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GENERAL WORK PLAN ADDENDUM

DOT&PF Statewide PFAS Addendum 003-OME-01 Initial Site Characterization

NOME, ALASKA

SHANNON & WILSON

August 2020

Shannon & Wilson No: 105745-001

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Submitted To: Alaska Department of Transportation & Public Facilities
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Attn: Dan Phillips, Sam Myers, and Sammy Cummings

Subject: GENERAL WORK PLAN ADDENDUM, DOT&PF STATEWIDE PFAS ADDENDUM 003-OME-01
INITIAL SITE CHARACTERIZATION, NOME, ALASKA

Shannon & Wilson prepared this Work Plan Addendum on behalf of the Alaska Department of Transportation & Public Factifies (DOT&PF). This Addendum is a supplement to the *DOT&PF Statewide PFAS General Work Plan Revision 1* (GWP), submitted July 2020. The services proposed in this GWP Addendum, 003-OME-01, describe the plan for initial site characterization activities associated with per- and polyfluorinated substances (PFAS) at the Nome Airport (OME).

The scope of services was specified in our proposal dated July 14, 2020, authorized on July 23, 2020 by NTP 10-1 under Professional Services Agreement Number 25-19-013 *Per- and Polyfluorinated Substances (PFAS) Related Environmental & Engineering Services*. Funding to implement this GWP Addendum will be requested following Alaska Department of Environmental Conservation (DEC) review and approval.

This GWP Addendum was prepared and reviewed by:

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ACRONYMS

AAC	Alaska Administrative Code
AAOF	Army Air Operating Facility
AFFF	aqueous film forming foam
ARFF	Aircraft Rescue and Firefighting
ARNG	Alaska Army Air National Guard
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
COPC	contaminant of potential concern
CSM	Conceptual Site Model
CUL	cleanup level
DEC	Alaska Department of Environmental Conservation
DOT&PF	Alaska Department of Transportation & Public Facilities
DRO	diesel range organics
DVPP	Data-Validation Program Plan
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
ft.	feet
GAC	granular activated carbon
GRO	gasoline range organics
GWP	General Work Plan
IDW	investigative-derived waste
LHA	Lifetime Health Advisory
LOD	limit of detection
mg/kg	milligram per kilogram
MW	monitoring well
ng/L	nanograms per liter
NJUS	Nome Joint Utility System
OME	Nome Airport
PAH	polycyclic aromatic hydrocarbons
PFAS	per- and polyfluoroalkyl substances
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
PID	photoionization detector
POC	point of contact
PPE	personal protective equipment
ppm	parts per million
QA	quality assurance

ACRONYMS

QAPP	Quality Assurance Project Plan
QC	quality control
RL	reporting limit
RRO	residual range organics
SSHP	Site Safety and Health Plan
TWP	temporary well point
µg/L	microgram per liter

1 INTRODUCTION

This Addendum, 003-OME-01, is a supplement to the *DOT&PF Statewide PFAS General Work Plan Revision 1* (GWP). In collaboration with the GWP, this Addendum provides guidance for per- and polyfluoroalkyl substances (PFAS) initial site characterization activities at and near the Nome Airport (OME) in Nome, Alaska (Figure 1, Exhibit 1-1).

Shannon & Wilson prepared the GWP and this Addendum in general accordance with Alaska Department of Environmental Conservation's (DEC) March 2017 *Site Characterization Work Plan and Reporting Guidance for Investigation of Contaminated Sites* and DEC's October 2019 *Field Sampling Guidance* document. If additional site characterization activities are required that are not covered in the GWP or are deviations from the GWP, they will be described in this Addendum.

This Addendum also includes a Site Safety and Health Plan (SSHP). Shannon & Wilson will also follow their internal *Guidance for Field Work During the COVID-19 Pandemic* (April 2020) and the Alaska Department of Transportation & Public Facilities (DOT&PF) *COVID-19 Management Plan* (April 2020) guidelines for field work conducted during the COVID-19 pandemic.

Exhibit 1-1 below provides site specific information associated with the OME.

Exhibit 1-1: Airport Information

Airport Name:	Nome Airport
Airport Code:	OME
DEC File No. / Hazard ID:	400.38.056 / 27154
Airport Address:	227 Airport Road, Nome, Alaska 99762
DOT&PF Region:	Northern
DOT&PF Regional POC:	Dan Phillips and Sam Myers
DOT&PF PFAS POC:	Sammy Cummings
Airport Type:	Current Part 139 Airport
Airport Coordinates (Lat/Long):	64.510641, -165.444655

POC = point of contact

1.1 Background

General background information relating to sites covered under the GWP is included in Section 1.1 of the GWP. Background information specific to the OME is detailed below.

1.1.1 Previous Investigations

The Alaska Army Air National Guard (ARNG) has leased an approximately 1-acre plot from the DOT&PF since 1988 (Figure 1). The ARNG conducted an assessment of aqueous film forming foam (AFFF) use at the OME, publishing their *Nome Army Air Operating Facility (AAOF) Preliminary Assessment Repor*t in October 2019. The ARNG stores AFFF at the AAOF hangar but is not aware of any AFFF releases at the ARNG facility. The report concluded that "evidence does not support current or former ARNG activities as having contributed to PFAS contamination" at the OME (AECOM, 2019). The ARNG assessment did not include analytical sampling. To Shannon & Wilson's knowledge no PFAS soil, water, or sediment samples have been collected at the OME.

DOT&PF Aircraft Rescue and Firefighting (ARFF) services has used AFFF for training and systems testing for many years. Part 139 Airports are required to conduct annual AFFF systems testing to maintain their certification through the Federal Aviation Administration (FAA). Prior to 2019, FAA inspections required the release of AFFF to the ground surface. There are no known emergency response incidents at the OME where AFFF was used. Areas of known and potential use are shown as AFFF sites on Figure 1. AFFF training activities likely occurred twice per year at two locations near the ARFF building beginning in the 1970s, and at least once per year at various locations along the OME runways. The precise timeline and locations of AFFF use are unknown.

1.1.2 Runway Resurfacing

DOT&PF plans to resurface both OME runways in 2021 and 2022. The planned construction project involves:

- deep ground improvement at two locations near the western extent of Runway 10-28 (excavations of approximately 240 feet [ft.] by 340 ft. to 380 ft. and up 11 ft. deep);
- crack repair east of the junction of Runways 10-28 and 3-21 (approximately 200 ft. by 130 ft. and 8 ft. deep);
- storm drain replacement near the ARFF building (approximately 60 ft. by 200 ft. and up to 9 ft. deep at the center); and
- apron settlement repair near the ARFF building (approximately 40 ft. by 20 ft. and 4 ft. deep).

These excavation areas are shown in Figure 1. Soil disturbance is expected to be minimal along other portions of the OME runways. The anticipated excavation depth will be less than one foot, unless additional cracking or settlement areas are encountered during construction. DOT&PF plans to stockpile the excavated soil on OME property.

1.1.3 Geology

The OME is located on the Norton Sound coastal plain and is surrounded by seasonally saturated wetlands. The Snake River and several small streams flow through OME property. Poorly drained organic-rich silty loam and/or peat deposits may be present in undisturbed areas. The subsurface consists of unconsolidated colluvial, glacial outwash and till, and beach deposits with variable-depth permafrost. Some areas of the Snake River floodplain have been mined for placer gold. Unconsolidated silts, sands, and gravels are underlain by weathered schist bedrock at a depth of approximately 25 to 60 ft. below ground surface (bgs) (Dorava, 1995; Sainsbury, 1975; AECOM, 2019; Shannon & Wilson, 2010).

1.1.4 Groundwater and Drinking Water

Depth to groundwater near the OME fluctuates based on the season, tides, and precipitation. Previous investigations have encountered groundwater between five and 29 ft. bgs. DOT&PF staff in Nome report groundwater can be present as shallow as three ft. bgs in low-lying areas. In unfrozen areas near the OME, groundwater may be hydrologically connected to Norton Sound causing salt-water intrusion (Dorava, 1995; Shannon & Wilson, 2010).

The Nome Joint Utility System (NJUS) supplies the downtown Nome area and OME vicinity (DEC Public Water System ID No. 2340010). The water system has approximately 1,250 service connections and provides water to over 3,000 individuals. The NJUS sources their water from several groundwater wells several miles from downtown Nome, at the base of Anvil Mountain (Dorava, 1995; Nome Joint Utility System, 2017).

1.2 Project Objectives and Scope

The project objective is to understand the extent of PFAS contamination, if present, resulting from the historic use of AFFF by the DOT&PF at the OME. This Addendum describes our methods used to identify PFAS source areas and evaluate the horizontal and vertical extent of PFAS contamination on and off the airport property. Refer to Section 2.3 for contaminants of potential concern (COPCs) and Exhibit 4-1 for proposed samples and analyses.

The scope for this initial site characterization effort includes:

- conducting a limited water supply well search to confirm municipal water is the source of drinking water near and downgradient of the OME;
- sampling identified water supply wells for PFAS;
- collecting analytical surface and subsurface soil samples from near the OME runways and potential AFFF releases areas;
- installing and sampling temporary well points (TWPs) to evaluate PFAS concentrations just below the surface of the groundwater;
- constructing, developing, and sampling two monitoring well (MW) nests near potential AFFF release areas; and
- collecting analytical surface water and sediment samples from OME drainage ditches, ponds, and creeks.

The proposed search areas for the limited water supply well search are presented in Figure 2. The proposed locations for soil, groundwater, and surface water samples are presented in Figures 3 through 5.

2 SITE AND PROJECT DESCRIPTION

The following sections provide a site and project description.

2.1 Site Location and Boundaries

The OME is located at 227 Airport Road in Nome, Alaska. The airport is northwest of downtown Nome and north of Norton Sound. Runway 10-28 is the main OME runway, Runway 3-21 is designed for use in a crosswind. Figure 1 shows the property boundaries for land owned by the DOT&PF. The geographic coordinates of the OME ARFF building and DOT&PF office are latitude 64.511751, longitude -165.435510.

2.2 Potential Sources of PFAS Contamination

General information regarding potential sources of contamination at DOT&PF sites to be covered under GWP is included in Section 2.1 of the GWP.

Specific potential sources of PFAS contamination at the OME are:

- two fire training areas where AFFF was believed to have been used near the ARFF building;
- FAA required AFFF systems testing areas at various, unknown locations along the OME runways; and
- AFFF storage areas including DOT&PF's ARFF building and ARNG's hangar.

2.3 Contaminants of Potential Concern and Regulatory Levels

General information regarding COPCs and regulatory levels is included in Section 2.2 of the GWP. The primary COPCs for this project are PFAS compounds perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). DEC's *Field Sampling Guidance* (2019) also identifies gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polynuclear aromatic hydrocarbons (PAHs) as COPCs at ARFF training areas. It is possible metals or other contaminants related to historic mining activity may be present on OME property; this is outside the scope of the Addendum.

Nome has an annual average precipitation of 16 inches per year (Western Region Climate Center). To evaluate analytical data, soil results will be compared to 18 Alaska Administrative Code (AAC) 75.341 *Tables B1 Method Two – Migration to Groundwater* and *B2, Method Two – Under 40-Inch Zone – Migration to Groundwater*.

Water supply well samples will be compared to the U.S. Environmental Protection Agency (EPA) lifetime health advisory level (LHA) and DEC drinking water action level of 70 nanograms per liter (ng/L) for PFOS, PFOA, or the sum of the two. Groundwater and surface water samples will be compared to Alaska's 18 AAC 75.341 *Table C, Groundwater Human Health Cleanup Level*. The current cleanup levels (CULs) and analytical reporting limits for these site COPCs are summarized below in Exhibit 2-1.

Exhibit 2-1: COPCs, Regulatory and Laboratory Reporting Limits

Method	Analyte	Soil Limit[a] (mg/kg)	Regulatory Water Limit[a] (µg/L)	Laboratory LODs/RLs[c]	
				Soil (mg/kg)	Water (µg/L)
PFAS Analytes					
537.1 or 537.1M[d]	PFOS	0.0030	0.40	0.000200	0.00200
	PFOA	0.0017	0.40	0.000500	0.00200
	PFOS+PFOA	-	0.070	-	0.00200
Petroleum Analytes					
AK101	GRO	300	2,200	1.25	50
AK102	DRO	250	1,500	10	300
AK103	RRO	11,000	1,100	50	250
EPA 8260 (BTEX)	Benzene	0.022	4.6	0.00625	0.2
	Toluene	6.7	1,100	0.0125	0.5
	Ethylbenzene	0.13	15	0.0125	0.5
	Xylenes Total	1.5	190	0.0375	1.5
PAH Analytes					
EPA 8270D-SIM (PAH)	1-Methylnaphthalene	0.41	11	0.0125	0.025
	2-Methylnaphthalene	1.3	36	0.0125	0.025
	Acenaphthene	37	530	0.0125	0.025
	Acenaphthylene	18	260	0.0125	0.025
	Anthracene	390	43	0.0125	0.025
	Benzo(a)anthracene	0.70	0.30	0.0125	0.025
	Benzo[a]pyrene	1.9	0.25	0.0125	0.01
	Benzo[b]fluoranthene	20	2.5	0.0125	0.025
	Benzo[g,h,i]perylene	15,000	0.26	0.0125	0.025
	Benzo[k]fluoranthene	190	0.80	0.0125	0.025
	Chrysene	600	2.0	0.0125	0.025
	Dibenzo[a,h]anthracene	6.3	0.25	0.0125	0.01
	Fluoranthene	590	260	0.0125	0.025
	Fluorene	36	290	0.0125	0.025
	Indeno [1,2,3-c,d] pyrene	65	0.19	0.0125	0.025
	Naphthalene	0.38	1.7	0.0100	0.05
	Phenanthrene	39	170	0.0125	0.025
	Pyrene	87	120	0.0125	0.025

Notes:

a. 18 AAC 75 *Table B2. Method Two - Petroleum Hydrocarbon Soil Cleanup Levels – Under 40-Inch Zone - Migration to Groundwater* or *Table B1. Method Two - Soil Cleanup Levels Table - Migration to Groundwater*.

b. 18 AAC 75 *Table C. Groundwater Cleanup Levels*.

c. February 2020 LODs from SGS North America, Inc. for petroleum and PAH analyses. February 2020 RLs from Eurofins TestAmerica, Sacramento for PFAS analyses.

d. All available PFAS analytes will be requested for analytical reports. However, only PFOS and PFOA have a DEC drinking water action level or cleanup levels and are reported in this table.

BTEX = benzene, toluene, ethylbenzene, and total xylenes; DRO = diesel range organics, EPA = U.S. Environmental Protection Agency, GRO = gasoline range organics, LOD = limit of detection, mg/kg = milligram per kilogram; µg/L = microgram per liter, PAH = polynuclear aromatic hydrocarbons, PFAS = per- and polyfluoroalkyl substances, PFOA = perfluorooctanoic acid PFOS = perfluorooctanesulfonic acid, RL = reporting limit, RRO = residual range organics, SIM = selective ion monitoring

2.4 Conceptual Site Models and Site Safety and Health Plans

A conceptual site model (CSM) describes potential pathways between a contaminant source and possible receptors (i.e., people, animals, and plants) and is used to determine who may be at risk of exposure to those contaminants. A DEC Human Health Conceptual Site Model Graphic Form and Human Health Conceptual Site Model Scoping Form was completed based on the preliminary understanding of site conditions. These forms are included in Appendix A of this Addendum.

Very little is known about potential PFAS-affected media at and near the OME. The draft CSM will be revised and presented in the final report following the receipt of analytical data. Potentially affected media include contaminated soil, groundwater, surface water sediment, and biota. Potential human exposure pathways include:

- incidental soil, groundwater, or surface water ingestion;
- dermal absorption of contaminants from soil, groundwater, or surface water;
- ingestion of fugitive dust;
- ingestion of groundwater (i.e. water supply wells);
- direct contact with sediment; and
- ingestion of wild or farmed foods.

2.5 Project Team

Chris Darrah is Shannon & Wilson's Principal-in-Charge and Kristen Freiburger is Project Manager for the DOT&PF Statewide PFAS contract. Marcy Nadel will serve as the Environmental Lead for the OME site and be Shannon & Wilson's primary point of contact (POC). Shannon & Wilson's project team also includes other State of Alaska Qualified Environmental Professionals to support the various field and reporting tasks required to achieve the project objectives. The project team and their associated responsibilities are summarized in Exhibit 2-2 below.

Exhibit 2-2: Project Team

Affiliation	Responsibility	Representative	Contact Number
DOT&PF	Client – Regional POC, Engineering	Dan Phillips	(907) 451-2926
	Client – Regional POC, Environmental	Sam Myers	(907) 451-5291
	Client – Statewide PFAS POC	Sammy Cummings	(907) 888-5671
DEC	Regulatory agency POC	Bill O'Connell	(907) 269-3057
Shannon & Wilson	Principal-in-charge	Chris Darrah	(907) 458-3143
	Statewide Project Manager	Kristen Freiburger	(907) 458-3146
	Environmental Lead POC	Marcy Nadel	(907) 458-3150
Eurofins TestAmerica, Sacramento	PFAS analytical laboratory services	David Alltucker	(916) 374-4383
SGS North America, Inc.	Additional analytical laboratory services	Jennifer Dawkins	(907) 474-8656
Subcontractors	Soil borings and monitoring well installation	TBD	TBD
	Surveying	TBD	TBD

POC = point of contact

2.6 Project Schedule and Submittals

Section 2.5 of GWP provides general information regarding project schedules (i.e. the general order of occurrence of site characterization activities) and associated submittals.

Once DEC approval is received for the proposed scope of services outlined in this Addendum, Shannon & Wilson will coordinate with DOT&PF staff to collect soil, water supply well, groundwater, surface water, and sediment samples. Field activities are tentatively scheduled for early October 2020, weather permitting. This schedule is subject to change following guidance by the U.S. Centers for Disease Control and Prevention, Alaska Department of Health and Social Services, and the City of Nome regarding the COVID-19 pandemic.

Laboratory analysis will be requested on a standard 14-day turn-around time. After field work is complete, a Site Characterization Report will be prepared documenting the results of the sampling event. The report will include summarized field observations, analytical results with a discussion of data quality, photo documentation, figures showing sample locations, description of deviations from the approved Addendum, if any, and conclusions and recommendations. The report will also include an updated CSM.

The anticipated schedule is outlined below:

- DEC comments addressed; approval received – September 25, 2020
- Addendum implementation (field activities) – Early October 2020
- Draft Report Submittal – within 60 days of receipt of analytical results, February 2021
- Final Report Submittal – within 30 days of receiving DEC comments on the Draft Report

Please note, Addendum implementation is scheduled based on the anticipated OME construction schedule. Seasonal factors including depth to groundwater and freezing conditions may impact Shannon & Wilson's ability to perform the field effort outlined in this document.

3 SITE CHARACTERIZATION ACTIVITIES

The following sections describe the site characterization activities to be conducted at the OME. General information regarding site characterization activities are described in Section 3.2 of the GWP. Sampling procedures and analytical methods are described in Section 4. Analytical laboratories and methods employed as a part of this Addendum are identified in Section 4.3. A Quality Assurance Program Plan (QAPP) is included in Section 5. A SSHP is provided as Appendix B. Proposed sample locations are presented in Figures 3 through 5.

3.1 Water Supply Well Search

General information regarding water supply well search activities are described in Section 3.1 of the GWP. Available information indicates groundwater is an unlikely drinking water source near the OME. Shannon & Wilson will therefore conduct a limited water supply well search. Water utility maps prepared by the NJUS are included in Appendix C. The Nome City Clerk's office maintains real estate and personal property tax records for the City of Nome. Shannon & Wilson will request additional records from the City of Nome and NJUS in order to confirm municipal water is the source of drinking water at properties near and downgradient of the OME (Figure 2). The majority of the well search area is within DOT&PF property.

After reviewing available utility-connection and property-ownership records for Areas 1 and 2 (Figure 2), Shannon & Wilson will prepare detailed maps for the well search field effort. Field staff will visit parcels in the well search area to match utility-connection records with developed structures. If the well search identifies newly constructed homes or businesses that are not connected to the NJUS water system, field staff will make a

reasonable attempt to contact the owners or occupants to inquire about their water source. These structures may be dry, newly connected to the NJUS water system, or supplied by their own water supply wells. Shannon & Wilson will collect PFAS samples for any identified water supply well in the search areas (Figure 2). Please note, not approaching properties identified by NJUS water system records could result in missing secondary water supply wells used for industrial or non-potable purposes.

3.2 Pre-investigation Activities

Pre-investigation tasks for this project are outlined in the following sections. These tasks include obtaining access to locations near active OME runways, obtaining permits, and checking for utilities prior to drilling.

3.2.1 Site Access and Permitting

Shannon & Wilson will complete a *City of Nome Travel Activity Form* and follow applicable travel restrictions related to the COVID-19 pandemic. As of August 10, 2020, newly arrived travelers, including essential workers, may travel between work and their place of residence but are not permitted to visit public places until they have completed a 7-day quarantine and have two negative COVID-19 tests.

Advancing soil borings and TWPs and installing groundwater MWs will require an FAA 7460 permit. Shannon & Wilson will provide DOT&PF the anticipated drill rig mast height and other relevant details. DOT&PF Northern Region will coordinate with the FAA to obtain permission to use a drill rig near the active runways. We anticipate the FAA will require runway closure during drilling on the runways and runway apron. Shannon & Wilson and the drilling contractor will follow the 7460 permit stipulations related to working hours, locations, etc.

Shannon & Wilson will coordinate with DOT&PF Leasing to obtain a building permit, if need. Prior to mobilizing to the site, Shannon & Wilson and drilling contractor staff will also obtain badges for entering secured airport areas.

Shannon & Wilson is not aware of other required permits or authorizations for conducting this field effort. Please note, depending on weather conditions, the drilling contractor may use a propane-fueled weed burner to heat the paved surface of the runway prior to patching with hydraulic cement.

3.2.2 Utility Locates

Utility clearance will be coordinated by contacting the State of Alaska Digline, Inc. and the OME airport manager. A map of anticipated drilling locations will be provided to the Alaska Digline and OME airport manager, no later than 10 days prior to planned activities. Shannon & Wilson assumes the Digline and OME airport manager will provide information regarding utilities in the proposed investigation areas and mark utilities that are close to drilling activities.

3.3 Soil Characterization Activities

Soil characterization activities for this project include surface and subsurface soil-sample collection, as described in the following sections. General information regarding soil characterization activities are described in Section 3.2.2 of the GWP. Soil sampling procedures are presented in Sections 4.2 and 4.4 of the GWP. Field screening procedures are presented in Section 4.3 of the GWP.

3.3.1 Field Screening

Shannon & Wilson will field screen identified surface soil sample locations for volatile petroleum compounds using a photoionization detector (PID). Soil borings will be field screened at a frequency of one every five ft., until the groundwater table is encountered. Surface soil and drill cuttings will be containerized if PID readings exceed 20 parts per million (ppm) or visual and olfactory observations suggest the presence of hydrocarbon contamination. Excess soils from borings will be segregated using the following PID reading guidelines:

- PID readings 0 to 20 ppm are considered not contaminated with petroleum contaminants. Soils will be spread in the immediate surrounding of the boring location.
- PID readings greater than 20 ppm are considered potentially contaminated with petroleum contaminants. Soils will be held pending PFAS, petroleum, and PAH results.

Drums will be stored onsite in the ARFF building pending analytical results. These results will be used to determine waste disposal requirements, as described in Section 4.6.

3.3.2 Surface Soil

Shannon & Wilson will collect 24 surface soil samples: 13 from along the OME runways and 11 from potential AFFF releases areas (Figure 3). Due to the potential for historic surface water migration of PFAS from AFFF, the samples from near the runways may be collected from gravel in the runway apron immediately adjacent to the pavement, gravel in a low

lying area near the runway, or native soil bordering the runway apron. Surface soil samples will be collected from just below vegetation, if present. One soil sample will also be collected from gravel fill adjacent to the ARNG hangar. These samples will be submitted for PFAS analysis only.

The soil sample locations in the approximate area of historic AFFF training are shown in Figure 5. These 10 samples will be submitted for analysis of GRO, DRO, RRO, BTEX, and PFAS. Additionally, the sample location with the highest PID concentration will be submitted for PAHs. The four surface soil samples near the ARFF building will be collected from the edge of the pavement, as close to the building as possible. Surface soil samples will also be collected from the soil borings described in Section 3.3.3.

3.3.3 Soil Borings

The drilling subcontractor will advance up to 15 soil borings (Figure 3). Nine of the soil borings will terminate at or just beneath the groundwater table; these soil borings are described below:

- four soil borings along Runway 10-28, immediately south of the runway;
- two soil borings along Runway 3-21, one near each end;
- one soil boring south of the ARNG hangar; and
- two soil borings south of the ARFF building, within the planned storm drain replacement and apron settlement repair excavation areas.

Two of the soil borings will be drilled up to 40 ft. bgs. Permanent groundwater MWs will be installed at these locations, as described in Section 3.4.2. These soil borings will be installed at the following locations:

- north of the ARFF building, within the AFFF release area; and
- south of the ARFF building, between the building and Runway 10-28.

Shannon & Wilson field staff will log the soil type encountered during drilling and collect two to three analytical soil samples analysis from each boring. PFAS samples will be collected from near the surface (i.e., less than one foot bgs) and approximately half way between the surface and groundwater table. Preference will be given to more organic-rich material and changes in soil type.

In addition to PFAS soil samples, a groundwater smear zone soil sample will be collected from the four ARFF building vicinity soil borings. The smear zone soil samples will be submitted for GRO, DRO, RRO, and PFAS analysis at each boring, and for PAH analysis at

one boring. Depths will be identified for each analytical sample on the field form. Upon completion of the soil boring, the drilling contractor will install TWPs as described in Section 3.4.1. The drilling contractor will install TWPs at two additional locations where soil borings are not required.

Up to four additional one-foot soil borings will be located within the OME runways at locations where the pavement integrity is compromised. Figure 3 shows the anticipated locations of these samples; however, precise sample locations will be determined in the field in coordination with OME staff. Shannon & Wilson will collect one PFAS soil sample per boring from immediately beneath the pavement section to characterize the soil DOT&PF plans to remove during runway rehabilitation. After completing these borings, the driller will patch the runway using epoxy.

3.4 Groundwater Characterization

Groundwater characterization activities for this project include sample collection from TWPs and permanent MWs, described as follows. General information regarding groundwater characterization activities are described in Section 3.2.3 of the GWP. TWP sampling procedures are presented in Section 4.5 of the GWP. MW installation, development, and sampling procedures are presented in Section 4.6 of the GWP. Proposed groundwater sample locations are presented in Figure 4.

3.4.1 Temporary Well Points

The drilling contractor will install TWPs at eight of the soil-boring locations:

- immediately south of the eastern deep ground improvement area near the western end of Runway 10-28,
- north of Runway 10-28;
- immediately south of Runway 10-28, west of its junction with Runway 3-21;
- immediately south of the Runway 10-28 crack repair area east of its junction with Runway 3-21;
- northeast of the OME, south of the Nome Landfill;
- at the north and south ends of Runway 3-21; and
- one TWP south of the ARNG hangar.

Shannon & Wilson will request the drilling contractor to advance the well points to just below the surface of the groundwater. Please note, the depth to groundwater can vary widely within OME property depending on the season, tides, and recent precipitation. Field

staff will collect a PFAS sample from the uppermost foot of groundwater at each TWP. Depth to water, groundwater parameters and observations, and other local conditions will be documented in field notes. TWP point purge water will be treated and disposed of in accordance with Section 4.6.

3.4.2 Monitoring Wells

The drilling contractor will install two nests of groundwater MWs with two wells each at the following locations:

- north of the ARFF building, within the AFFF release area; and
- south of the ARFF building, between the building and Runway 10-28.

Each nest will have one MW well screen set to span the groundwater table, and one MW screened from 35 to 40 ft. bgs or just above bedrock, whichever is encountered sooner. Previous soil borings in the ARFF building vicinity encountered bedrock at 25 ft. bgs (Phukan, Inc., 2003). The anticipated MW depths are approximately 12 ft. and 25 ft. bgs.

The newly installed MWs will be developed prior to sampling to remove sediment and verify proper hydraulic connection with the aquifer. To allow time for annular-seal materials to set, field staff will begin development no sooner than 24 hours after installation is complete. Field staff will sample the two shallow MWs for GRO, DRO, RRO, BTEX, and PFAS, and the two deep MWs for PFAS only. One of the shallow monitoring wells will also be sampled for PAHs.

Shannon & Wilson will also sample two existing MWs owned by DOT&PF, shown in Figure 4 and described as follows:

- near the western end of Runway 10-28 next to the Snake River (MW-30 or MW-279); and
- at the former FAA Flight Service Station and MarkAir facility on the Southeast Apron.

It is possible existing MWs have been damaged or destroyed since their installation. These samples will be submitted for determination of PFAS only. Shannon & Wilson will share the results of MW sampling on the Southeast Apron with DOT&PF leasing and relevant OME tenants. MW purge and development water will be treated and disposed of in accordance with Section 4.6.

3.5 Surface Water Characterization

General information regarding surface water characterization and sediment sample collection activities are described in Section 3.2.4 of the GWP. Surface water and sediment sampling procedures are presented in Sections 4.7 and 4.8 of the GWP, respectively.

3.5.1 Surface Water Sampling

Shannon & Wilson will collect up to 12 surface water samples from OME drainage ditches, ponds, and creeks. Tentative sample locations are shown in Figures 4 and 5. If standing water is not present in the drainage ditches or ponds identified in the figures, field staff will coordinate with the Project Manager to identify alternative, nearby locations or omit some of these samples.

Some of these surface water bodies may be frozen during the planned late fall sampling effort. If the ice is thin, field staff will attempt to break it ice using hand tools. The surface water samples will be submitted for determination of PFAS only. Eurofins TestAmerica, Sacramento has indicated collecting frozen water samples could introduce analytical bias because PFAS may not be equally distributed within the ice, depending on the rate the ice was formed. If liquid water is not accessible, Shannon & Wilson will omit the corresponding samples.

The following five surface water samples will be collected from drainage ditches:

- inside the drainage culvert southwest of ARFF building;
- west of Runway 3-21 opposite the ARNG hangar and Taxiway Juliet;
- two samples from the east of Runway 3-21, west and north of the ARNG hangar; and
- north of the junction of Runways 10-28 and 3-21.

The following four surface water samples will be collected from ponds or depressions in the tundra:

- east of the ARFF building and other Northeast Apron hangars, east of Doyle Road;
- east of the FAA Housing Complex;
- southeast of the Northwest Apron hangars, west of Doyle Road; and
- between Doyle and Center Creek Roads, west of the eastern end of Runway 10-28.

The following three surface water samples will be collected from flowing water near the OME:

- creek near the eastern end of Runway 10-18; and
- creek south west of the ARNG hangar.

3.5.2 Sediment Sampling

Shannon & Wilson will collect up to nine sediment samples from the standing water bodies listed above, if the sediment is accessible. Freezing or near-freezing conditions may prevent field staff from collecting some of the sediment samples. These samples will be submitted for determination of PFAS only.

4 SAMPLING AND ANALYSIS PLAN

This section describes the analytical sampling approach for investigating contamination associated with the OME. A DEC-qualified sampler will collect and handle the samples for projects covered under this GWP and collect required quality control (QC) samples in accordance with DEC's *Field Sampling Guidance*. Field personnel will document field activities with field notes and photographs as well as applicable field forms (Appendix B of GWP), as detailed in Section 5.2 of the GWP.

Analytical laboratories and methods employed as a part of this Addendum are identified in Section 4.3. Sample containers, preservation methods, and holding times are included in Section 4.4. Equipment decontamination procedures are outlined in Section 4.5. Investigation derived waste (IDW) management is described in Section 4.6.

4.1 Sample Collection Methods

The sampling effort described in this Addendum will be conducted in general accordance with the GWP. The following sections contain supplemental information and exceptions to the general Sampling and Analysis Plan found in Section 4 of the GWP.

4.1.1 Drilling Method and Monitoring Well Construction

Use of a Geoprobe® Model 6712 or 66 series direct push/auger is anticipated for drilling the soil borings. The drilling contractor will use a direct-push sampling system equipped with a two- or three-inch MacroCore for the soil borings terminating at or just below the groundwater table. The TWPs will be pre-screened, disposable 1-inch diameter PVC. The driller will use either a direct push or hollow stem auger method to install the MWs.

The MWs will be located within an unpaved portion of the OME that may be used for parking small airplane. The MWs will be completed using flush mount monuments to allow continued vehicle and airplane traffic. DOT&PF will use caution during snow plowing to avoid damaging the monuments.

4.1.2 Temporary Well Points

The TWPs will be removed after sampling; it would not be practical to leave them in the ground for potential future sampling because the sample locations are close to active runways. Following removal, the TWP boreholes will be backfilled with bentonite chips or grout to two feet below the ground surface. The final two feet will be backfilled with sand, pea gravel, topsoil, asphalt cold patch, epoxy, and/or hydraulic cement to match the previous ground surface.

4.1.3 Sediment Sampling

Sediment samples will be collected from shallow standing water bodies using hand tools such a trowel, shovel, or hand auger. We anticipate the water depth will be less than two ft. Field staff will remove vegetation or plant matter prior to collecting the sediment samples.

4.2 Analytical Sample Summary

An analytical sample summary is detailed in Exhibit 4-1, below. More information regarding QC samples can be found in Section 5.2.

Exhibit 4-1: Analytical Sample Summary

	Matrix	Location Type	PFAS (EPA 537.1 or 537.1M)	GRO / DRO / RRO (AK101 / AK102 / AK103)	BTEX (EPA 8260)	PAH (EPA 8270D-SIM)
Number of Samples	Surface Soil*	Near Runways	13 + 3 DUP	-	-	-
		ARNG Hangar	1	-	-	-
		ARFF Building	10 + 1 DUP + 2 QC	10 + 1 DUP	10 + 1 DUP + 1 QC	1 + 1 DUP + 1 QC
	Soil Borings	Near Runways	12 + 2 DUP	-	-	-
		Beneath Runways	4	-	-	-
		ARNG Hangar	2	-	-	-
		ARFF Building	12 + 2 DUP	-	4 + 1 DUP	1
	Groundwater	Temporary Well Point	8 + 2 DUP	-	-	-
		New Monitoring Well	4 + 2 DUP + 2 QC	2 + 1 DUP + 2 QC	2 + 1 DUP + 2 QC	1 + 1 DUP + 2 QC
		Existing Monitoring Well	2 + 1 DUP + 1 QC	-	-	-
	Surface Water	Drainage Ditch or Culvert	5 + 1 DUP	-	-	-
		Pond	4+ 1 DUP + 1 QC	-	-	-
		Creek	2	-	-	-
	Sediment	Drainage Ditch or Culvert	5 + 1 DUP + 1 QC	-	-	-
		Pond	4 + 1 DUP + 1 QC	-	-	-
	Treated Water	GAC Effluent	1	-	-	-

Notes:

DUP = field duplicate sample; QC = quality control sample; PFAS = per- and polyfluoroalkyl substances; EPA = U.S. Environmental Protection Agency; GRO = gasoline range organics; DRO = diesel range organics; RRO = residual range organics; BTEX = benzene, toluene, ethylbenzene, and total xylenes; PAH = polynuclear aromatic hydrocarbons; SIM = selective ion monitoring

*Surface soil section includes samples collected using hand tools, surface soil samples will also be collected from soil borings.

In addition to field duplicate samples, QC samples listed in this table include equipment blank, field blank, and trip blank samples. Laboratory QC samples are not included in these totals. Table assumes all potential samples will be collected.

4.3 Analytical Laboratories and Methods

The GRO, DRO, RRO, BTEX, and PAH soil and water samples will be submitted to SGS North America, Inc. in Anchorage, Alaska. The PFAS soil, water, and sediment samples will

be submitted to Eurofins TestAmerica of Sacramento, California. Based on the DEC Technical Memorandum issued on October 2, 2019, PFAS analysis will report the 18 PFAS compounds defined in the EPA Method 537.1. Other analytical samples will be submitted for the analyses listed in Exhibit 4-2.

4.4 Sample Containers, Preservation, and Holding Times

General information regarding sample containers, preservation, and holding times is described in Section 4.12 of the GWP. This information is provided in Exhibit 4-1, below, for the analytical methods employed for this project.

Exhibit 4-2: Sample Containers, Preservation, and Holding Time Requirements

Analyte	Method	Media	Container and Sample Volume	Preservation	Holding Time
PFAS	EPA 537.1 or 537.1M	Drinking Water	2 x 250 mL polycarbonate	Trizma 0 °C to 6 °C	14 days to extraction, analyzed within 40 days of extraction
		Water	2 x 250 mL polycarbonate	0 °C to 6 °C	
		Soil	4-oz polycarbonate	0 °C to 6 °C	
GRO	AK101	Water	3 x 40-mL VOA vials (no headspace)	HCl to <4 0 °C to 6 °C	14 days to extraction, analyzed within 40 days of extraction
		Soil	Pre-weighed 4-oz amber glass jar with septa	25mL MeOH 0 °C to 6 °C	
DRO	AK102	Water	2 x 250-mL amber glass	HCl to <4 0 °C to 6 °C	7 days to extraction, analyzed within 40 days of extraction
		Soil	4-oz amber glass jar	0 °C to 6 °C	14 days to extraction, analyzed within 40 days of extraction
RRO	AK103	Water	2 x 250-mL amber glass	HCl to <4 0 °C to 6 °C	7 days to extraction, analyzed within 40 days of extraction
		Soil	4-oz amber glass jar	0 °C to 6 °C	14 days to extraction, analyzed within 40 days of extraction
BTEX	EPA 8260	Water	3 x 40-mL VOA vials (no headspace)	HCl to <4 0 °C to 6 °C	14 days
		Soil	Pre-weighed 4-oz amber glass jar with septa	25mL MeOH 0 °C to 6 °C	
PAHs	EPA 8270D-SIM	Water	2 x 250-mL amber glass	0 °C to 6 °C	7 days to extraction, analyzed within 40 days of extraction
		Soil	4-oz amber glass jar		14 days to extraction, analyzed within 40 days of extraction

Notes:

BTEX = benzene, toluene, ethylbenzene, and total xylenes; °C = degrees Celsius, DRO = diesel range organics, EPA = U.S. Environmental Protection Agency, GRO = gasoline range organics, HDPE - high density polyethylene, HCl = hydrochloric acid, mL = milliliter, oz = ounce, PAH = polynuclear aromatic hydrocarbons, PFAS = per- and polyfluoroalkyl substances, RRO = residual range organics, SIM = selective ion monitoring, VOA = volatile organic analysis

4.5 Equipment Decontamination

Equipment decontamination procedures are described in Section 4.14 of the GWP. According to a preliminary assessment report for PFAS prepared for the ARNG, utility water in Nome was tested for PFOS and PFOA as part of the EPA Unregulated Contaminant Monitoring Rule 3 testing program and these compounds were not detected above the drinking water LHA (AECOM, 2019). However, the 2019 NJUS consumer confidence report does not include PFAS water-quality data.

4.6 Investigative Derived Waste Management

IDW will consist of soil cuttings, TWP and MW development and purge water, decontamination rinsate water, and disposable sampling equipment.

Soil cuttings will be spread in the immediate surroundings of the boring location unless field observations (i.e. visual staining, odor, or PID readings greater than 20 ppm) suggest the presence of contamination. If contaminants are suspected to be present in soil cuttings, the cuttings will be combined and placed in a 55-gallon drum or supersack and temporarily stored onsite at the ARFF building. The appropriate soil disposal method will be selected following the receipt of soil analytical results.

Liquids will be treated using three in-line five-gallon granular activated carbon (GAC) filters and discharged to the ground surface at least 100 ft. from drainage ditches or surface water bodies. Silty MW development water will be allowed to settle prior to filtration. An effluent sample will be collected following the completion of the sampling event. Purge water from water supply well samples will be purged to the ground surface, septic system, or municipal sewer system.

Other IDW will primarily consist of disposable sampling equipment (nitrile gloves, pump tubing, etc.). These items will be disposed of at an onsite dumpster and ultimately the Nome Landfill.

4.7 Deviations from the General Work Plan

Section 3.1.1 of the GWP describes a door-to-door water supply well search where field staff make a reasonable attempt to speak with each resident in the well search area. Shannon & Wilson plans to conduct a more limited well search in Nome because most structures are reportedly connected to the NJUS water system (Appendix C).

5 QUALITY ASSURANCE PROJECT PLAN

This QAPP is intended to guide field activities and data assessment, and ensure sampling and documentation are effective, laboratory data are usable, and the information acquired is of high quality and reliable. Shannon & Wilson will be responsible for conducting data reduction, evaluation, and reporting under this QAPP. A general QAPP is provided as Section 5 of the GWP. Additionally, a Data-Validation Program Plan (DVPP) which describes the procedures for qualifying analytical data in a consistent manner and is included as Appendix C to the GWP. The following sections describe specific procedures to be followed during sampling at the OME.

5.1 Quality Assurance Objectives

Data quality objectives are detailed in Section 5.1 of the GWP. Numeric QA objectives for this project are presented in Exhibit 5-1, below.

Exhibit 5-1: Quality Assurance Objectives for Analytical Samples[1]

Analyte	Method	Matrix	Precision	Accuracy	Completeness
PFAS	EPA 537.1[2]	Water	±30%	(analyte dependent)	85%
		Soil	±50%	(analyte dependent)	85%
GRO	AK101	Water	±30%	60-120%	85%
		Soil	±50%	60-120%	85%
DRO	AK102	Water	±30%	60-120%	85%
		Soil	±50%	60-120%	85%
RRO	AK103	Water	±30%	60-120%	85%
		Soil	±50%	60-120%	85%
BTEX	8260	Water	±30%	(analyte dependent)	85%
		Soil	±50%	(analyte dependent)	85%
PAHs	8270D-SIM	Water	±30%	(analyte dependent)	85%
		Soil	±50%	(analyte dependent)	85%

Notes:

BTEX = benzene, toluene, ethylbenzene, and xylenes; COPC = contaminant of potential concern, DRO = diesel range organics, EPA = U.S. Environmental Protection Agency, GRO = gasoline range organics, PAH = polynuclear aromatic hydrocarbons, PFAS = per- and polyfluoroalkyl substances, PFOA = perfluorooctanoic acid PFOS = perfluorooctanesulfonic acid RRO = residual range organics, SIM = selective ion monitoring

The primary COPCs are PFAS, specifically PFOS and PFOA, for projects conducted under this GWP Addendum. However, Appendix F of *DEC's* Field Sampling Guidance (DEC 2019) identifies the following additional COPCs for sites associated with fire training facilities, fires, and facilities where AFFF was used: GRO, DRO, RRO, BTEX, and PAHs.

5.2 Field Quality Control Samples

The field quality assurance (QA)/QC program for this project includes the collection of the following QA/QC samples, as described below.

5.2.1 Field Duplicate Samples

Field duplicate sample collection procedures are described in Section 5.4.1 of the GWP. Refer to Exhibit 4-1 for number of field duplicates for each matrix. Shannon & Wilson made the following assumptions when determining the appropriate number of field duplicate samples:

- surface soil samples will be collected over a two-day period;
- petroleum surface soil samples in the AFFF release area will be collected on the same day;
- soil borings will be advanced over a four-day period;
- TWPs will be sampled over a two-day period;
- the new MWs will be developed and sampled over a two-day period, the two shallow wells will be sampled on the same day;
- existing MWs will be sampled on the same day; and
- surface water and sediment samples will be collected over a two-day period.

The duration of the field sampling effort may be shorter or longer than anticipated.

5.2.2 Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike and matrix spike duplicate samples will not be collected for this project. However, the laboratories may report QC samples collected from this or other projects not associated with this Addendum to meet their reporting requirements.

5.2.3 Trip Blank Samples

Trip blank samples are described in Section 5.4.3 of the GWP. Shannon & Wilson will store volatile soil and water samples in separate coolers and submit one trip blank sample per cooler.

5.2.4 Equipment Blank Samples

Equipment blank sample collection procedures are described in Section 5.4.4 of the GWP. Field staff will collect one submersible pump equipment blank sample each day the pump is

used, after the final water sample of the day. The TWPs will not be sampled using reusable equipment. Field staff will collect soil and sediment sample field blanks by pouring laboratory supplied PFAS-free water down the length of the hand auger, shovel, Eckman dredge, or other reusable equipment and collecting the rinsate in sample bottles. Rinsate samples are not required when disposable materials are used.

5.2.5 Field Blank Samples

Field blank sample collection procedures are described in Section 5.4.5 of the GWP. Field blank samples are needed for areas with potential for PFAS-containing particulate matter to enter samples (i.e. high-contamination areas, windy/dusty conditions, etc.). Shannon & Wilson will collect two field blank samples, one each during surface soil and MW at the ARFF training area.

5.2.6 Temperature Blank Samples

Temperature blanks are described in Section 5.4.6 of the GWP.

5.3 Laboratory Quality Control Samples

Laboratory quality control samples are described in Section 5.5 of the GWP.

5.4 Laboratory Data Deliverables

Laboratory data deliverables are described in Section 5.6 of the GWP.

5.5 Data Reduction, Evaluation, and Reporting

Data reduction, evaluation, and reporting are discussed in Section 5.7 of the GWP.

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LEGEND

- Planned runway rehabilitation area
- Planned excavation up to 11 feet
- Planned waste or stockpile area
- Building
- AFFF release site
- Airport property boundary

0 0.2 0.4

Miles

N

Nome Airport
Nome, Alaska

SITE MAP

August 2020 105745-001

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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Figure 1

LEGEND

- Well Search Areas
- Area 1
- Area 2

0 0.25 0.5

Miles

N

Nome Airport
Nome, Alaska

WELL SEARCH EXTENT

August 2020 105745-001

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Figure 2

LEGEND

- Soil boring
- Surface soil
- AFFF release site
- Planned soil excavation

N

0 0.25 0.5

Miles

Nome Airport
Nome, Alaska

SOIL SAMPLE LOCATIONS

August 2020 105745-001

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Figure 3

LEGEND

- Monitoring well nest (new)
- Monitoring well (existing)
- Temporary well point
- Surface water
- AFFF release site

N

0 0.25 0.5

Miles

Nome Airport
Nome, Alaska

WATER SAMPLE LOCATIONS

August 2020 105745-001

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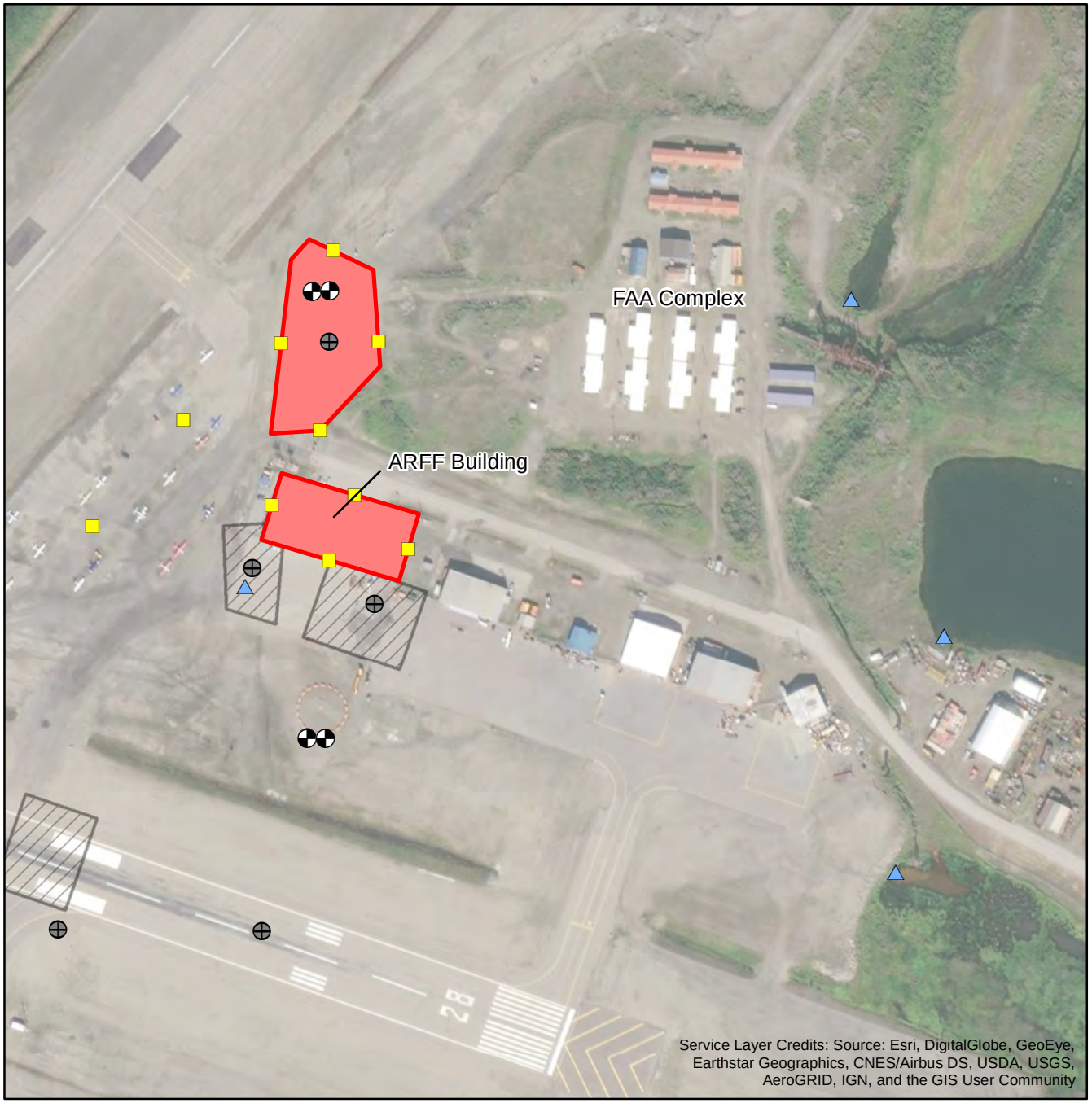
Figure 4



LEGEND

- Soil boring
- Surface soil
- Monitoring well
- Surface water
- AFFF release site
- Planned soil excavation

0 250 500

Feet

N

Nome Airport
Nome, Alaska

ARFF BUILDING VICINITY SAMPLE LOCATIONS

August 2020 105745-001

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Figure 5

APPENDIX A: DRAFT CONCEPTUAL SITE MODEL

Appendix A

Draft Conceptual Site Model

Scoping and Graphics Forms

CONTENTS

Appendix A - Human Health Conceptual Site Model
Scoping Form and Standardized Graphic

Site Name: ADOT&PF Nome Airport Sitewide PFAS

File Number: 400.38.056

Completed by: Marcy Nadel, Shannon & Wilson, Inc.

Introduction

The form should be used to reach agreement with the Alaska Department of Environmental Conservation (DEC) about which exposure pathways should be further investigated during site characterization. From this information, summary text about the CSM and a graphic depicting exposure pathways should be submitted with the site characterization work plan and updated as needed in later reports.

General Instructions: Follow the italicized instructions in each section below.

1. General Information:

Sources *(check potential sources at the site)*

- ☐ USTs
- ☐ ASTs
- ☐ Dispensers/fuel loading racks
- ☐ Drums
- ☐ Vehicles
- ☐ Landfills
- ☐ Transformers
- ☒ Other: Aqueous Film Forming Foam (AFFF) release

Release Mechanisms *(check potential release mechanisms at the site)*

- ☒ Spills
- ☒ Leaks
- ☒ Direct discharge
- ☐ Burning
- ☐ Other:

Impacted Media *(check potentially-impacted media at the site)*

- ☒ Surface soil (0-2 feet bgs*)
- ☒ Subsurface soil (>2 feet bgs)
- ☐ Air
- ☒ Sediment
- ☒ Groundwater
- ☒ Surface water
- ☒ Biota
- ☐ Other:

Receptors *(check receptors that could be affected by contamination at the site)*

- ☒ Residents (adult or child)
- ☒ Commercial or industrial worker
- ☒ Construction worker
- ☒ Subsistence harvester (i.e. gathers wild foods)
- ☒ Subsistence consumer (i.e. eats wild foods)
- ☒ Site visitor
- ☒ Trespasser
- ☒ Recreational user
- ☐ Farmer
- ☐ Other:

* bgs - below ground surface

2. Exposure Pathways: *(The answers to the following questions will identify complete exposure pathways at the site. Check each box where the answer to the question is "yes".)*

a) Direct Contact -

1. Incidental Soil Ingestion

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site-specific basis.) ☒

If the box is checked, label this pathway complete: Complete

Comments:

No surface soil samples have been collected at the OME. However, AFFF releases to the ground surface could cause soil contamination.

2. Dermal Absorption of Contaminants from Soil

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Can the soil contaminants permeate the skin (see Appendix B in the guidance document)? ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

b) Ingestion -

1. Ingestion of Groundwater

Have contaminants been detected or are they expected to be detected in the groundwater, or are contaminants expected to migrate to groundwater in the future? ☒

Could the potentially affected groundwater be used as a current or future drinking water source? Please note, only leave the box unchecked if DEC has determined the groundwater is not a currently or reasonably expected future source of drinking water according to 18 AAC 75.350. ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

No water supply well samples have been collected at or downgradient of the OME. However, PFAS contaminated groundwater is possible.

2. Ingestion of Surface Water

Have contaminants been detected or are they expected to be detected in surface water, or are contaminants expected to migrate to surface water in the future? ☒

Could potentially affected surface water bodies be used, currently or in the future, as a drinking water source? Consider both public water systems and private use (i.e., during residential, recreational or subsistence activities). ☒

If both boxes are checked, label this pathway complete: Complete

Comments:

Surface water near the OME is not used for drinking water. However, incidental ingestion is possible during recreational and subsistence activities in Norton Sound and the harbor.

3. Ingestion of Wild and Farmed Foods

Is the site in an area that is used or reasonably could be used for hunting, fishing, or harvesting of wild or farmed foods? ☒

Do the site contaminants have the potential to bioaccumulate (see Appendix C in the guidance document)? ☒

Are site contaminants located where they would have the potential to be taken up into biota? (i.e. soil within the root zone for plants or burrowing depth for animals, in groundwater that could be connected to surface water, etc.) ☒

If all of the boxes are checked, label this pathway complete: Complete

Comments:

Nome residents often fish in Norton Sound, south of the OME.

c) Inhalation-

1. Inhalation of Outdoor Air

Are contaminants present or potentially present in surface soil between 0 and 15 feet below the ground surface? (Contamination at deeper depths may require evaluation on a site specific basis.) ☒

Are the contaminants in soil volatile (see Appendix D in the guidance document)? ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

PFAS are not included in Appendix D. If volatile organic compounds are reported during site characterization activities, this section will be updated with the new information.

2. Inhalation of Indoor Air

Are occupied buildings on the site or reasonably expected to be occupied or placed on the site in an area that could be affected by contaminant vapors? (within 30 horizontal or vertical feet of petroleum contaminated soil or groundwater; within 100 feet of non-petroleum contaminted soil or groundwater; or subject to "preferential pathways," which promote easy airflow like utility conduits or rock fractures) ☒

Are volatile compounds present in soil or groundwater (see Appendix D in the guidance document)? ☐

If both boxes are checked, label this pathway complete: Incomplete

Comments:

3. **Additional Exposure Pathways:** *(Although there are no definitive questions provided in this section, these exposure pathways should also be considered at each site. Use the guidelines provided below to determine if further evaluation of each pathway is warranted.)*

Dermal Exposure to Contaminants in Groundwater and Surface Water

Dermal exposure to contaminants in groundwater and surface water may be a complete pathway if:

- Climate permits recreational use of waters for swimming.
- Climate permits exposure to groundwater during activities, such as construction.
- Groundwater or surface water is used for household purposes, such as bathing or cleaning.

Generally, DEC groundwater cleanup levels in 18 AAC 75, Table C, are deemed protective of this pathway because dermal absorption is incorporated into the groundwater exposure equation for residential uses.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

Nome residents and miners may swim in the harbor or Norton Sound in the summertime.

According to the Alaska Department of Health and Social Services, PFOS and PFOA are not appreciably absorbed through the skin. However, Appendix B of the 2017 Guidance on Developing Conceptual Site Models lists both PFOS and PFOA. We consider dermal exposure to these compounds to be insignificant for the purposes of this CSM.

Inhalation of Volatile Compounds in Tap Water

Inhalation of volatile compounds in tap water may be a complete pathway if:

- The contaminated water is used for indoor household purposes such as showering, laundering, and dish washing.
- The contaminants of concern are volatile (common volatile contaminants are listed in Appendix D in the guidance document.)

DEC groundwater cleanup levels in 18 AAC 75, Table C are protective of this pathway because the inhalation of vapors during normal household activities is incorporated into the groundwater exposure equation.

Check the box if further evaluation of this pathway is needed: ☐

Comments:

PFAS are not included in Appendix D.

Inhalation of Fugitive Dust

Inhalation of fugitive dust may be a complete pathway if:

- Nonvolatile compounds are found in the top 2 centimeters of soil. The top 2 centimeters of soil are likely to be dispersed in the wind as dust particles.
- Dust particles are less than 10 micrometers (Particulate Matter - PM_{10}). Particles of this size are called respirable particles and can reach the pulmonary parts of the lungs when inhaled.

DEC human health soil cleanup levels in Table B1 of 18 AAC 75 are protective of this pathway because the inhalation of particulates is incorporated into the soil exposure equation.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

No surface soil samples have been collected at the OME. However, AFFF was likely released to the ground surface in unpaved gravel parking areas that can be dusty in the summertime.

Direct Contact with Sediment

This pathway involves people's hands being exposed to sediment, such as during some recreational, subsistence, or industrial activity. People then incidentally ingest sediment from normal hand-to-mouth activities. In addition, dermal absorption of contaminants may be of concern if the the contaminants are able to permeate the skin (see Appendix B in the guidance document). This type of exposure should be investigated if:

- Climate permits recreational activities around sediment.
- The community has identified subsistence or recreational activities that would result in exposure to the sediment, such as clam digging.

Generally, DEC direct contact soil cleanup levels in 18 AAC 75, Table B1, are assumed to be protective of direct contact with sediment.

Check the box if further evaluation of this pathway is needed: ☒

Comments:

No surface soil samples have been collected at the OME. However, AFFF was likely released to the ground surface in unpaved areas open to DOT&PF employees and the public.

4. Other Comments *(Provide other comments as necessary to support the information provided in this form.)*

This initial CSM will be revised following the receipt of analytical data.

HUMAN HEALTH CONCEPTUAL SITE MODEL GRAPHIC FORM

Site: ADOT&PF Nome Airport Sitewide PFAS
400.38.056

Completed By: Marcy Nadel, Shannon & Wilson, Inc.
Date Completed: August 2020

***Instructions*: Follow the numbered directions below. Do not consider contaminant concentrations or engineering/land use controls when describing pathways.**

(1) *Check the media that could be directly affected by the release.*

(2) *For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Check additional media under (1) if the media acts as a secondary source.*

(3) *Check all exposure media identified in (2).*

(4) *Check all pathways that could be complete. The pathways identified in this column **must** agree with Sections 2 and 3 of the Human Health CSM Scoping Form.*

(5) *Identify the receptors potentially affected by each exposure pathway: Enter "C" for current receptors, "F" for future receptors, "C/F" for both current and future receptors, or "I" for insignificant exposure.*

Current & Future Receptors

Media	Transport Mechanisms	Exposure Media	Exposure Pathway/Route	Residents (adults or children)	Commercial or industrial workers	Site visitors, trespassers, or recreational users	Construction workers	Farmers or subsistence harvesters	Subsistence consumers	Other
☑ Surface Soil (0-2 ft bgs)	☑ Direct release to surface soil → check soil	☑ soil	☑ Incidental Soil Ingestion	C/F	C/F	C/F	C/F	C/F	C/F	
	☑ Migration to subsurface → check soil		☑ Dermal Absorption of Contaminants from Soil	C/F	C/F	C/F	C/F	C/F	C/F	
	☑ Migration to groundwater → check groundwater		☑ Inhalation of Fugitive Dust	C/F	C/F	C/F	C/F			
	☐ Volatilization → check air									
	☑ Runoff or erosion → check surface water									
	☑ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Subsurface Soil (2-15 ft bgs)	☑ Direct release to subsurface soil → check soil	☑ groundwater	☑ Ingestion of Groundwater	C/F	C/F	C/F	C/F			
	☑ Migration to groundwater → check groundwater		☑ Dermal Absorption of Contaminants in Groundwater	I	I	I	I			
	☐ Volatilization → check air		☐ Inhalation of Volatile Compounds in Tap Water							
	☑ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Ground-water	☑ Direct release to groundwater → check groundwater	☐ air	☐ Inhalation of Outdoor Air							
	☐ Volatilization → check air		☐ Inhalation of Indoor Air							
	☑ Flow to surface water body → check surface water		☐ Inhalation of Fugitive Dust							
	☑ Flow to sediment → check sediment									
	☑ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Surface Water	☑ Direct release to surface water → check surface water	☑ surface water	☑ Ingestion of Surface Water	I		I		I	I	
	☐ Volatilization → check air		☑ Dermal Absorption of Contaminants in Surface Water	I	I	I	I	I	I	
	☑ Sedimentation → check sediment		☐ Inhalation of Volatile Compounds in Tap Water							
	☑ Uptake by plants or animals → check biota									
	☐ Other (list):									
☑ Sediment	☑ Direct release to sediment → check sediment	☑ sediment	☑ Direct Contact with Sediment	C/F	C/F	C/F	C/F	C/F	C/F	
	☑ Resuspension, runoff, or erosion → check surface water									
	☑ Uptake by plants or animals → check biota	☑ biota	☑ Ingestion of Wild or Farmed Foods	C/F				C/F	C/F	
	☐ Other (list):									

APPENDIX B: SITE SAFETY AND HEALTH PLAN

Appendix B

Site Safety and Health Plan

CONTENTS

ENCLOSURES

- DOT&PF's COVID-19 Management Plan
- Guidance for Field Work During the COVID-19 Pandemic
- Guidance for Residential Water Sampling During the COVID-19 Pandemic

APPENDIX B: SITE SAFETY AND HEALTH PLAN

Shannon & Wilson prepared this Site Safety and Health Plan (SSHP) for the initial site characterization activities at the Nome Airport (OME). The purpose of this SSHP is to protect the health and safety of field personnel from physical and chemical hazards associated with work at this site. This document complies with DOT&PF's April 8, 2020 COVID-19 Management Plan, enclosed. Our contractors will adopt DOT&PF's Management Plan and follow their own COVID-related safety protocols.

The provisions of this plan apply to Shannon & Wilson personnel who will potentially be exposed to safety and/or health hazards during this investigation. Shannon & Wilson employees are covered under its Corporate Safety and Health Program. General safety and health requirements described in that program will be met. Each Shannon & Wilson employee on the site will sign the personal acknowledgement form documenting they have read and understand this SSHP and agree to abide by its requirements. A copy of this SSHP will be kept on-site throughout the duration of sampling operations.

B.1. SITE HAZARD ANALYSIS

There are two categories of hazards that may occur during the field work: potential chemical exposure hazards and physical hazards associated with site characterization activities. These hazards are discussed below.

B.1.1 Chemical-Exposure Hazards

Contaminated soil and water may be encountered during site exploration activities. PFAS are believed to be the primary contaminants of potential concern and may be encountered in soils and water at unknown concentrations. Petroleum compounds may also be encountered in soil or groundwater.

Shannon & Wilson personnel will implement skin protection when they are to contact potentially contaminated soil or water. Field personnel will wear work gloves or nitrile gloves as needed, and Level D personal protective equipment (PPE). Field personnel will not require respiratory protection based on the current understanding of site conditions and scope of services.

B.1.2 Physical Hazards

Primary physical hazards associated with site characterization activities include drilling equipment and other heavy equipment; temperature stress; lifting, slipping, tripping, falling; insects and animals; and noise hazards. The best means of protection against

accidents related to physical hazards are careful control of equipment activities in the planned work area and use of experienced and safety- and health-trained field personnel.

Field personnel will not enter confined spaces for site characterization activities, nor will they enter trenches or excavations greater than four ft. in depth.

B.1.2.1 Drilling Activities and Heavy Equipment

Drill rigs have lots of moving parts and are very loud. Field personnel will wear proper PPE including appropriate hearing protection. A safe distance will be kept from the drill rig and field personnel will be aware of drill rig operations and crew movements. Practice good housekeeping around the work areas. Know where the drill rig's emergency shut-off switch(es) are located in order to shut the rig down in an emergency situation.

Underground utilities are present at the site. Utility locates will be requested by Shannon & Wilson prior to conducting any ground penetrating work.

DOT&PF personnel or OME tenants may use heavy equipment near or in Shannon & Wilson work areas. Personnel will exercise caution when working around heavy equipment and maintain a safe distance from moving equipment. Eye contact will be made with the operator prior to entering the work area, and personnel within the work area will remain within sight of the operator at all times.

B.1.2.2 Temperature Stress

The field effort discussed in this Addendum will occur in the fall. Cold, wet, and/or windy conditions are possible. Cold stress or injury due to hypothermia will be guarded against by wearing appropriate clothing, having warm shelter available, scheduling rest periods, adequate hydration, and self-monitoring physical and mental conditions.

B.1.2.3 Lifting Hazards

Moving coolers of soil samples or other heavy objects presents a lifting hazard. Personnel will use proper lifting techniques and obtain assistance when lifting objects weighing more than 40 pounds.

B.1.2.4 Slips, Trips, and Falls

The most common hazards on a job site are typically slips, trips, and falls. These hazards will be reduced through the following practices:

- Personnel will stay alert.
- All access-ways will be kept free of materials, supplies, and obstructions at all times.
- Tools and other materials will be located so as not to cause tripping or other hazards.
- Personnel should be aware of potential tripping hazards associated with vegetation, debris, and uneven ground.
- Personnel should be aware of limitations imposed by work clothing and PPE.

The project site may be inherently hazardous due to the potential presence of rain, snow, and ice, which can alter the character of the ground surface. The risk for slips, trips, and falls by site workers is increased due to wet or icy surfaces; therefore, workers will use caution when walking at the site.

B.1.2.5 Insects and Animals

During the summer and fall months, mosquitoes and other insects are common in areas predominantly covered with vegetation. Wearing PPE should be sufficient to protect site workers. Animals such as moose, bears, and other wildlife may be a hazard near vegetated areas around the airport. If a large animal approaches the site, workers should keep their distance or seek shelter in their vehicles.

B.1.2.6 Congested Areas

The site investigation may at times require field personnel to work adjacent to or in roadways. Field personnel will observe the speed and frequency of traffic proximal to the work site. Appropriate cones, barricades, or signs to secure the work area will be used when required.

B.1.2.7 Noise Hazards

Noise is considered a probably physical hazard given the proximity of sample locations to an active airport runway. Hearing protection will be used as necessary by field staff when near heavy equipment, drill rigs, or other loud equipment. Disposable earplugs will be used to reduce noise levels. Disposable earplugs will have the capacity to reduce noise by at least 30 decibels (dB), and below the OSHA PEL (eight-hour TWA) of 85 dB.

B.1.3 COVID-19 and Other Hazards

Employees will not report to work if they are experiencing symptoms of COVID-19. *Guidance for Field Work During the COVID-19 Pandemic* enclosed. Field staff will screen

themselves for COVID-19 symptoms included in the attachment prior to traveling to Nome. Single occupancy accommodations will be reserved, if possible. Should staff begin to feel ill after reporting to work, they will immediately report their symptoms and return to their lodging. Walk-in COVID-19 testing is available in a tent outside the Norton Sound Regional Hospital from 8:00 to 10:45 am and 1:00 to 5:00 pm Monday through Friday, and 1:00 to 5:00 pm on Saturday. Individuals with COVID-19 symptoms will quarantine in single-occupancy accommodations and follow direction from local healthcare providers until they are able to travel home. *Guidance for Residential Water Sampling During the COVID-19 Pandemic* when

Samplers will refer to the enclosed *Guidance for Residential Water Sampling During the COVID-19 Pandemic* when conducting residential sampling. It will not be possible to contact each individual resident or business owner prior to beginning the limited water supply well search. Some residents or business owners may decline access to sample locations due to COVID-19 concerns.

Biological, ionizing radiation, and other hazards are not expected to be present. However, be aware of the surroundings and maintain safe work practices in accordance with Shannon & Wilson's Corporate Health & Safety Plan.

B.2. PERSONAL RESPONSIBILITIES, TRAINING, AND MEDICAL SURVEILLANCE

Below is a summary of the assignment of responsibilities, training requirements, and medical surveillance information for Shannon & Wilson personnel.

B.2.1 Assignment of Responsibilities

Shannon & Wilson is responsible for understanding and complying with the requirements of this SSHP. Following is a list of responsibilities of all Shannon & Wilson personnel working on the site:

- Review and follow this SSHP.
- Attend and participate in safety meetings.
- Take appropriate action as described in this SSHP regarding accidents, fires, or other emergency situations.
- Take all reasonable precautions to prevent injury to themselves and their fellow workers.

- Perform only those tasks they believe they can do safely, and immediately report any accidents or unsafe conditions to Shannon & Wilson's Project Manager or Office Health and Safety Manager.
- Halt work, by themselves or by others, when they observe an unsafe act or potentially unsafe working condition.
- Report accidents, illnesses, and near-misses to the local contact and to Shannon & Wilson's Fairbanks office Health and Safety Manager.

B.2.2 Personal Training

Shannon & Wilson personnel performing activities on this site and under this plan have completed the appropriate training requirements specified in 29 CFR 1910.120(e). Each individual has completed an annual eight-hour refresher-training course and/or initial 40-hour training course within the last year.

A personal acknowledgement form will be completed by field personnel prior to commencing field activities. This acknowledgment form will document that they have read and understand this SSHP.

B.2.3 Medical Surveillance Program

All field personnel performing activities on this site covered by this SSHP have undergone baseline and annual physical/medical examinations as part of Shannon & Wilson's Corporate Health and Safety Program. All field personnel are active participants in Shannon & Wilson's Medical Monitoring Program or in a similar program, which complies with 29 CFR 1910.120(f).

B.3. PERSONAL PROTECTIVE EQUIPMENT

PPE will be required during the course of the field work. PPE selection will be based primarily on work-task requirements and potential exposure. Field personnel will use Level D protective equipment during normal work activities. Personnel are trained in the use of PPE that is, or may be, required. All personnel shall wear Level D PPE as a minimum:

- standard work clothes or cotton overalls;
- reflective, high-visibility safety vest;
- safety-toe boots;
- safety glasses;

- cloth and/or disposable face mask;
- hearing protection (on hand if needed);
- gloves; and,
- hard hat.

Disposable nitrile gloves will be worn during any activity that may require dermal contact with potentially contaminated media.

B.4. DECONTAMINATION PROCEDURES

Equipment decontamination procedures are necessary for any reusable equipment that comes into contact with contaminated soil and/or water. Decontamination procedures will consist of a rinse with non-phosphate-based detergent, a second rinse with plain tap water, and a final rinse with distilled water. Sampling equipment and PPE that is expendable will be disposed of at the site or in a landfill off-site.

Shannon & Wilson will conduct all site characterization activities in Level D PPE. Personnel decontamination will consist of the following:

- At the conclusion of site work each day, disposable PPE (likely limited to nitrile gloves) will be placed in trash bags for off-site disposal.
- Employees will wash their hands and face with soap and water before eating, drinking, smoking, or applying cosmetics.

B.5. ACCIDENTS AND EMERGENCIES

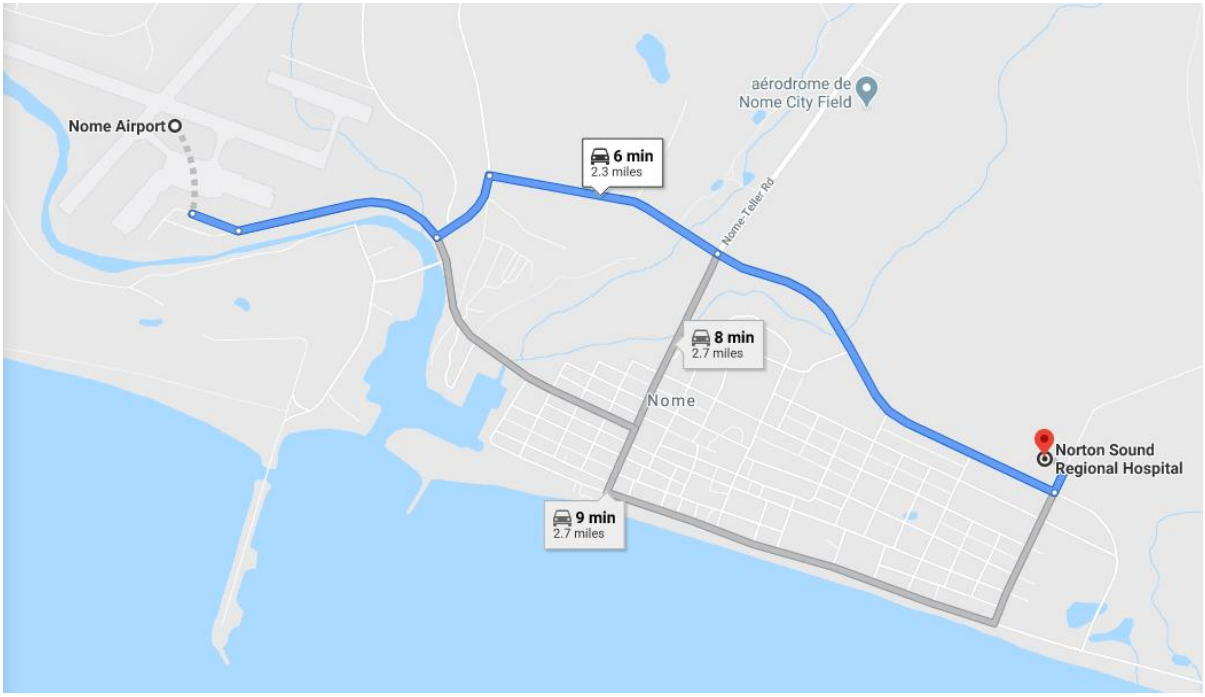
Shannon & Wilson field personnel are current in first aid and cardiopulmonary resuscitation (CPR) training. At a minimum, the following site safety equipment and first aid supplies shall be available in the field:

- PPE and clothing specialized for known site hazards;
- first aid kit, including first aid booklet;
- portable eye wash;
- clean water in portable containers; and
- other decontamination supplies.

The primary emphasis of any health and safety plan is accident prevention. If an injury or illness occurs during the course of field work, the severity of the problem will dictate the level of response. Minor injuries or illness will be addressed with basic first aid measures as recommended by a registered nurse through Shannon & Wilson's corporate Medcor service (1-800-775-5866).

More serious injuries will require assistance from the medical staff at the Norton Sound Regional Hospital, located at 1000 Greg Kruschek Avenue in Nome, Alaska. The Hospital Emergency Room is open 24 hours per day. The telephone number for the Norton Sound Regional Hospital nurse call line is (907) 443-6411. The general telephone number for Norton Sound Regional Hospital is (907) 443-3311. Field phones will be kept easily accessible in the case of an emergency.

Exhibit B-1: Directions from Nome Airport to Norton Sound Regional Hospital



Shannon & Wilson's Corporate Health and Safety Program requires accident reporting when there is a site-related accident, near-miss incident, or medical emergency. If an employee is treated by medical personnel, the medical attendant will complete an Incident Medical Treatment Documentation form. Completion of an Alaska Department of Labor Report of Occupational Injury or Illness is also required within 10 days for any work-related injury or illness.

B.6. GENERAL SITE SAFETY REQUIREMENTS

The following measures are designed to augment the specific health and safety guidelines provided in this plan:

- Field personnel should avoid contact with potentially contaminated surfaces such as: walking through puddles or pools of liquid; kneeling on the ground; or leaning, sitting, or placing equipment on contaminated soil or containers.
- Field personnel will be familiar with procedures for initiating an emergency response.
- Hazard assessment is a continual process; personnel must be aware of their surroundings and any chemical/physical hazards present.
- Personnel in the exclusion area shall be the minimum number necessary to perform work tasks in a safe and efficient manner.
- The use of contact lenses is prohibited; soft lenses may absorb irritants, and all lenses concentrate irritants.
- Equipment contacting potentially contaminated soil or water must be decontaminated or properly discarded before leaving the site.

Field personnel will be familiar with the physical characteristics of the work site including wind direction, site access, and location of communication devices and safety equipment.

APPENDIX B: SITE SAFETY AND HEALTH PLAN

SITE SAFETY AND HEALTH PLAN PERSONAL ACKNOWLEDGEMENT FORM

DOT&PF STATEWIDE GENERAL WORK PLAN
ADDENDUM 003-OME-01: NOME AIRPORT INITIAL SITE CHARACTERIZATION

I have reviewed this document and understand its contents and requirements. A copy of the above-referenced document has been made available to me. I agree to abide by the requirements of this Site Safety and Health Plan.

_____	_____	_____
Signature	Name (printed)	Date
_____	_____	_____
Signature	Name (printed)	Date
_____	_____	_____
Signature	Name (printed)	Date
_____	_____	_____
Signature	Name (printed)	Date

COVID-19 Management Plan

Purpose

In response to the Global COVID-19 Pandemic, countries, companies, communities and individuals have been called upon worldwide to make every effort to minimize to the greatest extent possible the risks associated with the transmission and perpetuation of the coronavirus. This document provides guidance to help mitigate the transmission of the coronavirus and provide safe and healthy working environments.

Scope

This document is designed to give clear, concise, consistent direction to essential critical infrastructure personnel working throughout the State of Alaska. Due to the fluidity of the events surrounding this pandemic, this document is considered a “living document” and will be updated as conditions change, and as relevant information is disseminated by local, state and federal agencies.

Roles and Responsibilities

The Management Team is committed to ensuring the health, safety and protection of personnel continuing to work through this pandemic, to their families and to the communities in which they live and work. The following leadership measures have been taken and shall continue throughout the duration of this pandemic:

Senior Management – Senior Management Teams shall continue to monitor the COVID-19 Pandemic situation and changing dynamics. Senior Management Teams shall remain in contact with all applicable local, state and federal leaders and shall ensure that any new directives given by governing bodies are immediately communicated to and implemented by project teams.

Project Management – Project Management Teams shall ensure that all applicable COVID-19 directives from Senior Management are immediately implemented and that all activities are conducted in accordance with the ALARA principle – to ensure that coronavirus transmission risks are As Low As Reasonably Achievable. Project Management Teams are responsible for ensuring that site specific emergency response plans are in place for each location, and that site specific COVID-19 training has been conducted for all field personnel prior to mobilization.

Field Supervisors – Field Supervisors are responsible for ensuring that the procedures contained in this document are available to and are followed by all project related personnel in the field, including workers, vendors, suppliers, client personnel and community members affiliated with or affected by the project. Field Supervisors are responsible for leading daily safety meetings, which shall include daily reminders of and training for COVID-19 precautions and safety measures.

Field Supervisors shall conduct daily health assessments of personnel. If personnel become sick at work the field supervisor shall immediately quarantine the individual and notify the project management team.

Field Personnel – Field personnel are responsible for following the procedures contained in this document; for reporting any unsafe or unsanitary conditions; and for immediately self-reporting and self-quarantining if they have any illness symptoms. Field personnel are responsible for helping to maintain safe, clean and healthy work sites.

COVID-19 General Information

COVID-19

The most recent information regarding the Corona Virus Pandemic provided by the CDC states:

The CDC is responding to a pandemic of respiratory disease spreading from person-to-person caused by a novel (new) coronavirus. The disease has been named "coronavirus disease 2019" (abbreviated "COVID-19"). This situation poses a serious public health risk. The federal government is working closely with state, local, tribal, and territorial partners, as well as public health partners, to respond to this situation. COVID-19 can cause mild to severe illness; most severe illness occurs in older adults.

Symptoms

COVID-19 Symptoms may appear 2-14 days after exposure and have been described by the CDC as but not limited to:

- Fever
- Shortness of breath
- dry cough

Emergency Medical Conditions – Severe symptoms described by the CDC as requiring immediate medical attention include but not limited to:

- Trouble breathing
- Persistent pain or pressure in the chest
- New confusion or inability to arouse
- Bluish lips or face

How The Virus Is Transmitted - The virus is thought to be spread primarily from person-to-person transmission inclusive of the following:

- People who are in close proximity, generally less than 6 feet, with other people who are infected

- Respiratory droplets produced when an infected person coughs or sneezes which can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs
- Touching a surface or object that has COVID-19 on it and then touching one's own mouth, nose, or possibly the eyes

Other Notes – The following should be considered:

- A person may NOT have a fever and yet still be a carrier of the virus
- People are most contagious when they are symptomatic, for example, experiencing fever, cough, and/or shortness of breath
- Asymptomatic and mildly symptomatic individuals can and also spread COVID-19
- A person without an elevated temperature does not mean he/she has a clean bill of health
- There have been numerous reports of inaccurate temperature readings from the forehead scan type thermometer
- Temperature testing does NOT ensure there is no communicable disease in the workplace and does not prevent the spread of disease
- Many cases are referred to as asymptomatic, which means that some individuals report no symptoms at all, but can still be carriers of the virus and can infect others

Screening – Management Teams shall maintain contact with local, state and federal agencies regarding the rapidly changing COVID-19 screening protocols and COVID-19 testing locations. The following are mandates that are currently in place in the State of Alaska:

- Employees who have travelled from outside the state of Alaska shall not be allowed to report to work prior to a 14-day quarantine period in accordance with DHSS guidelines.
- After the 14-day quarantine period, and prior to being deployed to remote job sites, personnel shall be screened per CDC and state guidelines. (See Wellness Screening Form, Appendix A.) Screening of individuals shall consist of:
    - Screening questions focusing on recent travel locations, known contact with persons known or suspected to have COVID-19, and current symptoms (i.e. fever, dry cough, difficulty in breathing, and/or fatigue)
    - Temperature screen for 100. F or greater to be taken on the same day of travel
- Personnel who do not pass the screening criteria shall not be allowed to mobilize to the jobsite and shall remain in quarantine until the employee is clear from any symptoms and/or has been deemed safe to return to work by a medical professional or qualified member of the Management Team
- Site Supervisors shall remain diligence in making sure that personnel are healthy and fit for work and shall remove, quarantine and report any employee who exhibits the above symptoms.

Emergency Response

Management Teams shall ensure that Emergency Response Plans are in place prior to mobilizing crews to new locations or allowing crews to continue working in existing locations. The Emergency response plans shall be site specific for each project location and shall include the following at a minimum:

- Project name and physical location of the work sites
- Emergency contact list of all project personnel, up to the executive management level responsible for the project
- Quarantine plans and locations for taking care of sick personnel
- Emergency and non-emergency transport plans to remove sick personnel from jobsites
- Locations of emergency medical supplies and PPE for the project
- Reporting matrix with contact information to report infected personnel
- Names, phone numbers and physical addresses of Designated Site Supervisors responsible for monitoring conditions and activating emergency response
- Names, addresses and phone numbers of the following entities:
    - Hospitals
    - Medical clinics
    - Emergency response shelters
    - Police
    - Fire
    - Ambulance
    - Airlines for evacuation if remote
    - Local supply companies (if any)

Social Distancing

In accordance with CDC, WHO and other local, state and federal guidelines and recommendations, Management Teams shall implement Social Distancing procedures to help limit or minimize contact between personnel and other people to help stop the transmission of the coronavirus. Social Distancing procedures shall include the following at a minimum and shall be updated as conditions, guidelines and recommendations change:

- Avoid gatherings of any size both internal and external to operations
- Perform meetings online or via conference call whenever possible
- Discontinue contact greetings such as hugs and handshakes
- Avoid physical contact and practice social distancing, including keeping at least 6 feet of separation from others when possible
- Discontinue collection of handwritten or iPad signatures for safety meetings and instead have the on-site supervisor document meetings and attendance
- Do not congregate in lunch or break room areas

- Have staggered break and lunch times when possible to prevent multiple personnel from being in the same location at the same time
- Limit the number of personnel in a single vehicle to avoid physical contact
- Provide single status rooms
- Allow only essential critical infrastructure personnel and stake holders on locations
- Require all non-essential personnel to work from home when feasible
- Limit face-to-face interactions as much as possible
- Limit trips to populated areas to essential travel for necessities only

Prior To Mobilization

Project Management Teams shall assist with minimizing impacts to communities and limiting interactions with others to the extent possible throughout the duration of all projects. Prior to mobilization, project teams shall ensure that every practical effort has been made to provide for the following:

- That personnel are healthy and ready for work
- All necessary housing and transportation have been arranged
- Availability and/or delivery of Food (or food service)
- Project materials and supplies have been obtained or located
- Acquisition of all required PPE, First-Aid response kits and consumables

Crews shall not mobilize to remote locations until all supplies necessary to safely execute the project have been located, and adequate housing and transportation to provide safe working and living conditions have been obtained.

Project Management Teams shall coordinate with local community leaders and governing entities prior to mobilization. Discuss site-specific plans, and any local/community considerations.

Mobilization/Transportation

Understanding that many remote locations require multiple transportation methods, the following precautions shall be taken to help minimize COVID-19 transmission risks during mobilization and transportation:

- Personnel must pass the health screening process prior to mobilization
- Modes of transportation must be approved by the Project Management Team
- All transportation vehicles, including marine vessels and aircraft shall be cleaned and sanitized in accordance with CDC guidelines prior to each transport
- Transportation methods shall allow adequate space between personnel and overcrowding of transportation methods shall be prohibited
- All vehicles, vessels and aircraft shall contain first-aid kits and PPE to assist if an employee becomes ill during transit

Sanitizing/Housekeeping

The CDC recommends the following cleaning and sanitizing measures in the workplace and at home:

- Cleaning refers to the removal of germs, dirt, and impurities from surfaces. Cleaning does not kill germs, but by removing them, it lowers their numbers and the risk of spreading infection. Clean soiled surfaces before disinfecting.
- Disinfecting refers to using chemicals to kill germs on surfaces. This process does not necessarily clean dirty surfaces or remove germs, but by killing germs on a surface *after* cleaning, it can further lower the risk of spreading infection.

    - A simple disinfecting solution of 1/3 cup of bleach to one gallon of water will kill the coronavirus
    - Isopropyl alcohol 70% or greater will kill the coronavirus
    - Other disinfectants registered with the EPA are also effective

- Ensure that all surfaces and common shared surfaces are cleaned and disinfected daily, including cell phones, computers, table-tops, desktops, doorknobs, copy machine buttons, touch screens, phone receivers, key boards, light switches, faucets handles, hand and power tools, construction equipment, vehicles, break rooms, restrooms, living quarters and all other work and residential areas.
- Ensure that clothing and bedding are laundered in the hottest water possible.
- Empty trash daily and have a separate closed trash receptacle for disposal of potentially contaminated waste, such as PPE, tissues, food waste, paper towels, disposable plates, cups and utensils
- Clean and disinfect trash cans
- Clean and disinfect surfaces of service and fleet vehicles prior to use, including steering wheels, gear shifters, instrument panels, door handles, control knobs and switches and use aerosol sanitizers inside of closed cabs

Personal Hygiene

Personal Hygiene is crucial to stopping the spread of COVID-19. (See Appendix B) In order to help stop the spread of germs at work it is critical that personnel practice the following:

- Frequent hand washing for 20 seconds with soap and water, or utilizing hand sanitizer (See Appendix C)
- Cover nose and mouth when coughing or sneezing with arm or tissue, dispose of tissue after use and wash hands after coughing or sneezing
- If possible, do not share tools. Disinfect tools between use by separate employees
- Do not share personal protection equipment (PPE)
- Sanitize reusable PPE per manufacturer's recommendation prior to each use
- Ensure used PPE is disposed of properly and ensure that proper decontamination methods are used when in contact with known COVID-19 contaminated areas

- Utilize disposable gloves where appropriate and wash hands after removing gloves
- Disinfect reusable supplies and equipment
- Utilize disposable hand towels and no-touch trash receptacles
- Request frequent cleaning and sanitation of portable toilets
- Avoid cleaning techniques – such as using pressurized air or water sprays that may result in the generation of bio-aerosols
- Ensure that cleaning and sanitizing supplies are available to employees so that they may clean their work surfaces in their workspaces daily
- Provide reminders and time to the employees to clean their workspaces
- Avoid touching face, especially eyes, nose and mouth

Self-Quarantine If Sick

It is critical that individuals NOT report to work while they are experiencing illness symptoms such as fever, cough, shortness of breath, sore throat, runny/stuffy nose, body aches, chills, or fatigue – Personnel shall inform their supervisor immediately, self-quarantine, stay isolated from others and should seek medical attention if they develop these symptoms!

If an employee becomes sick at work the Site Supervisor shall:

- Isolate and return infected personnel home as quickly as possible
- Notify the Project Management Team immediately upon discovering symptoms
- Limit interaction to one person for taking care of personnel who are quarantined
- Follow CDC guidelines and seek medical help to care for individuals in quarantine

OSHA Guidance

Current OSHA guidance can be found here: https://www.osha.gov/SLTC/covid-19/

See Appendix D for OSHA Alert Poster.

Don't Be Fools! Follow The Rules!

Appendix A – Wellness Screening Form

Wellness Screening for Remote Work Location Deployment

In addition to the screening measures listed in the form below, the Management Team will closely monitor Center for Disease Control (CDC) guidance on the best practices for prevention and response during this rapidly changing pandemic situation.

Conducting temperature checks on employees prior to deployment to a jobsite is a decision that we does not take lightly. During this pandemic, because of concerns for the health and safety of our workers and the public, it will be our policy to conduct such screenings.

Fairbanks Memorial Hospital
Coronavirus Hotline
(907) 458-2888

Employee Name:_____

Date/Time of screen: _____

1. **Have you traveled within the previous 14 days? NO YES**
    - **If yes, where?** _____

2. **Temperature recorded (℉):** _____ (if ≥ 100.4, verify temp. with second screen)

3. **Do you have or have you recently had any of the following symptoms (circle):**
    - **Fever**
    - **Dry cough**
    - **Difficulty in breathing** ** Symptoms may appear 2-14 days after exposure.
    - **Fatigue**

Employees who meet any one of the following criteria will not be mobilized to the jobsite without a medical examination and clearance:

- **Traveled to countries labeled by CDC as Level 3 Travel Health Notice**
- **Known contact with a person known or suspected to have COVID 19**
- **Screening temperature of 100.4 or higher**
- **Visible or self-reported symptoms of COVID-19**

Although these screenings are being conducted in good faith over concerns for employee and public health related to remote job sites, each employee should know the following:

1. **A person may NOT have a fever and yet still be a carrier of the virus.**
2. **A person without an elevated temperature does not mean he/she has a clean bill of health.**
3. **Temperature testing does NOT ensure there is no communicable disease in the workplace. It does not prevent the spread of disease. It is simply one precautionary screen that can help inform whether or not an employee should deploy to remote site work.**

Temperature Screener Signature: _____

Appendix B – Personal Hygiene Poster

STOP THE SPREAD OF GERMS AT WORK

COVER YOUR MOUTH AND NOSE WHEN YOU SNEEZE OR COUGH.
Cough or sneeze into a tissue and then throw it away; use your arm or sleeve to cover if you do not have a tissue.

CLEAN YOUR HANDS OFTEN.
Wash your hands with soap and water, vigorously rubbing together front and back for 20 seconds. Or use alcohol-based hand sanitizers, rubbing hands until they are dry.

CLEAN SHARED SURFACES AND EQUIPMENT OFTEN.
Use disinfectants to clean commonly touched items such as doorknobs, faucet handles, copy machines, coffee pot handles, desktops, handrails, microwave buttons, keyboards, and elevator buttons. Germs travel fast with multiple hands touching shared surfaces.

AVOID TOUCHING YOUR EYES, NOSE OR MOUTH.
Germs need an entry point, and the average adult touches his or her face once every three or four minutes. Keep hand sanitizer at your desk to use after meetings or before grabbing one of those doughnuts from the breakroom.

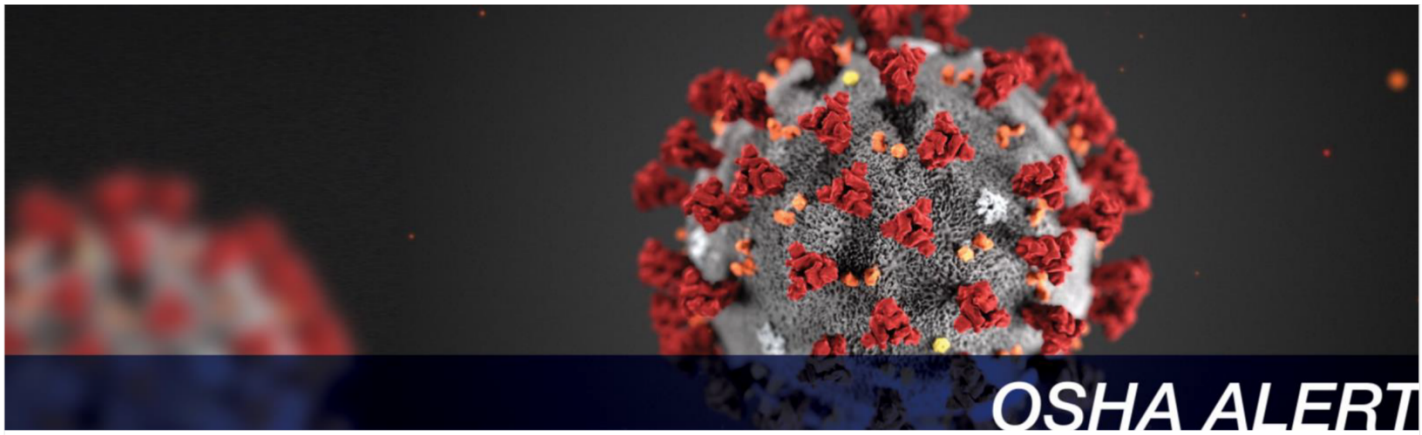
STAY HOME WHEN YOU ARE SICK AND CHECK WITH A HEALTH CARE PROVIDER WHEN NEEDED.
When you are sick or have flu symptoms, stay home, get plenty of rest and check with a health care provider as needed.

SHRM
BETTER WORKPLACES BETTER WORLD™

Appendix C – Hand Washing Poster


KEEP
CALM
AND
WASH
YOUR
HANDS
U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention
CS243041B

Appendix D – OSHA Alert Poster



Prevent Worker Exposure to Coronavirus (COVID-19)

The novel coronavirus (officially called COVID-19) is believed to spread from person-to-person, primarily through respiratory droplets produced when an infected person coughs or sneezes. The virus is also believed to spread by people touching a surface or object and then touching one's mouth, nose, or possibly the eyes.

Employers and workers should follow these general practices to help prevent exposure to coronavirus:

- Frequently wash your hands with soap and water for at least 20 seconds.
- If soap and running water are not available, use an alcohol-based hand rub that contains at least 60% alcohol.
- Avoid touching your eyes, nose, or mouth with unwashed hands.
- Avoid close contact with people who are sick.

Employers of workers with potential occupational exposures to coronavirus should follow these practices:

- Assess the hazards to which workers may be exposed.
- Evaluate the risk of exposure.
- Select, implement, and ensure workers use controls to prevent exposure, including physical barriers to control the spread of the virus; social distancing; and appropriate personal protective equipment, hygiene, and cleaning supplies.

For the latest information on the symptoms, prevention, and treatment of coronavirus, visit the Centers for Disease Control and Prevention coronavirus webpage.

For interim guidance and other resources on protecting workers from coronavirus, visit OSHA's COVID-19 webpage.

OSHA issues alerts to draw attention to worker safety and health issues and solutions.

OSHA Occupational Safety and Health Administration • osha.gov/covid-19 • 1-800-321-OSHA (6742) • @OSHA_DOL

OSHA 3989-03 2020

GUIDANCE FOR FIELD WORK DURING THE COVID-19 PANDEMIC

The purpose of this document is to provide guidance to individuals conducting field work during the outbreak of the coronavirus disease (COVID-19). COVID-19 is a respiratory illness spread by person-to-person contact. In order to slow and prevent the spread of COVID-19, Shannon & Wilson project managers (PM)s and staff shall stay informed with local, state and federal agencies regarding the rapidly changing COVID-19 health mandates, and screening protocols. Field personnel shall adhere to the guidelines provided by the Center for Disease Control (CDC). Shannon & Wilson staff shall also adhere to client safety and COVID-19 requirements.

Symptoms of COVID-19 include:

- Fever,
- Cough,
- Shortness of breath,
- Trouble breathing,
- Persistent pain or pressure in the chest,
- New confusion or inability to arouse, and
- Bluish lips or face.

If field personnel experience any of these symptoms or are feeling sick, they should immediately report their symptoms to the (PM) or their supervisor.

Field personnel should check their internal temperature prior to departing to the work site. If a member of the field personnel's household is sick, field personnel should inform the PM or their supervisor.

Field personnel should not report to work if they are ill.

The following practices should be followed as applicable:

- Travel to and from the work site in separate vehicles.
- Wipe down surfaces with sanitizing wipes prior to touching them.
- Maintain a social distance of 6 feet apart, if possible. When not possible, wear a mask. Acceptable masks include manufactured particulate masks, hand-sewn ("homemade") cloth masks, or other styles that cover the wearer's mouth and nose.

- Air purifying respirators with HEPA filter cartridges may be used if the employee has received medical clearance to do so and uses a properly fitted respirator.
- Avoid touching face, especially mouth, nose and eyes.
- Cover sneezes or coughs.
- Assign separate tasks to avoid sharing tools.
- Wash hands with soap and water for at least 20 seconds, when possible.
- Use hand sanitizer with at least 60% alcohol when soap and water are not available.
- Wear disposable gloves, and dispose of them in a trash receptacle after use.
- Stay informed, monitor local conditions, and stay up to date on policy changes enacted by the local, state and federal government.

Additional Information

Additional information regarding what to do if you are experiencing symptoms you suspect are related to COVID-19 can be found on the following websites: https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/index.html

Alaska Department of Health and Social Services COVID-19 website: http://dhss.alaska.gov/dph/Epi/id/Pages/COVID-19/default.aspx.

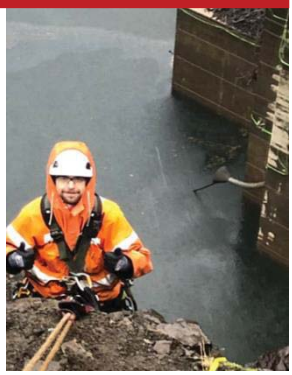
Alaska Office of the Governor website: https://gov.alaska.gov/.

For current information related to COVID-19 in Alaska you can dial 211 or 1-800-478-2221 from 7am to 8 pm 7 days a week.

COVID-19 BEST PRACTICES GUIDELINES

This document outlines best practices and guidelines for Shannon & Wilson employees performing work duties in the office, in the field, and while traveling. These best practices are in addition to all other policies and practices in place.

REMEMBER: If you are experiencing any symptoms (cough, fever, and/or shortness of breath) or if you or anyone you live with have tested positive, just stay at home – unless seeking medical treatment. Be sure to call your doctor's office before heading in as they may have specific instructions.



Wash your hands	Wash hands with water and soap for at least 20 seconds. If water and soap are not available, hand sanitizer should be used.
Avoid shaking hands when greeting people	Just don't do it, COVID-19 can spread the disease for up to 14 days without symptoms showing. Don't risk it, consider other options to greet people: wave, smile, just say hello.
Cough and sneeze into your bent elbow, or a tissue	Be sure to dispose of used tissues immediately, and then wash/sanitize your hands.
Try to resist touching your eyes, nose, and mouth	This is one way that COVID-19 spreads. Feel free to remind folks you see doing this not to.
Practice social distancing	Stay at least 6 feet from others. Hold virtual meetings instead of in-person; hold smaller meetings if that helps with limits on virtual meeting tools. Be sure to wipe down phones as well. Minimize visiting coworkers' workspaces.
Perform routine environmental cleaning	Routinely clean all frequently touched surfaces: clean your work areas when you arrive and leave the office, countertops, and doorknobs. If you are renting a car, wipe down the steering wheel and car components.
Plan for the unexpected	Try to keep food, and bottled water available. As businesses close and shift to pick up only practices, expect delays in receiving products and orders.

TIPS FOR FIELD WORK

- Limit crew sizes where possible and practice social distancing (i.e. remain 6 feet apart).
- Disinfect equipment and shared surfaces (restrooms, chairs, shared vehicle surfaces, etc.) at the beginning and end of each shift with Lysol or a bleach solution.
- Don't carpool to worksites if possible.
- Hold any briefings or meetings in open spaces to allow for proper distancing.
- Avoid common areas.
- Bring a jug of water and soap if you do not have access to a sink.
- Plan for additional PPE: wear safety glasses to help remind you to not touch your eyes, use gloves as needed and change between tasks to prevent cross-contamination to clean surfaces.
- Keep food and water available for yourself and don't share food.

Field Checklist

When packing/prepping for work in the field, consider adding these items to your existing list and contact your Office Manager if you need any assistance gathering any of these supplies:

☐ Water and soap to wash hands	☐ Thermometer
☐ Gloves	☐ Additional food and water
☐ Hand sanitizer (containing at least 60% alcohol)	☐ Clear sandwich bag to put your phone in during use
☐ Tissues	☐ Additional PPE (e.g., respirator) as needed

TIPS FOR SUBCONTRACTORS

- Request subs complete daily self-screening for COVID-19 symptoms before reporting for work.
- Request subs do not report for work if they are symptomatic.
- Include subs in tailgate meetings so they are informed of Shannon & Wilson's COVID-19 controls.

TIPS FOR HOTEL ACCOMODATIONS

- Use single occupancy accommodations, e.g., Airbnb or apartments, over shared spaces like hotels.
- Verify, that there is a process in place in line with Shannon & Wilson's COVID-19 controls.
- When entering your room/rental, clean all surfaces/counters with sanitizing wipes, especially areas used frequently for food prep.
- When booking, you can request a room that hasn't been used recently, 3 days at least.
- Clean your own room, with your own supplies, instead of using housekeeping. Most hotels will not enter if you place the Do Not Disturb sign on the door.
- Avoid shared spaces, like restaurants – try room service instead. You can ask them to leave it outside your door to limit contact.
- Practice social distancing in communal areas such as reception, vending, business center.
- Avoid buffets (usually breakfast) where multiple people may be handling the same serving utensils or standing close together in a line.
- Bring your own food (favorite snacks, protein bars, etc.) in case expected food options close.
- Bring extra necessities, as they may become unavailable at the hotel, due to demand.
- S&W will provide safety and sanitizing options as requested by the employee.

GUIDANCE FOR RESIDENTIAL WATER SAMPLING DURING THE COVID-19 PANDEMIC

This document provides guidance to Shannon & Wilson, Inc. employees conducting residential water sampling during the outbreak of the coronavirus disease (COVID-19). COVID-19 is a respiratory illness primarily spread by person-to-person contact and airborne particulate matter. Residential sampling requires special considerations due to the nature of the work, where Shannon & Wilson sampling staff enter people's properties and homes in order to collect a water sample. During these sampling events, staff may enter a property owner's or occupant's self-isolation area and may be in close proximity to those persons. In order to slow the spread of COVID-19, Shannon & Wilson has implemented practices to protect both staff and the resident. Shannon & Wilson project managers (PMs) and staff shall stay informed with local, state and federal COVID-19 health mandates as well as client-specified requirements and guidelines. Shannon & Wilson field personnel shall adhere to these guidelines.

Shannon & Wilson project staff will work closely with our clients prior to the planned sampling event to determine if a project should be considered essential work. For field work where travel to communities other than Fairbanks occurs, PMs and project staff will check for local health mandates or recommendations to ensure the community is open to outside essential-business travel before scheduling the sampling event. PMs and staff should also verify the availability of, and additional precautions required by, hotels and other businesses we may rely on during our travels (i.e. restaurants, grocery stores, car rental facilities, hardware stores, etc.).

Prior to scheduling travel, PMs or field staff will contact local government or tribal leadership to assist in determining whether members of the community would be willing to allow staff into their homes to collect samples during this time. Shannon & Wilson staff will not travel to rural communities until we receive permission from the local and/or tribal government. PMs will document the permission and save to the project file.

Where possible, staff will contact individual residents prior to the planned sampling event to determine if they are agreeable to staff entering their premises during the COVID-19 outbreak. Staff are not permitted to collect samples where either the owner or occupant refuses access. During the initial conversation, staff will ask a series of questions to determine if the environment is safe for our staff to enter. Where contact information is not available, staff will publicize the sampling event prior to arrival using available avenues.

Notification tools may include public notices, radio and other news outlets, email list serves, social media posts, and speaking with key community members.

Below is a list of questions staff will ask residents during the initial scheduling of the sampling appointment, and prior to entering the premises.

- Are you feeling sick?
- Has anyone in the household or recent guests experienced symptoms of COVID-19?
- Has anyone in the household or recent guests traveled outside of Alaska within the last 14 days, or are fulfilling a mandated quarantine?
- Have you been in contact with anyone who has been diagnosed with COVID-19 or experiencing symptoms of COVID-19 within the last 14 days?

If the answer is "yes" to any of these questions, sampling at that residence will not occur inside the home. If sampling is to occur on that day, it must be conducted from an outside spigot. If an outside spigot is not available for sampling, a sample will not be collected at that time. Sampling may also occur after a 14-day period has passed and the answer to the questions are no longer "yes".

While in the community, staff will minimize our exposure and contact, limiting activities to essential business and the outdoors. As a result, we will not hold or join public meetings.

Below are guidelines for traveling to other communities and sampling residential water wells.

- Follow Shannon & Wilson's *COVID-19 Best Practices and Guidelines* and *Proper Disinfection of Vehicles, Shared Equipment, and Common Surfaces* plans.
- Follow local, state, federal and client COVID-19 screening guidelines prior to traveling. DO NOT travel if you don't meet the screening criteria.
- Follow airline-specified requirements for travel.
- While in the field, check body temperature daily before reporting to work. If you have an elevated temperature (greater than 100.4 °F), contact your supervisor or project PM immediately.
- Do not enter occupant property without consent. Let occupant know it is ok to not give permission.

- Wear mask or cloth covering at all times while on occupants' premises and during travel. The sampler will also have a respirator available to wear and use their discretion on when to use it, such as if they are indoors for five minutes or more with someone not wearing a face covering. Prior to wearing the respirator inside the building, the sampler will explain this option to the resident to ease potential fears.

- Cold knocking may be necessary (i.e., initial well searches, no contact information for new occupants, etc.), and require our staff to visit a property without the occupants prior knowledge. Staff will knock on the door, and then back up a minimum of 6 feet from the door. Staff will be wearing a mask and gloves to knock on doors.

- Initial conversations are to be held outside. During this time the sampler will discuss safety for both occupant and sampler. Ask where the nearest sampling point is and explain that for everyone's well-being it is best staff only go a necessary minimal distance into the home.

- The sampler will purge well and sample from an outside spigot, where possible. Inside samples should only be collected where an outside spigot is not available. Field staff will minimize their time spent indoors.

- Request the occupant wear a mask while staff is on the premises. If the occupant refuses, the continuation for sampling at that residence will be at the discretion of the sampling staff. It is likely our staff will not collect a sample in these situations. Staff will arrive at the site with individually pre-packaged masks for residents to wear if they do not already have one.

- Wear nitrile gloves at all times while on the premises. A new pair of gloves should be put on prior to initiating any contact with a residence.

- Ask that occupants stay at least 6 feet away at a minimum. If a resident does not maintain 6 feet distance, our staff have the discretion to leave the premises and not collect a sample at that time.

- Avoid any person to person contact and maintain 6 feet distance from people.

- Ask residents the questions on the questionnaire, don't pass them the paper and ask them fill it out. Staff will not share pens or pass paperwork back and forth during the appointment. However, we will provide copies of paper documents to residents for their reference, where necessary (fact sheets, project contact information, etc.). We will not accept back any paperwork once it has been handled by a resident.

- Wipe down surfaces with a disinfectant prior to and after touching them.
- Only take minimum required sampling equipment into the residence. This will reduce the amount of equipment required to be disinfected and disinfectant supplies.
- Disinfect equipment between residences.
- Don't throw nitrile glove or other refuse in the resident's trash. Keep a closed trash collection point with the sampling equipment and regularly dispose of contents at an approved site such as a dumpster or landfill.

This document is supplemental to our site specific health and safety plan (SSHSP). The guidelines and emergency response plan in the SSHSP should be followed as well as the guidelines outlined in this document.

Additional Information

Additional information regarding what to do if you are experiencing symptoms you suspect are related to COVID-19 can be found on the following websites:
https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/index.html

Alaska Department of Health and Social Services COVID-19 website:
http://dhss.alaska.gov/dph/Epi/id/Pages/COVID-19/default.aspx.

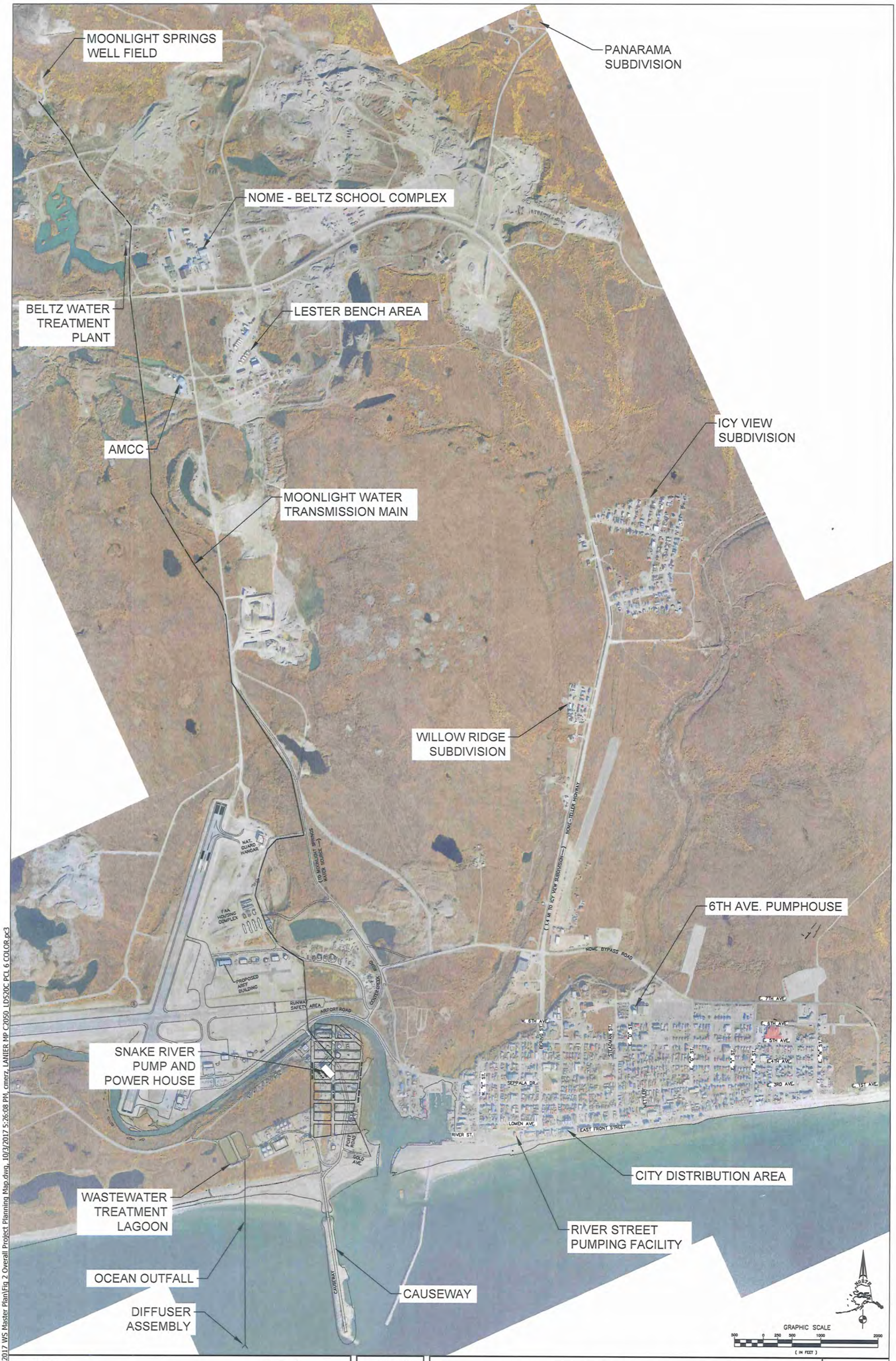
Alaska Office of the Governor website: https://gov.alaska.gov/.

Current information related to COVID-19 in Alaska is available by phone at 211 or 1-800-478-2221 from 7am to 8 pm 7 days a week.

APPENDIX C: NOME JOINT UTILITY SYSTEM MAPS

Appendix C

Nome Joint Utility System Maps



NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
P.O. Box 70 • Nome, Alaska 99762 • (907) 443-NJUS • Fax (907) 443-6336

CE2 ENGINEERS, INC.

Scale: AS SHOWN
Date: OCT 2017
Drawn: MRE

NOME JOINT UTILITY SYSTEM
OVERALL COMMUNITY MAP

FIGURE 2

G:\ACAD\NOME\2017 WS Master Plan\Fig 2 Overall Project Planning Map.dwg, 10/3/2017 5:26:08 PM, cmerz, LANIER MP C2050 LD520C PCL 6 COLOR.pc3

LEGEND
PROPOSED YEAR OF CONSTRUCTION

- 2018
- 2019
- 2020
- 2021
- 2022
- 2023

COMPONENT 6: BERING STREET W/S REPLACEMENT

COMPONENT 8: WEST NOME W/S REPLACEMENT

COMPONENT 9: SEPPALA DRIVE W/S REPLACEMENT

COMPONENT 3: EAST NOME W/S REPLACEMENT PH IIIA

COMPONENT 7: STEADMAN / 6th AVE W/S REPLACEMENT

COMPONENT 5: EAST NOME W/S REPLACEMENT PH IIIB -KING PLACE

COMPONENT 1: 6th AVE. & "I" ST. W/S REPLACEMENT

COMPONENT 4: BELMONT POINT W/S REPLACEMENT

COMPONENT 2: RIVER STREET WASTEWATER LIFT STATION RENOVATION

COMPONENT 11: WEST FRONT ST. W/S REPLACEMENT

COMPONENT 10: CARSTEN'S WAY W/S REPLACEMENT

NAT. GUARD HANGAR
FAA HOUSING COMPLEX
ARFF BUILDING
RUNWAY SAFETY AREA
AIRPORT ROAD
(TO MOONLIGHT SPRINGS WATER SOURCE)
CENTER CREEK ROAD
(1.4 MI TO ICY VIEW SUBDIVISION)
NOME-TELLER HIGHWAY
NOME BYPASS ROAD
HOSPITAL CAMPUS
PROPOSED ARMORY SITE
E. 7TH AVE.
E. 6TH AVE.
E. 5TH AVE.
E. 4TH AVE.
E. 3RD AVE.
E. 1ST AVE.
W. 6TH AVE.
BERING ST.
STEADMAN ST.
METTLER
W. "E" ST.
E. "D" ST.
E. "G" ST.
E. "I" ST.
E. "K" ST.
E. "N" ST.
SEPPALA DR.
LOMEN AVE.
RIVER ST.
WEST FRONT STREET
GOLD AVE.
NORTH

GRAPHIC SCALE
400 0 200 400 800 1600
(IN FEET)

G:\ACAD\NOME\2017 WS Master Plan\FIG 3 Priority Projects 5 Years Update3.dwg, 10/3/2017 4:57:38 PM, cmerz, LANIER MP C2050_LD520C PCL 6 (temporary).pc3

NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
P.O. Box 70 • Nome, Alaska 99762 • (907) 443-NJUS • Fax (907) 443-6336

CE2 ENGINEERS, INC.
PO BOX 230948 ANCHORAGE, AK 99523 PH: 907-349-1010 FAX: 907-349-1015

Scale: AS SHOWN
Date: OCT. 2017
Drawn: MRE

NOME JOINT UTILITY SYSTEM
2017 WATER AND SEWER SYSTEM MASTER PLAN
PRIORITY PROJECTS - 2018-2023 PLANNING INTERVAL
NOME, ALASKA

FIGURE 3

MATCHLINE SEE FIGURE 4G

MATCHLINE SEE FIGURE 4B

NOME BYPASS ROAD

STEADMAN ST.

BERING ST.

E. "I" ST.

E. "K" ST.

E. "N" ST.

W. 6TH AVE.

E. 6TH AVE.

E. 5TH AVE.

E. 4TH AVE.

E. 3RD AVE.

E. 1ST AVE.

SEPPALA DR.

EAST FRONT STREET

SIXTH AVE. PUMPHOUSE

1.0 MILLION GAL. TANK

N STREET PRESSURE REDUCING STATION

RIVER STREET CIRCULATION PUMP, 25 HP.

NORTH

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL EXISTING STEEL WATERMAIN

HDPE OR PE EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

(#) FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

NOME JOINT UTILITY SYSTEM

a component unit of CITY OF NOME

P.O. Box 70 • Nome, Alaska 99762 • (907) 443-NJUS • Fax (907) 443-6336

CE2 ENGINEERS, INC.

PO BOX 232048 ANCHORAGE, AK 99523 PH; 907-349-1010 FAX; 907-349-1015

Scale: AS SHOWN

Date: OCTOBER 2017

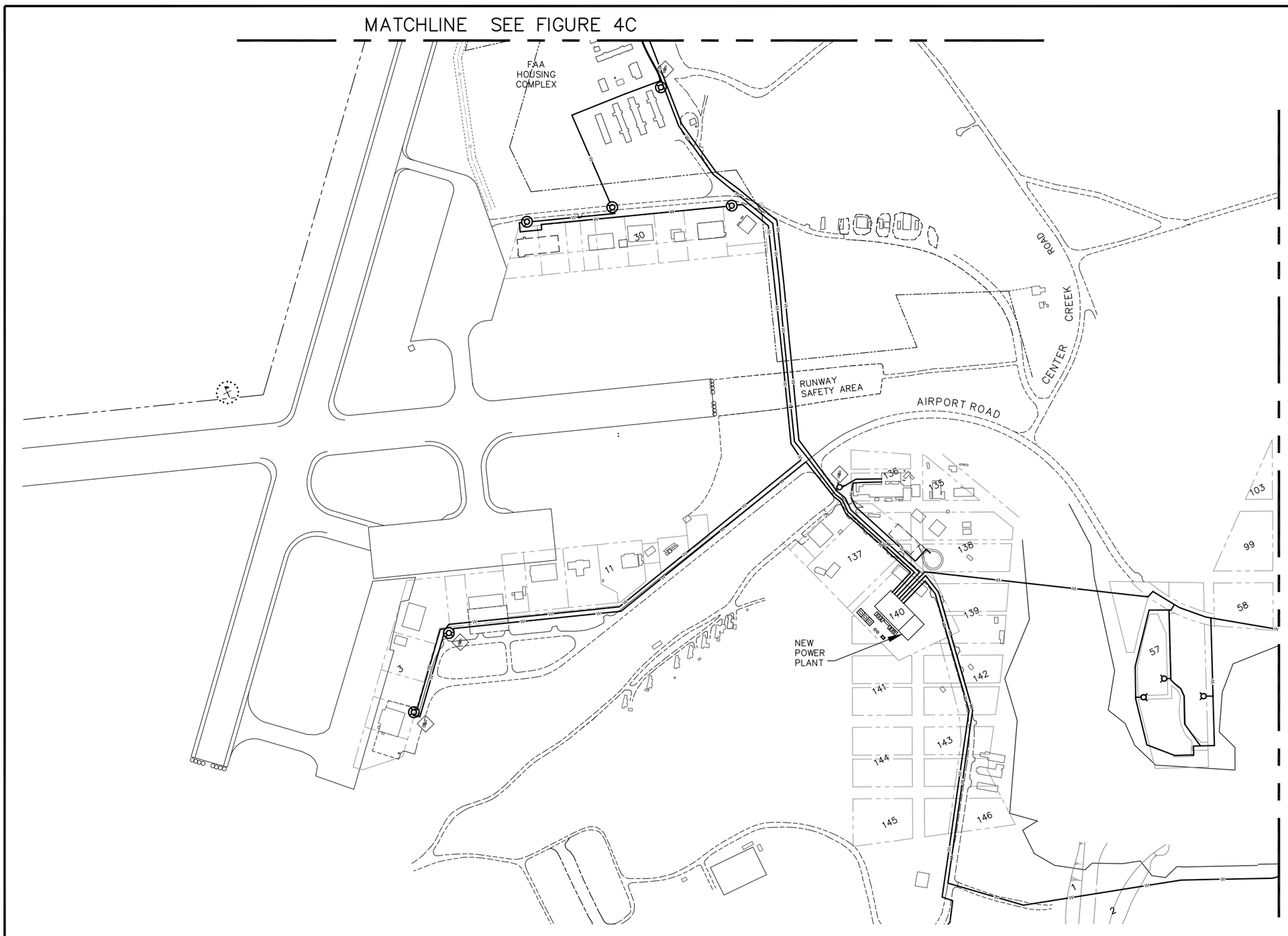
Drawn: DLW

EXISTING WATER SYSTEM - CORE AREA

NOME, ALASKA

FIGURE 4A

MATCHLINE SEE FIGURE 4C



MATCHLINE SEE FIGURE 4A

- EXISTING WATERMAIN AND DIRECTION OF FLOW
- STANDARD HYDRANT
- TEE BASED HYDRANT
- HYDRANT REPLACED SINCE 1997
- STL — EXISTING STEEL WATERMAIN
- HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN
- (#) — FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
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Scale: AS SHOWN

Date: OCTOBER 2017

Drawn: DLW

EXISTING WATER SYSTEM - BELMONT POINT, PORT ROAD, & AIRPORT AREA

NOME, ALASKA

FIGURE 4B

MATCHLINE SEE FIGURE 4D

MATCHLINE SEE FIGURE 4B

NORTH

EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL — EXISTING STEEL WATERMAIN

HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

(#) — FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
P.O. Box 70 • Nome, Alaska 99762 • (907) 443-NJUS • Fax (907) 443-6336

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Scale: AS SHOWN

Date: OCTOBER 2017

Drawn: DLW

EXISTING WATER SYSTEM - NATIONAL GUARD HANGER AREA

NOME, ALASKA

FIGURE 4C

MATCHLINE SEE FIGURE 4E

(TO MOONLIGHT SPRINGS WATER SOURCE)

NORTH

EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL — EXISTING STEEL WATERMAIN

HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

(#) — FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

MATCHLINE SEE FIGURE 4C

NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
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Scale: AS SHOWN

Date: OCTOBER 2017

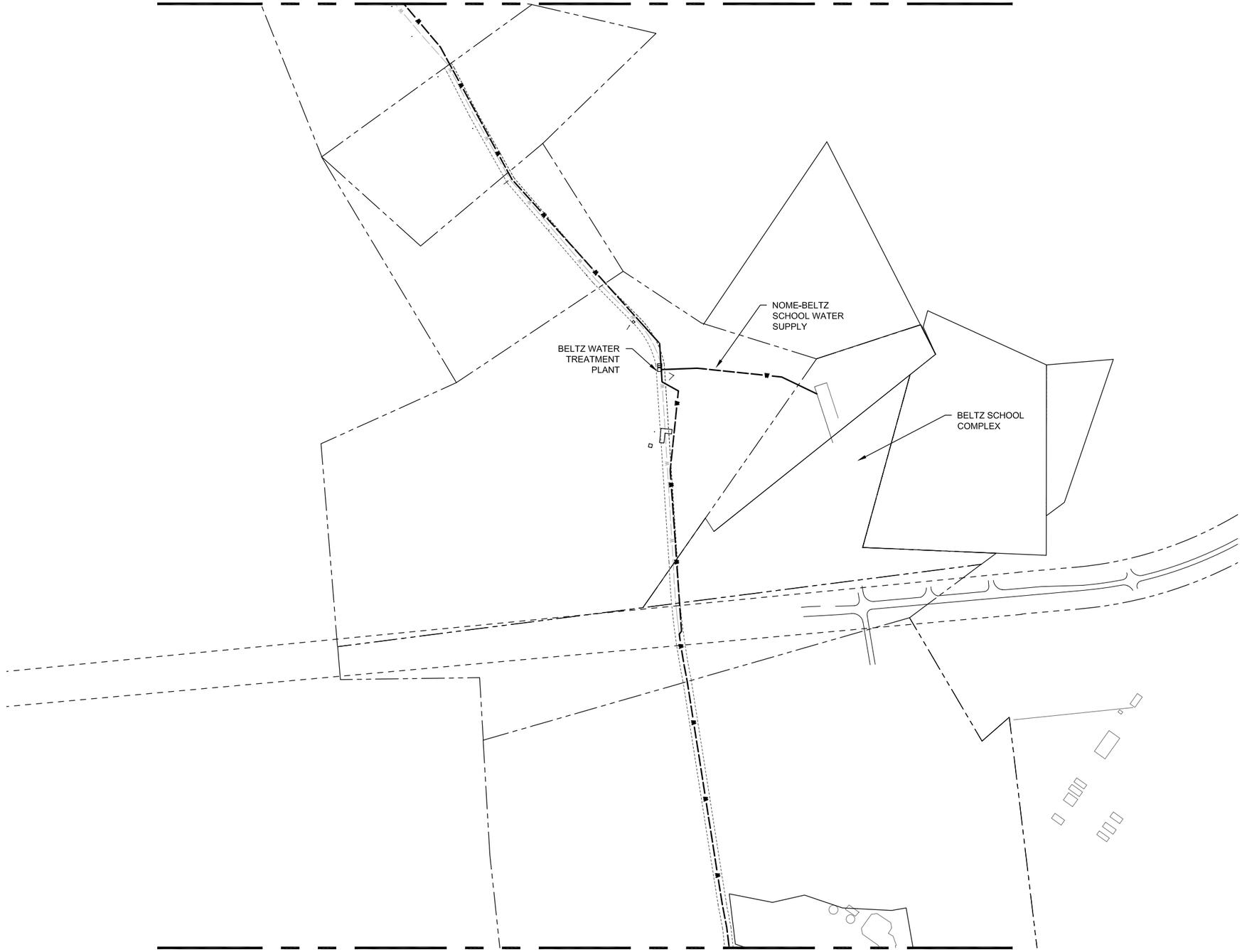
Drawn: DLW

EXISTING WATER SYSTEM - MOONLIGHT SPRINGS TANSMISSION MAIN

NOME, ALASKA

FIGURE 4D

MATCHLINE SEE FIGURE 4F



NORTH

EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL — EXISTING STEEL WATERMAIN

HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

— FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

MATCHLINE SEE FIGURE 4D

NOME JOINT UTILITY SYSTEM
a component unit of CITY OF NOME
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CE2 ENGINEERS, INC.
PO BOX 232948 ANCHORAGE, AK 99523 PH: 907-349-1010 FAX: 907-349-1015

Scale: AS SHOWN

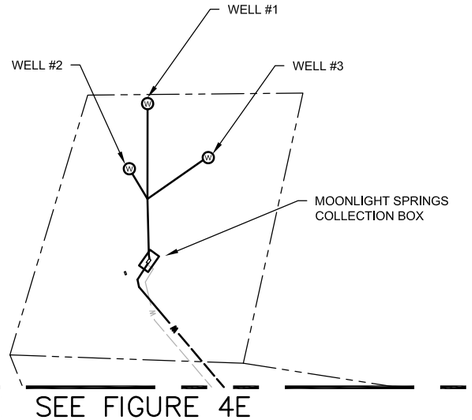
Date: OCTOBER 2017

Drawn: DLW

EXISTING WATER SYSTEM - BELTZ WATER TREATMENT PLANT AREA

NOME, ALASKA

FIGURE 4E



EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL — EXISTING STEEL WATERMAIN

HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

— FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

MATCHLINE SEE FIGURE 4E

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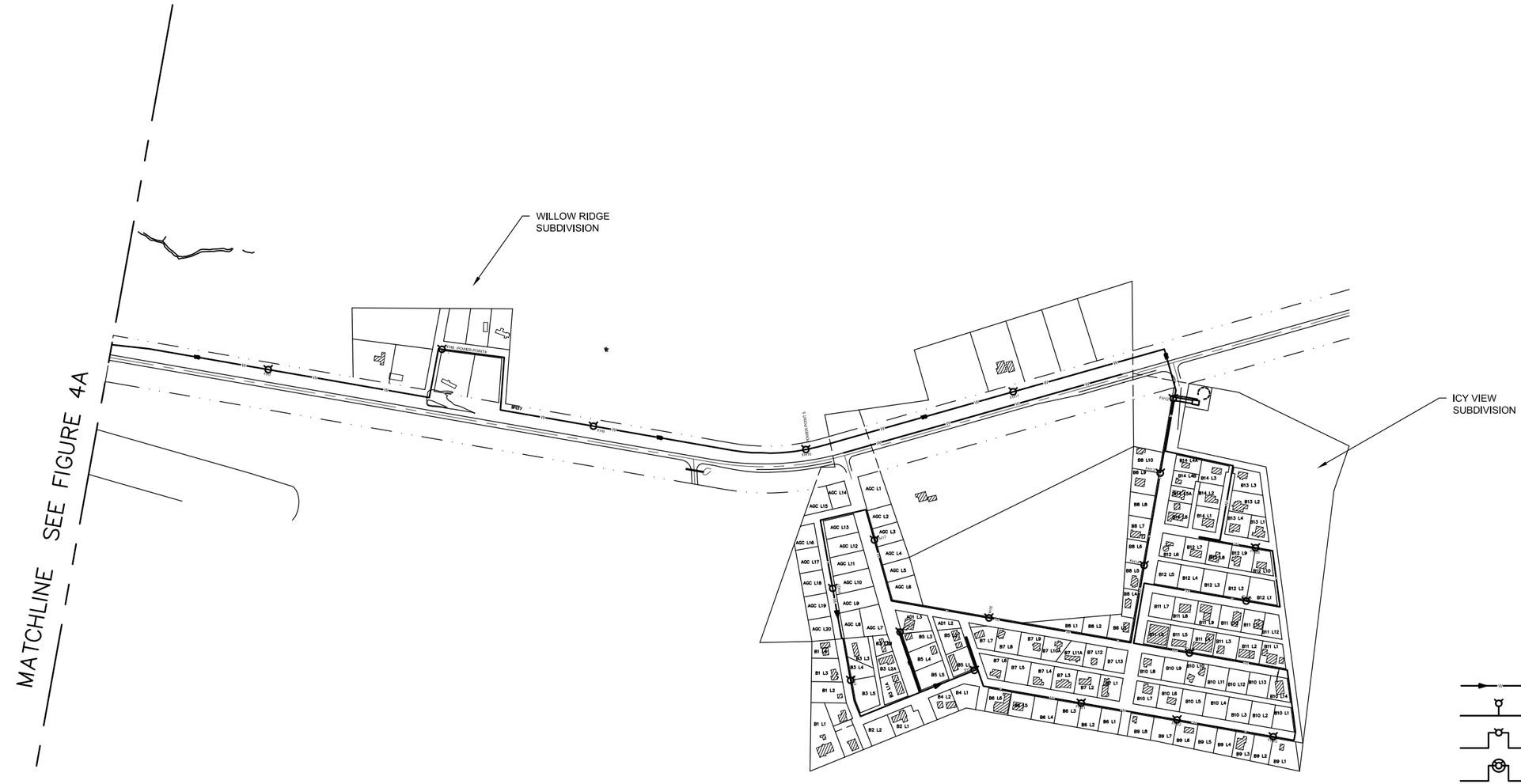
EXISTING WATER SYSTEM - MOONLIGHT SPRINGS COLLECTION AREA

NOME, ALASKA

FIGURE 4F



EXISTING WATERMAIN AND DIRECTION OF FLOW

STANDARD HYDRANT

TEE BASED HYDRANT

HYDRANT REPLACED SINCE 1997

STL — EXISTING STEEL WATERMAIN

HDPE OR PE — EXISTING HIGH DENSITY POLYETHYLENE WATERMAIN

(#) — FIRE HYDRANT NUMBER ASSIGNED BY THE CITY OF NOME

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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EXISTING WATER SYSTEM - WILLOW AND ICY VIEW SUBDIVISIONS

NOME, ALASKA

FIGURE 4G

MATCHLINE SEE FIGURE 5D

MATCHLINE SEE FIGURE 5B

NOME BYPASS ROAD

STEADMAN ST.

BERING ST.

E. "I" ST.

E. "K" ST.

E. "N" ST.

W. 6TH AVE.

E. 6TH AVE.

E. 5TH AVE.

E. 4TH AVE.

E. 3RD AVE.

E. 1ST AVE.

SEPPALA DR.

EAST FRONT STREET

W. 1st AVE SEWAGE LIFT STATION

RIVER ST. SEWAGE LIFT STATION

FRONT ST. SEWAGE LIFT STATION

NORTH

EXISTING GRAVITY SEWER, MANHOLE AND DIRECTION OF FLOW

SFM — SEWAGE FORCE MAIN AND DIRECTION OF FLOW

PE OR HDPE — EXISTING INSULATED HIGH DENSITY POLYETHYLENE SEWER MAIN

EXISTING CLEANOUT

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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Scale: 1" = 500'

Date: OCTOBER 2017

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EXISTING SEWER SYSTEM - CORE AREA

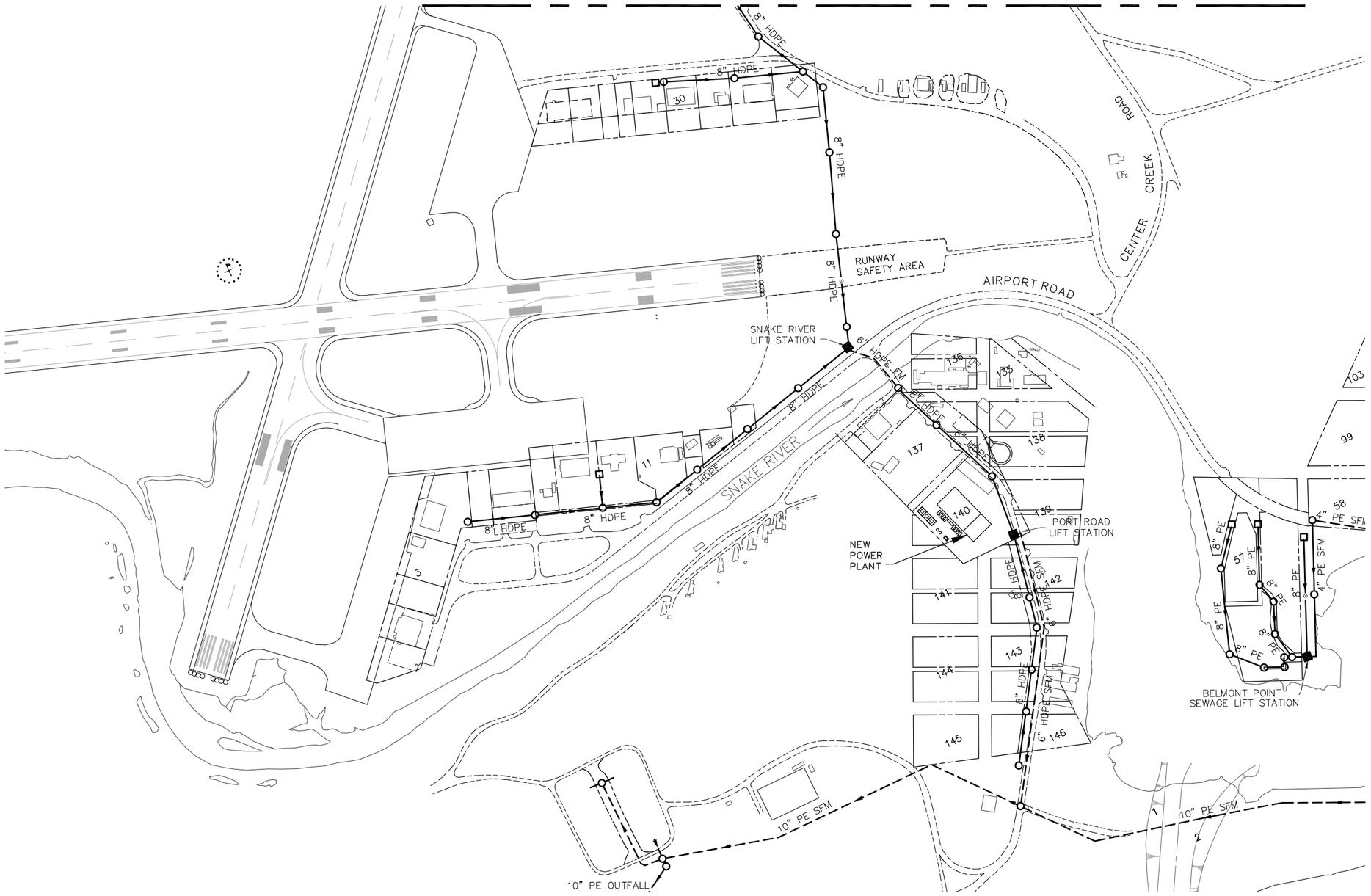
NOME, ALASKA

FIGURE 5A

G:\CAD\NOME\BASEMAPS\Existing Water Sewer Layouts\2017 update\FIG 5A-5D NOME - EXISTING SEWER SYSTEM_MRE.dwg, 10/3/2017 6:01:52 PM, cmerz, Adobe PDF

MATCHLINE SEE FIGURE 5C

MATCHLINE SEE FIGURE 5A



NORTH

EXISTING GRAVITY SEWER, MANHOLE AND DIRECTION OF FLOW

SFM SEWAGE FORCE MAIN AND DIRECTION OF FLOW

PE OR HDPE EXISTING INSULATED HIGH DENSITY POLYETHYLENE SEWER MAIN

EXISTING CLEANOUT

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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Scale: AS SHOWN

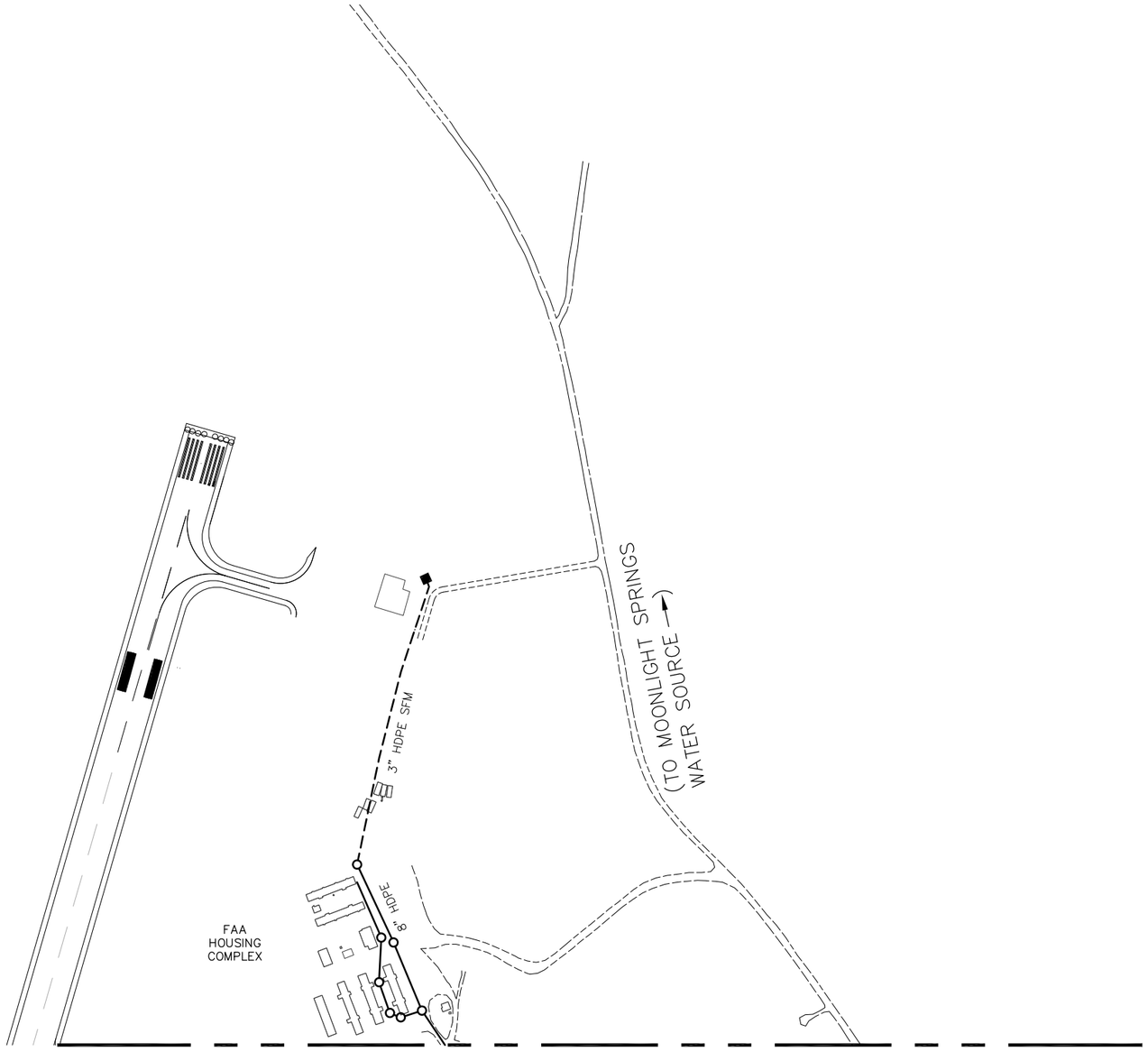
Date: OCTOBER 2017

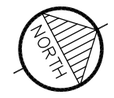
Drawn: DLW

EXISTING SEWER SYSTEM - AIRPORT AREA

NOME, ALASKA

FIGURE 5B





EXISTING GRAVITY SEWER, MANHOLE AND DIRECTION OF FLOW

SFM — SEWAGE FORCE MAIN AND DIRECTION OF FLOW

PE OR HDPE — EXISTING INSULATED HIGH DENSITY POLYETHYLENE SEWER MAIN

EXISTING CLEANOUT

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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Scale: AS SHOWN

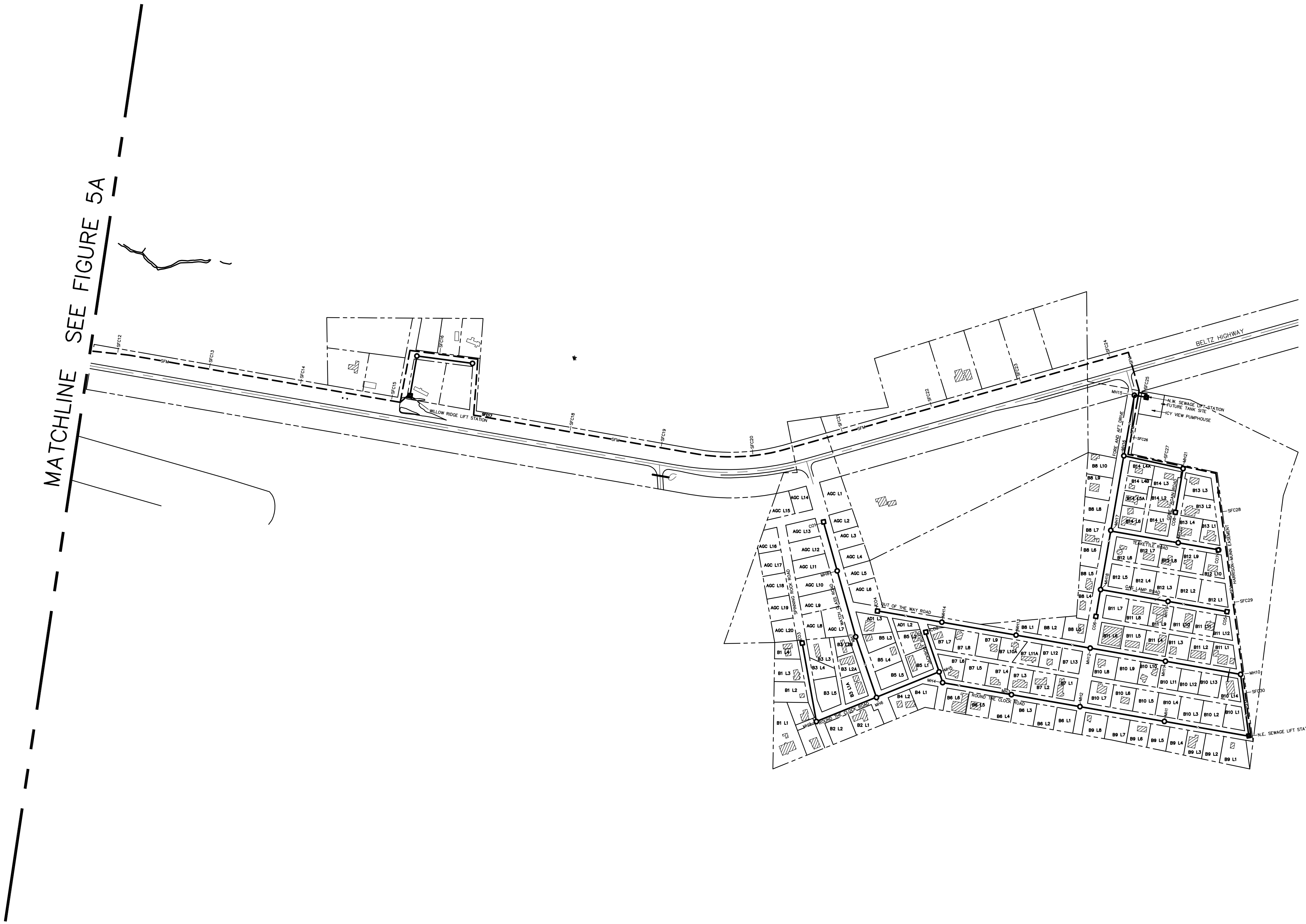
Date: OCTOBER 2017

Drawn: DLW

EXISTING SEWER SYSTEM - NATIONAL GUARD HANGER AREA

NOME, ALASKA

FIGURE 5C



NORTH

EXISTING GRAVITY SEWER, MANHOLE AND DIRECTION OF FLOW

SFM — SEWAGE FORCE MAIN AND DIRECTION OF FLOW

PE OR HDPE — EXISTING INSULATED HIGH DENSITY POLYETHYLENE SEWER MAIN

EXISTING CLEANOUT

GRAPHIC SCALE

250 0 125 250 500 1000

(IN FEET)

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Drawn: DLW

EXISTING SEWER SYSTEM - WILLOW AND ICY VIEW SUBDIVISIONS

NOME, ALASKA

FIGURE 5D

IMPORTANT INFORMATION

Important Information

About Your Geotechnical/Environmental Report

IMPORTANT INFORMATION

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors that were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent

IMPORTANT INFORMATION

such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

IMPORTANT INFORMATION

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland