# INITIAL INVESTIGATION FIELD REPORT

WASHINGTON STATE DEPARTMENT OF ECOLOGY

☐ **Check this box if you have attached any documents to this form (using the paperclip icon on the left).**

| | |
|---|---|
| **ERTS #(s):** | 712211 |
| **Parcel #(s):** | 5279100070 |
| **County:** | King |
| **FSID #:** | 96747 |
| **CSID #:** | 16584 |
| **UST #:** | |

**SITE INFORMATION**

| Site Name (Name over door): | Site Address (including City, State and Zip): | Phone / Email |
|---|---|---|
| Memorial Field | 190 E Sunset Way<br>Issaquah, WA 98027 | |
| Site Contact, Title, Business:<br>Robert York, Public Works Director<br>City of Issaquah | Site Contact Address (including City, State and Zip):<br>105 2nd Avenue NE<br>Issaquah, WA 98027 | Phone (425) 837-3449<br>Email<br>roberty@issaquahwa.gov |
| Site Owner, Title, Business:<br>Robert York, Public Works Director<br>City of Issaquah | Site Owner Address (including City, State and Zip):<br>105 2nd Avenue NE<br>Issaquah, WA 98027 | Phone (425) 837-3449<br>Email<br>roberty@issaquahwa.gov |
| Site Owner Contact, Title, Business: | Site Owner Contact Address (including City, State and Zip): | Phone<br>Email |
| Previous Site Owner(s): | Additional Info (for any Site Information Item): | |
| Alternate Site Name(s): | | |

| | |
|---|---|
| Latitude (Decimal Degrees): | 47.53661 |
| Longitude (Decimal Degrees): | 122.04531 |

**INSPECTION INFORMATION**

☑ Please check this box if there is relevant inspection information, such as data or photos, in an existing site report for this site.

| | | | |
|---|---|---|---|
| Inspection Conducted? Yes ☐ No ☒ | Date/Time: | Entry Notice: Announced ☐ | Unannounced ☐ |
| Photographs taken? Yes ☐ | No ☒ | Note: Attach photographs or upload to PIMS | |
| Samples collected? Yes ☒ | No ☐ | Note: Attach record with media, location, depth, etc. | |

**RECOMMENDATION**

| **No Further Action** (Check appropriate box below): | | **LIST on Confirmed and Suspected Contaminated Sites List**: ☒ |
|---|---|---|
| Release or threatened release does not pose a threat | ☐ | |
| No release or threatened release | ☐ | |
| Refer to program/agency (Name: _____) | ☐ | |
| Independent Cleanup Action Completed (contamination removed) | ☐ | |

*COMPLAINT (Brief Summary of ERTS Complaint):*

Perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) were detected in groundwater pumped from City of Issaquah water supply well # 4 in 2013. Results of subsequent investigations indicated that apparent sources of the contamination were at Eastside Fire & Rescue Headquarters (separate IIFR, CSID 16581), Issaquah Valley Elementary School and Dodd Fields Park (separate IIFR, CSID 16583), Memorial Field (subject of this IIFR, CSID 16584) and Rainier Trail (separate IIFR, CSID 16582).

*CURRENT SITE STATUS (Brief Summary of why Site is recommended for Listing or NFA):*

Additional investigations at Memorial Field confirmed that soil and groundwater are contaminated with per- and polyfluoroalkyl substances (PFAS) due to fire fighting training activities. Petroleum hydrocarbons and polycyclic aromatic hydrocarbons may also be present but have not been analyzed. Recommendation: add to Confirmed and Suspected Contaminated Sites List.

Investigator: Priscilla Tomlinson Date Submitted: 1/21/2022

**OBSERVATIONS** ☑ **Please check this box if you included information on the Supplemental Page at end of report.**

**Description** (If site visit made, please be sure to include the following: site observations, site features and cover, chronology of events, sources/past practices likely responsible for contamination, presence of water supply wells and other potential exposure pathways, etc.):

Currently, fire fighting services in the City of Issaquah are provided by Eastside Fire & Rescue, an interlocal agreement among King County Fire Protection Districts 10 and 38 and Cities of Issaquah, North Bend, and Sammamish. The training exercises conducted at Memorial Field occurred under the auspices of the City of Issaquah and King County Fire Protection District 10 prior to the formation of Eastside Fire & Rescue.

Training on the use of aqueous film-forming foam (AFFF) that contained PFOS, PFOA, and other PFAS was conducted at Memorial Field from the early 1980s through the mid-1990s at a frequency of approximately once or twice per year. Typically one to three 5-gallon buckets of AFFF concentrate were expended during each training event. Training exercises were conducted on the southern portion of the ball field.

To aid in interpretation of the data collected so far during site investigations, temporary investigatory levels (ILs) were developed using EPA's (2016a,b) health advisory levels and standard MTCA equations. Health advisory levels were established only for PFOS and PFOA, so these are the only two PFAS with ILs. The establishment of State Action Levels for drinking water for multiple PFAS (perfluorobutane sulfonate [PFBS], perfluorohexane sulfonate [PFHxS], PFOS, PFOA, and perfluorononanoic acid [PFNA]) in January 2022 is expected to result in the development of new screening levels for this site to replace the ILs as site investigations continue.

To date, three soil samples have been collected on the Memorial Field property at depths ranging from surface to 29 feet below ground surface (bgs) and analyzed by modified EPA Method 537. PFOS and PFOA were detected at concentrations up to 0.014 and 0.0010 mg/kg, respectively. The soil ILs for leaching in the vadose zone are 0.00088 mg/kg for PFOS and 0.00044 mg/kg for PFOA. Eight additional PFAS were also detected.

A total of eight groundwater samples have been collected on the Memorial Field property from four monitoring wells, completed in the shallow and intermediate aquifer zones at depths ranging from 39 to 70 feet bgs, and analyzed by modified EPA Method 537. Wells were sampled one to three times between October 2018 and October 2020. PFOS and PFOA were detected at concentrations up to 0.12 and 0.0052 ug/L, respectively, in the shallow aquifer. The groundwater IL is 0.07 ug/L for the sum of PFOS and PFOA. Nine additional PFAS were also detected. The groundwater plume extends beyond the parcel boundary to the north and may comingle with the groundwater plume(s) from at least one other source area parcel. The full extent of groundwater contamination in the Lower Issaquah Valley has not yet been fully delineated.

Documents reviewed:

USEPA. 2016a. Drinking Water Health Advisory for Perfluorooctane Sulfonate (PFOS). EPA 822-R-16-004. Office of Water. May.

USEPA. 2016b. Drinking Water Health Advisory for Perfluorooctanoic Acid (PFOA). EPA 822-R-16-005. Office of Water. May.

Farallon. 2019. Per- and Poly-Fluoroalkyl Substances Characterization Study Summary Report, Lower Issaquah Valley, Issaquah, Washington. Prepared by Farallon Consulting, LLC, for Eastside Fire & Rescue. March 27.

Farallon. 2021. Per- and Poly-Fluoroalkyl Substances Additional Characterization Study Summary Report, Lower Issaquah Valley, Issaquah, Washington. Prepared by Farallon Consulting, LLC, for Eastside Fire & Rescue. April 14.

| CONTAMINANT GROUP | CONTAMINANT | SOIL | GROUNDWATER | SURFACE WATER | AIR | SEDIMENT | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| Non-Halogenated Organics | Phenolic Compounds | | | | | | Compounds containing phenols (Examples: phenol; 4-methylphenol; 2-methylphenol) |
| | Non-Halogenated Solvents | | | | | | Organic solvents, typically volatile or semi-volatile, not containing any halogens. To determine if a product has halogens, search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB ) and look at the Chemical/Physical Properties, and Molecular Formula. If there is not a Cl, I, Br, F in the formula, it's not halogenated. (Examples: acetone, benzene, toluene, xylenes, methyl ethyl ketone, ethyl acetate, methanol, ethanol, isopropranol, formic acid, acetic acid, stoddard solvent, Naptha). *Use this when TEX contaminants are present independently of gasoline.* |
| | Polynuclear Aromatic Hydrocarbons (PAH) | | | | | | Hydrocarbons composed of two or more benzene rings. |
| | Tributyltin | | | | | | The main active ingredients in biocides used to control a broad spectrum of organisms. Found in antifouling marine paint, antifungal action in textiles and industrial water systems. (Examples: Tributyltin; monobutyltin; dibutyltin) |
| | Methyl tertiary-butyl ether | | | | | | MTBE is a volatile oxygen-containing organic compound that was formerly used as a gasoline additive to promote complete combustion and help reduce air pollution. |
| | Benzene | | | | | | Benzene |
| | Other Non-Halogenated Organics | | | | | | TEX |
| | Petroleum Diesel | | | | | | Petroleum Diesel |
| | Petroleum Gasoline | | | | | | Petroleum Gasoline |
| | Petroleum Other | | | | | | Oil-range organics |
| Halogenated Organics (see notes at bottom) | PBDE | | | | | | Polybrominated di-phenyl ether |
| | Other Halogenated Organics | C | C | | | | Other organic compounds with halogens (chlorine, fluorine, bromine, iodine). search HSDB (http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB ) and look at the Chemical/Physical Properties, and Molecular Formula. If there is a Cl, I, Br, F in the formula, it is halogenated. (Examples: Hexachlorobutadiene; hexachlorobenzene; pentachlorophenol) |
| | Halogenated solvents | | | | | | PCE, chloroform, EDB, EDC, MTBE |
| | Polychlorinated Biphenyls (PCB) | | | | | | Any of a family of industrial compounds produced by chlorination of biphenyl, noted primarily as an environmental pollutant that accumulates in animal tissue with resultant pathogenic and teratogenic effects |
| | Dioxin/dibenzofuran compounds (see notes at bottom) | | | | | | A family of more than 70 compounds of chlorinated dioxins or furans. (Examples: Dioxin; Furan; Dioxin TEQ; PCDD; PCDF; TCDD; TCDF; OCDD; OCDF). *Do not use for 'dibenzofuran', which is a non-chlorinated compound that is detected using the semivolatile organics analysis 8270* |
| Metals | Metals - Other | | | | | | Cr, Se, Ag, Ba, Cd |
| | Lead | | | | | | Lead |
| | Mercury | | | | | | Mercury |
| | Arsenic | | | | | | Arsenic |
| Pesticides | Non-halogenated pesticides | | | | | | Pesticides without halogens (Examples: parathion, malathion, diazinon, phosmet, carbaryl (sevin), fenoxycarb, aldicarb) |
| | Halogenated pesticides | | | | | | Pesticides with halogens (Examples: DDT; DDE; Chlordane; Heptachlor; alpha-beta and delta BHC; Aldrin; Endosulfan, dieldrin, endrin) |

| CONTAMINANT GROUP | CONTAMINANT | SOIL | GROUNDWATER | SURFACE WATER | AIR | SEDIMENT | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| Other Contaminants | Radioactive Wastes | | | | | | Wastes that emit more than background levels of radiation. |
| | Conventional Contaminants, Organic | | | | | | Unspecified organic matter that imposes an oxygen demand during its decomposition (Example: Total Organic Carbon) |
| | Conventional Contaminants, Inorganic | | | | | | Non-metallic inorganic substances or indicator parameters that may indicate the existence of contamination if present at unusual levels (Examples: Sulfides, ammonia) |
| | Asbestos | | | | | | All forms of Asbestos. Asbestos fibers have been used in products such as building materials, friction products and heat-resistant materials. |
| | Other Deleterious Substances | | | | | | Other contaminants or substances that cause subtle or unexpected harm to sediments (Examples: Wood debris; garbage (e.g., dumped in sediments)) |
| | Benthic Failures | | | | | | Failures of the benthic analysis standards from the Sediment Management Standards. |
| | Bioassay Failures | | | | | | For sediments, a failure to meet bioassay criteria from the Sediment Management Standards. For soils, a failure to meet TEE bioassay criteria for plant, animal or soil biota toxicity. |
| Reactive Wastes | Unexploded Ordinance | | | | | | Weapons that failed to detonate or discarded shells containing volatile material. |
| | Other Reactive Wastes | | | | | | Other Reactive Wastes (Examples: phosphorous, lithium metal, sodium metal) |
| | Corrosive Wastes | | | | | | Corrosive wastes are acidic or alkaline (basic) wastes that can readily corrode or dissolve materials they come into contact with. Wastes that are highly corrosive as defined by the Dangerous Waste Regulation (WAC 173-303-090(6)). (Examples: Hydrochloric acid; sulfuric acid; caustic soda) |

**(fill in contaminant matrix above with appropriate status choice from the key below the table)**

| Status choices for contaminants | |
|---|---|
| **Contaminant Status** | **Definition** |
| B— Below Cleanup Levels (Confirmed) | The contaminant was tested and found to be below cleanup levels. (Generally, we would not enter each and every contaminant that was tested; for example if an SVOC analysis was done we would not enter each SVOC with a status of "below". We would use this for contaminants that were believed likely to be present but were found to be below standards when tested |
| S— Suspected | The contaminant is suspected to be present; based on some knowledge about the history of the site, knowledge of regional contaminants, or based on other contaminants known to be present |
| C— Confirmed Above Cleanup Levels | The contaminant is confirmed to be present above any cleanup level. For example—above MTCA method A, B, or C; above Sediment Quality Standards; or above a presumed site-specific cleanup level (such as human health criteria for a sediment contaminant). |
| RA— Remediated - Above | The contaminant was remediated, but remains on site above the cleanup standards (for example—capped area). |
| RB— Remediated - Below | The contaminant was remediated, and no area of the site contains this contaminant above cleanup standards (for example— complete removal of contaminated soils). |

**Halogenated chemicals and solvents**: Any chemical compound with chloro, bromo, iodo or fluoro is halogenated; those with eight or fewer carbons are generally solvents (e.g. halogenated methane, ethane, propane, butane, pentane, hexane, heptane or octane ) and may also be used for or registered as pesticides or fumigants. Most are dangerous wastes, either listed or categorical. Organic compounds with more carbons are almost always halogenated pesticides or a contaminant or derivative. Referral to the HSDB is recommended if you are unfamiliar with a chemical name or compound, as it contains useful information about synonyms, uses, trade names, waste codes, and other regulatory information about most toxic or potentially toxic chemicals.

**Dibenzodioxins and dibenzofurans** are normalized to a combined equivalent toxicity based on 2,3,7,8-tetrachloro-p-dibenzodioxin as set out in WAC 173-340-708(8)(d) and in the Evaluating the Toxicity and Assessing the Carcinogenic Risk of Environmental Mixtures using Toxicity Equivalency Factors Focus Sheet (https://fortress.wa.gov/ecy/clarc/FocusSheets/tef.pdf ). Results may be reported as individual compounds and isomers (usually lab results), or as a toxic equivalency value (reports).

**FOR ECOLOGY II REVIEWER USE ONLY (For Listing Sites):**

**How did the Site come to be known:** ☐ **Site Discovery (received a report):** _____ (Date Report Received)
☐ **ERTS Complaint**
☑ **Other (please explain):** _____

**Does an Early Notice Letter need to be sent:** ☒ Yes ☐ No
**If *No*, please explain why:** _____

**NAICS Code (if known):** _____
**Otherwise, briefly explain how property is/was used (i.e., gas station, dry cleaner, paint shop, vacant land, etc.):**
_____

**Site Unit(s) to be created (Unit Type):** ☒ Upland (includes VCP & LUST) ☐ Sediment
**If multiple Units needed, please explain why:** _____

**Cleanup Process Type (for the Unit):** ☐ No Process ☐ Independent Action
☐ Voluntary Cleanup Program ☑ Ecology-supervised or conducted
☐ Federal-supervised or conducted

**Site Status:** ☒ Awaiting Cleanup ☐ Construction Complete – Performance Monitoring
☐ Cleanup Started ☐ Cleanup Complete – Active O&M/Monitoring
☐ No Further Action Required

**Model Remedy Used?** ☐
**If yes, was this a transformer spill?** ☐

**Site Manager (Default: _____):** _____

**Specific confirmed contaminants include:**

PFAS in Soil

PFAS in Groundwater

_____ in Other (specify matrix: _____)

**Facility/Site ID No. (if known):**
96747
**Cleanup Site ID No. (if known):**
16584

COUNTY ASSESSOR INFO: Please attach to this report a copy of the tax parcel/ownership information for each parcel associated with the site, as well as a parcel map illustrating the parcel boundary and location.

# Memorial Field




Date: 1/13/2022 Notes:

N

King County