

CHANGE ORDER

In-Scope

Out-of-Scope

Project: Benner Twp

Change Order No.: 7

Date: 5/25/22

Requisition No: GTAC7-4-106

Contractor: HDR Engineering

Regional PM: John Ciccone

Contractor PM: Matthew Blanchard

Description of Adjustment:

This Change Order requests funding for project management (Task 1000), project planning (Task 1010), procurement (Task 1040), POET installation (Task 1092), POET maintenance (Task 1093), data evaluation (Task 2000), report prep (Task 2070), project meetings (Task 2200), and groundwater sampling (Task 3012) activities.

Reason / Justification for the Adjustment:

During teleconference meetings with the PADEP on April 1 and April 28, the PADEP discussed the need for point of entry treatment (POET) systems for several homes in Benner Township based on the PFAS sampling results from potable wells sampled in March 2022. On May 3, 2022, the PADEP requested HDR to prepare a Change Order for the installation, maintenance and sampling of several POET systems. HDR submitted a draft WP/CE to the PADEP on May 17, 2022. The PADEP responded with minor comments and requested the CO to include budget for sampling up to 12 potable wells in the future in the event homeowners contact the PADEP interested in having their well sampled and tested for PFAS.

Schedule Impact:

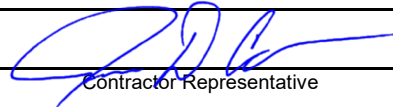

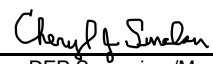

The POET system installations will be scheduled shortly after the approval of the POET installer which will be recommended in a SAF.

Current Project Budget: \$143,668.54

Cost of Change Order: \$216,192.91

Task:	Amount
1000	\$1,850.97
1010	\$12,970.76
1040	\$2,085.18
1092	\$119,238.10
1093	\$60,304.80
2000	\$1,948.20
2070	\$7,429.96
2200	\$4,544.94
3012	\$5,820.00

New Project Budget: \$359,861.45

	Contractor Representative	<u>5/26/2022</u>
		Date
	DEP Project Manager	<u>5/26/22</u>
		Date
	DEP Supervisor/Manager	<u>5/26/22</u>
		Date
	DEP ECP Manager/Division Chief	<u>5/26/22</u>
		Date
	DEP Contract Manager	Date

Estimate Attached

Work Plan Addendum Attached

Revised Schedule Attached



**BENNER TOWNSHIP PFAS INVESTIGATION
REQUISITION NUMBER GTAC7-4-106
Change Order 07
WORK PLAN/COST ESTIMATE**

May 25, 2022

The Pennsylvania Department of Environmental Protection (PADEP) has requested HDR Engineering, Inc. (HDR) to assist in determining the source and extent of per- and polyfluoroalkyl substances (PFASs) that were detected in potable wells at properties along High Tech Road in Benner Township during a groundwater investigation completed by the PADEP's Water Supply Program in 2019. The PADEP assigned the Scope of Work (SOW) and the Project Requisition to HDR on June 10 and July 21, 2020, respectively.

The PADEP and HDR recently conducted private water supply sampling in March 2022 for several residential properties located near the perimeter of the University Park Airport (UPA). The PADEP conducted a confirmatory potable well sampling event in April and May 2022 for a portion of the wells that were sampled in March as well as some new wells based on requests the PADEP received from homeowners. A total of five (5) separate potable well sampling events have been completed including December 2021 (a total 7 wells sampled), February 2022 (a total of 7 wells sampled, March 2022 (a total of 37 wells sampled, April 2022 (a total of 12 wells sampled), and May 2022 (a total of 6 wells to be sampled the week of May 23rd). Several potable well samples exhibited PFAS concentrations that exceeded the Environmental Protection Agency's (EPA) Health Advisory Limit (HAL) of 70 parts per trillion (ppt) combined for perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). This Change Order (CO07) presents the Work Plan and Cost Estimate for HDR to review point of entry treatment (POET) systems that can be installed at residences, the sampling and maintenance of the POET systems once they are installed, and to conduct a site meeting with the PADEP to discuss additional field investigations.

PROJECT DESCRIPTION

During the summer of 2019, the PADEP's Bureau of Safe Drinking Water completed a groundwater sampling event for a public supply well and potable wells located at properties along High Tech Road in Benner Township, Pennsylvania (Site). A public water supply well is located at the State of the Art, Inc. (SOTA) property; a potable well is located at the Matreya, LLC property; and, a potable well is located at the Handy Delivery, Inc., property. The SOTA supply well was sampled by the Water Supply Program and the Handy Delivery and Matreya wells were sampled by the PADEP's Environmental Cleanup and Brownfields Program staff. All the wells were sampled for PFAS. The analysis indicated that PFAS was present at a concentration of 114 ppt for combined PFOS and PFOA in the SOTA well, 138.6 ppt in the Matreya, LLC (Matreya) potable well, and 112.1 ppt in the Handy Delivery well. All three of the samples exceeded the EPA HAL of 70 ppt for combined PFOS and PFOA.

The UPA is located approximately 800' southeast of the SOTA public supply well. The UPA property covers 1,091 acres of land surrounded by a variety of farmland, residential properties and forests. The UPA is managed by two entities: Penn State University (PSU) and the Centre

County Airport Authority (CCAA). PSU is the designated sponsor of UPA responsible for overseeing all airside facilities (runways, taxiways, and aprons). PSU is responsible for maintenance of all airfield surface pavements, snow removal, Aircraft Rescue Fire Fighting (ARFF) equipment, oversight of the fuel farm and fueling operations, as well as hanger and tenant leasing and rental negotiations. PSU reported use of aqueous film forming foam (AFFF) at UPA for firefighting testing as mandated by the Federal Aviation Administration (FAA). Upon request from PADEP, PSU initially sampled three monitoring wells in February and March 2020 that are identified as FedEx1 and APT-1, and Haller Farm South). The combined PFOS and PFOA results from all the wells were less than the EPA HAL. In February and March 2020, PSU also sampled several potable wells that are located on PSU property to the north and east of the airport and High Tech Road. The wells exhibited combined PFOS and PFOA concentrations less than the HAL.

The boundaries of the Study Area during the due diligence phase of the PFAS investigation in 2020 and 2021 generally included properties along High Tech Road, portions of the Fox Hill Road, the Army and Air Force National Guard properties and the UPA property. After several potable well sampling events were completed by the PADEP in 2021 and 2022, the boundaries of the Study Area have been expanded radially from the airport to include the residential properties in the Walnut Grove development located south of the airport. In general, the investigation area is primarily bounded to the north by Buffalo Run Road, in the west by Bernal Road, in the south by Big Hollow Road, and in the east by Rock Road/Barns Lane.

PROJECT BACKGROUND

HDR conducted a due diligence investigation based on the Work Plan submitted to the PADEP in October 2020. The due diligence was performed as an initial effort toward gaining a better understanding of the history and potential use of PFAS materials by properties in the vicinity of High Tech Road and Fox Hill Road in Benner Township, Centre County Pennsylvania. The due diligence included a desktop study, a regulatory database search, site reconnaissance visits, and questions and review of relevant information from regulatory agencies and property owners.

The regulatory database search conducted by Environmental Data Resources (EDR) included fire insurance maps, historical aerial photographs, historical topographic maps, city directory information, and the EDR Radius Report. None of the twenty-one listings within the EDR Radius Report were identified as potential environmental concerns for the Study Area based on factors such as nature of the listing, cleanup/closure status, and distances from the Study Area, hydraulic gradient, or geology.

The Due Diligence Summary Report was submitted to the PADEP on June 15, 2021 and included recommendations to conduct a soil sampling investigation. In September 2021, HDR submitted Work Plan that proposed a soil investigation for the UPA and properties along High Tech Road, and background locations at Rock Road, Walnut Grove Drive, and S. Fillmore Road. The soil investigation was approved by the PADEP. Soil samples from the UPA property were collected by PSU in December 2021 and submitted for analysis of PFAS. Preliminary data indicated levels of PFOS were detected above the PADEP MSC for several soil samples collected near areas where AFFF was reportedly used for firefighting training.

The soil boring investigation for the properties off-site of UPA was completed by HDR in February 2022. A total of 13 soil borings were installed along High Tech Road, SOTA and Matreya properties, and at S. Fillmore Drive, Rock Road and Walnut Grove Drive. Up to two (2) soil samples were collected from each boring consisting of a shallow zone from 0-2 feet below ground

surface (bgs) and a deeper sample from approximately 5-8 feet bgs. One shallow soil sample exhibited a PFOS concentration greater than the PADEP MSC (7,000 ppt) which was collected near the discharge of the 30-inch stormwater pipe located on the SOTA property. Detections of PFAS concentrations less than the PADEP MSCs were exhibited in other soil samples on the SOTA property and at the Rock Road location. The results of the HDR and PSU soil boring investigation will be provided in an upcoming report.

In December 2021, the PADEP collected water samples from water sources at seven (7) properties located to the south and east of UPA. The samples were submitted to the Bureau of Laboratories (BOL) for analysis of several PFAS parameters. Concentrations of PFOS and PFOA were exhibited in several of the samples. A concentration of PFOS exceeded the HAL in one of the samples collected from a potable well located in the Walnut Grove development.

A total of fifty-one (51) potable well samples have been collected by the PADEP between December 2021 and March 2022. The PADEP conducted confirmatory sampling for a portion of wells in April and May 2022. The analytical data from the April and May 2022 event is expected to be completed by late May and late June 2022, respectively. For those homes with combined PFOA and PFOS concentrations at or greater than the EPA HAL, bottled water delivery has been arranged as an immediate, short-term alternate drinking water source. The PADEP intends to follow up the provision of bottled water with the installation of whole home treatment (POET) systems for those residents with water supply wells containing concentrations greater than 70 ppt who do not have an existing treatment system that is effectively reducing levels of PFAS below the HAL. The number of residences that will be eligible for a POET system is unknown and currently under PADEP review.

During teleconference calls with the PADEP on April 28 and May 3, 2022 the PADEP and HDR discussed the next phase of the environmental investigation as well as short-term and long-term remedies for potable wells that are impacted with PFAS.

PROPOSED SCOPE OF WORK

HDR has prepared this Change Order (CO) based on the items that were discussed with the PADEP during the May 3, 2022 teleconference meeting. During the meeting, the PADEP requested HDR to prepare a Work Plan and Cost Estimate for the preparation and installation of POET systems at eligible homes to treat PFAS in potable water. The PADEP provided HDR with a preliminary list of homes that are eligible for a POET system (Attachment A). A cost estimate for maintenance and periodic sampling of the POET systems and a site meeting to discuss the next phase of the soil investigations are also included in the Work Plan. The proposed work for the Work Plan is provided below:

- Procurement of POET system installation and maintenance vendors, suppliers, contractors as warranted.
- Site visits by HDR and the POET system installation contractor to homes that are candidates for a POET system to assess for access, design considerations, existing treatment systems, etc.
- Review POET system information collected by PADEP and provided to HDR.
- Coordinate contractor visits for POET system maintenance.
- Coordinate with the sub-contract laboratory for the analysis of PFAS in samples collected prior to and after the POET system.
- Extra sample bottles and a laboratory to be placed on a stand-by for the future analysis of potable water samples collected by the PADEP from residential wells.

- Provide analytical laboratory reports to the PADEP.
- Site meeting with the PADEP to discuss the proposed field investigations (for example, geophysical study, fracture trace analysis, soil and seep sampling, and groundwater monitoring well installation).

WBS-1000 Project Management

Work for this task includes conducting miscellaneous project management duties such as invoice review, review of Daily Activity Reports (DARs), budgeting and general project management, PADEP project communications, small CO efforts, etc.

WBS-1010 Project Planning

The current funding for this task was exceeded based on HDR's prior project planning for the draft CO. This CO requests funding for the preparation of the draft and final CO (CO 07).

This task requests funding for POET system planning discussions with the PADEP. This includes the review of PADEP's list of residences that are eligible for a POET system, and reviewing available PADEP photographs, field notes, etc. of the existing POET systems in the residence to assist in the planning and discussion of the new POET systems.

The size (footprint) of the POET system in use for the Walnut Grove development residence can serve as a reference to assist in determining the area needed to install a similar system. Information will also be reviewed in the event the home contains an existing water treatment system (for example, ultraviolet (UV) light, water softener, etc.). The cost estimate provided in this CO assumes up to fourteen (14) residences in the Walnut Grove development are considered eligible for a new POET system.

The objective of the POET system will be to reduce PFAS levels in groundwater to provide a source of safe potable water to the residence. Further information is needed and a discussion with the PADEP is likely to evaluate if the POET system will be designed to meet the need for the homeowner's use of water, for example, drinking, bathing, and cleaning activities. The POET system will not be designed to treat water used for filling of swimming pools, spas, watering plants and lawn, and heating and cooling of homes (residential geothermal systems).

WBS-1040 Procurement

HDR will procure bids and submit a Subcontract Approval Form (SAF) along with the appropriate back-up documentation to the PADEP for recommended contractors. New funding is being requested for this task for the following contractors:

- POET system installation (Task 1092) and maintenance services (Task 1093) – HDR will review qualified POET system installers and recommend an installer that can provide and install a POET system at each residence. A total of up to fourteen (14) POET systems are proposed to be installed at residences located in the Walnut Grove development. The use of PFAS-free materials will be requested in the bid for any parts that may come into contact with potable water. The installer will conduct operation and maintenance (O&M) service visits for each POET system that is installed. The installer may also conduct non-routine service (upon receiving approval from the PADEP) for the POET system at the request of the homeowner. The information provided by the PADEP will be used to assist in the preparation of the bid package.
- Analytical testing of POET system samples (Task 1093) – HDR will request pricing from ALS Environmental, Inc. (ALS) for the analysis of PFAS in quarterly POET system samples for a two-year period after the POET system is installed. ALS was the lowest

bidder as presented in HDR's March 8, 2022 Subcontractor Approval Form (SAF) which was approved by the PADEP on March 11, 2022. If their pricing has not changed, HDR will recommend ALS as a sole source bidder in the SAF for the analysis of PFAS from the POET system samples. Using the same laboratory will provide consistency in data. HDR recommends using the same list of PFAS parameters and the sample method for the POET system samples that was used for the potable well sampling events in March and April 2022. If ALS's pricing has changed, then HDR will request bids from other laboratories and submit the recommendation in a SAF.

- Analytical testing of potable water (Task 3012) – The PADEP requested this CO to include budget for the analysis of twelve (12) potable water wells that may be collected in the future. The sample bottles will be ordered by HDR upon request from the PADEP and delivered to the regional office. A budget is included in this CO to serve as retainer for future sampling and analysis of the same PFAS parameters and method used during prior potable well sampling events. The same laboratory used for the analysis of the POET system samples will be recommended for the analysis of future potable water samples provided that their pricing has not changed. Using the same laboratory for analysis of PFAS will provide consistency in data.

WBS-2000 Data Evaluation

HDR will review the laboratory analytical reports associated with the water samples to monitor the performance of the POET system and observe if breakthrough of PFAS constituents has occurred from the post-treatment sample. Up to four (4) sample reports will be reviewed for each POET system.

WBS-2070-Report Preparation

HDR will prepare a POET system summary report that will present the details of the POET system installed at each home along one (1) round of post-installation POET system sample results. The report will include:

- The number of POET systems installed and their location (property address)
- Work orders from the POET system installer
- Photo documentation of the POET system installation
- Copy of an operation manual for each POET system
- Proposed maintenance and sampling schedule
- Laboratory reports for the initial POET system samples

This task also includes the preparation and submittal of five (5) monthly Project Status Reports (PSRs) to the PADEP and the meeting minutes for the proposed site meeting. In addition, HDR will update the Sampling Analysis Plan (SAP) for the POET system sampling.

WBS-1092 POET Installation

The PADEP proposes to install a POET system for those residents with potable water wells exhibiting concentrations of PFOA and PFOS at or greater than 70 ppt who do not have an existing POET system that is effectively reducing levels to below the EPA HAL. The PADEP is in the process of determining the number of homes that are eligible for the installation of a POET system. According to PADEP personnel, POET systems were installed at residences in the southeast region at an estimated cost of \$5,000 to \$6,000 per system.

Granular activated carbon (GAC) filtration or Reverse Osmosis (RO) are a couple of examples of residential treatment systems that provide effective methods for treating PFAS in groundwater. One residential property in the Walnut Grove development currently utilizes a water treatment

system for their potable well which according to the PADEP includes an Ecowater Systems® carbon filtration unit, water softener, UV light, and an infrared (IR) system.

A RO system can be effective at separating PFAS from water. However, PFAS can remain concentrated in the RO reject water which is discharged to the environment (for example, an on-lot septic system). If a RO system is considered as the only option for a POET system at the residence(s), further information will be needed to understand the fate of the RO reject water and if PFAS-impacted reject water is present on the property.

The PADEP collected pre-treatment and post-treatment water samples from a Walnut Grove property in December 2021. The pre-treatment and post-treatment samples exhibited a PFOS concentration of 186.8 ppt and 0.95 ppt, respectively. This property provides an example of the type of water treatment systems that may exist in other residences as well as they type of POET system to be installed. Residences may currently have a similar system, a single component of the system, or no water treatment system. If a residence has an existing treatment system that is not designed to remove PFAS, the new POET system will likely be installed to treat the influent groundwater stream prior to entering the existing treatment system. Based on the reduced levels of PFAS from the post-treatment sample at the Walnut Grove residence, HDR anticipates that a similar POET system will be installed by a certified installer for the residences suggested by PADEP.

A pre-system install site visit is proposed for HDR, PADEP and the POET system installer to meet at the residences and review the location of the entry of water into the home, measure the water pressure entering the home, determine the area for the placement of the POET system with the homeowner, answer questions from the homeowner regarding the POET system, and for the POET installer to prepare for the materials needed to complete the installation. In addition, the PADEP will confirm that the homeowner accepts or refuses a POET system. The pre-install site visits for each eligible property will be completed over a two-day period. One overnight for HDR personnel is included in the cost estimate.

The information obtained during the pre-system install visit will be reviewed by the POET system installer to provide a recommendation and estimate for the type of POET system for each home. HDR forward the recommendation to the PADEP for approval.

Once the type of POET system has been approved, HDR will coordinate a schedule with the PADEP, the homeowner and the POET system installer to conduct the installation. The homeowner will be notified that their water supply service may be interrupted during the installation process. An HDR field technician will be onsite to monitor and oversee the progress and the completion of the POET system installation for each residence. The POET system will include accessible sample ports for the collection of pre-, mid-, and post-treatment samples. At the completion of the installation, HDR and the installer will review the operation of the POET system with the homeowner. A copy of the POET system manual will be provided to the homeowner. HDR will also document the pre- and post-installation conditions in the vicinity of the POET system during the installation.

WBS-1093 POET Maintenance (Sampling and Filter Replacement)

This task requests budget for the POET installer to conduct operation and maintenance (O&M) service to the POET system for a two-year period after the installation date. The maintenance period maybe extended with PADEP approval provided that PFAS levels in the well exceed the HAL and an alternate source of potable water is not available.

The O&M includes routine scheduled service (for example, the replacement and disposal of filters, cartridges, etc.). HDR will schedule the POET installer for routine service visits based on the recommended O&M service schedule of the POET system. For the purposes of this CO, HDR assumes that one routine service visit will be completed per year for each POET system. An HDR technician will not be present onsite during the routine service visit. If the POET system effluent sample exhibits breakthrough of PFOA and PFOS (> 70 ppt), then additional routine service visits may be necessary in order to replace the filters or conduct confirmatory sampling.

If HDR is notified by the homeowner that non-routine service is necessary, HDR will notify the PADEP before the service is scheduled and confirm the service is approved. Since the number of non-routine services is difficult to predict, the task includes a contingency for non-routine services. The non-routine service will be charged to this task. An HDR technician will not be present during the non-routine service visit(s).

HDR field technicians will complete the initial post-POET system install sampling event approximately 1 month after the POET system has been installed and operating. The PADEP will be invited to attend the sampling event to observe the sample collection procedures. The PFAS samples will be collected in accordance with the SAP. Up to four (4) samples will be collected from each POET system including the influent (pre-treatment sample, between carbon units (mid-treatment) and effluent (post-treatment)). A field reagent blank sample will be collected from the influent sample port and submitted for PFAS analysis. Each sample will be submitted for analysis of PFAS parameters by an accredited laboratory via EPA Method 537.1.

The results from the initial sampling event will be provided to the PADEP. The following sampling events will be completed on a quarterly basis by PADEP personnel. HDR will assist the PADEP in the ordering of the sample bottles from the commercial laboratory and coordinating the sampling schedule with the laboratory manager.

WBS-2200 Project Meeting

The current funding for this task was exceeded based prior teleconference meetings with the PADEP in April and May 2022. This CO requests funding for these discussions.

HDR and PADEP will conduct a site meeting to review the next phase of the PFAS investigation. The site visit will focus on areas to conduct a geophysical investigation, dye testing, monitoring well installations, surface and subsurface soil sampling, and surface water/seep sampling. The PADEP developed a site map with areas to be considered for the investigation. This map will be reviewed by HDR prior to the meeting and discussed with the PADEP. Meeting attendees from HDR will include the Program Manager, the Project Manager, and the Project Geologist. HDR will prepare meeting minutes and submit to the PADEP. The information discussed at the site meeting will be necessary for the preparation of the next CO.

WBS-3012 Groundwater Sampling

The PADEP may be contacted by homeowners in the future requesting analysis of their potable water for PFAS. This task includes up to twelve (12) potable wells to be sampled by the PADEP. Each sample will be submitted for the analysis of the same eighteen (18) PFAS constituents that were included in prior potable well sampling events. In accordance with EPA Method 537.1 for analysis of PFAS, two (2) samples will be collected from each potable well. HDR will order the sample bottles upon notification from the PADEP. The PADEP will prepare and ship the samples to the laboratory via a courier. HDR will forward the laboratory reports to the PADEP.

PROJECT STAFFING/MANAGEMENT

The project will be managed and staffed by HDR employees from the Mechanicsburg and Bethlehem, Pennsylvania offices. Key staff assigned to this project are listed below.

- **Project Oversight, Quality Assurance and Quality Control** - Tom McMonagle, P.G.
- **Project Manager** - Matthew Blanchard
- **Project Geologist** – Vincent Carbone, P. G.
- **Scientist/Technicians** – Will vary depending on availability, but HDR representatives will be mobilized from HDR’s Mechanicsburg, Philadelphia, Pittsburgh, or Bethlehem offices.

KEY UNDERSTANDINGS

- The PADEP will provide HDR with the final list of properties that are eligible for the installation of a POET system based on the potable well samples greater than or equal to the EPA HAL (70 ppt). In the event the PFAS standard is lowered to less than 70 ppt, the PADEP will provide HDR with an updated list of residences that are eligible for a POET system.
- Only one (1) POET installation company will be recommended to install each POET system and to conduct routine and non-routine POET system O&M.
- A cost estimate for O&M service and sampling of existing POET systems in Walnut Grove are not included in this CO.
- A lead time of ten (10) business days is requested by HDR prior to the start of the POET system sampling events to order the sample bottles and coordinate with laboratory personnel.
- The initial quarterly sampling of the POET systems will be completed by PADEP and HDR. Subsequent quarterly sampling events will be completed by PADEP personnel. Sampling of future potable wells will be completed by PADEP personnel.
- The POET system samples and the future potable well samples will be submitted to the same commercial laboratory that was approved for the analysis of PFAS during the March 2022 potable well sampling event.
- The POET system will be installed within an accessible area of the home with approval from the homeowner and no new construction work will be required for the placement of the POET system.
- A cost estimate for the removal and disposal of existing water treatment systems is not included in this CO.
- The POET system installer will remove and dispose of used filters, cartridges, etc., from the POET system as part of the normal O&M schedule.
- The POET systems are intended for use for drinking water to the home. The design and use of the POET system is not intended to treat water used for filling of swimming pools, watering the lawn, and the heating and cooling of residences that contain a geothermal system.

PROJECT REPORTING

Deliverables for this Work Plan will consist of the following:

- POET System Summary Report (tables, figures, analytical reports, photo documentation, and field notes).
- Monthly Project Status Reports
- Meeting Minutes (as necessary)

HEALTH AND SAFETY PLAN

All fieldwork will be conducted in accordance with the Site-Specific HASP which will be prepared and provided upon approval of this Work Plan. Tailgate safety briefings will be performed daily, and all employees will have stop-work authority. PFAS guidance documents will be reviewed regarding clothing and materials that are permitted for the collection of the samples.

SAMPLE ANALYSIS

HDR will obtain the required sample containers from the recommended laboratory for potable well samples and submitted to the laboratory for analysis. HDR will coordinate with the laboratory so that the samples are processed within the standard holding times.

The laboratory will be able to accommodate the volume of PFAS samples anticipated for this scope of work. The list of PFAS parameters is provided in the project's SAP. All the samples will be analyzed via EPA Method 537.1. The SAP was approved by the PADEP and submitted to the PADEP on February 11, 2022.

COST ESTIMATE

The cost for the work detailed within this Work Plan is presented in the attached summary table and is summarized by the PADEP WBS Tasks.

SCHEDULE

The pre-install visit will be conducted approximately two weeks after the POET system installer SAF has been approved by the PADEP. The installation of the POET system will vary based on the availability of the installer and the homeowner. HDR will contact the PADEP to arrange a date and time for the site meeting. HDR will order the extra sample bottles upon being notified by the PADEP.

ATTACHMENT

- **A** – List of proposed properties eligible for a POET system

COST ESTIMATE

**Cost Estimate: Change Order 07
Benner Township Site
Requisition Number GTAC7-4-106
May 2022**

WBS	Description	Classification	Hours / Quantity	Unit Rate	Cost Estimate	Comments
1000	Project Management				\$1,850.97	
1000.01	<i>Correction to PM budget from CO 03</i>				<i>\$1,850.97</i>	
	McMonagle, Tom	Program Manager	1	\$207.21	\$207.21	Project QC, support
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	12	\$136.98	\$1,643.76	Review DARs, project updates to/from PADEP, invoice reviews for subs and HDR
1010	Project Planning				\$12,970.76	
1010.01	<i>Project Planning</i>				<i>\$12,970.76</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	18	\$136.98	\$2,465.64	Project planning calls and communication with the PADEP for POET system, prep the draft and final WP and CE.
	Nush, Spencer	EIT	120	\$86.80	\$10,416.00	Research POET systems, review conf. PFAS sampling. Review home construction and existing POET system info for up to 14 homes.
	Eskin, Connie	Admin Assistant	1	\$89.12	\$89.12	Prep and format the WP and CE
1040	Procurement				\$2,085.18	
1040.01	<i>Request bids from POET system installers and lab</i>				<i>\$2,085.18</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	1	\$136.98	\$136.98	Bid review. Submit SAFs.
	Markowitz, Katie	RA/Env. Sci	20	\$97.41	\$1,948.20	Request bids from POET installers. Prepare bid package for POET system install and O&M. Request pricing from lab. Prep SAFs for lab and POET installer
1092	POET Installation				\$119,238.10	
1092.01	<i>Pre-system install visit (up to 14 residences).</i>				<i>\$12,492.50</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	10	\$129.25	\$1,292.50	1 day onsite (8 hrs) to meet PADEP and POET installer, evaluate ~4 properties. Review POET system recommendations with PADEP.
	Nush, Spencer	EIT	120	\$86.80	\$10,416.00	3 days (10 hrs/day includes 2 overnights) onsite to meet PADEP and POET installer (10hrs/day), evaluate up to 14 properties, download photos, review notes, prep summary for each resident to assist with bid package (6 hrs/summary * 14), 6 hours travel (round trip)
	Personal Vehicle	Mileage	1	\$235.00	\$235.00	Estimate for personal vehicle for 1 round trip (400 miles/round trip from Philly to Site)
	Personal Vehicle	Mileage	1	\$125.00	\$125.00	Estimate for personal vehicle for 1 round trip (210 miles/round trip from Mechanicsburg to Site)
	Meals & Incidentals	Standard US GSA Rate for State College, PA	2	\$96.00	\$192.00	75% of standard US GSA rate for first and last day of travel, 1 HDR rep, 2 days. (travel in excess of 50 miles one way).
	Lodging	Standard US GSA Rate for State College, PA	2	\$116.00	\$232.00	1 overnight for SN. Includes taxes
1092.02	<i>POET system install (up to 14 residences)</i>				<i>\$106,745.60</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	8	\$129.25	\$1,034.00	Install updates from PADEP and SN, coordination of schedules with PADEP
	Nush, Spencer	EIT	212	\$86.80	\$18,401.60	5 separate mob events to oversee installation of POET systems. 3 POET systems installed each mob. (9 hrs/day *14), 6 hrs round trip (Philly to SC) * 5 mobs, Prep DARs, POET paperwork, photo logs (4 hrs/system * 14)
	Personal Vehicle	Mileage	1	\$1,150.00	\$1,150.00	Estimate for personal vehicle for 5 round trips (400 miles/round trip from Philly to Site) to perform POET install oversight
	Personal Vehicle	Mileage	1	\$200.00	\$200.00	Estimate for personal vehicle for driving to homes for POET installs (25 miles/day for 14 days)
	Meals & Incidentals	Standard US GSA Rate for State College, PA	5	\$160.00	\$800.00	75% of standard US GSA rate for first and last day of travel, 1 HDR rep, 5 events. Each event includes 3 days. (travel in excess of 50 miles one way).
	Lodging	Standard US GSA Rate for State College, PA	10	\$116.00	\$1,160.00	10 overnights for S. Nush (2 overnights/event - total of 5 events) includes taxes
	POET system install (Sub)	Estimated	14	\$6,000.00	\$84,000.00	Cost for POET system and installation. Recommended POET installer to be submitted via SAF. Assumes up to 14 POET systems to be installed.

**Cost Estimate: Change Order 07
Benner Township Site
Requisition Number GTAC7-4-106
May 2022**

WBS	Description	Classification	Hours / Quantity	Unit Rate	Cost Estimate	Comments
1093	POET Maintenance and Sampling				\$60,304.80	
1092.01	<i>Sample up to 14 POET systems (1 event)</i>				<i>\$60,304.80</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	2	\$129.25	\$258.50	Sample coordination with lab. and PADEP schedule
	Markowitz, Katie	RA/Env. Sci	30	\$97.41	\$2,922.30	2 days (10 hrs/day includes 2 overnights) onsite to meet PADEP. Sample up to 14 POET systems. 4 hrs. for travel.
	Nush, Spencer	EIT	45	\$86.80	\$3,906.00	2 days (10 hrs/day includes 2 overnights) onsite to meet PADEP. Sample up to 14 POET systems. Prep bottles and COCs for shipping to lab. Prep DARs. 6 hrs. for travel.
	Personal Vehicle	Mileage	1	\$120.00	\$120.00	Estimate for personal vehicle (KM) for 1 round trip (205 miles/round trip from Mech to Site)
	Personal Vehicle	Mileage	1	\$232.00	\$232.00	Estimate for personal vehicle (SN) for 1 round trip (400 miles/round trip from Philly to Site)
	Meals & Incidentals	Standard US GSA Rate for State College, PA	2	\$106.00	\$212.00	Contingency for 75% of standard US GSA rate for first and last day of travel, 2 HDR reps, 1 event for 2 days. (travel in excess of 50 miles one way).
	Lodging	Standard US GSA Rate for State College, PA	4	\$116.00	\$464.00	2 overnights for SN and KM each. Includes taxes
	POET system Routine O&M (Sub)	Estimated	28	\$1,000.00	\$28,000.00	Cost for POET system O&M. POET installer to conduct O&M (1/year for 2 years). Assumes 14 POET systems to be scheduled for routine service (\$1,000/service event/POET system).
	POET system Non-Routine O&M (Sub)	Estimated	1	\$13,500.00	\$13,500.00	Contingency for POET installer to conduct 1 (est. \$1,500/ visit) non-routine O&M service event. Service will be scheduled upon approval from the PADEP.
	PFAS Analytical Costs + Courier fees + Extract and Hold (Sub)	Estimated	1	\$10,640.00	\$10,640.00	Recommended lab to be submitted via SAF. 1 quarterly event = 4 samples per system (1 effluent sample, 1 FRB sample, 1 inf. Sample, and 1 mid point sample = \$760.00.) * 14 POET systems. Plus QC samples. Samples to be analyzed by a commercial lab.
	Misc. sampling equipment	Estimated	1	\$50.00	\$50.00	Nitrile gloves, misc. field supplies
2000	Data Evaluation				\$1,948.20	
2000.01	<i>Review analytical reports for ~ 48 POET/PFAS water samples</i>				<i>\$1,948.20</i>	
	Markowitz, Katie	RA/Env. Sci	20	\$97.41	\$1,948.20	Manage lab data for project file, verify data quality in ~60 lab reports
2070	Report Preparation				\$7,429.96	
2070.01	<i>Prepare POET System Install Summary Report</i>				<i>\$7,429.96</i>	
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	12	\$129.25	\$1,551.00	Prepare meeting minutes (2 hrs), prepare 5 monthly PSRs (1 hr/PSR), Review and QC POET Install Summary report
	Eskin, Connie	Admin Assistanct	3	\$89.12	\$267.36	Prep and format the Summary Report
	York, Ben	Sr. GIS Analyst	4	\$100.90	\$403.60	Prep GIS figures with POET systems for report
	Nush, Spencer	EIT	60	\$86.80	\$5,208.00	Prep POET Summary Report, tables, photo logs, POET manuals, POET lab data for up to 14 POET systems
2200	Project Meetings				\$4,544.94	
2200.01	<i>Site Meeting with PADEP personnel</i>				<i>\$4,544.94</i>	
	McMonagle, Tom	RA/Env. Sci	4	\$207.21	\$828.84	Attended teleconference project meetings with the PADEP in April and May. Site project meeting with PADEP in June for field investigation planning.
	Carbone, Vincent	Project Geologist	10	\$198.63	\$1,986.30	Attended teleconference project meetings with the PADEP in April and May. Site project meeting with PADEP in June to evaluate site geology and geologic features (sinkholes, fractures, etc).
	Blanchard, Matthew	Project Manager/Sr. Environmental Scientist	10	\$136.98	\$1,369.80	Attended teleconference project meetings with the PADEP in April and May. Site project meeting with PADEP in June for field investigation planning.
	Personal Vehicle	Mileage	1	\$235.00	\$235.00	Estimate for 1 personal vehicle for 1 round trip (400 miles/round trip from Bethlehem to Site) for project meeting
	Personal Vehicle	Mileage	1	\$125.00	\$125.00	Estimate for 1 personal vehicles for 1 round trip (210 miles/round trip from Mechanicsburg to Site) for project meeting
3012	Groundwater Sampling				\$5,820.00	
3012.01	<i>PADEP to sample up to 12 potable wells (standby)</i>				<i>\$5,820.00</i>	
	PFAS Analytical Costs + Extract and Hold (Sub)	Estimated	12	\$485.00	\$5,820.00	Recommended lab to be submitted via SAF. Standby for future potable well sampling events. Two samples collected per potable well= \$485.00) * 12 potable wells. Samples to be analyzed by a commercial lab. Cost includes reporting and sustainability fee.
Total					\$216,192.91	

**Task Summary: Change Order 07
Benner Township Site
Requisition Number GTAC7-4-106
May 2022**

WBS	Current Task Authorization	Est. Remaining Funding (as of 5/21/22)	Change Order 07 Funding Request	New Total Authorization
Task 1000- Project Management	\$ 4,231.67	\$ 90.79	\$1,850.97	\$ 6,082.64
Task 1010- Project Planning	\$ 15,404.00	\$ (1,152.85)	\$12,970.76	\$ 28,374.76
Task 1020-File/Document Review	\$ 12,916.94	\$ 930.34		\$ 12,916.94
Task 1040 - Procurement	\$ 2,559.31	\$ 832.03	\$2,085.18	\$ 4,644.49
Task 1092 - POET System Installation	\$ 2,559.31	\$ -	\$119,238.10	\$ 121,797.41
Task 1093 - POET System O&M	\$ 2,559.31	\$ -	\$60,304.80	\$ 62,864.11
Task 2000 - Data Evaluation	\$ 1,753.38	\$ 1,239.70	\$1,948.20	\$ 3,701.58
Task 2001 - GIS Applications	\$ 2,487.60	\$ 2,487.60		\$ 2,487.60
Task 2070 - Report Prep	\$ 31,175.73	\$ 15,126.37	\$7,429.96	\$ 38,605.69
Task 2200 - Project Meetings	\$ 3,463.13	\$ (118.37)	\$4,544.94	\$ 8,008.07
Task 3000 - Site Survey/Utility Markout	\$ 4,819.34	\$ 158.86		\$ 4,819.34
Task 3011 - Soil Sampling	\$ 19,318.04	\$ 3,406.80		\$ 19,318.04
Task 3012 - Groundwater Sampling	\$ 38,346.76	\$ 6,876.65	\$5,820.00	\$ 44,166.76
Task 3080 - IDW Disposal	\$ 1,678.86	\$ -		\$ 1,678.86
Totals	\$ 88,903.35	\$ 29,877.92	\$ 216,192.91	\$ 305,096.26

ATTACHMENT A

List of Properties Eligible for POET System:

1. 1412 Majestic View Drive
2. 1419 Majestic View Drive
3. 1852 Walnut Grove Drive
4. 1418 Majestic View Drive
5. 1424 Majestic View Drive
6. 1436 Majestic View Drive
7. 1443 Majestic View Drive
8. 1413 Majestic View Drive
9. 1430 Majestic View Drive
10. 1859 Walnut Grove Drive
11. 1846 Walnut Grove Drive*
12. 1822 Walnut Grove Drive*
13. To Be Determined – contingency**
14. To Be Determined – contingency**

*-will be determined once confirmatory sample results are available. PFOS+PFOA concentrations were detected between 40 ppt and 70 ppt in the initial samples.

** - extra POET system pending the sampling of potable wells that have not been sampled yet.