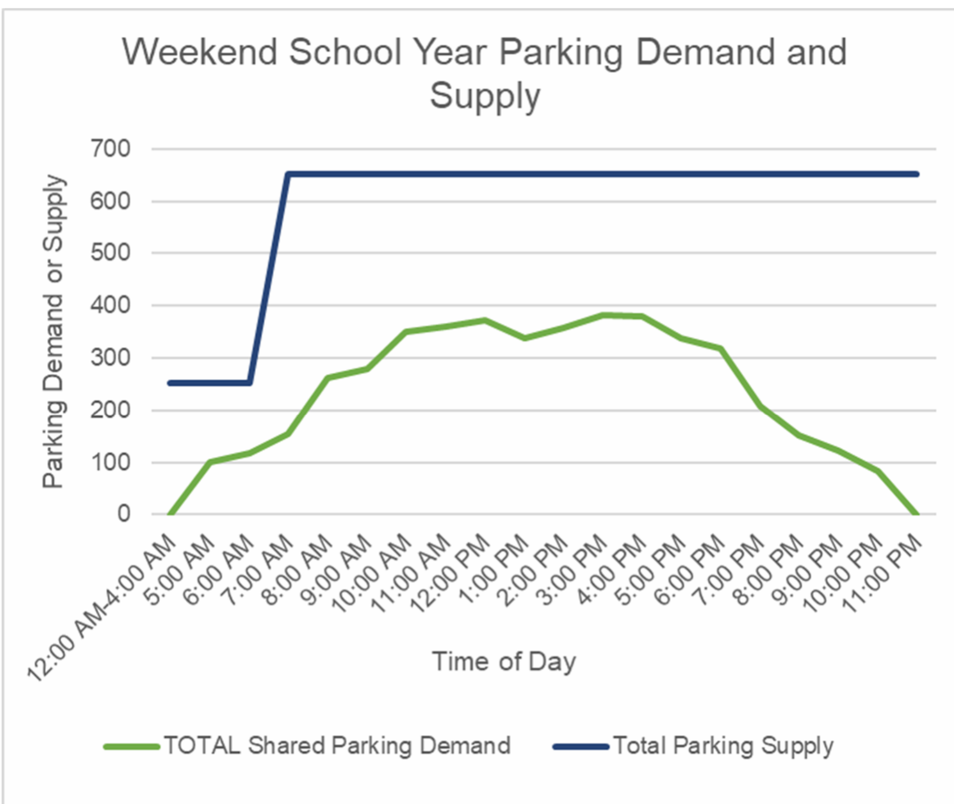

Figure 6: Weekend School Parking Demand and Supply

Possible Mitigation Strategies

Once a specific proposal is completed, a more detailed analysis of transportation mitigation measures will be evaluated. Given the range of impacts from the anticipated program, potential options for mitigating anticipated transportation and parking impacts will be provided. Peak project trip generation is anticipated to occur during summer weekdays, with 720 to 910 trips estimated during the PM peak hour. During this time only on-site parking would be available with access provided on SE 30th Place. This would result in all vehicles traveling to the site via SE Eastgate Way and 160th Avenue SE. I-90 is also likely to be used, but alternative routes to SE Eastgate Way are available.

With the estimated trip generation of 720 to 910 trips, level of service (LOS) at the intersections of 160th Avenue SE/SE 30th Place and 160th Avenue SE/SE Eastgate Way would likely be affected. LOS performance of the nearby I-90 interchanges at 148th Avenue SE, 156th Avenue SE, and 161st Avenue SE would also likely be affected by the project.

Congestion could occur in the project vicinity during peak conditions such as during the weekday summer PM peak hour. This is when higher demands are anticipated and when shared parking is not available from the nearby office complex. If additional parking isn't provided, additional demand management strategies will be needed or congestion would be anticipated in the parking lots that could affect vehicle circulation to SE 30th Place for both the project and neighboring businesses.

Mitigation measures could include, but are not limited to, the following:

- Implement transportation demand management (TDM) measures, such as promoting active transportation, enhancing public transit, and/or parking management strategies to reduce the number of vehicles that would access the site during the weekday summer PM peak hour. This could be completed through education and awareness through a website and information provided during registration of activities. This could also include staggering and providing gaps between scheduled activities to disperse the concentration of activities and people arriving at once. The size and schedule of activities will drive the timing and intensity of impacts. In addition, transit stops are currently provided at the intersections of 161st Avenue SE/SE Eastgate Way and 158th Ave SE/SE Eastgate Way. Providing a covered shelter for the eastbound direction to match the covered shelter provided for the westbound direction would improve rider comfort and potentially increase transit usage.
- Consider amending and/or restructure the parking lot easement agreement between Advanta Office Holdings, LLC and the City of Bellevue to provide additional parking spaces during weekday PM peak hours throughout the year to meet anticipated demands. This could involve a parking demand study to evaluate the current demand and available parking spaces, if any, during the weekday PM peak hour.

Summary

The project is located at the Bellevue Airfield Park on the northwest corner of 160th Avenue SE and SE 30th Place in Bellevue. The project includes the development of an aquatics center, pickleball courts, and park amenities. The project would include on-site parking with access to SE 30th Place and at the proposed extension of SE 30th Place west of 160th Avenue SE. In total, approximately 250 parking spaces will be provided on-site with up to an additional 400 spaces available during afternoons and weekends.

The development would generate approximately 720 to 910 trips to the area during the summer weekday PM peak hour. As the master plan gets closer to finalization, a more precise trip generation and parking estimate will be conducted on a specific proposal. Project LOS impacts and queuing issues will be assessed and mitigated in a Level 2 traffic analysis at a later date,

The available parking supply is anticipated to meet the demands of the proposed project for three of the four conditions evaluated. Weekdays during the school year as well as weekends during both the school year and during the summer will have enough parking to meet the anticipated demands. The only condition that is anticipated to have a deficit in parking would be during summer weekday conditions. This is when daytime activity levels of the aquatic center are anticipated to be higher and when additional shared parking from the adjacent uses is not currently available. Based on the current weekday summer program, implementing parking management strategies to reduce parking demands or exploring adding more parking is likely needed.

Bellevue Airfield Park - Aquatics Center

Proposed Use											
									Gross Trips		
Land Use	Setting	Size	Units	Model	Equation	Rate	Units	Inbound %	Inbound	Outbound	Subtotal
Public Park (LU 411)		**15.76**	acres								
Daily	General Urban/Suburban			Equation (lin)	T=0.64x+88.46	-	-	50%	50	50	100
AM Peak Hour	General Urban/Suburban			Rate	-	0.02	per acre	59%	0	0	0
PM Peak Hour	General Urban/Suburban			Rate	-	0.11	per acre	55%	1	1	2
Pickleball Courts (LU 490)		**8**	courts								
Daily	General Urban/Suburban			Rate	-	30.32	per court	50%	121	121	242
AM Peak Hour	General Urban/Suburban			Rate	-	4.21	per court	50%	17	17	34
PM Peak Hour	General Urban/Suburban			Rate	-	4.21	per court	50%	17	17	34
Aquatic Center (Summer Weekday)		**1**									
Daily					-	-	-		7,012	6,993	14,005
AM Peak Hour					-	-	-		186	101	287
PM Peak Hour					-	-	-		379	379	758
Total											
Daily									7,183	7,164	14,347
AM Peak Hour									203	118	321
PM Peak Hour									397	397	794

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 11th Edition equation and average trip rate as shown above.
2. No AM peak hour trip generation information for LU 490. PM peak hour trip generation rate has been applied to the AM peak hour.
3. Trip generation for the aquatics center based on program information and an estimated stay of 1 hour. 60% of vehicles are estimated to drop-off and leave, while 40% are estimated to stay and park.

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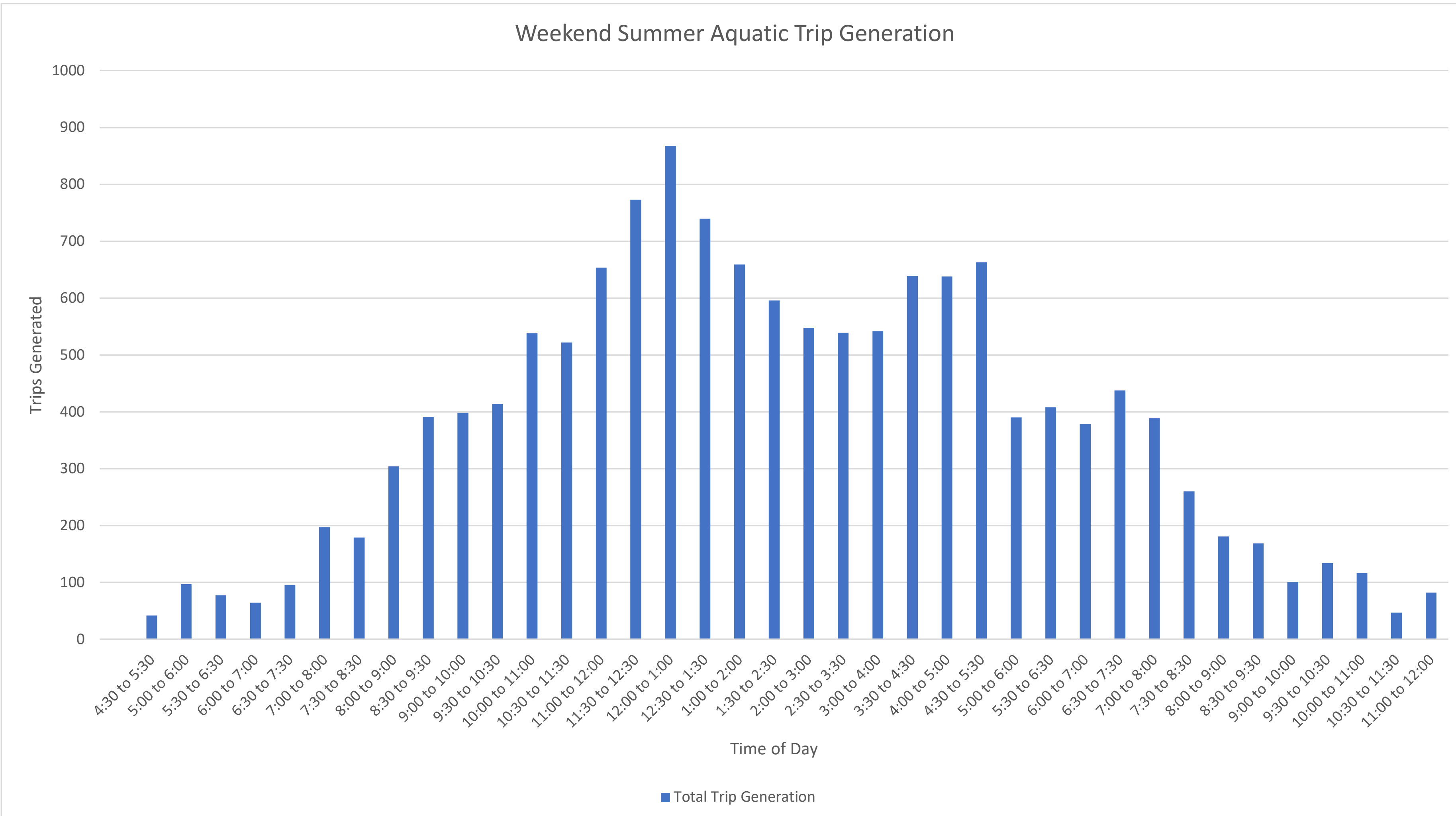
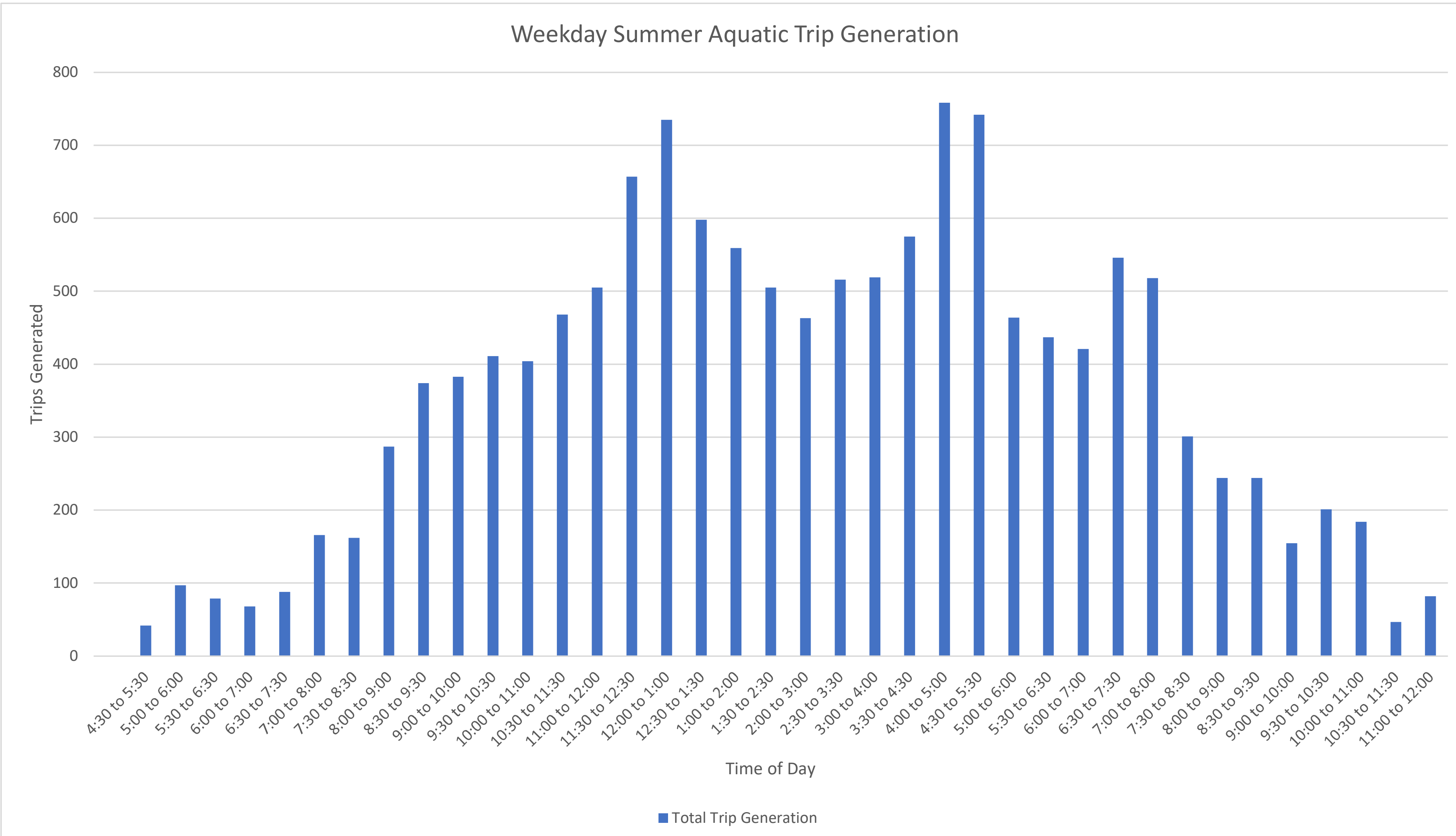
Pickleball Courts (LU 490)		**8**	courts								
Daily	General Urban/Suburban			Rate	-	30.32	per court	50%	121	121	242
AM Peak Hour	General Urban/Suburban			Rate	-	4.21	per court	50%	17	17	34
PM Peak Hour	General Urban/Suburban			Rate	-	4.21	per court	50%	17	17	34
Aquatic Center (Non-Summer Weekday)		**1**									
Daily					-	-	-		3,411	3,416	6,827
AM Peak Hour					-	-	-		85	118	203
PM Peak Hour					-	-	-		117	104	221
Total											
Daily									3,582	3,587	7,169
AM Peak Hour									102	135	237
PM Peak Hour									135	122	257

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 11th Edition equation and average trip rate as shown above.
2. No AM peak hour trip generation information for LU 490. PM peak hour trip generation rate has been applied to the AM peak hour.
3. Trip generation for the aquatics center based on program information and an estimated stay of 1 hour. 60% of vehicles are estimated to drop-off and leave, while 40% are estimated to stay and park.


Weekend Summer Aquatic Trip Generation
Trips Generated
1000
900
800
700
600
500
400
300
200
100
0
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
11:30 to 12:30
12:00 to 1:00
12:30 to 1:30
1:00 to 2:00
1:30 to 2:30
2:00 to 3:00
2:30 to 3:30
3:00 to 4:00
3:30 to 4:30
4:00 to 5:00
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
Time of Day
Total Trip Generation



Weekday Summer Aquatic Trip Generation
Trips Generated
800
700
600
500
400
300
200
100
0
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
11:30 to 12:30
12:00 to 1:00
12:30 to 1:30
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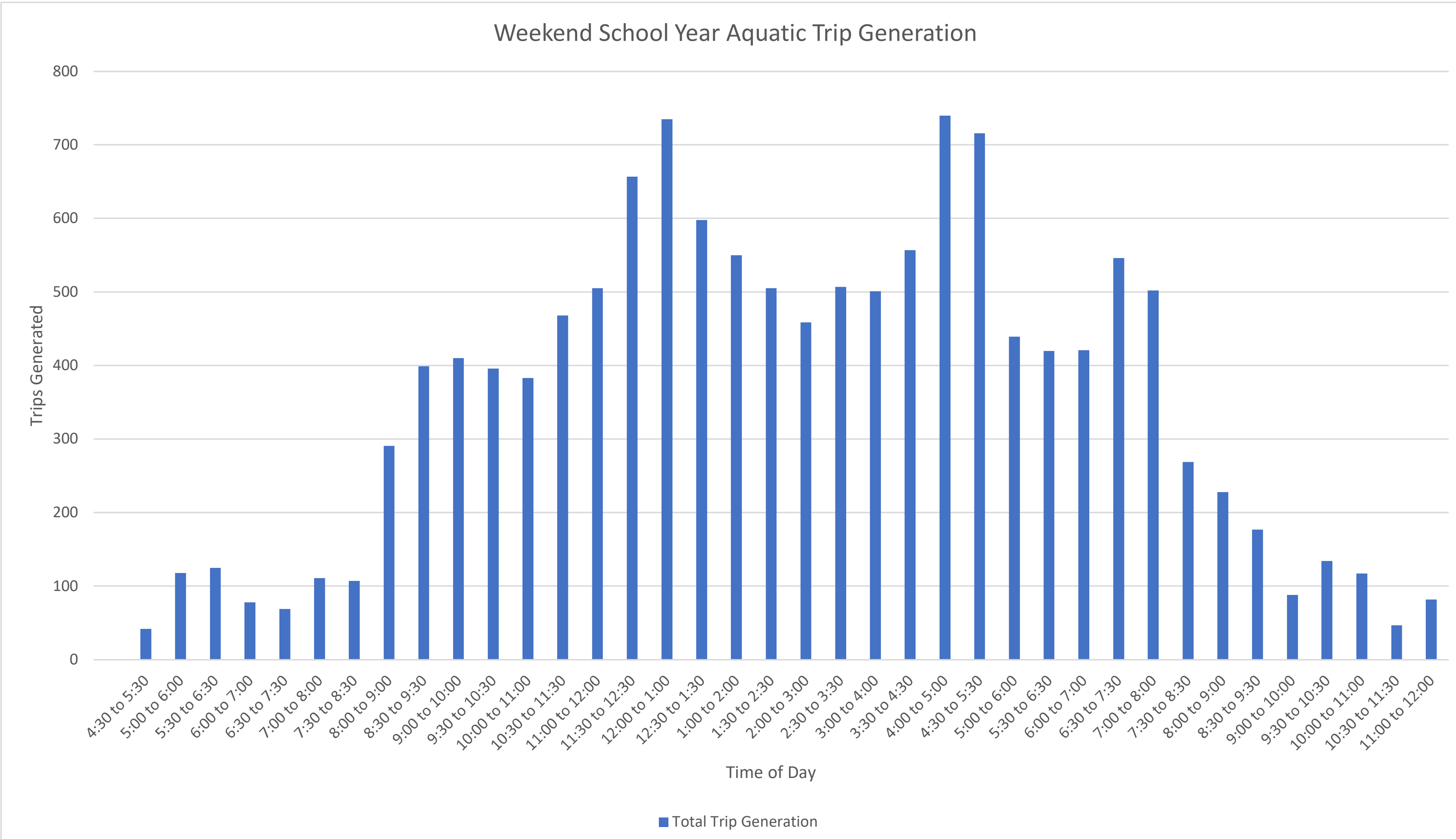
4:00 to 5:00
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
Time of Day
Total Trip Generation



Weekend School Year Aquatic Trip Generation
Trips Generated
800
700
600
500
400
300
200
100
0
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
11:30 to 12:30
12:00 to 1:00
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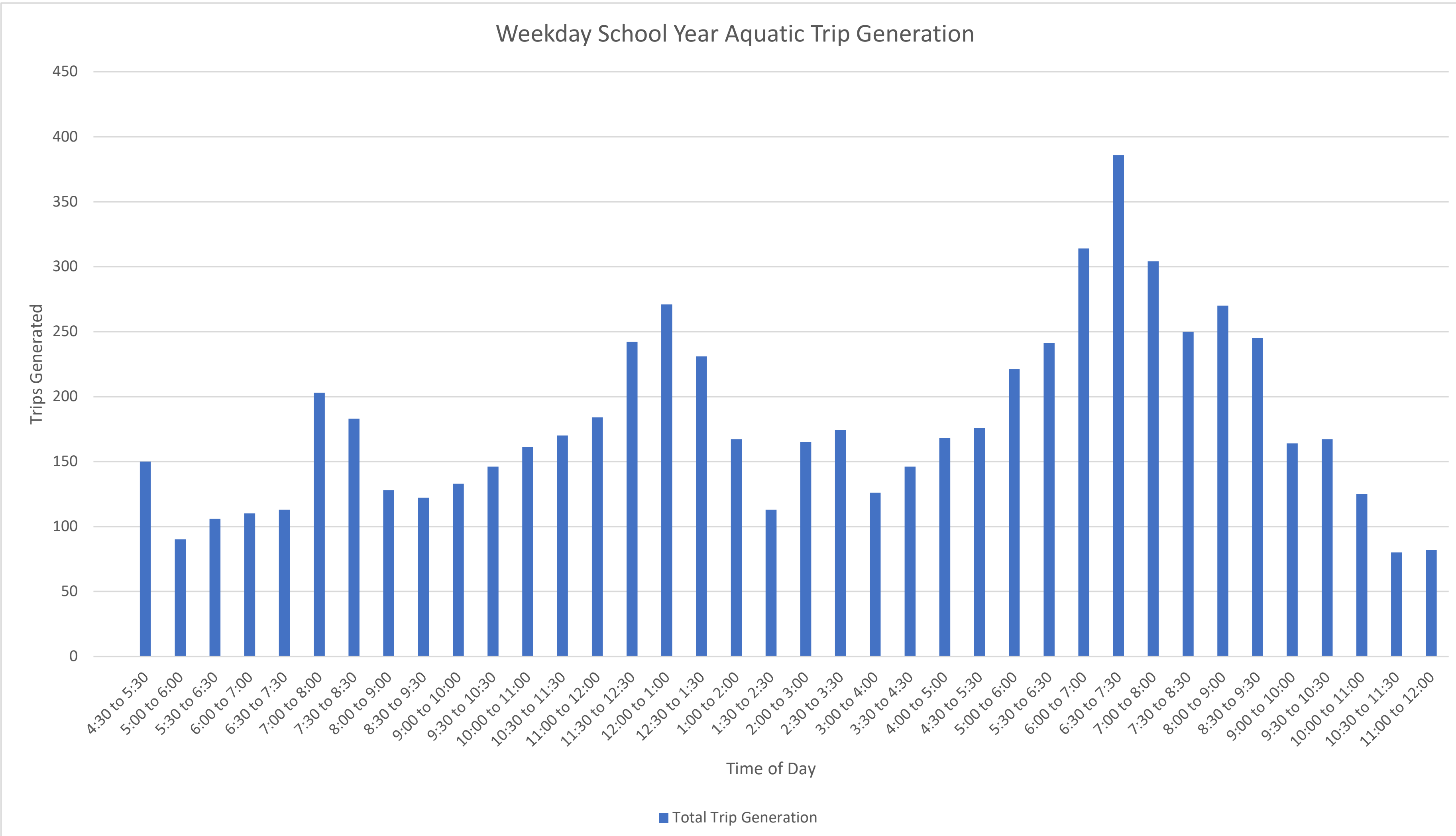
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
Time of Day
Total Trip Generation



Weekday School Year Aquatic Trip Generation
Trips Generated
Time of Day
0
50
100
150
200
250
300
350
400
450
4:30 to 5:30
5:00 to 6:00
5:30 to 6:30
6:00 to 7:00
6:30 to 7:30
7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
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12:30 to 1:30
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7:00 to 8:00
7:30 to 8:30
8:00 to 9:00
8:30 to 9:30
9:00 to 10:00
9:30 to 10:30
10:00 to 11:00
10:30 to 11:30
11:00 to 12:00
Total Trip Generation

Weekday Summer Aquatic Trip Generation and Assumptions

			Assume People Stay for appx 1 Hour		Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumed 2 to 3-Hour Practices	60% drop-off	Assumed 2-hour practice	60% drop-off	Assumed 2.5-hour practice	60% drop-off
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Time of Day	**Staff**		**Open Time / Lap Lanes**		**School District Teams - Swim**		**School District Teams - Diving**		**School District Teams - Water Polo**		**Club Teams - Swim**		**Club Teams - Diving**		**Club Teams - Water Polo**	
4:30 to 5:00	12		0	0	0		0		0		0		0		0	
5:00 to 5:30			0	0	0	0	0	0	0	0	0	0	0		0	0
5:30 to 6:00			17	0	0	0	0	0	0	0	25	15	0		0	0
6:00 to 6:30			0	0	0	0	0	0	0	0	0	0	0		0	0
6:30 to 7:00			25	17	0	0	0	0	0	0			0		0	0
7:00 to 7:30			0	0	0	0	0	0	0	0			0		0	0
7:30 to 8:00			50	25	0	0	0	0	0	0			13	8	0	0
8:00 to 8:30			0	0	0	0	0	0	0	0			0		0	0
8:30 to 9:00			42	50	0	0	0	0	0	0	42	25	0		0	0
9:00 to 9:30			0	0	0	0	0	0	0	0	15	25	0		0	0
9:30 to 10:00			25	42	0	0	0	0	0	0	0	0	13	8	0	0
10:00 to 10:30		2	0	0	0	0	0	0	0	0			8	13	0	0
10:30 to 11:00			25	25	0	0	0	0	0	0			0		0	0
11:00 to 11:30			0	0	0	0	0	0	0	0			0		0	0
11:30 to 12:00			50	25	0	0	0	0	0	0			0		0	0
12:00-12:30	15	15	0	0	0	0	0	0	0	0	25	42	8	13	0	0
12:30 to 1:00			50	50	0	0	0	0	0	0			0		0	0
1:00 to 1:30			0	0	0	0	0	0	0	0			0		0	0
1:30 to 2:00			42	50	0	0	0	0	0	0			0		0	0
2:00 to 2:30			0	0	0	0	0	0	0	0			0		0	0
2:30 to 3:00			25	42	0		0	0	0	0			0		0	0
3:00 to 3:30			0	0	0	0	0	0	0	0			0		0	0
3:30 to 4:00	2		25	25	0	0	0	0	0	0			0		0	0
4:00 to 4:30			0	0	0	0	0	0	0	0			0		0	0
4:30 to 5:00			25	25	33	20	8	5	0	0	42	25	0		17	10
5:00 to 5:30	3		0	17	0	0	0	0	0	0			0		0	0
5:30 to 6:00			8	8	0	0	0	0	0	0			0		0	0
6:00 to 6:30			0	0	0	0	0	0	0	0			0		0	0
6:30 to 7:00			8	8	0	0	0	0	13	8	25	15	0		0	0
7:00 to 7:30	8		0	0	20	33	5	8	0	0	25	42	0		17	10
7:30 to 8:00			8	8	0	0	0	0	0	0			0		10	17
8:00 to 8:30	15	15	0	0	0	0	0	0	0	0			0		0	0
8:30 to 9:00			8	8	0	0	0	0	8	13			0		0	0
9:00 to 9:30			0	0	0	0	0	0	0	0			42	25	0	0
9:30 to 10:00		5	0	8	0	0	0	0	0	0			0		0	0
10:00 to 10:30				0	0	0	0	0	0	0	15	25	25	42	10	17
10:30 to 11:00		6		0	0	0	0	0	0	0			0		0	0
11:00 to 11:30		6		0	0	0	0	0	0	0			0		0	0
11:30 to 12:00		6		0	0	0	0	0	0	0			0		0	0

	Assumed 2.5-hour practice	60% drop-off	Assume People Stay for appx 1 Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx 1 Hour				Assumes people will stay approximately 1 hour		Dryside Use			Total Half-Hour Vehicle Trips			Rolling 1-Hour Vehicle Trips			
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Community Program		50									
Time of Day	**Artistic Swimming**		**Leisure Pool**		**Swim Lessons**		**Deep Water Fitness**		**Therapy**		**Special Needs**		**In**	**Out**	In	Out	Total	In	Out	Total	Time of Day	In	Out	Total Trip Generation
4:30 to 5:00	0		0	0	0	0	0		0	0					10		10	22	0	22				
5:00 to 5:30	0	0	0	0	0	0	0	0	0	0					20		20	20	0	20	4:30 to 5:30	42	0	42
5:30 to 6:00	0	0	0	0	0	0	0	0	0	0					20		20	62	15	77	5:00 to 6:00	82	15	97
6:00 to 6:30	0	0	0	0	0	0	0	0	2	0							0	2	0	2	5:30 to 6:30	64	15	79
6:30 to 7:00	0	0	0	0	0	0	9	0	15	0							0	49	17	66	6:00 to 7:00	51	17	68
7:00 to 7:30	0	0	0	0	0	0	9	9	2	2							0	11	11	22	6:30 to 7:30	60	28	88
7:30 to 8:00	0	0	0	0	0	0	9	9	15	15							0	87	57	144	7:00 to 8:00	98	68	166
8:00 to 8:30	0	0	0	0	0	0	0	9	2	2			5				0	7	11	18	7:30 to 8:30	94	68	162
8:30 to 9:00	0	0	42	0	18	0	0	0	15	15			20				0	179	90	269	8:00 to 9:00	**186**	**101**	**287**
9:00 to 9:30	0	0	0	0	18	18	0	0	2	2			20	5			0	55	50	105	8:30 to 9:30	234	140	374
9:30 to 10:00	0	0	42	42	18	18	0	0	15	15			20	20			0	133	145	278	9:00 to 10:00	188	195	383
10:00 to 10:30	0	0	25	0	18	18	0	0	2	2			25	20			0	78	55	133	9:30 to 10:30	211	200	411
10:30 to 11:00	0	0	58	42	18	18	0	0	15	15	10		25	20			0	151	120	271	10:00 to 11:00	229	175	404
11:00 to 11:30	0	0	67	25	18	18	0	0	2	2	10	10	20	25			0	117	80	197	10:30 to 11:30	268	200	468
11:30 to 12:00	0	0	58	58	0	18	9	0	15	15	10	10	15	25			0	157	151	308	11:00 to 12:00	274	231	505
12:00-12:30	0	0	67	67	0	0	9	9	2	2	10	10	15	20	10	10	20	161	188	349	11:30 to 12:30	318	339	657
12:30 to 1:00	0	0	100	58	0	0	9	9	15	15		10	15	15	20	20	40	209	177	386	12:00 to 1:00	370	365	735
1:00 to 1:30	0	0	67	67	0	0	0	9	2	2			10	15	20	20	40	99	113	212	12:30 to 1:30	308	290	598
1:30 to 2:00	0	0	100	100	0	0	0	0	15	15			10	15			0	167	180	347	1:00 to 2:00	266	293	559
2:00 to 2:30	0	0	67	67	0	0	0	0	2	2			10	10			0	79	79	158	1:30 to 2:30	246	259	505
2:30 to 3:00	0	0	100	100	0	0	0	0	9	9			10	10			0	144	161	305	2:00 to 3:00	223	240	463
3:00 to 3:30	0	0	108	67	0	0	0	0	8	8			10	10			0	126	85	211	2:30 to 3:30	270	246	516
3:30 to 4:00	0	0	100	100	18	0	0	0	9	9			10	10			0	164	144	308	3:00 to 4:00	290	229	519
4:00 to 4:30	0	0	67	108	18	18	0	0	8	8			10	10	20		20	123	144	267	3:30 to 4:30	287	288	575
4:30 to 5:00	21	13	58	100	18	18	0	0	9	9			25	10			0	256	235	491	4:00 to 5:00	**379**	**379**	**758**
5:00 to 5:30	0	0	67	67	18	18	0	0	8	8	10		25	10			0	131	120	251	4:30 to 5:30	387	355	742
5:30 to 6:00	0	0	16	58	18	18	0	0		17	10	10	25	25			0	77	136	213	5:00 to 6:00	208	256	464
6:00 to 6:30	0	0	51	67	18	18	0	0			10	10	25	25			0	104	120	224	5:30 to 6:30	181	256	437
6:30 to 7:00	0	0	16	16	0	18	0	0			10	10	25	25			0	97	100	197	6:00 to 7:00	201	220	421
7:00 to 7:30	21	13	26	51	0	0	0	0			10	10	25	25			0	157	192	349	6:30 to 7:30	254	292	546
7:30 to 8:00	13	21	16	16		0		0				10	25	25			0	72	97	169	7:00 to 8:00	229	289	518
8:00 to 8:30	0	0	0	42		0		0					15	25	10	10	20	40	92	132	7:30 to 8:30	112	189	301
8:30 to 9:00	0	0											10	25	20	20	40	46	66	112	8:00 to 9:00	86	158	244
9:00 to 9:30	0	0											10	15	20	20	40	72	60	132	8:30 to 9:30	118	126	244
9:30 to 10:00	0	0											0	10			0	0	23	23	9:00 to 10:00	72	83	155
10:00 to 10:30	13	21											0	10			0	63	115	178	9:30 to 10:30	63	138	201
10:30 to 11:00	0	0											0	0			0	0	6	6	10:00 to 11:00	63	121	184
11:00 to 11:30	0	0											0	0		35	35	0	41	41	10:30 to 11:30	0	47	47
11:30 to 12:00	0	0											0	0		35	35	0	41	41	11:00 to 12:00	0	82	82

Weekend Summer Aquatic Trip Generation and Assumptions

			Assume People Stay for appx 1 Hour		Assumed 2 to 3-Hour Practices	60% drop-off	Assumed 2-hour practice	60% drop-off	Assumed 2.5-hour practice	60% drop-off	Assumed 2.5-hour practice	60% drop-off	Assume People Stay for appx 1 Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx 1 Hour				Assumes people will stay approximately 1 hour		Dryside Use			Total Half-Hour Vehicle Trips			Rolling 1-Hour Vehicle Trips			
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	Community Program		50									
Time of Day	**Staff**		**Open Time / Lap Lanes**		**Club Teams - Swim**		**Club Teams - Diving**		**Club Teams - Diving**		**Artistic Swimming**		**Leisure Pool**		**Swim Lessons**		**Deep Water Fitness**		**Therapy**		**Special Needs**		**In**	**Out**	In	Out	Total	In	Out	Total	Time of Day	In	Out	Total Trip Generation
4:30 to 5:00	12		0	0	0		0		0		0		0	0	0	0	0		0	0					10		10	22	0	22				
5:00 to 5:30			0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0					20		20	20	0	20	4:30 to 5:30	42	0	42
5:30 to 6:00			17	0	25	15	0		0	0	0	0	0	0	0	0	0	0	0	0					20		20	62	15	77	5:00 to 6:00	82	15	97
6:00 to 6:30			0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0							0	0	0	0	5:30 to 6:30	62	15	77
6:30 to 7:00			25	17	8	5	0		0	0	0	0	0	0	0	0	9	0	0	0							0	42	22	64	6:00 to 7:00	42	22	64
7:00 to 7:30			0	0	9	5	0		0	0	0	0	0	0	0	0	9	9	0	0							0	18	14	32	6:30 to 7:30	60	36	96
7:30 to 8:00			50	25	0	0	13	8	0	0	0	0	42	0	9	0	9	9	0	0							0	123	42	165	7:00 to 8:00	141	56	197
8:00 to 8:30			0	0	0	0	0		0	0	0	0	0	0	0	0	0	9	0	0			5				0	5	9	14	7:30 to 8:30	128	51	179
8:30 to 9:00			42	50	42	25	0		0	0	0	0	42	42	18	9	0	0	0	0			20				0	164	126	290	8:00 to 9:00	**169**	**135**	**304**
9:00 to 9:30			0	0	15	25	0		0	0	0	0	0	0	18	18	0	0	0	0			20	5			0	53	48	101	8:30 to 9:30	217	174	391
9:30 to 10:00			25	42	0	0	13	8	0	0	0	0	83	42	18	18	0	0	8	0			20	20			0	167	130	297	9:00 to 10:00	220	178	398
10:00 to 10:30		2	0	0	5	8	8	13	0	0	0	0	0	0	18	18	0	0	0	0			25	20			0	56	61	117	9:30 to 10:30	223	191	414
10:30 to 11:00			25	25	5	9	0		0	0	0	0	167	83	18	18	0	0	8	8	10		25	20			0	258	163	421	10:00 to 11:00	314	224	538
11:00 to 11:30			0	0	0	0	0		0	0	0	0	0	0	18	18	0	0	0	0	10	10	20	25			0	48	53	101	10:30 to 11:30	306	216	522
11:30 to 12:00			50	25	0	0	0		0	0	0	0	208	167	0	18	9	0	8	8	10	10	15	25			0	300	253	553	11:00 to 12:00	348	306	654
12:00-12:30	15	15	0	0	25	42	8	13	0	0	0	0	0	0	9	0	9	9	0	0	10	10	15	20	10	10	20	101	119	220	11:30 to 12:30	401	372	773
12:30 to 1:00			50	50	0	0	0		0	0	0	0	208	208	9	9	9	9	8	8		10	15	15	20	20	40	319	329	648	12:00 to 1:00	420	448	868
1:00 to 1:30			0	0	0	0	0		0	0	0	0	0	0	9	9	0	9	0	0			10	15	20	20	40	39	53	92	12:30 to 1:30	358	382	740
1:30 to 2:00			42	50	0	0	0		0	0	0	0	208	208	9	9	0	0	8	8			10	15			0	277	290	567	1:00 to 2:00	316	343	659
2:00 to 2:30			0	0	0	0	0		0	0	0	0	0	0	0	9	0	0	0	0			10	10			0	10	19	29	1:30 to 2:30	287	309	596
2:30 to 3:00			25	42	0	0	0		0	0	0	0	208	208	0	0	0	0	8	8			10	10			0	251	268	519	2:00 to 3:00	261	287	548
3:00 to 3:30			0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0			10	10			0	10	10	20	2:30 to 3:30	261	278	539
3:30 to 4:00	2		25	25	0	0	0		0	0	0	0	208	208	18	0	0	0	8	8			10	10			0	271	251	522	3:00 to 4:00	281	261	542
4:00 to 4:30			0	0	0	0	0		0	0	0	0	0	41	18	18	0	0	0	0			10	10	20		20	48	69	117	3:30 to 4:30	319	320	639
4:30 to 5:00			25	25	42	25	8	5	17	10	21	13	84	167	18	18	0	0	0	8			25	10			0	240	281	521	4:00 to 5:00	288	350	638
5:00 to 5:30	3		0	17	0	0	0		0	0	0	0	41	0	18	18	0	0	0	0	10		25	10			0	97	45	142	4:30 to 5:30	**337**	**326**	**663**
5:30 to 6:00			8	8	0	0	0		0	0	0	0	42	84	18	18	0	0	0	0	10	10	25	25			0	103	145	248	5:00 to 6:00	200	190	390
6:00 to 6:30			0	0	0	0	5	8	0	0	0	0	0	41	18	18	0	0	0	0	10	10	25	25			0	58	102	160	5:30 to 6:30	161	247	408
6:30 to 7:00			8	8	25	15	0		0	0	0	0	33	42	0	18	0	0	0		10	10	25	25			0	101	118	219	6:00 to 7:00	159	220	379
7:00 to 7:30	8		0	0	25	42	8	5	17	10	21	13	0	0	0	0	0	0	0		10	10	25	25			0	114	105	219	6:30 to 7:30	215	223	438
7:30 to 8:00			8	8	0	0	0		10	17	13	21	0	33		0		0				10	25	25			0	56	114	170	7:00 to 8:00	170	219	389
8:00 to 8:30	15	15	0	0	0	0	0		0	0	0	0	0	0		0		0					15	25	10	10	20	40	50	90	7:30 to 8:30	96	164	260
8:30 to 9:00			8	8	0	0	0		0	0	0	0											10	25	20	20	40	38	53	91	8:00 to 9:00	78	103	181
9:00 to 9:30			0	0	0	0	5	8	0	0	0	0											10	15	20	20	40	35	43	78	8:30 to 9:30	73	96	169
9:30 to 10:00		5	0	8	0	0	0		0	0	0	0											0	10			0	0	23	23	9:00 to 10:00	35	66	101
10:00 to 10:30				0	15	25	0	0	10	17	13	21											0	10			0	38	73	111	9:30 to 10:30	38	96	134
10:30 to 11:00		6		0	0	0	0		0	0	0	0											0	0			0	0	6	6	10:00 to 11:00	38	79	117
11:00 to 11:30		6		0	0	0	0		0	0	0	0											0	0		35	35	0	41	41	10:30 to 11:30	0	47	47
11:30 to 12:00		6		0	0	0	0		0	0	0	0											0	0		35	35	0	41	41	11:00 to 12:00	0	82	82

Weekend School Year Aquatic Trip Generation and Assumptions

			Assume People Stay for appx 1 Hour		Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumed 2 to 3-Hour Practices	60% drop-off	Assumed 3-hour practice	60% drop-off	Assumed 2.5-hour practice	60% drop-off	Assumed 2.5-hour practice	60% drop-off
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Time of Day	**Staff**		**Open Time / Lap Lanes**		**School District Teams - Swim**		**School District Teams - Diving**		**School District Teams - Water Polo**		**Club Teams - Swim**		**Club Teams - Diving**		**Club Teams - Diving**		**Artistic Swimming**	
4:30 to 5:00	12		0	0	0		0		0		0		0		0		0	
5:00 to 5:30			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 to 6:00			17	0	0	0	0	0	0	0	25	15	13	8	0	0	0	0
6:00 to 6:30			0	0	0	0	0	0	0	0	17	10	0	0	0	0	0	0
6:30 to 7:00			25	17	0	0	0	0	0	0			0	0	0	0	0	0
7:00 to 7:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
7:30 to 8:00			50	25	0	0	0	0	0	0			0	0	0	0	0	0
8:00 to 8:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
8:30 to 9:00			42	50	0	0	0	0	0	0	42	25	13	8	0	0	0	0
9:00 to 9:30			0	0	0	0	0	0	0	0	15	25	8	13	0	0	0	0
9:30 to 10:00			25	42	0	0	0	0	0	0	10	17	0	0	0	0	0	0
10:00 to 10:30		2	0	0	0	0	0	0	0	0			0	0	0	0	0	0
10:30 to 11:00			25	25	0	0	0	0	0	0			0	0	0	0	0	0
11:00 to 11:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
11:30 to 12:00			50	25	0	0	0	0	0	0			0	0	0	0	0	0
12:00-12:30	15	15	0	0	0	0	0	0	0	0	25	42	8	13	0	0	0	0
12:30 to 1:00			50	50	0	0	0	0	0	0			0	0	0	0	0	0
1:00 to 1:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
1:30 to 2:00			42	50	0	0	0	0	0	0			0	0	0	0	0	0
2:00 to 2:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
2:30 to 3:00			25	42	0	0	0	0	0	0			0	0	0	0	0	0
3:00 to 3:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
3:30 to 4:00	2		25	25	0	0	0	0	0	0			0	0	0	0	0	0
4:00 to 4:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
4:30 to 5:00			25	25	33	20	8	5	0	0	42	25	0	0	17	10	21	13
5:00 to 5:30	3		0	17	0	0	0	0	0	0			0	0	0	0	0	0
5:30 to 6:00			8	8	0	0	0	0	0	0			0	0	0	0	0	0
6:00 to 6:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
6:30 to 7:00			8	8	0	0	0	0	13	8	25	15	0	0	0	0	0	0
7:00 to 7:30	8		0	0	20	33	5	8	0	0	25	42	0	0	17	10	21	13
7:30 to 8:00			8	8	0	0	0	0	0	0			0	0	10	17	13	21
8:00 to 8:30	15	15	0	0	0	0	0	0	0	0			0	0	0	0	0	0
8:30 to 9:00			8	8	0	0	0	0	8	13			0	0	0	0	0	0
9:00 to 9:30			0	0	0	0	0	0	0	0			0	0	0	0	0	0
9:30 to 10:00		5	0	8	0	0	0	0	0	0			0	0	0	0	0	0
10:00 to 10:30				0	0	0	0	0	0	0	15	25	0	0	10	17	13	21
10:30 to 11:00		6		0	0	0	0	0	0	0			0	0	0	0	0	0
11:00 to 11:30		6		0	0	0	0	0	0	0			0	0	0	0	0	0
11:30 to 12:00		6		0	0	0	0	0	0	0			0	0	0	0	0	0

	Assume People Stay for appx 1 Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx Half-Hour		Assume People Stay for appx 1 Hour				Assumes people will stay approximately 1 hour		Dryside Use			Total Half-Hour Vehicle Trips			Rolling 1-Hour Vehicle Trips			
	In	Out	In	Out	In	Out	In	Out	In	Out	Community Program		50									
Time of Day	**Leisure Pool**		**Swim Lessons**		**Deep Water Fitness**		**Therapy**		**Special Needs**		**In**	**Out**	In	Out	Total	In	Out	Total	Time of Day	In	Out	Total Trip Generation
4:30 to 5:00	0	0	0	0	0		0	0					10		10	22	0	22				
5:00 to 5:30	0	0	0	0	0	0	0	0					20		20	20	0	20	4:30 to 5:30	42	0	42
5:30 to 6:00	0	0	0	0	0	0	0	0					20		20	75	23	98	5:00 to 6:00	95	23	118
6:00 to 6:30	0	0	0	0	0	0	0	0							0	17	10	27	5:30 to 6:30	92	33	125
6:30 to 7:00	0	0	0	0	9	0	0	0							0	34	17	51	6:00 to 7:00	51	27	78
7:00 to 7:30	0	0	0	0	9	9	0	0							0	9	9	18	6:30 to 7:30	43	26	69
7:30 to 8:00	0	0	0	0	9	9	0	0							0	59	34	93	7:00 to 8:00	68	43	111
8:00 to 8:30	0	0	0	0	0	9	0	0			5				0	5	9	14	7:30 to 8:30	64	43	107
8:30 to 9:00	42	0	18	0	0	0	17	0			20				0	194	83	277	8:00 to 9:00	**199**	**92**	**291**
9:00 to 9:30	0	0	18	18	0	0	0	0			20	5			0	61	61	122	8:30 to 9:30	255	144	399
9:30 to 10:00	42	42	18	18	0	0	17	17			20	20			0	132	156	288	9:00 to 10:00	193	217	410
10:00 to 10:30	25	0	18	18	0	0	0	0			25	20			0	68	40	108	9:30 to 10:30	200	196	396
10:30 to 11:00	58	42	18	18	0	0	17	17	10		25	20			0	153	122	275	10:00 to 11:00	221	162	383
11:00 to 11:30	67	25	18	18	0	0	0	0	10	10	20	25			0	115	78	193	10:30 to 11:30	268	200	468
11:30 to 12:00	58	58	0	18	9	0	17	17	10	10	15	25			0	159	153	312	11:00 to 12:00	274	231	505
12:00-12:30	67	67	0	0	9	9	0	0	10	10	15	20	10	10	20	159	186	345	11:30 to 12:30	318	339	657
12:30 to 1:00	100	58	0	0	9	9	17	17		10	15	15	20	20	40	211	179	390	12:00 to 1:00	370	365	735
1:00 to 1:30	67	67	0	0	0	9	0	0			10	15	20	20	40	97	111	208	12:30 to 1:30	308	290	598
1:30 to 2:00	100	100	0	0	0	0	8	17			10	15			0	160	182	342	1:00 to 2:00	257	293	550
2:00 to 2:30	67	67	0	0	0	0	9	0			10	10			0	86	77	163	1:30 to 2:30	246	259	505
2:30 to 3:00	100	100	0	0	0	0	0	9			10	10			0	135	161	296	2:00 to 3:00	221	238	459
3:00 to 3:30	108	67	0	0	0	0	8	8			10	10			0	126	85	211	2:30 to 3:30	261	246	507
3:30 to 4:00	100	100	18	0	0	0	0	0			10	10			0	155	135	290	3:00 to 4:00	281	220	501
4:00 to 4:30	67	108	18	18	0	0	8	8			10	10	20		20	123	144	267	3:30 to 4:30	278	279	557
4:30 to 5:00	58	100	18	18	0	0	0	0			25	10			0	247	226	473	4:00 to 5:00	**370**	**370**	**740**
5:00 to 5:30	67	67	18	18	0	0		8	10		25	10			0	123	120	243	4:30 to 5:30	370	346	716
5:30 to 6:00	16	58	18	18	0	0			10	10	25	25			0	77	119	196	5:00 to 6:00	200	239	439
6:00 to 6:30	51	67	18	18	0	0			10	10	25	25			0	104	120	224	5:30 to 6:30	181	239	420
6:30 to 7:00	16	16	0	18	0	0			10	10	25	25			0	97	100	197	6:00 to 7:00	201	220	421
7:00 to 7:30	26	51	0	0	0	0			10	10	25	25			0	157	192	349	6:30 to 7:30	254	292	546
7:30 to 8:00		16		0		0				10	25	25			0	56	97	153	7:00 to 8:00	213	289	502
8:00 to 8:30		26		0		0					15	25	10	10	20	40	76	116	7:30 to 8:30	96	173	269
8:30 to 9:00											10	25	20	20	40	46	66	112	8:00 to 9:00	86	142	228
9:00 to 9:30											10	15	20	20	40	30	35	65	8:30 to 9:30	76	101	177
9:30 to 10:00											0	10			0	0	23	23	9:00 to 10:00	30	58	88
10:00 to 10:30											0	10			0	38	73	111	9:30 to 10:30	38	96	134
10:30 to 11:00											0	0			0	0	6	6	10:00 to 11:00	38	79	117
11:00 to 11:30											0	0		35	35	0	41	41	10:30 to 11:30	0	47	47
11:30 to 12:00											0	0		35	35	0	41	41	11:00 to 12:00	0	82	82

Weekday School Year Aquatic Trip Generation and Assumptions

			Assume People Stay for appx 1 Hour		Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assumes 60% dropped off/40% drive & park	60% drop-off	Assume People Stay for appx Half Hour		Assume People Stay for appx 1 Hour						Dryside Use			Total Half-Hour Vehicle Trips			Rolling 1-Hour Vehicle Trips			
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	50									
Time of Day	Staff		Open Time / Lap Lanes		School District Teams - Swim		School District Teams - Diving		School District Teams - Water Polo		Club Teams - Swim		Club Teams - Diving		Deep Water Fitness		Therapy		Special Needs		Community Program		In	Out	Total	In	Out	Total	Time of Day	In	Out	Total Trip Generation
4:30 to 5:00	12		8	0	33	20	8	5	0		0		0				0	0					10		10	71	25	96				
5:00 to 5:30			34	0	0	0	0	0	0	0	0	0	0	0			0	0					20		20	54	0	54	4:30 to 5:30	125	25	150
5:30 to 6:00			8	8	0	0	0	0	0	0	0	0	0	0			0	0					20		20	28	8	36	5:00 to 6:00	82	8	90
6:00 to 6:30			34	34	0	0	0	0	0	0	0	0	0	0			2	0							0	36	34	70	5:30 to 6:30	64	42	106
6:30 to 7:00			8	8	0	0	0	0	0	0	0	0	0	0	9		15	0							0	32	8	40	6:00 to 7:00	68	42	110
7:00 to 7:30			17	34	0	0	0	0	0	0	0	0	0	0	9	9	2	2							0	28	45	73	6:30 to 7:30	60	53	113
7:30 to 8:00			8	8	20	33	5	8	0	0	0	0	0	0	9	9	15	15							0	57	73	**130**	7:00 to 8:00	**85**	**118**	**203**
8:00 to 8:30			9	17	0	0	0	0	0	0	0	0	0	0	9	9	2	2			5				0	25	28	53	7:30 to 8:30	82	101	183
8:30 to 9:00			8	8	0	0	0	0	0	0	0	0	0	0		9	15	15			20				0	43	32	75	8:00 to 9:00	68	60	128
9:00 to 9:30			9	9	0	0	0	0	0	0	0	0	0	0			2	2			20	5			0	31	16	47	8:30 to 9:30	74	48	122
9:30 to 10:00			8	8	0	0	0	0	0	0	0	0	0	0			15	15			20	20			0	43	43	86	9:00 to 10:00	74	59	133
10:00 to 10:30		2	0	9	0	0	0	0	0	0	0	0	0	0			2	2			25	20			0	27	33	60	9:30 to 10:30	70	76	146
10:30 to 11:00			8	8	0	0	0	0	0	0	0	0	0	0			15	15	10		25	20			0	58	43	101	10:00 to 11:00	85	76	161
11:00 to 11:30			0	0	0	0	0	0	0	0	0	0	0	0			2	2	10	10	20	25			0	32	37	69	10:30 to 11:30	90	80	170
11:30 to 12:00			8	8	0	0	0	0	0	0	0	0	0	0	9		15	15	10	10	15	25			0	57	58	115	11:00 to 12:00	89	95	184
12:00-12:30	15	15	0	0	0	0	0	0	0	0	0	0	0	0	9	9	2	2	10	10	15	20	10	10	20	61	66	127	11:30 to 12:30	118	124	242
12:30 to 1:00			8	8	0	0	0	0	0	0	0	0	0	0	9	9	15	15		10	15	15	20	20	40	67	77	144	12:00 to 1:00	128	143	271
1:00 to 1:30			0	0	0	0	0	0	0	0	0	0	0	0	9	9	2	2			10	15	20	20	40	41	46	87	12:30 to 1:30	108	123	231
1:30 to 2:00			8	8	0	0	0	0	0	0	0	0	0	0		9	15	15			10	15			0	33	47	80	1:00 to 2:00	74	93	167
2:00 to 2:30			9	0	0	0	0	0	0	0	0	0	0	0			2	2			10	10			0	21	12	33	1:30 to 2:30	54	59	113
2:30 to 3:00			8	8	33	20	8	5	0	0	0	0	0	0			15	15			10	10			0	74	58	132	2:00 to 3:00	95	70	165
3:00 to 3:30			9	9	0	0	0	0	0	0	0	0	0	0			2	2			10	10			0	21	21	42	2:30 to 3:30	95	79	174
3:30 to 4:00	2		8	8	0	0	0	0	0	0	0	0	10	6			15	15			10	10			0	45	39	84	3:00 to 4:00	66	60	126
4:00 to 4:30			9	9	0	0	0	0	0	0	0	0	0	0			2	2			10	10	20		20	41	21	62	3:30 to 4:30	86	60	146
4:30 to 5:00			33	8	0	0	0	0	0	0	0	0	0	0			15	15			25	10			0	73	33	106	4:00 to 5:00	114	54	168
5:00 to 5:30	3		9	9	0	0	0	0	0	0	0	0	0	0			2	2	10		25	10			0	49	21	70	4:30 to 5:30	122	54	176
5:30 to 6:00			33	33	0	0	0	0	0	0	0	0	0	0				15	10	10	25	25			0	68	83	**151**	5:00 to 6:00	**117**	**104**	**221**
6:00 to 6:30			9	9	0	0	0	0	0	0	0	0	0	0				2	10	10	25	25			0	44	46	90	5:30 to 6:30	112	129	241
6:30 to 7:00			33	33	0	0	0	0	13	8	42	25	0	0				0	10	10	25	25			0	123	101	224	6:00 to 7:00	167	147	314
7:00 to 7:30	8		9	9	20	33	5	8	0	0	0	0	0	0				0	10	10	25	25			0	77	85	162	6:30 to 7:30	200	186	386
7:30 to 8:00			33	33	0	0	0	0	0	0	0	0	6	10				0		10	25	25			0	64	78	142	7:00 to 8:00	141	163	304
8:00 to 8:30	15	15	9	9	0	0	0	0	0	0	0	0	0	0				0			15	25	10	10	20	49	59	108	7:30 to 8:30	113	137	250
8:30 to 9:00			33	33	0	0	0	0	8	13	0	0	0	0				0			10	25	20	20	40	71	91	162	8:00 to 9:00	120	150	270
9:00 to 9:30			9	9	0	0	0	0	0	0	0	0	0	0				0			10	15	20	20	40	39	44	83	8:30 to 9:30	110	135	245
9:30 to 10:00		5	33	33	0	0	0	0	0	0	0	0	0	0				0			0	10			0	33	48	81	9:00 to 10:00	72	92	164
10:00 to 10:30				9	0	0	0	0	0	0	25	42	0	0				0			0	10			0	25	61	86	9:30 to 10:30	58	109	167
10:30 to 11:00		6		33	0	0	0	0	0	0	0	0	0	0				0			0	0			0	0	39	39	10:00 to 11:00	25	100	125
11:00 to 11:30		6		0	0	0	0	0	0	0	0	0	0	0				0			0	0		35	35	0	41	41	10:30 to 11:30	0	80	80
11:30 to 12:00		6		0	0	0	0	0	0	0	0	0	0	0				0			0	0		35	35	0	41	41	11:00 to 12:00	0	82	82

Aquatics Center Trip Generation Comparison

	AM Peak Hour			PM Peak Hour		
	In	**Out**	**Total**	**In**	**Out**	**Total**
Weekday School Year	85	118	203	117	104	221
Weekend School Year	199	92	291	370	370	740
Weekday Summer	**186**	**101**	**287**	**379**	**379**	**758**
Weekend Summer	169	135	304	337	326	663

Weekend Summer Aquatic Parking Calculations

	Rolling 1-Hour Vehicle Trips			Estimated Parking Demand
Time of Day	In	Out	Total Trip Generation	
4:00 to 5:00	22	0	22	22
4:30 to 5:30	42	0	42	42
5:00 to 6:00	82	15	97	89
5:30 to 6:30	62	15	77	89
6:00 to 7:00	42	22	64	109
6:30 to 7:30	60	36	96	113
7:00 to 8:00	141	56	197	194
7:30 to 8:30	128	51	179	190
8:00 to 9:00	169	135	304	228
8:30 to 9:30	217	174	391	233
9:00 to 10:00	220	178	398	270
9:30 to 10:30	223	191	414	265
10:00 to 11:00	314	224	538	360
10:30 to 11:30	306	216	522	355
11:00 to 12:00	348	306	654	402
11:30 to 12:30	401	372	773	384
12:00 to 1:00	420	448	868	374
12:30 to 1:30	358	382	740	360
1:00 to 2:00	316	343	659	347
1:30 to 2:30	287	309	596	338
2:00 to 3:00	261	287	548	321
2:30 to 3:30	261	278	539	321
3:00 to 4:00	281	261	542	341
3:30 to 4:30	319	320	639	320
4:00 to 5:00	288	350	638	279
4:30 to 5:30	337	326	663	331
5:00 to 6:00	200	190	390	289
5:30 to 6:30	161	247	408	245
6:00 to 7:00	159	220	379	228
6:30 to 7:30	215	223	438	237
7:00 to 8:00	170	219	389	179
7:30 to 8:30	96	164	260	169
8:00 to 9:00	78	103	181	154
8:30 to 9:30	73	96	169	146
9:00 to 10:00	35	66	101	123
9:30 to 10:30	38	96	134	88
10:00 to 11:00	38	79	117	82
10:30 to 11:30	0	47	47	41
11:00 to 12:00	0	82	82	0

Peak parking demand 402

Weekday Summer Aquatic Parking Calculations

Rolling 1-Hour Vehicle Trips				Estimated Parking Demand
Time of Day	In	Out	Total Trip Generation	
4:00 to 5:00	22	0	22	22
4:30 to 5:30	42	0	42	42
5:00 to 6:00	82	15	97	89
5:30 to 6:30	64	15	79	91
6:00 to 7:00	51	17	68	123
6:30 to 7:30	60	28	88	123
7:00 to 8:00	98	68	166	153
7:30 to 8:30	94	68	162	149
8:00 to 9:00	186	101	287	238
8:30 to 9:30	234	140	374	243
9:00 to 10:00	188	195	383	231
9:30 to 10:30	211	200	411	254
10:00 to 11:00	229	175	404	285
10:30 to 11:30	268	200	468	322
11:00 to 12:00	274	231	505	328
11:30 to 12:30	318	339	657	301
12:00 to 1:00	370	365	735	333
12:30 to 1:30	308	290	598	319
1:00 to 2:00	266	293	559	306
1:30 to 2:30	246	259	505	306
2:00 to 3:00	223	240	463	289
2:30 to 3:30	270	246	516	330
3:00 to 4:00	290	229	519	350
3:30 to 4:30	287	288	575	329
4:00 to 5:00	379	379	758	350
4:30 to 5:30	387	355	742	361
5:00 to 6:00	208	256	464	302
5:30 to 6:30	181	256	437	286
6:00 to 7:00	201	220	421	283
6:30 to 7:30	254	292	546	248
7:00 to 8:00	229	289	518	223
7:30 to 8:30	112	189	301	171
8:00 to 9:00	86	158	244	151
8:30 to 9:30	118	126	244	163
9:00 to 10:00	72	83	155	140
9:30 to 10:30	63	138	201	88
10:00 to 11:00	63	121	184	82
10:30 to 11:30	0	47	47	41
11:00 to 12:00	0	82	82	0

Peak parking demand 361

Weekend School Year Aquatic Parking Calculations

Rolling 1-Hour Vehicle Trips				Estimated Parking Demand
Time of Day	In	Out	Total Trip Generation	
4:00 to 5:00	22	0	22	22
4:30 to 5:30	42	0	42	42
5:00 to 6:00	95	23	118	94
5:30 to 6:30	92	33	125	101
6:00 to 7:00	51	27	78	118
6:30 to 7:30	43	26	69	118
7:00 to 8:00	68	43	111	143
7:30 to 8:30	64	43	107	139
8:00 to 9:00	199	92	291	250
8:30 to 9:30	255	144	399	250
9:00 to 10:00	193	217	410	226
9:30 to 10:30	200	196	396	254
10:00 to 11:00	221	162	383	285
10:30 to 11:30	268	200	468	322
11:00 to 12:00	274	231	505	328
11:30 to 12:30	318	339	657	301
12:00 to 1:00	370	365	735	333
12:30 to 1:30	308	290	598	319
1:00 to 2:00	257	293	550	297
1:30 to 2:30	246	259	505	306
2:00 to 3:00	221	238	459	280
2:30 to 3:30	261	246	507	321
3:00 to 4:00	281	220	501	341
3:30 to 4:30	278	279	557	320
4:00 to 5:00	370	370	740	341
4:30 to 5:30	370	346	716	344
5:00 to 6:00	200	239	439	302
5:30 to 6:30	181	239	420	286
6:00 to 7:00	201	220	421	283
6:30 to 7:30	254	292	546	248
7:00 to 8:00	213	289	502	207
7:30 to 8:30	96	173	269	171
8:00 to 9:00	86	142	228	151
8:30 to 9:30	76	101	177	146
9:00 to 10:00	30	58	88	123
9:30 to 10:30	38	96	134	88
10:00 to 11:00	38	79	117	82
10:30 to 11:30	0	47	47	41
11:00 to 12:00	0	82	82	0

Peak parking demand 344

Weekday School Year Aquatic Parking Calculations

Rolling 1-Hour Vehicle Trips				Estimated Parking Demand
Time of Day	In	Out	Total Trip Generation	
4:00 to 5:00	71	25	96	46
4:30 to 5:30	125	25	150	100
5:00 to 6:00	82	8	90	120
5:30 to 6:30	64	42	106	122
6:00 to 7:00	68	42	110	146
6:30 to 7:30	60	53	113	129
7:00 to 8:00	85	118	203	113
7:30 to 8:30	82	101	183	110
8:00 to 9:00	68	60	128	121
8:30 to 9:30	74	48	122	136
9:00 to 10:00	74	59	133	136
9:30 to 10:30	70	76	146	130
10:00 to 11:00	85	76	161	145
10:30 to 11:30	90	80	170	140
11:00 to 12:00	89	95	184	139
11:30 to 12:30	118	124	242	134
12:00 to 1:00	128	143	271	124
12:30 to 1:30	108	123	231	119
1:00 to 2:00	74	93	167	105
1:30 to 2:30	54	59	113	114
2:00 to 3:00	95	70	165	130
2:30 to 3:30	95	79	174	130
3:00 to 4:00	66	60	126	136
3:30 to 4:30	86	60	146	156
4:00 to 5:00	114	54	168	196
4:30 to 5:30	122	54	176	224
5:00 to 6:00	117	104	221	209
5:30 to 6:30	112	129	241	207
6:00 to 7:00	167	147	314	229
6:30 to 7:30	200	186	386	221
7:00 to 8:00	141	163	304	207
7:30 to 8:30	113	137	250	197
8:00 to 9:00	120	150	270	177
8:30 to 9:30	110	135	245	172
9:00 to 10:00	72	92	164	157
9:30 to 10:30	58	109	167	121
10:00 to 11:00	25	100	125	82
10:30 to 11:30	0	80	80	41
11:00 to 12:00	0	82	82	0

Peak parking demand: 229

Bellevue Airfield Park - Aquatics Center 1.22058

Weekend School Year Shared Parking Demand Estimate

Use	Aquatics Center		Public Park		Pickleball Courts		TOTAL Shared Parking Demand	On-Site Parking Supply	Shared Parking Spaces (per Agreement)	Total Parking Supply	Parking Surplus/Deficit
Size	1 Center		15.76-Acre		8 Courts						
Parking Rate	vehicles/aquatics center		0.60 vehicles/acre		4 vehicles/court						
Rate Source	Programmatic		ITE Parking Generation (6th Ed)		Programmatic						
Unadjusted Demand[3]	344		9		32						
Reduciton[1]	0%		0%		0%						
Adjusted Demand	344		9		32						
Time of Day[2]	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand					
12:00 AM-4:00 AM	0%	0	0%	0	0%	0	0	251	0	251	251
5:00 AM	29%	101	0%	0	0%	0	101	251	0	251	150
6:00 AM	34%	118	0%	0	0%	0	118	251	0	251	133
7:00 AM	42%	143	20%	2	28%	9	154	251	400	651	497
8:00 AM	73%	250	25%	2	33%	11	263	251	400	651	388
9:00 AM	74%	254	67%	6	56%	18	278	251	400	651	373
10:00 AM	94%	322	82%	7	61%	20	349	251	400	651	302
11:00 AM	95%	328	98%	9	68%	22	359	251	400	651	292
12:00 PM	97%	333	90%	8	93%	30	371	251	400	651	280
1:00 PM	89%	306	100%	9	70%	22	337	251	400	651	314
2:00 PM	93%	321	97%	9	86%	28	358	251	400	651	293
3:00 PM	99%	341	88%	8	100%	32	381	251	400	651	270
4:00 PM	100%	344	80%	7	91%	29	380	251	400	651	271
5:00 PM	88%	302	61%	5	93%	30	337	251	400	651	314
6:00 PM	82%	283	57%	5	95%	30	318	251	400	651	333
7:00 PM	60%	207	0%	0	0%	0	207	251	400	651	444
8:00 PM	44%	151	0%	0	0%	0	151	251	400	651	500
9:00 PM	36%	123	0%	0	0%	0	123	251	400	651	528
10:00 PM	24%	82	0%	0	0%	0	82	251	400	651	569
11:00 PM	0%	0	0%	0	0%	0	0	251	400	651	651

Bellevue Airfield Park - Aquatics Center 1.22058

Weekday School Year Shared Parking Demand Estimate

Use	Aquatics Center		Public Park		Pickleball Courts		TOTAL Shared Parking Demand	On-Site Parking Supply	Shared Parking Spaces (per Agreement)	Total Parking Supply	Parking Surplus/Deficit
Size	1 Center		15.76-Acre		8 Courts						
Parking Rate	vehicles/aquatics center		vehicles = 0.62(# of acres)+18.48		4 vehicles/court						
Rate Source	Programmatic		ITE Parking Generation (6th Ed)		Programmatic						
Unadjusted Demand[3]	289		29		32						
Reduciton[1]	0%		0%		0%						
Adjusted Demand	289		29		32						
Time of Day[2]	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand					
12:00 AM-4:00 AM	0%	0	0%	0	0%	0	0	251	0	251	251
5:00 AM	42%	122	0%	0	0%	0	122	251	0	251	129
6:00 AM	51%	146	0%	0	0%	0	146	251	0	251	105
7:00 AM	39%	113	28%	8	28%	9	130	251	0	251	121
8:00 AM	47%	136	33%	10	33%	11	157	251	0	251	94
9:00 AM	47%	136	56%	16	56%	18	170	251	0	251	81
10:00 AM	50%	145	61%	18	61%	20	183	251	0	251	68
11:00 AM	48%	139	68%	20	68%	22	181	251	0	251	70
12:00 PM	43%	124	93%	27	93%	30	181	251	0	251	70
1:00 PM	39%	114	70%	20	70%	22	156	251	0	251	95
2:00 PM	45%	130	86%	25	86%	28	183	251	50	301	118
3:00 PM	54%	156	100%	29	100%	32	217	251	50	301	84
4:00 PM	78%	224	91%	26	91%	29	279	251	50	301	22
5:00 PM	100%	289	93%	27	93%	30	346	251	114	365	19
6:00 PM	82%	237	95%	28	95%	30	295	251	200	451	156
7:00 PM	62%	179	0%	0	0%	0	179	251	200	451	272
8:00 PM	53%	154	0%	0	0%	0	154	251	200	451	297
9:00 PM	43%	123	0%	0	0%	0	123	251	200	451	328
10:00 PM	28%	82	0%	0	0%	0	82	251	200	451	369
11:00 PM	0%	0	0%	0	0%	0	0	251	200	451	451

Bellevue Airfield Park - Aquatics Center 1.22058

Weekend Summer Shared Parking Demand Estimate

Use	Aquatics Center		Public Park		Pickleball Courts		TOTAL Shared Parking Demand	On-Site Parking Supply	Shared Parking Spaces (per Agreement)	Total Parking Supply	Parking Surplus/Deficit
Size	1 Center		15.76-Acre		8 Courts						
Parking Rate	vehicles/aquatics center		0.60 vehicles/acre		4 vehicles/court						
Rate Source	Programmatic		ITE Parking Generation (6th Ed)		Programmatic						
Unadjusted Demand[3]	402		9		32						
Reduciton[1]	0%		0%		0%						
Adjusted Demand	402		9		32						
Time of Day[2]	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand					
12:00 AM-4:00 AM	0%	0	0%	0	0%	0	0	251	0	251	251
5:00 AM	22%	89	0%	0	0%	0	89	251	0	251	162
6:00 AM	28%	113	0%	0	0%	0	113	251	0	251	138
7:00 AM	48%	194	20%	2	28%	9	205	251	400	651	446
8:00 AM	58%	233	25%	2	33%	11	246	251	400	651	405
9:00 AM	67%	270	67%	6	56%	18	294	251	400	651	357
10:00 AM	90%	360	82%	7	61%	20	387	251	400	651	264
11:00 AM	100%	402	98%	9	68%	22	433	251	400	651	218
12:00 PM	93%	374	90%	8	93%	30	412	251	400	651	239
1:00 PM	86%	347	100%	9	70%	22	378	251	400	651	273
2:00 PM	80%	321	97%	9	86%	28	358	251	400	651	293
3:00 PM	85%	341	88%	8	100%	32	381	251	400	651	270
4:00 PM	82%	331	80%	7	91%	29	367	251	400	651	284
5:00 PM	72%	289	61%	5	93%	30	324	251	400	651	327
6:00 PM	59%	237	57%	5	95%	30	272	251	400	651	379
7:00 PM	45%	179	0%	0	0%	0	179	251	400	651	472
8:00 PM	38%	154	0%	0	0%	0	154	251	400	651	497
9:00 PM	31%	123	0%	0	0%	0	123	251	400	651	528
10:00 PM	20%	82	0%	0	0%	0	82	251	400	651	569
11:00 PM	0%	0	0%	0	0%	0	0	251	400	651	651

Bellevue Airfield Park - Aquatics Center 1.22058

Weekday Summer Shared Parking Demand Estimate

Use	Aquatics Center		Public Park		Pickleball Courts		TOTAL Shared Parking Demand	On-Site Parking Supply	Shared Parking Spaces (per Agreement)	Total Parking Supply	Parking Surplus/Deficit
Size	1 Center		15.76-Acre		8 Courts						
Parking Rate	vehicles/aquatics center		vehicles = 0.62(# of acres)+18.48		4 vehicles/court						
Rate Source	Programmatic		ITE Parking Generation (6th Ed)		Programmatic						
Unadjusted Demand[3]	361		29		32						
Reduciton[1]	0%		0%		0%						
Adjusted Demand	361		29		32						
Time of Day[2]	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand	% Hourly Demand	Hourly Demand					
12:00 AM-4:00 AM	0%	0	0%	0	0%	0	0	251	0	251	251
5:00 AM	12%	42	0%	0	0%	0	42	251	0	251	209
6:00 AM	25%	91	0%	0	0%	0	91	251	0	251	160
7:00 AM	34%	123	28%	8	28%	9	140	251	0	251	111
8:00 AM	41%	149	33%	10	33%	11	170	251	0	251	81
9:00 AM	67%	243	56%	16	56%	18	277	251	0	251	-26
10:00 AM	70%	254	61%	18	61%	20	292	251	0	251	-41
11:00 AM	89%	322	68%	20	68%	22	364	251	0	251	-113
12:00 PM	83%	301	93%	27	93%	30	358	251	0	251	-107
1:00 PM	88%	319	70%	20	70%	22	361	251	0	251	-110
2:00 PM	85%	306	86%	25	86%	28	359	251	50	301	-58
3:00 PM	91%	330	100%	29	100%	32	391	251	50	301	-90
4:00 PM	91%	329	91%	26	91%	29	384	251	50	301	-83
5:00 PM	100%	361	93%	27	93%	30	418	251	114	365	-53
6:00 PM	79%	286	95%	28	95%	30	344	251	200	451	107
7:00 PM	69%	248	0%	0	0%	0	248	251	200	451	203
8:00 PM	47%	171	0%	0	0%	0	171	251	200	451	280
9:00 PM	45%	163	0%	0	0%	0	163	251	200	451	288
10:00 PM	24%	88	0%	0	0%	0	88	251	200	451	363
11:00 PM	11%	41	0%	0	0%	0	41	251	200	451	410