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PER- AND POLY-FLUOROALKYL SUBSTANCES SOURCE REMEDIATION ACTION PLAN 175 NEWPORT WAY NORTHWEST ISSAQUAH, WASHINGTON

Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027

Farallon PN: 1754-004

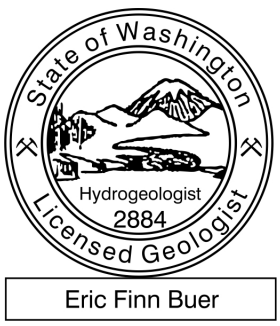
For:
Eastside Fire & Rescue
175 Newport Way Northwest
Issaquah, Washington 98027

April 7, 2021

Prepared by:

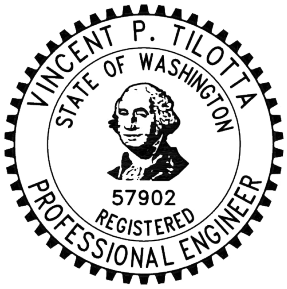
Eric Buer, L.G., L.H.G.
Principal Hydrogeologist

Vince Tilotta, P.E.
Associate Engineer



Reviewed by:

Clifford T. Schmitt
Principal Hydrogeologist



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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Summary Report on behalf of Eastside Fire & Rescue (EFR) to document the proposed approach to develop a remediation action plan for confirmed releases of per- and polyfluoroalkyl substances (PFAS) to soil and groundwater on the property at 175 Newport Way Northwest, in Issaquah, Washington (175 Newport Way Northwest area of interest). Farallon has prepared this report for EFR under two agreements: an Interagency Agreement between EFR and the Washington State Department of Ecology (Ecology) (IAA No. C2000071); and an Interlocal Agreement between EFR and the City of Issaquah. Previous characterization of the 175 Newport Way Northwest area of interest was performed under scopes of work described in Interagency Agreement (IAA) Nos. C1800181 dated July 10, 2018 and C2000071 dated December 3, 2019. This report was prepared to satisfy reporting requirements under Interagency Agreement Task 9, Source Remediation Action Plan.

The overall purpose of this report is to summarize applicable project background as it applies to the proposed remediation action plan, identify recommended technologies based on subsurface characteristics at the 175 Newport Way Northwest area of interest, and provide a proposed scope of work to complete additional characterization and pilot testing to facilitate full scale remediation.

2.0 PROJECT BACKGROUND

EFR, the City of Issaquah, and the Ecology, collectively referred to as the Parties, are in the process of evaluating suspected and confirmed releases of PFAS to the subsurface associated with aqueous film forming foam (AFFF) training exercises to soil and groundwater in the Lower Issaquah Valley. The characterization work has focused on the five areas of interest and down-gradient groundwater (Figure 1). Complete documentation of the investigation work is available in the Per- and Poly-Fluoroalkyl Substances Additional Characterization Study Summary Report prepared by Farallon (2021) for EFR.

2.1 PROJECT BACKGROUND

The Parties are in the process of characterizing the nature and extent of PFAS found in the Lower Issaquah Valley that are impacting the underlying aquifer, and identifying source remedial action(s) that when implemented will benefit groundwater quality of this important drinking water resource. For clarity and discussion purposes, previous reporting and this report divide the aquifer in the Lower Issaquah Valley and in the vicinity into three water-bearing zones: shallow groundwater, intermediate groundwater, and deep groundwater. Shallow groundwater is encountered at depths between approximately 5 to 60 feet below ground surface (bgs). Intermediate groundwater is encountered at depths between approximately 60 and 120 feet bgs. Deep groundwater is encountered at depths greater than 120 feet bgs.

Confirmed releases of AFFF have resulted in concentrations of PFAS in soil and groundwater that exceed current Ecology Investigatory Levels (Investigatory Levels) at the following locations:

- 175 Newport Way Northwest, confirmed impacts to soil and shallow groundwater;
- Issaquah Valley Elementary West Playfield, confirmed impacts to soil, shallow groundwater, and intermediate groundwater;
- Issaquah Valley Elementary East Ballfields (Dodd Fields Park), confirmed impacts to soil, shallow groundwater, and intermediate groundwater;
- North of 190 East Sunset Way (Memorial Field), confirmed impacts to soil and shallow groundwater; and
- West of 135 East Sunset Way on the former rail grade (Rainier Trail), confirmed impacts to soil and shallow groundwater.

This report focuses on 175 Newport Way Northwest (Figure 2), which has the longest reported history of AFFF training and some of the highest reported concentrations of PFAS in soil and shallow groundwater identified to date for the locations included in this investigation.

2.2 175 NEWPORT WAY NORTHWEST PREVIOUS CHARACTERIZATION

Analytical results for soil and groundwater obtained through previous characterization work indicate that some of the highest reported concentrations of PFAS in soil and shallow groundwater are on the western portion of the 175 Newport Way Northwest area of interest where historical AFFF training was performed over a period of approximately 20 years on a monthly basis (NWN AFFF training area). Preliminary findings under the scopes of these two IAAs include:

- Observed concentrations of PFAS in soil, reconnaissance groundwater, and groundwater are highest within the footprint of the AFFF training area (Figures 2 and 3).
- While variable, concentrations of PFAS in soil, including perfluorooctane sulfonic acid (PFOS)[1] and perfluorooctanoic acid (PFOA), generally attenuate with depth below the AFFF training area. Reported concentrations of PFAS in soil at a depth of 15 feet bgs in the vadose zone are typically an order of magnitude or more less than those observed in the interval from ground surface to a depth of 5 feet bgs of the vadose zone (Figures 2 and 4).
- Subsurface stratigraphy under the NWN AFFF training area comprises a surficial silty sand and sand unit overlying a sand and gravel unit followed by a low-permeability hard gray silt first encountered at a depth of approximately 15 feet bgs on the western portion of the NWN AFFF training area and approximately 30 feet bgs on the eastern portion of the AFFF training area (Figure 4).
- The hard gray silt basement unit has the characteristics to act as a low-permeability aquiclude. No lower groundwater-bearing unit has been identified below the hard gray silt.
- The hard gray silt unit may also support injected treatments by limiting the vertical spread of treatment solution.
- Shallow groundwater was observed under the AFFF training area at a depth of approximately 10 to 18 feet bgs, near the contact between the surficial silty sand/sand unit and sand and gravel units. Shallow groundwater flows to the east across the AFFF training area and transitions to flowing north in the central and eastern portions of the 175 Newport Way Northwest area of interest.
- Observed concentrations of PFOS and PFOA in shallow groundwater suggest additional PFAS-contaminated soil and groundwater are present west of the 175 Newport Way Northwest area of interest. Reported concentrations of PFOS and PFOA in shallow groundwater are the same order of magnitude in monitoring wells NWN-MW04, NWN-MW07, and NWN-MW03 (west to east, respectively) before beginning to decline on the eastern portion of the area of interest (Figure 3).

[1] Conventional product chemical names are provided here consistent with the acronyms and terminology used in the Ecology Draft Chemical Action Plan (2020). Ionic forms of the chemicals are most commonly encountered in the environment.

- Although hydraulic testing was not performed, the characteristics of the sand and gravel unit suggest it is highly conductive.
- A downward vertical gradient was observed in shallow groundwater using well pairs NWN-MW03/NWN-MW09 (both screened in shallow groundwater) and NWN-MW02/NWN-MW08 (shallow/intermediate well pair).

3.0 RECOMMENDED REMEDIAL TECHNOLOGIES

PFAS are not currently listed as hazardous substances and therefore not subject to a formal Feasibility Study. To evaluate implications for remediation, Farallon performed a screening of currently available remedial technologies for PFAS and identified key characteristics that will influence cleanup action technology selection and design for each of the areas of interest.

3.1 EVALUATION OF FEASIBLE REMEDIATION TECHNOLOGIES

Farallon performed a preliminary screening of currently available remediation technologies for PFAS in soil and groundwater. Although potential remedial technologies and associated cleanup actions are not subject to a formal feasibility study at this time, the technology screening was performed based on preliminary evaluation of the criteria identified in the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Section 173-340-360(3) to identify permanent solutions to the maximum extent practicable, including protectiveness, permanence, cost, long-term effectiveness, management of short-term risks, technical and administrative implementability, and consideration of public concerns.

3.1.1 Eliminated Technologies

Potential remedial technologies for PFAS that were eliminated fell into one of the following categories:

- Technologies that have been demonstrated to be ineffective for PFAS such as soil vapor extraction and air sparging.
- Technologies that are still experimental or have not been proven at a commercial scale such as ball milling, ethanol flushing, and advanced oxidation/reduction for soil; and sonication, or bioremediation for groundwater.
- Technologies that preliminary evaluation indicated were unsuitable for conditions identified at the areas of interest such as deep excavation below the water table, dynamic groundwater flushing, or pump-and-treat systems to provide hydraulic control for high-concentration PFAS-impacted groundwater.
- Technologies that preliminary evaluation indicated would be cost-prohibitive for the volumes of soil and groundwater under consideration, including off-site incineration, soil washing, and reverse osmosis or filtration technology.

3.1.2 Retained Technologies

Treatment technologies that were retained included proven, commercially available technologies that preliminary evaluation indicated would support development of remedial actions that are both protective of human health and the environment and cost-effective to implement. Retained technologies for soil include:

- Direct excavation and off-site disposal of higher-concentration PFAS-impacted soil.

- Installation of engineering controls such as physical barriers at the surface to reduce or eliminate infiltration of precipitation through unsaturated soil.
- Solidification of contaminated soil to reduce infiltration of precipitation and PFAS mobility.
- In-situ treatment or amendment with activated carbon additives for unsaturated and saturated soil to reduce or eliminate PFAS mobility in the subsurface.
- Subsurface barriers or structures to enhance treatment or isolate higher-concentration media such as cutoff walls and/or vaults.

Retained technologies for groundwater include:

- Activated carbon treatment using either direct injection technology or direct installation for shallow groundwater to create permeable reaction barriers or retain PFAS in-situ at the point of direct-treatment;
- Subsurface barriers or structures to enhance treatment or isolate higher-concentration media such as cutoff walls, flume-and-gate structures, and similar treatment systems;
- Localized low-volume hydraulic control using pump-and-treat systems for high-concentration groundwater to prevent migration, dispersion, and dilution that will contaminate larger down-gradient volumes of water.

3.2 RECOMMENDED SOIL TECHNOLOGIES

Based on the reported distribution of PFAS in the subsurface and lithologies present, remedial technologies recommended for further evaluation at the 175 Newport Way Northwest area of interest are:

- Direct excavation of soil with high concentrations of PFAS to a depth of approximately 10 feet bgs;
- Capping, solidification, or amendment with activated carbon of unsaturated (vadose zone) soil with elevated concentrations of PFAS; and
- Injection treatment of the saturated sand and gravel interval overlying the hard gray silt.

Based on the assessment of the AFFF training area performed to date, adequate information is available to develop a Source Remediation Plan. Some limited additional characterization sufficient to support bench testing of potential treatment products and to evaluate performance of pilot-scale treatment of the AFFF training area is recommended. Based on the results of the bench- and pilot-scale testing, a preliminary full-scale remedial design will be developed.

3.3 RECOMMENDED GROUNDWATER TECHNOLOGIES

Based on the reported distribution of PFAS in shallow and intermediate groundwater, technologies recommended for further evaluation at the 175 Newport Way Northwest area of interest are:

- Direct injection treatment of shallow groundwater below the NWN AFFF training area;
- Construction of a subsurface vault keyed into the hard gray silt to isolate soil and shallow groundwater with the highest reported concentrations of PFAS; and
- Construction of a passive treatment system with activated carbon such as a funnel-and-gate system keyed into the hard gray silt to enhance treatment of shallow groundwater prior to migration and dispersion out of the NWN AFFF training area and ultimately into intermediate groundwater.

Localized hydraulic control for shallow groundwater may be possible at the NWN AFFF training area given the boundary conditions that are present. However, this approach is unlikely to be cost effective when compared with a passive treatment system over the long term for control of PFAS in shallow groundwater.

4.0 PROPOSED SCOPE OF WORK

Work to be completed under this Source Remediation Action Plan is described below by task.

- Task 1: Project Management and Communications;
- Task 2: Pilot Test Work Plan;
- Task 3: NWN AFFF Training Area Characterization;
- Task 4: Pilot Test Feasibility and Design Memorandum;
- Task 5: Pilot Testing;
- Task 6: Summary Reporting; and
- Task 7: Investigation-Derived Waste Disposal.

4.1 TASK 1: PROJECT MANAGEMENT AND COMMUNICATIONS

Task 1 includes the following scheduling, budgeting, allocation of personnel resources, subcontracting, contract management, public communications as requested by the Parties, coordination for attendance at meetings with the Parties; and other administrative duties as required. Monthly progress reports will be prepared for the Parties under Task 1 detailing completed and planned activities.

4.2 TASK 2: PILOT TEST WORK PLAN

Task 2 includes preparation of a Pilot Test Work Plan (Work Plan) as an addendum to the existing *Per- and Poly-Fluoroalkyl Substances Characterization Study Work Plan, Lower Issaquah Valley, Issaquah, Washington* dated August 6, 2018, prepared by Farallon (2018 Work Plan) that will identify additional sampling to be performed prior to and in conjunction with pilot testing. EFR will update the 2018 Work Plan's associated Quality Assurance and Program Plan as needed to address the tasks described in this scope of work and will ensure compliance with cultural and archeological requirements, including the development of an Inadvertent Discovery Plan.

The updated Work Plan and Quality Assurance and Program Plan will describe the final scope of work to be performed, including:

- Sample locations and types;
- Standard operating procedures for work to be performed;
- Quality control measures;
- Analytical methods and laboratories;
- Applicable Investigatory Levels; and
- Other project information as appropriate.

4.3 TASK 3: NWN AFFF TRAINING AREA CHARACTERIZATION

Task 3 includes additional collection of soil and groundwater analytical data at the NWN AFFF training area to support the design of the planned pilot test and bench-scale testing of soil amendments or injected product for NWN AFFF training area soils. The data collection will be used to refine the extent of impacts to soil and to confirm that observed impacts to shallow groundwater correspond to known areas with elevated PFAS concentrations in soil at the NWN AFFF training area (i.e., reducing the potential that a previously unidentified source in soil is causing impacts to shallow groundwater). The data collected under Task 3 will be used to draft the Pilot Test Feasibility and Design Memorandum that will be prepared under Task 4.

Additional characterization includes:

- Advancing six direct-push borings into the shallow zone (up to 20 feet bgs) or, at select locations, to the hard gray silt (20 to 30 feet bgs) at the NWN AFFF training area and central portion of the 175 Newport Way Northwest area of interest (Figures 2 and 3);
- Completion of the six borings as new shallow monitoring wells;
- Collection of soil samples during drilling activities at depths of 3, 5, 10, and/or 15 feet bgs or at intervals selected by the field personnel based on field observations during drilling and for analysis by Modified U.S. Environmental Protection Agency Method 537;
- Performing one groundwater monitoring event with the new and existing groundwater monitoring wells (15 samples); and
- Excavating a shallow test pit proximate to borings NWN-R06 and STTA01 to collect shallow soil for bench testing and coordination with select remediation contractors for bench-scale testing of treatment media, including to evaluate product[2] effectiveness and appropriate dosing.

Monitoring wells will be completed with 2-inch Schedule 40 polyvinyl chloride casings with 0.020-inch slotted screen openings and 10/20 Colorado Silica Sand filter pack. A licensed surveyor will survey the top-of-casing elevations and locations of each completed monitoring well and provide the coordinates in Washington State Plane North (feet) and elevations in North American Vertical Datum of 1988.

4.4 TASK 4: PILOT TEST FEASIBILITY AND DESIGN MEMORANDUM

Task 4 includes developing a Pilot Test Feasibility Memorandum documenting subsurface conditions at the AFFF training area and adjacent portions of 175 Newport Way Northwest area of interest and the results of bench-scale testing performed under Task 3. The Pilot Test Feasibility Memorandum will describe the proposed source remedial action approach that will be further

[2] Current products under consideration include PlumeStop and AquaGate-RemBind.

evaluated through a field-scale pilot test and will provide preliminary design documents for the pilot testing to be performed.

4.5 TASK 5: PILOT TESTING

Task 5 includes performing a pilot test as described in the design plans and specifications prepared under Task 4. For this scope of work the assumed pilot test will be up to two full-scale injection events using a product selected based on the results of the bench-scale testing performed under Task 3 and documented under Task 4.

Oversight efforts include field observation and data collection, performance/verification monitoring, and construction inspection to confirm compliance with prepared plans and specifications and/or document any deviations that are observed. The cost estimate assumes 12 groundwater samples will be collected following each injection event to evaluate treatment performance and observed changes in PFAS concentrations in groundwater.

4.6 TASK 6: SUMMARY REPORTING

Task 6 includes preparation of a summary report documenting pilot testing design and performance, including additional characterization information, pilot test design specifications, final injected masses, observed radii of influence, and other information as appropriate. Task 6 will include:

- Preparation of summary figures draw to an approximate scale and tables, including characterization and monitoring data, groundwater elevations, and injection data;
- Evaluation of the pilot test performance;
- Further evaluation of the conceptual site model for 175 Newport Way Northwest based on reported performance data; and
- Pilot testing design documents and other supporting information.

4.7 TASK 7: INVESTIGATION-DERIVED WASTE DISPOSAL

Task 7 includes profiling and disposal of investigation-derived waste (IDW) generated as part of work described in this Source Remediation Action Plan, including soil cuttings decontamination water; and purge water from monitoring wells. EFR will ensure that all IDW is properly removed and disposed of at an appropriately licensed facility.

5.0 REFERENCES

Farallon Consulting, L.L.C. (Farallon). 2018. *Final Per- and Poly-Fluoroalkyl Substances Characterization Study Work Plan, Lower Issaquah Valley, Issaquah, Washington*. Prepared for Eastside Fire & Rescue. August 6.

———. 2021. *Per- and Poly-Fluoroalkyl Substances Additional Characterization Study Summary Report, Lower Issaquah Valley, Issaquah Washington*. Prepared for Eastside Fire and Rescue. February.

Washington State Department of Ecology (Ecology). 2018. Investigatory Levels for Perfluoroalkyl Substances. February 9.

———. 2020. *Per- and Polyfluoroalkyl Substances Draft Chemical Action Plan. Draft for Public Comment*. Publication 20-04-035. October.

6.0 LIMITATIONS

6.1 GENERAL LIMITATIONS

The conclusions contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location. The conclusions contained herein are subject to the following inherent limitations:

- **Accuracy of Information**. Farallon obtained, reviewed, and evaluated certain information used in this report/assessment from sources that were believed to be reliable. Farallon's conclusions, opinions, and recommendations are based in part on such information. Farallon's services did not include verification of its accuracy or authenticity. Should the information upon which Farallon relied prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.
- **Reconnaissance and/or Characterization**. Farallon performed a reconnaissance and/or characterization of the Site that is the subject of this report/assessment to document current conditions. Farallon focused on areas deemed more likely to exhibit hazardous materials conditions. Contamination may exist in other areas of the Site that were not investigated or were inaccessible. Site activities beyond Farallon's control could change at any time after the completion of this report/assessment.

For the foregoing reasons, Farallon cannot and does not warrant or guarantee that the Site is free of hazardous or potentially hazardous substances or conditions, or that latent or undiscovered conditions will not become evident in the future. Farallon's observations, findings, and opinions can be considered valid only as of the date of the report.

This report/assessment has been prepared in accordance with the contract for services between Farallon and Eastside Fire and Rescue, and currently accepted industry standards. No other warranties, representations, or certifications are made.

6.2 LIMITATION ON RELIANCE BY THIRD PARTIES

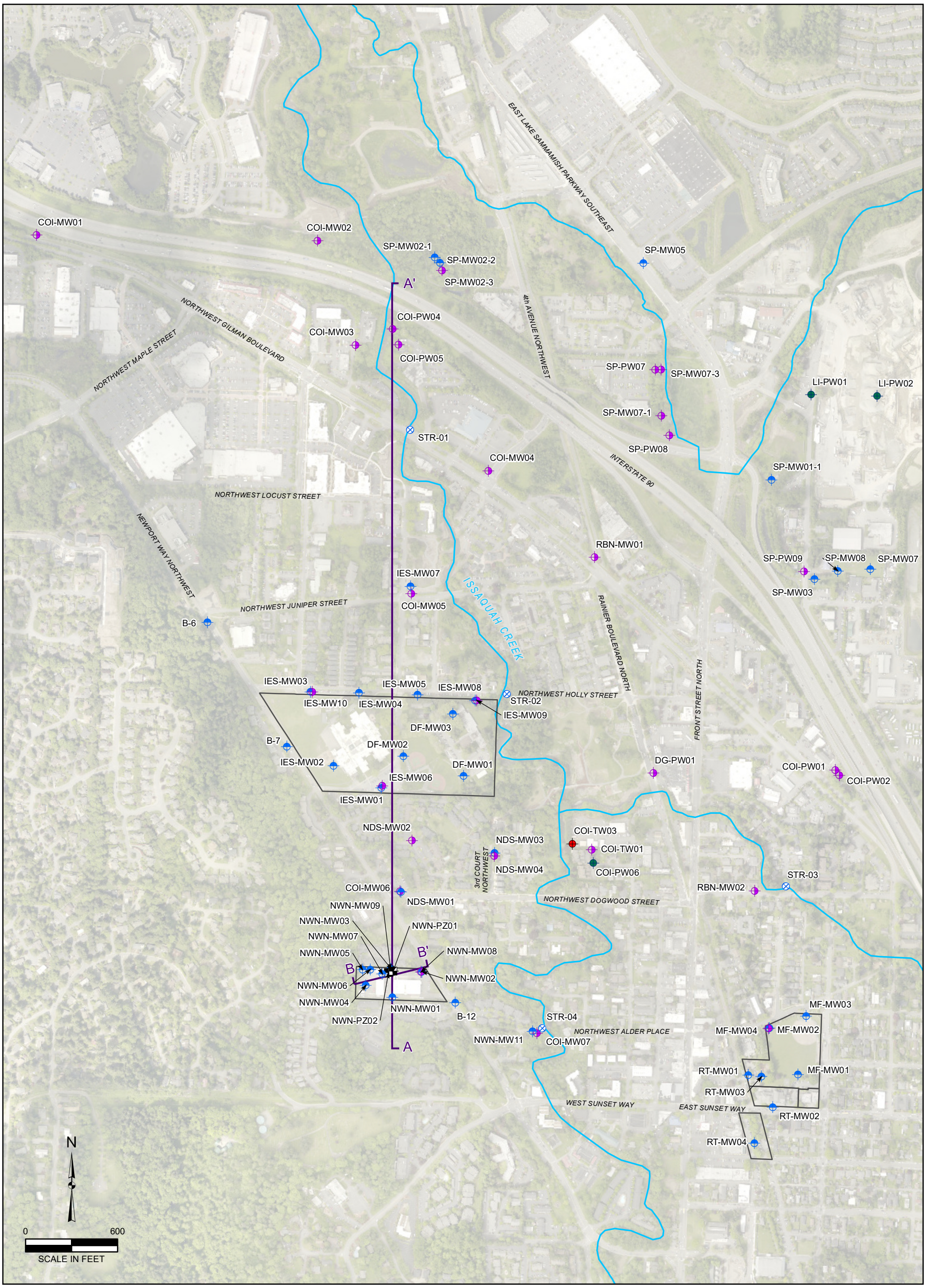
Reliance by third parties is prohibited. This report/assessment has been prepared for the exclusive use of Eastside Fire and Rescue to address the unique needs of Eastside Fire and Rescue at the 175 Newport Way Northwest property at a specific point in time. The Washington Department of Ecology and City of Issaquah are recognized as an intended user(s) of this report/assessment, subject to the same limitations as Eastside Fire and Rescue.

This is not a general grant of reliance. No one other than Eastside Fire and Rescue may rely on this report unless Farallon agrees in advance to such reliance in writing. Any unauthorized use, interpretation, or reliance on this report/assessment is at the sole risk of that party and Farallon will have no liability for such unauthorized use, interpretation, or reliance.

FIGURES

PFAS SOURCE REMEDIATION ACTION PLAN
175 Newport Way Northwest
Issaquah, Washington

Farallon PN: 1754-004



LEGEND

- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- PIEZOMETER
- STREAM GAUGING STATION
- PRODUCTION WELL
- TEST WELL
- KING COUNTY PARCEL
- A — A LINE OF CROSS-SECTION

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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FIGURE 1

AREAS OF INTEREST
PFAS SOURCE REMEDIATION ACTION PLAN
LOWER ISSAQUAH VALLEY ISSAQUAH, WASHINGTON

FARALLON PN: 1754-004

Drawn By: jjones | Checked By: EB | Date: 11/10/2020 | Disc Reference:

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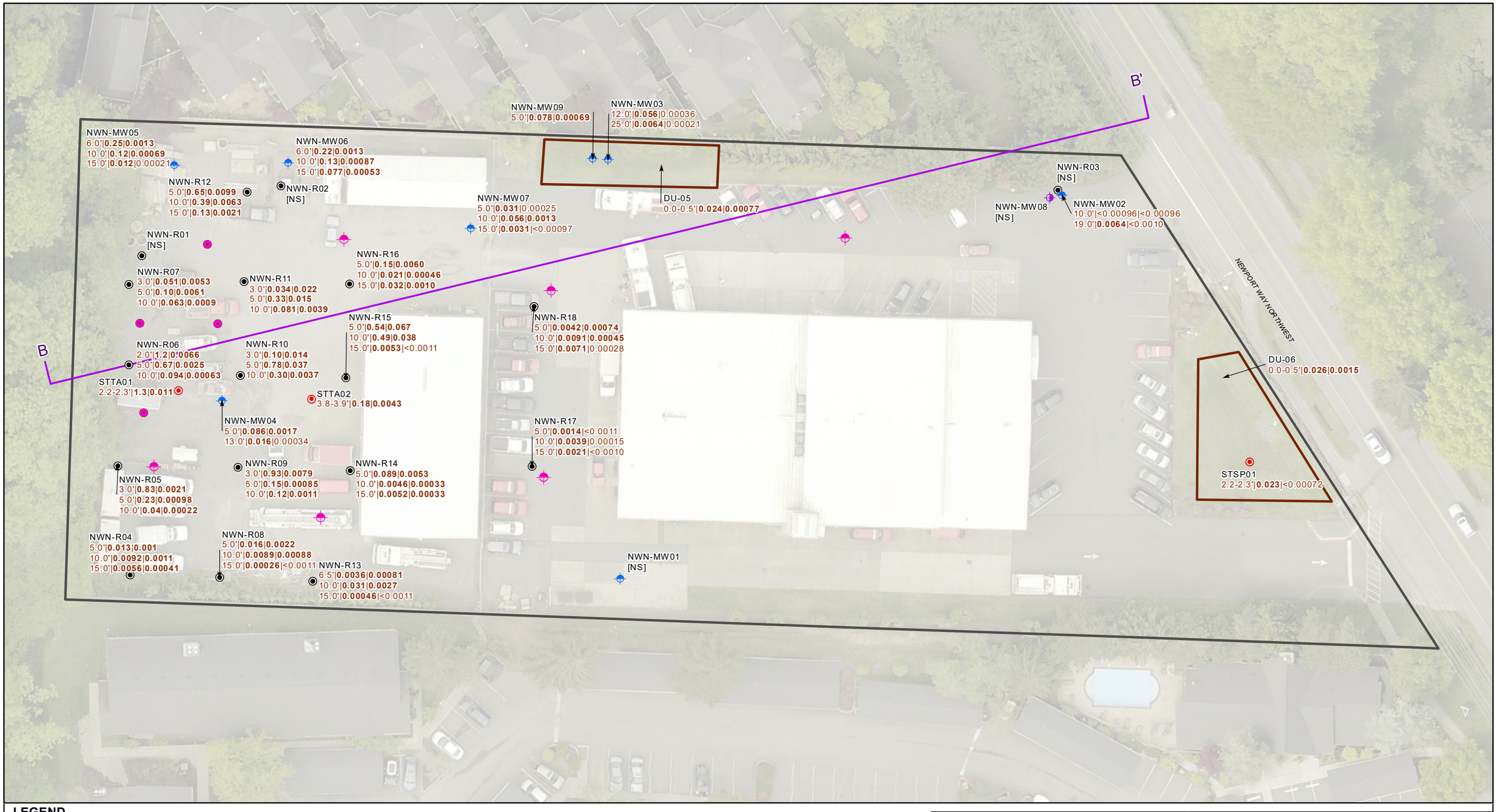

LEGEND

- PROPOSED BORING
- PROPOSED SHALLOW MONITORING WELL
- BORING
- GEOSYNTEC SAMPLE
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- KING COUNTY PARCEL
- MIS DECISION UNIT

NOTES:
DEPTH AND CONCENTRATIONS REPORTED AS:
SOIL SAMPLE DEPTH IN FEET BGS | PFOS | PFOA
ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DU = DECISION UNIT
PFOA = PERFLUOROOCTANOIC ACID
PFOS = PERFLUOROOCTANE SULFONIC ACID

B B' LINE OF CROSS-SECTION

BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE WASHINGTON STATE DEPARTMENT OF ECOLOGY INVESTIGATORY LEVELS.
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
BGS = BELOW GROUND SURFACE
NS = NOT SAMPLED

0 40
SCALE IN FEET

N

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FIGURE 2

SOIL ANALYTICAL RESULTS
175 NEWPORT WAY NORTHWEST
PFAS SOURCE REMEDIATION ACTION PLAN
LOWER ISSAQUAH VALLEY
ISSAQUAH, WASHINGTON

FARALLON PN: 1754-004

Drawn By: jjones | Checked By: EB | Date: 11/18/2020 | Disc Reference:
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NWN-R02
8/23/18 |23.0'|**9.50**|**0.45**

NWN-MW09
[3/19/20 |43.0'|**2.0**|**0.14**]
4/17/20 |47.5'|**0.23**|0.022

NWN-MW06
4/17/20 |20.0'|**8.6**|**0.41**

NWN-MW03
10/26/18 |26.0'|**1.0**|**0.16**
4/17/20 |25.0'|**2.2**|**0.37**

NWN-MW08
[3/20/20 |53.0'|**0.3**|0.038]

NWN-R03
8/22/18 |28.0'|**0.380**|0.032
8/23/18 |39.0'|**0.25**|0.021

NWN-MW05
4/16/20 |15.0'|**4.7**|**0.32**

NWN-MW02
10/26/18 |26.0'|**0.086**|0.0091
4/16/20 |24.0'|**0.61**|0.0023

NWN-MW07
4/17/20 |21.5'|**2.9**|**0.22**

NWN-R01
8/24/18 |19.0'|**7.3**|**0.39**

NWN-R18
3/19/20 |23.0'|**2.0**|**0.14**

NWN-R16
3/19/20 |17.0'|**7.4**|**0.83**

NWN-R06
3/20/20 |10.0'|**21**|**0.65**

NWN-MW04
10/26/18 |13.0-23.0'|**2.2**|**0.20**
4/17/20 |18.0'|**2.6**|**0.13**

NWN-MW01
10/26/18 |24.0'|0.052|0.012
4/16/20 |25.0'|0.063|0.0032

NWN-R13
3/18/20 |14.0'|**0.51**|**0.17**

NWN-R04
3/18/20 |12.0'|**0.18**|0.024

NWN-R08
3/18/20 |13.0'|**0.39**|**0.10**

NEWPORT WAY NORTHWEST

B-12
2/12/20 |25.0'|0.042|0.0070

NORTHWEST ALDER COURT

NWN-MW11
4/15/20 |20.0'|0.0017|0.00087

LEGEND

- PROPOSED BORING
- PROPOSED SHALLOW MONITORING WELL
- BORING
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- KING COUNTY PARCEL

NOTES:
SAMPLE RESULTS HIGHLIGHTED IN GREEN REPRESENT RECONNAISSANCE BORING TEMPORARY WELL GROUNDWATER RESULTS
SAMPLE RESULTS HIGHLIGHTED IN RED REPRESENT MONITORING WELL GROUNDWATER RESULTS

DEPTH AND CONCENTRATIONS REPORTED AS:
SAMPLE DATE | GROUNDWATER SAMPLE DEPTH IN FEET BGS | PFOS | PFOA
ANALYTICAL RESULTS IN MICROGRAMS PER LITER
[ ] = INTERMEDIATE RECONNAISSANCE GROUNDWATER SAMPLE

PFOA = PERFLUOROOCTANOIC ACID
PFOS = PERFLUOROOCTANE SULFONIC ACID
BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE WASHINGTON STATE DEPARTMENT OF ECOLOGY INVESTIGATORY LEVELS.
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
BGS = BELOW GROUND SURFACE

0 80
SCALE IN FEET

N

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FIGURE 3

GROUNDWATER ANALYTICAL RESULTS
175 NEWPORT WAY NORTHWEST
PFAS SOURCE REMEDIATION ACTION PLAN
LOWER ISSAQUAH VALLEY ISSAQUAH, WASHINGTON

FARALLON PN: 1754-004

Drawn By: jjones | Checked By: EB | Date: 11/18/2020 | Disc Reference:
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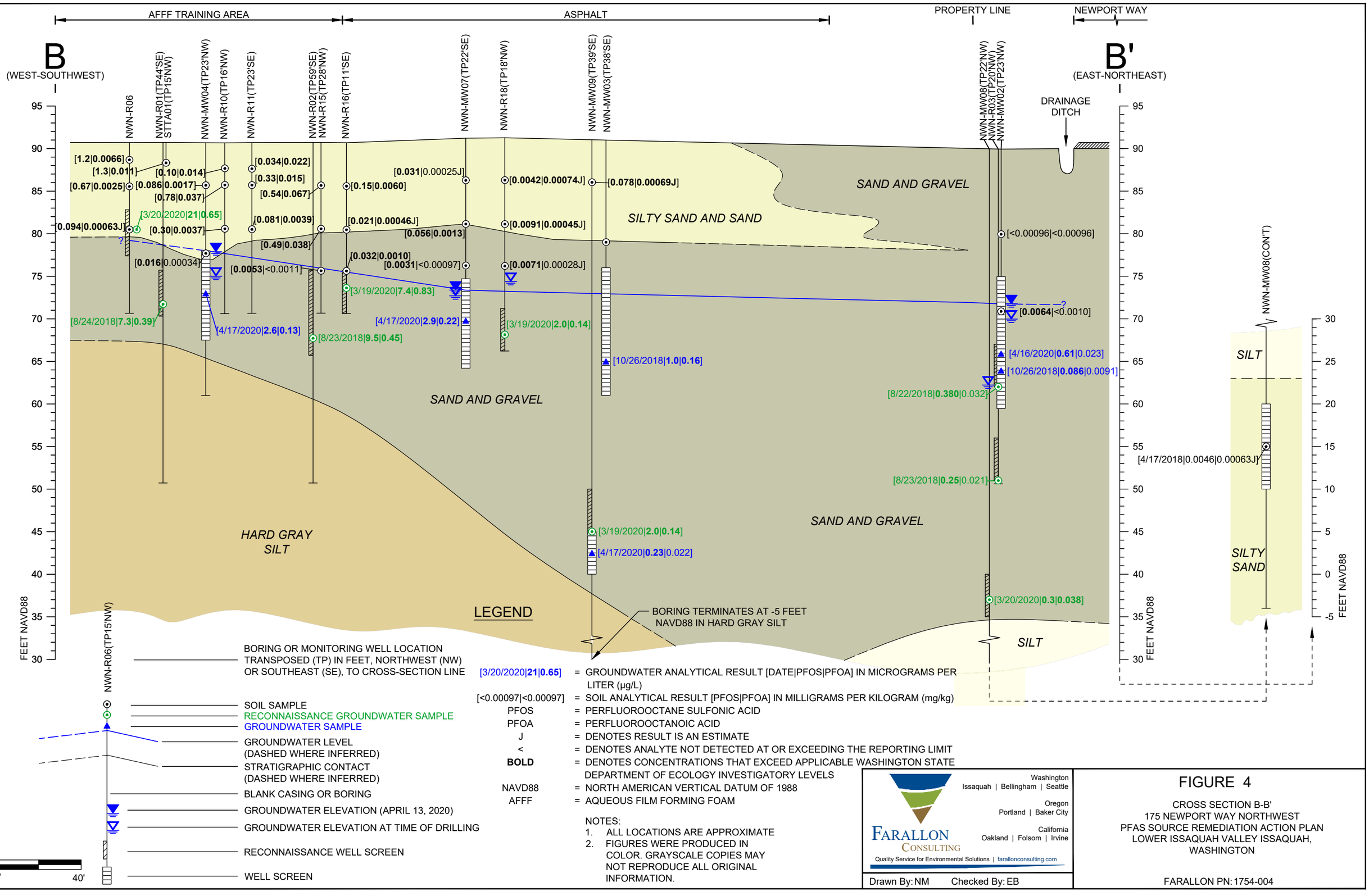

LEGEND

- BORING OR MONITORING WELL LOCATION TRANSPOSED (TP) IN FEET, NORTHWEST (NW) OR SOUTHEAST (SE), TO CROSS-SECTION LINE — NWN-R06(TP15'NW)
- SOIL SAMPLE
- RECONNAISSANCE GROUNDWATER SAMPLE
- GROUNDWATER SAMPLE
- GROUNDWATER LEVEL (DASHED WHERE INFERRED)
- STRATIGRAPHIC CONTACT (DASHED WHERE INFERRED)
- BLANK CASING OR BORING
- GROUNDWATER ELEVATION (APRIL 13, 2020)
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- RECONNAISSANCE WELL SCREEN
- WELL SCREEN

10' / 0' / 0' / 40'

[3/20/2020|**21**|**0.65**] = GROUNDWATER ANALYTICAL RESULT [DATE|PFOS|PFOA] IN MICROGRAMS PER LITER (µg/L)

[<0.00097|<0.00097] = SOIL ANALYTICAL RESULT [PFOS|PFOA] IN MILLIGRAMS PER KILOGRAM (mg/kg)

PFOS = PERFLUOROOCTANE SULFONIC ACID

PFOA = PERFLUOROOCTANOIC ACID

J = DENOTES RESULT IS AN ESTIMATE

< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT

BOLD = DENOTES CONCENTRATIONS THAT EXCEED APPLICABLE WASHINGTON STATE DEPARTMENT OF ECOLOGY INVESTIGATORY LEVELS

NAVD88 = NORTH AMERICAN VERTICAL DATUM OF 1988

AFFF = AQUEOUS FILM FORMING FOAM

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE
2. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

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FIGURE 4

CROSS SECTION B-B'
175 NEWPORT WAY NORTHWEST
PFAS SOURCE REMEDIATION ACTION PLAN
LOWER ISSAQUAH VALLEY ISSAQUAH, WASHINGTON

FARALLON PN: 1754-004

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