

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2020

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ____ to ____

Commission File No. 1-11596

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

(Exact name of registrant as specified in its charter)

Delaware

*State or other jurisdiction of
incorporation or organization*

8302 Dunwoody Place, #250, Atlanta, GA
(Address of principal executive offices)

58-1954497

*(IRS Employer
Identification Number)*

30350
(Zip Code)

(770) 587-9898

(Registrant's telephone number)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, \$.001 Par Value	PESI	NASDAQ Capital Markets
Preferred Stock Purchase Rights		NASDAQ Capital Markets

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes No

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated Filer Non-accelerated Filer Smaller reporting company Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial standards provided pursuant to Section 13(a) of the Exchange Act

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of the Registrant's voting and non-voting common equity held by nonaffiliates of the Registrant computed by reference to the closing sale price of such stock as reported by NASDAQ as of the last business day of the most recently completed second fiscal quarter (June 30, 2020), was approximately \$72,649,482). For the purposes of this calculation, all directors and executive officers of the Registrant (as indicated in Item 12) have been deemed to be affiliates. Such determination should not be deemed an admission that such directors and executive officers, are, in fact, affiliates of the Registrant. The Company's Common Stock is listed on the NASDAQ Capital Markets.

As of February 18, 2021, there were 12,165,734 shares of the registrant's Common Stock, \$.001 par value, outstanding.

Documents incorporated by reference: None

PERMA-FIX ENVIRONMENTAL SERVICES, INC.

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PART I

ITEM 1. BUSINESS

Company Overview and Principal Products and Services

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), a Delaware corporation incorporated in December 1990, is an environmental and environmental technology know-how company.

The principal element of our business strategy consists of upgrading our facilities within our Treatment Segment to increase efficiency and modernize and expand treatment capabilities to meet the changing markets associated with the waste management industry. Within our Services Segment, we continue to revitalize and expand our business development programs to further increase competitive procurement effectiveness and broaden the market penetration within both the commercial and government sectors. The Company remains focused on expansion into both commercial and international markets to supplement government spending in the United States of America (“USA”), from which a significant portion of the Company’s revenue is derived. This includes new services, new customers and increased market share in our current markets.

Our majority-owned subsidiary, Perma-Fix Medical S.A. and its wholly-owned subsidiary, Perma-Fix Medical Corporation (“PFM Corporation” – a Delaware corporation) (together known as “PF Medical” or our “Medical Segment”) which is currently involved on a limited basis in the research and development (“R&D”) of the Company’s medical isotope production technology, has not generated any revenue and has substantially reduced R&D costs and activities due to the need for capital to fund these activities. The Company anticipates that the Medical Segment will not resume full R&D activities until the necessary capital is obtained through its own credit facility or additional equity raise, or obtains partners willing to provide funding for its R&D.

COVID-19 Pandemic

The spread of COVID-19 in early 2020 continues to result in significant volatility in the U.S. and international markets. We continue to closely monitor the impact of the COVID-19 pandemic on all aspects of our business. Since the start of the pandemic, we have experienced delays in waste shipment from certain customers within our Treatment Segment directly related to the impact of COVID-19 including generator shutdowns and limited sustained operations, along with other factors. However, we expect to see a gradual return in waste receipts from these customers starting in the first half of 2021 as they accelerate operations. Within our Services Segment, all of the projects that were previously shutdown in late March 2020 due to the pandemic recommenced starting in late June 2020 as stay-at-home orders and certain other restrictions resulting from the pandemic were lifted.

Since the outbreak of COVID-19, we have remained focused on keeping our employees working and, at the same time, focusing on protecting the health and wellbeing of our employees and the communities in which we operate while assuring the continuity of our business operations.

Our management team has proactively implemented our business continuity and safety plans and has taken a variety of measures to ensure the ongoing availability of our waste treatment and remediation services, while taking health and safety measures, including separating employee and customer contact, social distancing between employees, implementing enhanced cleaning and hygiene protocols in all of our facilities, and implementing remote work policies, when necessary.

The situation surrounding COVID-19 continues to remain fluid and volatile. The potential for a material impact on our business increases the longer COVID-19 impacts the level of economic activities in the United States and globally as our customers may further continue to delay waste shipments and projects may shut down again. For this reason, we cannot reasonably estimate with any degree of certainty the future impact COVID-19 may have on our results of operations, financial position, and liquidity during the next twelve months.

For a more detailed discussion of the impact of COVID-19 on the Company's results of operations, please see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" – "Results of Operations" and "Liquidity and Capital Resources."

Segment Information and Foreign and Domestic Operations and Sales

The Company has three reportable segments. In accordance with Financial Accounting Standards Board ("FASB") ASC 280, "Segment Reporting", we define an operating segment as:

- a business activity from which we may earn revenue and incur expenses;
- whose operating results are regularly reviewed by the chief operating decision maker ("CODM") to make decisions about resources to be allocated and assess its performance; and
- for which discrete financial information is available.

TREATMENT SEGMENT reporting includes:

- nuclear, low-level radioactive, mixed (waste containing both hazardous and low-level radioactive waste), hazardous and non-hazardous waste treatment, processing and disposal services primarily through four uniquely licensed (Nuclear Regulatory Commission or state equivalent) and permitted (U.S. Environmental Protection Agency ("EPA") or state equivalent) treatment and storage facilities as follow: Perma-Fix of Florida, Inc. ("PFF"), Diversified Scientific Services, Inc., ("DSSI"), Perma-Fix Northwest Richland, Inc. ("PFNWR") and Oak Ridge Environmental Waste Operations Center ("EWOC" – See below for further information of this facility); and
- R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

In 2020, we expanded our low-level radioactive waste processing and treatment capability within our Treatment Segment through the addition of our EWOC facility. The EWOC facility serves primarily as a multi-disciplinary equipment and component processing center for large component, size/volume reduction, sort/segregation, waste transload, and system operability testing. The ultimate objective of the facility will be receipt, preparation, packaging, and transportation of low-level radioactive waste to final disposal facilities (landfills, approved radiological waste repositories). Operations at the facility have been limited to date as we continue to complete transition of the site. No revenue was generated at EWOC in 2020.

For 2020, the Treatment Segment accounted for \$30,143,000, or 28.6%, of total revenue, as compared to \$40,364,000, or 54.9%, of total revenue for 2019. See "Dependence Upon a Single or Few Customers" for further details and a discussion as to our Segments' contracts with government clients (domestic and foreign) or with others as a subcontractor to government clients.

SERVICES SEGMENT, which includes:

- Technical services, which include:
 - professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
 - health physics services including health physicists, radiological engineers, nuclear engineers and health physics technicians support to government and private radioactive materials licensees;
 - integrated Occupational Safety and Health services including industrial hygiene ("IH") assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and Occupational Safety and Health Administration ("OSHA") citation assistance;
 - global technical services providing consulting, engineering (civil, nuclear, mechanical, chemical, radiological and environmental), project management, waste management, environmental, and decontamination and decommissioning ("D&D") field, technical, and management personnel and services to commercial and government customers; and
 - waste management services to commercial and governmental customers.

- Nuclear services, which include:
 - o D&D of government and commercial facilities impacted with radioactive material and hazardous constituents including engineering, technology applications, specialty services, logistics, transportation, processing and disposal; and
 - o license termination support of radioactive material licensed and federal facilities over the entire cycle of the termination process: project management, planning, characterization, waste stream identification and delineation, remediation/demolition, final status survey, compliance demonstration, reporting, transportation, disposal and emergency response.
- A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) health physics, IH and customized nuclear, environmental, and occupational safety and health (“NEOSH”) instrumentation.
- A company owned gamma spectroscopy laboratory for the analysis of oil and gas industry solids and liquids.

For 2020, the Services Segment accounted for \$75,283,000, or 71.4%, of total revenue, as compared to \$33,095,000, or 45.1%, of total revenue for 2019. See “Dependence Upon a Single or Few Customers” for further details and a discussion as to our Segments’ contracts with government clients (domestic and foreign) or with others as a subcontractor to government clients.

MEDICAL SEGMENT (see a discussion of our Medical Segment above under “Company Overview and Principal Products and Services”).

Our Treatment and Services Segments provide services to research institutions, commercial companies, public utilities, and governmental agencies (domestic and foreign), including the U.S. Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”). The distribution channels for our services are through direct sales to customers or via intermediaries.

Our corporate office is located at 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

Foreign Revenue

Our consolidated revenue for 2020 and 2019 included approximately \$5,550,000, or 5.3%, and \$5,488,000, or 7.5%, respectively, from Canadian customers (including revenues generated by our Perma-Fix of Canada, Inc. (“PF Canada”) subsidiary).

Permits and Licenses

Waste management service companies are subject to extensive, evolving and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state and local environmental laws and regulations govern our activities regarding the treatment, storage, processing, disposal and transportation of hazardous, non-hazardous and radioactive wastes, and require us to obtain and maintain permits, licenses and/or approvals in order to conduct our waste activities. We are dependent on our permits and licenses discussed below in order to operate our businesses. Failure to obtain and maintain our permits or approvals would have a material adverse effect on us, our operations, and financial condition. The permits and licenses have terms ranging from one to ten years, and provided that we maintain a reasonable level of compliance, renew with minimal effort, and cost. We believe that these permit and license requirements represent a potential barrier to entry for possible competitors.

PFF, located in Gainesville, Florida, operates its hazardous, mixed and low-level radioactive waste activities under a Resource Conservation and Recovery Act (“RCRA”) Part B permit, Toxic Substances Control Act (“TSCA”) authorization, Restricted RX Drug Distributor-Destruction license, biomedical, and a radioactive materials license issued by the State of Florida.

DSSI, located in Kingston, Tennessee, conducts mixed and low-level radioactive waste storage and treatment activities under RCRA Part B permits and a radioactive materials license issued by the State of Tennessee Department of Environment and Conservation. Co-regulated TSCA Polychlorinated Biphenyl (“PCB”) wastes are also managed for PCB destruction under EPA Approval.

PFNWR, located in Richland, Washington, operates a low-level radioactive waste processing facility as well as a mixed waste processing facility. Radioactive material processing is authorized under radioactive materials licenses issued by the State of Washington and mixed waste processing is additionally authorized under a RCRA Part B permit with TSCA authorization issued jointly by the State of Washington and the EPA.

EWOC, located in Oak Ridge, Tennessee, operates a low-level radioactive waste material processing facility. Radioactive material processing is authorized under radioactive material licenses issued by the State of Tennessee Department of Environmental and Conservation, Division of radiological health.

The combination of RCRA Part B hazardous waste permits, TSCA authorizations, and radioactive material licenses held by the Company and its subsidiaries comprising our Treatment Segment is very difficult to obtain for a single facility and make this Segment unique.

We believe that the permitting and licensing requirements, and the cost to obtain such permits, are barriers to the entry of hazardous waste and radioactive and mixed waste activities as presently operated by our waste treatment subsidiaries. If the permit requirements for hazardous waste treatment, storage, and disposal (“TSD”) activities and/or the licensing requirements for the handling of low-level radioactive matters are eliminated or if such licenses or permits were made less rigorous to obtain, we believe such would allow companies to enter into these markets and provide greater competition.

Backlog

Our Treatment Segment maintains a backlog of stored waste, which represents waste that has not been processed. The backlog is principally a result of the timing and complexity of the waste being brought into the facilities and the selling price per container. At December 31, 2020, our Treatment Segment had a backlog of approximately \$7,631,000, as compared to approximately \$8,506,000 at December 31, 2019. Additionally, the time it takes to process waste from the time it arrives may increase due to the types and complexities of the waste we are currently receiving. We typically process our backlog during periods of low waste receipts, which historically has been in the first or fourth quarters.

Dependence Upon a Single or Few Customers

Our Treatment and Services Segments have significant relationships with the U.S and Canadian governmental authorities. A significant amount of our revenues from our Treatment and Services Segments are generated indirectly as subcontractors for others who are prime contractors to government authorities, particularly the U.S Department of Energy (“DOE”) and U.S. Department of Defense (“DOD”) or directly as the prime contractor to government authorities. The contracts that we are a party to with others as subcontractors to the U.S federal government or directly with the U.S federal government generally provide that the government may terminate or renegotiate the contracts on 30 days’ notice, at the government’s election. The contracts/task order agreements that we are a party to with Canadian governmental authorities generally provide that the government authorities may terminate the contracts/task order agreements at any time for any reason for convenience. Our inability to continue under existing contracts that we have with the U.S federal government and Canadian government authorities (directly or indirectly as a subcontractor) or significant reductions in the level of governmental funding in any given year could have a material adverse impact on our operations and financial condition.

We performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either indirectly for others as a subcontractor to government entities or directly as a prime contractor to government entities, representing approximately \$96,582,000, or 91.6%, of our total revenue during 2020, as compared to \$59,985,000, or 81.7%, of our total revenue during 2019.

Revenue generated by us as a subcontractor to a customer for a remediation project performed for a government entity (the “DOE”) within our Services Segment in 2020 and 2019 accounted for approximately \$41,011,000 or 38.9% and \$8,529,000 or 11.6% (included in revenues generated relating to government clients above) of our total revenue for 2020 and 2019, respectively. This remediation project included among other things, decontamination support of a building. As work progressed throughout stages of this project in 2020, additional contaminations were regularly discovered which resulted in approvals for additional work to be performed under this project. This project is expected to be completed by the first half of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Competitive Conditions

The Treatment Segment's largest competitor is EnergySolutions ("ES") which operates treatment facilities in Oak Ridge, TN and Erwin, TN and disposal facilities for low level radioactive waste in Clive, UT and Barnwell, SC. Waste Control Specialists ("WCS"), which has licensed disposal capabilities for low level radioactive waste in Andrews, TX, is also a competitor in the treatment market with increasing market share. These two competitors also provide us with options for disposal of our treated nuclear waste. The Treatment Segment treats and disposes of DOE generated waste largely at DOE owned sites. Our Treatment Segment currently solicits business primarily on a North America basis with both government and commercial clients; however, we continue to focus on emerging international markets for additional work.

Our Services Segment is engaged in highly competitive businesses in which a number of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. The extent of such competition varies according to the industries and markets in which our customers operate as well as the geographic areas in which we operate. The degree and type of competition we face is also often influenced by the project specification being bid on and the different specialty skill sets of each bidder for which our Services Segment competes, especially projects subject to the governmental bid process. We also have the ability to prime federal government small business procurements (small business set asides). Based on past experience, we believe that large businesses are more willing to team with small businesses in order to be part of these often-substantial procurements. There are a number of qualified small businesses in our market that will provide intense competition that may provide a challenge to our ability to maintain strong growth rates and acceptable profit margins. For international business there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. If our Services Segment is unable to meet these competitive challenges, it could lose market share and experience an overall reduction in its profits.

Certain Environmental Expenditures and Potential Environmental Liabilities

Environmental Liabilities

We have three remediation projects, which are currently in progress relating to our Perma-Fix of Dayton, Inc. ("PFD"), Perma-Fix of Memphis, Inc. ("PFM"), and Perma-Fix South Georgia, Inc. ("PFSG") subsidiaries, which are all included within our discontinued operations. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. These remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2020, we had total accrued environmental remediation liabilities of \$854,000. At December 31, 2020, \$744,000 of the total accrued environmental liabilities was recorded as current.

The nature of our business exposes us to significant cost to comply with governmental environmental laws, rules and regulations and risk of liability for damages. Such potential liability could involve, for example, claims for cleanup costs, personal injury or damage to the environment in cases where we are held responsible for the release of hazardous materials; claims of employees, customers or third parties for personal injury or property damage occurring in the course of our operations; and claims alleging negligence or professional errors or omissions in the planning or performance of our services. In addition, we could be deemed a responsible party for the costs of required cleanup of properties, which may be contaminated by hazardous substances generated or transported by us to a site we selected, including properties owned or leased by us. We could also be subject to fines and civil penalties in connection with violations of regulatory requirements.

Research and Development (“R&D”)

Innovation and technical know-how by our operations is very important to the success of our business. Our goal is to discover, develop and bring to market innovative ways to process waste that address unmet environmental needs. We conduct research internally, and also through collaborations with other third parties. The majority of our research activities are performed as we receive new and unique waste to treat. Our competitors also devote resources to R&D and many such competitors have greater resources at their disposal than we do.

Governmental Regulation

Environmental companies, such as us, and their customers are subject to extensive and evolving environmental laws and regulations by a number of federal, state and local environmental, safety and health agencies, the principal of which being the EPA. These laws and regulations largely contribute to the demand for our services. Although our customers remain responsible by law for their environmental problems, we must also comply with the requirements of those laws applicable to our services. We cannot predict the extent to which our operations may be affected by future enforcement policies as applied to existing laws or by the enactment of new environmental laws and regulations. Moreover, any predictions regarding possible liability are further complicated by the fact that under current environmental laws we could be jointly and severally liable for certain activities of third parties over whom we have little or no control. Although we believe that we are currently in substantial compliance with applicable laws and regulations, we could be subject to fines, penalties or other liabilities or could be adversely affected by existing or subsequently enacted laws or regulations. The principal environmental laws affecting our customers and us are briefly discussed below.

The Resource Conservation and Recovery Act of 1976, as amended (“RCRA”)

RCRA and its associated regulations establish a strict and comprehensive permitting and regulatory program applicable to companies, such as us, that treat, store or dispose of hazardous waste. The EPA has promulgated regulations under RCRA for new and existing treatment, storage and disposal facilities including incinerators, storage and treatment tanks, storage containers, storage and treatment surface impoundments, waste piles and landfills. Every facility that treats, stores or disposes of hazardous waste must obtain a RCRA permit or must obtain interim status from the EPA, or a state agency, which has been authorized by the EPA to administer its program, and must comply with certain operating, financial responsibility and closure requirements.

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (“CERCLA,” also referred to as the “Superfund Act”)

CERCLA governs the cleanup of sites at which hazardous substances are located or at which hazardous substances have been released or are threatened to be released into the environment. CERCLA authorizes the EPA to compel responsible parties to clean up sites and provides for punitive damages for noncompliance. CERCLA imposes joint and several liabilities for the costs of clean up and damages to natural resources.

Health and Safety Regulations

The operation of our environmental activities is subject to the requirements of the OSHA and comparable state laws. Regulations promulgated under OSHA by the Department of Labor require employers of persons in the transportation and environmental industries, including independent contractors, to implement hazard communications, work practices and personnel protection programs in order to protect employees from equipment safety hazards and exposure to hazardous chemicals.

Atomic Energy Act

The Atomic Energy Act of 1954 governs the safe handling and use of Source, Special Nuclear and Byproduct materials in the U.S. and its territories. This act authorized the Atomic Energy Commission (now the Nuclear Regulatory Commission “USNRC”) to enter into “Agreements with states to carry out those regulatory functions in those respective states except for Nuclear Power Plants and federal facilities like the VA hospitals and the DOE operations.” The State of Florida Department of Health (with the USNRC oversight), Office of Radiation Control, regulates the licensing and radiological program of the PFF facility; the State of Tennessee (with the USNRC oversight), Tennessee Division of Radiological Health, regulates licensing and the radiological program of the DSSI facility and the EWOC facility; and the State of Washington (with the USNRC oversight) Department of Health, regulates licensing and the radiological operations of the PFNWR facility.

Other Laws

Our activities are subject to other federal environmental protection and similar laws, including, without limitation, the Clean Water Act, the Clean Air Act, the Hazardous Materials Transportation Act and the TSCA. Many states have also adopted laws for the protection of the environment which may affect us, including laws governing the generation, handling, transportation and disposition of hazardous substances and laws governing the investigation and cleanup of, and liability for, contaminated sites. Some of these state provisions are broader and more stringent than existing federal law and regulations. Our failure to conform our services to the requirements of any of these other applicable federal or state laws could subject us to substantial liabilities which could have a material adverse effect on us, our operations and financial condition. In addition to various federal, state and local environmental regulations, our hazardous waste transportation activities are regulated by the U.S. Department of Transportation, the Interstate Commerce Commission and transportation regulatory bodies in the states in which we operate. We cannot predict the extent to which we may be affected by any law or rule that may be enacted or enforced in the future, or any new or different interpretations of existing laws or rules.

ITEM 1A. RISK FACTORS

The following are certain risk factors that could affect our business, financial performance, and results of operations. These risk factors should be considered in connection with evaluating the forward-looking statements contained in this Form 10-K, as the forward-looking statements are based on current expectations, and actual results and conditions could differ materially from the current expectations. Investing in our securities involves a high degree of risk, and before making an investment decision, you should carefully consider these risk factors as well as other information we include or incorporate by reference in the other reports we file with the Securities and Exchange Commission (the "Commission").

Risk Related to COVID-19

COVID-19 could result in material adverse effects on our business, financial position, results of operations and cash flows.

The extent of the impact of the COVID-19 pandemic on our business is uncertain and difficult to predict, as the responses to the pandemic continue to evolve rapidly. Since the latter part of the second quarter of 2020, all of the projects within our Services Segment that were previously shutdown have restarted as stay-at-home orders and certain other restrictions resulting from the pandemic were lifted. Within our Treatment Segment, we continue to experience delays in waste shipment from certain customers directly related to the impact of COVID-19 including generator shutdowns and limited sustained operations, along with other factors. However, we expect to see a gradual return in waste receipts from these customers starting in the first half of 2021 as they accelerate operations. COVID-19 disruption could have a material adverse effect on our business as our customers could curtail and reduce capital and overall spending.

The severity of the impact the COVID-19 pandemic on our business will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic, the extent and severity of the impact on our customers, the impact on governmental programs and budgets, distribution of COVID-19 vaccines, the rate at which people are inoculated with the vaccines, and how quickly and to what extent normal economic and operating conditions resume, all of which are uncertain and cannot be predicted with any accuracy or confidence at this time. Our future results of operations and liquidity could be adversely impacted by continued delays in waste shipments and/or the recurrence of project work shut downs as well as potential partial/full shutdown of any of our facilities due to COVID-19.

Risks Relating to our Business and Operations

Failure to maintain our financial assurance coverage that we are required to have in order to operate our permitted treatment, storage and disposal facilities could have a material adverse effect on us.

We maintain finite risk insurance policies and bonding mechanisms which provide financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure of those facilities. We are required to provide and to maintain financial assurance that guarantees to the state that in the event of closure, our permitted facilities will be closed in accordance with the regulations. In the event that we are unable to obtain or maintain our financial assurance coverage for any reason, this could materially impact our operations and our permits which we are required to have in order to operate our treatment, storage, and disposal facilities.

If we cannot maintain adequate insurance coverage, we will be unable to continue certain operations.

Our business exposes us to various risks, including claims for causing damage to property and injuries to persons that may involve allegations of negligence or professional errors or omissions in the performance of our services. Such claims could be substantial. We believe that our insurance coverage is presently adequate and similar to, or greater than, the coverage maintained by other companies in the industry of our size. If we are unable to obtain adequate or required insurance coverage in the future, or if our insurance is not available at affordable rates, we would violate our permit conditions and other requirements of the environmental laws, rules, and regulations under which we operate. Such violations would render us unable to continue certain of our operations. These events would have a material adverse effect on our financial condition.

The inability to maintain existing government contracts or win new government contracts over an extended period could have a material adverse effect on our operations and adversely affect our future revenues.

A material amount of our Treatment and Services Segments' revenues are generated through various government contracts or subcontracts (domestic and foreign (primarily Canadian)). Our revenues from governmental contracts and subcontracts relating to governmental facilities within our segments were approximately \$96,582,000, or 91.6%, and \$59,985,000, or 81.7%, of our consolidated revenues for 2020 and 2019, respectively. Most of our government contracts or our subcontracts granted under government contracts are awarded through a regulated competitive bidding process. Some government contracts are awarded to multiple competitors, which increase overall competition and pricing pressure and may require us to make sustained post-award efforts to realize revenues under these government contracts. All contracts with, or subcontracts involving, the U.S federal government are terminable, or subject to renegotiation, by the applicable governmental agency on 30 days notice, at the option of the governmental agency. The contracts/task order agreements that we are a party to with Canadian governmental authorities generally provide that the government authorities may terminate the contracts/task order agreements at any time for any reason for convenience. If we fail to maintain or replace these relationships, or if a material contract is terminated or renegotiated in a manner that is materially adverse to us, our revenues and future operations could be materially adversely affected.

Our existing and future customers may reduce or halt their spending on hazardous waste and nuclear services with outside vendors, including us.

A variety of factors may cause our existing or future customers (including government clients) to reduce or halt their spending on hazardous waste and nuclear services from outside vendors, including us. These factors include, but are not limited to:

- accidents, terrorism, natural disasters or other incidents occurring at nuclear facilities or involving shipments of nuclear materials;
- failure of government to approve necessary budgets, or to reduce the amount of the budget necessary, to fund remediation sites, including DOE and DOD sites;
- civic opposition to or changes in government policies regarding nuclear operations;
- a reduction in demand for nuclear generating capacity; or
- failure to perform under existing contracts, directly or indirectly, with the government.

These events could result in or cause government clients to terminate or cancel existing contracts involving us to treat, store or dispose of contaminated waste and/or to perform remediation projects, at one or more of government sites. These events also could adversely affect us to the extent that they result in the reduction or elimination of contractual requirements, lower demand for nuclear services, burdensome regulation, disruptions of shipments or production, increased operational costs or difficulties or increased liability for actual or threatened property damage or personal injury.

Economic downturns, reductions in government funding or other events beyond our control (such as the continued impact of COVID-19) could have a material negative impact on our businesses.

Demand for our services has been, and we expect that demand will continue to be, subject to significant fluctuations due to a variety of factors beyond our control, including, without limitation, economic conditions, reductions in the budget for spending to remediate federal sites due to numerous reasons including, without limitation, the substantial deficits that the federal government has and is continuing to incur, and/or the continued impact resulting from COVID-19. During economic downturns, large budget deficits that the federal government and many states are experiencing, and other events beyond our control, including, but not limited to the impact from COVID-19, the ability of private and government entities to spend on waste services, including nuclear services, may decline significantly. Our operations depend, in large part, upon governmental funding (for example, the annual budget of the DOE) or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flow.

The loss of one or a few customers could have an adverse effect on us.

One or a few governmental customers or governmental related customers have in the past, and may in the future, account for a significant portion of our revenue in any one year or over a period of several consecutive years. Because customers generally contract with us for specific projects, we may lose these significant customers from year to year as their projects with us are completed. Our inability to replace the business with other similar significant projects could have an adverse effect on our business and results of operations.

We are a holding company and depend, in large part, on receiving funds from our subsidiaries to fund our indebtedness.

Because we are a holding company and operations are conducted through our subsidiaries, our ability to meet our obligations depends, in large part, on the operating performance and cash flows of our subsidiaries.

Our Treatment Segment has limited end disposal sites to utilize to dispose of its waste which could significantly impact our results of operations.

Our Treatment Segment has limited options available for disposal of its nuclear waste. Currently, there are only three disposal sites, each site having different owners, for our low-level radioactive waste we receive from non-governmental sites, allowing us to take advantage of the pricing competition between the three sites. If any of these disposal sites ceases to accept waste or closes for any reason or refuses to accept the waste of our Treatment Segment, for any reason, we would have limited remaining site to dispose of our nuclear waste. With limited end disposal site to dispose of our waste, we could be subject to significantly increased costs which could negatively impact our results of operations.

Our operations are subject to seasonal factors, which cause our revenues to fluctuate.

We have historically experienced reduced revenues and losses during the first and fourth quarters of our fiscal years due to a seasonal slowdown in operations from poor weather conditions, overall reduced activities during these periods resulting from holiday periods, and finalization of government budgets during the fourth quarter of each year. During our second and third fiscal quarters there has historically been an increase in revenues and operating profits. If we do not continue to have increased revenues and profitability during the second and third fiscal quarters, this could have a material adverse effect on our results of operations and liquidity.

We are engaged in highly competitive businesses and typically must bid against other competitors to obtain major contracts.

We are engaged in highly competitive business in which most of our government contracts and some of our commercial contracts are awarded through competitive bidding processes. We compete with national, international (primarily Canada currently) and regional firms with nuclear and/or hazardous waste services practices, as well as small or local contractors. Some of our competitors have greater financial and other resources than we do, which can give them a competitive advantage. In addition, even if we are qualified to work on a new government contract, we might not be awarded the contract because of existing government policies designed to protect certain types of businesses and under-represented minority contractors. Although we believe we have the ability to certify and bid government contract as a small business, there are a number of qualified small businesses in our market that will provide intense competition. For international business, which we continue to focus on, there are additional competitors, many from within the country the work is to be performed, making winning work in foreign countries more challenging. Competition places downward pressure on our contract prices and profit margins. If we are unable to meet these competitive challenges, we could lose market share and experience on overall reduction in our profits.

We bear the risk of cost overruns in fixed-price contracts. We may experience reduced profits or, in some cases, losses under these contracts if costs increase above our estimates.

Our revenues may be earned under contracts that are fixed-price or maximum price in nature. Fixed-price contracts expose us to a number of risks not inherent in cost-reimbursable contracts. Under fixed price and guaranteed maximum-price contracts, contract prices are established in part on cost and scheduling estimates which are based on a number of assumptions, including assumptions about future economic conditions, prices and availability of labor, equipment and materials, and other exigencies. If these estimates prove inaccurate, or if circumstances change such as unanticipated technical problems, difficulties in obtaining permits or approvals, changes in laws or labor conditions, weather delays, cost of raw materials, our suppliers' or subcontractors' inability to perform, and/or other events beyond our control, such as the impact of the Coronavirus, cost overruns may occur and we could experience reduced profits or, in some cases, a loss for that project. Errors or ambiguities as to contract specifications can also lead to cost-overruns.

Adequate bonding is necessary for us to win certain types of new work and support facility closure requirements.

We are often required to provide performance bonds to customers under certain of our contracts, primarily within our Services Segment. These surety instruments indemnify the customer if we fail to perform our obligations under the contract. If a bond is required for a particular project and we are unable to obtain it due to insufficient liquidity or other reasons, we may not be able to pursue that project. In addition, we provide bonds to support financial assurance in the event of facility closure pursuant to state requirements. We currently have a bonding facility but, the issuance of bonds under that facility is at the surety's sole discretion. Moreover, due to events that affect the insurance and bonding markets generally, bonding may be more difficult to obtain in the future or may only be available at significant additional cost. There can be no assurance that bonds will continue to be available to us on reasonable terms. Our inability to obtain adequate bonding and, as a result, to bid on new work could have a material adverse effect on our business, financial condition and results of operations.

If we cannot maintain our governmental permits or cannot obtain required permits, we may not be able to continue or expand our operations.

We are a nuclear services and waste management company. Our business is subject to extensive, evolving, and increasingly stringent federal, state, and local environmental laws and regulations. Such federal, state, and local environmental laws and regulations govern our activities regarding the treatment, storage, recycling, disposal, and transportation of hazardous and non-hazardous waste and low-level radioactive waste. We must obtain and maintain permits or licenses to conduct these activities in compliance with such laws and regulations. Failure to obtain and maintain the required permits or licenses would have a material adverse effect on our operations and financial condition. If any of our facilities are unable to maintain currently held permits or licenses or obtain any additional permits or licenses which may be required to conduct its operations, we may not be able to continue those operations at these facilities, which could have a material adverse effect on us.

Risks Related to Laws and Regulations

As a government contractor, we are subject to extensive government regulation, and our failure to comply with applicable regulations could subject us to penalties that may restrict our ability to conduct our business.

Our governmental contracts or subcontracts relating to DOE sites, are a significant part of our business. Allowable costs under U.S. government contracts are subject to audit by the U.S. government. If these audits result in determinations that costs claimed as reimbursable are not allowed costs or were not allocated in accordance with applicable regulations, we could be required to reimburse the U.S. government for amounts previously received.

Governmental contracts or subcontracts involving governmental facilities are often subject to specific procurement regulations, contract provisions and a variety of other requirements relating to the formation, administration, performance and accounting of these contracts. Many of these contracts include express or implied certifications of compliance with applicable regulations and contractual provisions. If we fail to comply with any regulations, requirements or statutes, our existing governmental contracts or subcontracts involving governmental facilities could be terminated or we could be suspended from government contracting or subcontracting. If one or more of our governmental contracts or subcontracts are terminated for any reason, or if we are suspended or debarred from government work, we could suffer a significant reduction in expected revenues and profits. Furthermore, as a result of our governmental contracts or subcontracts involving governmental facilities, claims for civil or criminal fraud may be brought by the government or violations of these regulations, requirements or statutes.

Changes in environmental regulations and enforcement policies could subject us to additional liability and adversely affect our ability to continue certain operations.

We cannot predict the extent to which our operations may be affected by future governmental enforcement policies as applied to existing environmental laws, by changes to current environmental laws and regulations, or by the enactment of new environmental laws and regulations. Any predictions regarding possible liability under such laws are complicated further by current environmental laws which provide that we could be liable, jointly and severally, for certain activities of third parties over whom we have limited or no control.

Our businesses subject us to substantial potential environmental liability.

Our business of rendering services in connection with management of waste, including certain types of hazardous waste, low-level radioactive waste, and mixed waste (waste containing both hazardous and low-level radioactive waste), subjects us to risks of liability for damages. Such liability could involve, without limitation:

- claims for clean-up costs, personal injury or damage to the environment in cases in which we are held responsible for the release of hazardous or radioactive materials;
- claims of employees, customers, or third parties for personal injury or property damage occurring in the course of our operations; and
- claims alleging negligence or professional errors or omissions in the planning or performance of our services.

Our operations are subject to numerous environmental laws and regulations. We have in the past, and could in the future, be subject to substantial fines, penalties, and sanctions for violations of environmental laws and substantial expenditures as a responsible party for the cost of remediating any property which may be contaminated by hazardous substances generated by us and disposed at such property, or transported by us to a site selected by us, including properties we own or lease.

As our operations expand, we may be subject to increased litigation, which could have a negative impact on our future financial results.

Our operations are highly regulated and we are subject to numerous laws and regulations regarding procedures for waste treatment, storage, recycling, transportation, and disposal activities, all of which may provide the basis for litigation against us. In recent years, the waste treatment industry has experienced a significant increase in so-called “toxic-tort” litigation as those injured by contamination seek to recover for personal injuries or property damage. We believe that, as our operations and activities expand, there will be a similar increase in the potential for litigation alleging that we have violated environmental laws or regulations or are responsible for contamination or pollution caused by our normal operations, negligence or other misconduct, or for accidents, which occur in the course of our business activities. Such litigation, if significant and not adequately insured against, could adversely affect our financial condition and our ability to fund our operations. Protracted litigation would likely cause us to spend significant amounts of our time, effort, and money. This could prevent our management from focusing on our operations and expansion.

If environmental regulation or enforcement is relaxed, the demand for our services will decrease.

The demand for our services is substantially dependent upon the public’s concern with, and the continuation and proliferation of, the laws and regulations governing the treatment, storage, recycling, and disposal of hazardous, non-hazardous, and low-level radioactive waste. A decrease in the level of public concern, the repeal or modification of these laws, or any significant relaxation of regulations relating to the treatment, storage, recycling, and disposal of hazardous waste and low-level radioactive waste would significantly reduce the demand for our services and could have a material adverse effect on our operations and financial condition. We are not aware of any current federal or state government or agency efforts in which a moratorium or limitation has been, or will be, placed upon the creation of new hazardous or radioactive waste regulations that would have a material adverse effect on us; however, no assurance can be made that such a moratorium or limitation will not be implemented in the future.

We and our customers operate in a politically sensitive environment, and the public perception of nuclear power and radioactive materials can affect our customers and us.

We and our customers operate in a politically sensitive environment. Opposition by third parties to particular projects can limit the handling and disposal of radioactive materials. Adverse public reaction to developments in the disposal of radioactive materials, including any high-profile incident involving the discharge of radioactive materials, could directly affect our customers and indirectly affect our business. Adverse public reaction also could lead to increased regulation or outright prohibition, limitations on the activities of our customers, more onerous operating requirements or other conditions that could have a material adverse impact on our customers’ and our business.

The elimination or any modification of the Price-Anderson Acts indemnification authority could have adverse consequences for our business.

The Atomic Energy Act of 1954, as amended, or the AEA, comprehensively regulates the manufacture, use, and storage of radioactive materials. The Price-Anderson Act (“PAA”) supports the nuclear services industry by offering broad indemnification to DOE contractors for liabilities arising out of nuclear incidents at DOE nuclear facilities. That indemnification protects DOE prime contractor, but also similar companies that work under contract or subcontract for a DOE prime contract or transporting radioactive material to or from a site. The indemnification authority of the DOE under the PAA was extended through 2025 by the Energy Policy Act of 2005.

Under certain conditions, the PAA’s indemnification provisions may not apply to our processing of radioactive waste at governmental facilities, and may not apply to liabilities that we might incur while performing services as a contractor for the DOE and the nuclear energy industry. If an incident or evacuation is not covered under PAA indemnification, we could be held liable for damages, regardless of fault, which could have an adverse effect on our results of operations and financial condition. If such indemnification authority is not applicable in the future, our business could be adversely affected if the owners and operators of new facilities fail to retain our services in the absence of commercial adequate insurance and indemnification.

Risks Relating to our Financial Performance and Position and Need for Financing

If any of our permits, other intangible assets, and tangible assets becomes impaired, we may be required to record significant charges to earnings.

Under accounting principles generally accepted in the United States (“U.S. GAAP”), we review our intangible and tangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Our permits are tested for impairment at least annually. Factors that may be considered a change in circumstances, indicating that the carrying value of our permit, other intangible assets, and tangible assets may not be recoverable, include a decline in stock price and market capitalization, reduced future cash flow estimates, and slower growth rates in our industry. We may be required, in the future, to record impairment charges in our financial statements, in which any impairment of our permit, other intangible assets, and tangible assets is determined. Such impairment charges could negatively impact our results of operations.

Breach of any of the covenants in our credit facility could result in a default, triggering repayment of outstanding debt under the credit facility and the termination of our credit facility.

Our credit facility with our bank contains financial covenants. A breach of any of these covenants could result in a default under our credit facility triggering our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. In the past, when we failed to meet our minimum quarterly fixed charge coverage ratio (“FCCR”) requirement, our lender has either waived these instances of non-compliance or provided certain amendments to our FCCR requirements which enabled us to meet our quarterly FCCR requirements. Additionally, our lender has in the past waived our quarterly FCCR testing requirements. If we fail to meet any of our financial covenants going forward, including the minimum quarterly FCCR requirement, and our lender does not further waive the non-compliance or further revise our covenant requirement so that we are in compliance, our lender could accelerate the payment of our borrowings under our credit facility and terminate our credit facility. In such event, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

Our debt and borrowing availability under our credit facility could adversely affect our operations.

At December 31, 2020, our aggregate consolidated debt was approximately \$6,729,000, which included our PPP Loan balance of approximately \$5,318,000. We have applied for loan forgiveness on the entire PPP Loan balance which is subject to the review and approval of our lender and the SBA. Our Second Amended and Restated Revolving Credit, Term Loan and Security Agreement dated May 8, 2020 provides for a total credit facility commitment of approximately \$19,742,000, consisting of a \$18,000,000 revolving line of credit and a term loan balance of approximately \$1,742,000. The maximum we can borrow under the revolving part of the credit facility is based on a percentage of the amount of our eligible receivables outstanding at any one time reduced by outstanding standby letters of credit and any borrowing reduction that our lender may impose from time to time. At December 31, 2020, we had no borrowing under the revolving part of our credit facility and borrowing availability of up to an additional \$14,220,000. A lack of positive operating results could have material adverse consequences on our ability to operate our business. Our ability to make principal and interest payments, to refinance indebtedness, and borrow under our credit facility will depend on both our and our subsidiaries’ future operating performance and cash flow. Prevailing economic conditions, interest rate levels, and financial, competitive, business, and other factors affect us. Many of these factors are beyond our control.

Our indebtedness could limit our financial and operating activities, and adversely affect our ability to incur additional debt to fund future needs.

As a result of our indebtedness, we could, among other things, be:

- required to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities;
- make it more difficult for us to satisfy our obligations;
- limit our ability to borrow additional money if needed for other purposes, including working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all;
- limit our ability to adjust to changing economic, business and competitive conditions;
- place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing;
- make us more vulnerable to an increase in interest rates, a downturn in our operating performance or a decline in general economic conditions; and
- make us more susceptible to changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing.

Any of the foregoing could adversely impact our operating results, financial condition, and liquidity. Our ability to continue our operations depends on our ability to generate profitable operations or complete equity or debt financings to increase our capital.

We may be unable to utilize loss carryforwards in the future.

We have approximately \$14,264,000 and \$71,316,000 in net operating loss carryforwards for federal and state income tax purposes, respectively, which will expire in various amounts starting in 2021 if not used against future federal and state income tax liabilities, respectively. Approximately \$12,199,000 of our federal net operating loss carryforwards were generated after December 31, 2017 and thus do not expire. Our net loss carryforwards are subject to various limitations. Our ability to use the net loss carryforwards depends on whether we are able to generate sufficient income in the future years. Further, our net loss carryforwards have not been audited or approved by the Internal Revenue Service.

Our Paycheck Protection Loan (“PPP Loan”) may be audited

In April 2020, we received a PPP Loan under the CARES Act in the amount of approximately \$5,666,000 which had a principal balance of approximately \$5,318,000 at December 31, 2020. We are aware that PPP loans in excess of \$2,000,000 may be subject to being audited by the appropriate governmental authority. If our PPP Loan is audited, it is currently unknown how our PPP Loan could be affected by an audit. An audit could result, among other things, in us being required to return all or a portion of our PPP Loan.

Risks Relating to our Common Stock

Issuance of substantial amounts of our Common Stock could depress our stock price.

Any sales of substantial amounts of our Common Stock in the public market could cause an adverse effect on the market price of our Common Stock and could impair our ability to raise capital through the sale of additional equity securities. The issuance of our Common Stock will result in the dilution in the percentage membership interest of our stockholders and the dilution in ownership value. At December 31, 2020, we had 12,153,897 shares of Common Stock outstanding.

In addition, at December 31, 2020, we had outstanding options to purchase 658,400 shares of our Common Stock at exercise prices ranging from \$2.79 to \$7.29 per share. Further, our preferred share rights plan, if triggered, could result in the issuance of a substantial amount of our Common Stock. The existence of this quantity of rights to purchase our Common Stock under the preferred share rights plan could result in a significant dilution in the percentage ownership interest of our stockholders and the dilution in ownership value. Future sales of the shares issuable could also depress the market price of our Common Stock.

We do not intend to pay dividends on our Common Stock in the foreseeable future.

Since our inception, we have not paid cash dividends on our Common Stock, and we do not anticipate paying any cash dividends in the foreseeable future. Our credit facility prohibits us from paying cash dividends on our Common Stock without prior approval from our lender.

The price of our Common Stock may fluctuate significantly, which may make it difficult for our stockholders to resell our Common Stock when a stockholder wants or at prices a stockholder finds attractive.

The price of our Common Stock on the NASDAQ Capital Markets constantly changes. We expect that the market price of our Common Stock will continue to fluctuate. This may make it difficult for our stockholders to resell the Common Stock when a stockholder wants or at prices a stockholder finds attractive.

Future issuance of our Common Stock could adversely affect the price of our Common Stock, our ability to raise funds in new stock offerings and could dilute the percentage ownership of our common stockholders.

Future sales of substantial amounts of our Common Stock or equity-related securities in the public market, or the perception that such sales or conversions could occur, could adversely affect prevailing trading prices of our Common Stock and could dilute the value of Common Stock held by our existing stockholders. No prediction can be made as to the effect, if any, that future sales of shares of our Common Stock or the availability of shares of our Common Stock for future sale will have on the trading price of our Common Stock. Such future sales or conversions could also significantly reduce the percentage ownership of our common stockholders.

Our Preferred Share Rights Plan may adversely affect our stockholders.

The Company adopted a Preferred Share Purchase Rights Plan (“Rights Plan”) dated May 2018. As part of the Rights Plan, the Company’s Board of Directors (“Board”) declared a dividend distribution of one Preferred Share Purchase Right (“Right”) on each outstanding share of the Company’s Common Stock to stockholders of record on May 12, 2018. The Rights Plan is designed to assure that all of the Company’s shareholders receive fair and equal treatment in the event of any proposed takeover of the Company and to guard against partial tender abusive tactics to gain control of the Company. The Rights Plan, as amended, is to terminate the earliest of (1) close of business on May 2, 2021, (2) the time at which the Rights are redeemed, (3) the time at which the Rights are exchange, or (4) closing of any merger or acquisition of the Company which has been approved by the Board prior to any person becoming such an acquiring person.

In general, the Rights under the Rights Plan will be exercisable only if a person or group acquires beneficial ownership of 15% or more of the Company’s Common Stock or announces a tender or exchange offer, the consummation of which would result in ownership by a person or group of 15% or more of the Common Stock (with certain exceptions). Each Right under the Rights Plan (other than the Rights owned by such acquiring person or members of such group which are void) will entitle shareholders to buy one one-thousandth of a share of a new series of participating preferred stock at an exercise price of \$20.00. Each one one-thousandth of a share of such new preferred stock purchasable upon exercise of a Right has economic terms designed to approximate the value of one share of Common Stock. Shareholders who have beneficial ownership of 15% or more at the adoption of the new Rights Plan are grandfathered in, but may not acquire additional shares without triggering the new Rights Plan.

If the Company is acquired in a merger or other business combination transaction, each Right will entitle its holder (other than Rights owned by such acquiring person or members of such group which are void) to purchase, at the Right’s then current exercise price, a number of the acquiring company’s common shares having a market value at the time of twice the Right’s exercise price.

In addition, if a person or group (with certain exceptions) acquires 15% or more of the Company’s outstanding Common Stock, each Right will entitle its holder (other than the Rights owned by such acquiring person or members of such group which are void) to purchase, in lieu of preferred stock, at the Right’s then current exercise price, a number of shares of the Company’s Common Stock having a market value of twice the Right’s exercise price.

Following the acquisition by a person or group of beneficial ownership of 15% or more of the Company’s outstanding Common Stock (with certain exceptions), and prior to an acquisition of 50% or more of the Company’s Common Stock by such person or group, the Company’s Board may, at its option, exchange the Rights (other than Rights owned by such acquiring person or members of such group) in whole or in part, for shares of the Company’s Common Stock at an exchange ratio of one share of Common Stock (or one one-thousandth of a share of the new series of participating preferred stock) per Right.

Prior to the acquisition by a person or group of beneficial ownership of 15% or more of the Company’s Common Stock (with certain exceptions), the Rights are redeemable for \$0.001 per Right at the option of the Board of Directors.

The Rights will cause substantial dilution to a person or group that attempts to acquire us on terms not approved by our Board. The Rights should not interfere with any merger or other business combination approved by our Board.

General Risk Factors

Loss of certain key personnel could have a material adverse effect on us.

Our success depends on the contributions of our key management, environmental and engineering personnel. Our future success depends on our ability to retain and expand our staff of qualified personnel, including environmental specialists and technicians, sales personnel, and engineers. Without qualified personnel, we may incur delays in rendering our services or be unable to render certain services. We cannot be certain that we will be successful in our efforts to attract and retain qualified personnel as their availability is limited due to the demand for hazardous waste management services and the highly competitive nature of the hazardous waste management industry. We do not maintain key person insurance on any of our employees, officers, or directors.

We may not be successful in winning new business mandates from our government and commercial customers or international customers.

We must be successful in winning mandates from our government, commercial customers and international customers to replace revenues from projects that we have completed or that are nearing completion and to increase our revenues. Our business and operating results can be adversely affected by the size and timing of a single material contract.

Our failure to maintain our safety record could have an adverse effect on our business.

Our safety record is critical to our reputation. In addition, many of our government and commercial customers require that we maintain certain specified safety record guidelines to be eligible to bid for contracts with these customers. Furthermore, contract terms may provide for automatic termination in the event that our safety record fails to adhere to agreed-upon guidelines during performance of the contract. As a result, our failure to maintain our safety record could have a material adverse effect on our business, financial condition and results of operations.

Systems failures, interruptions or breaches of security and other cyber security risks could have an adverse effect on our financial condition and results of operations.

We are subject to certain operational risks to our information systems. Because of efforts on the part of computer hackers and cyberterrorists to breach data security of companies, we face risk associated with potential failures to adequately protect critical corporate, customer and employee data. As part of our business, we develop and retain confidential data about us and our customers, including the U.S. government. We also rely on the services of a variety of vendors to meet our data processing and communications needs.

Despite our implemented security measures and established policies, we cannot be certain that all of our systems are entirely free from vulnerability to attack or other technological difficulties or failures on the part of our employees to follow our established security measures and policies. Information security risks have increased significantly. Our technologies, systems, and networks may become the target of cyber-attacks, computer viruses, malicious code, or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of our or our customers' confidential, proprietary and other information and the disruption of our business operations. A security breach could adversely impact our customer relationships, reputation and operation and result in violations of applicable privacy and other laws, financial loss to us or to our customers or to our employees, and litigation exposure. While we maintain a system of internal controls and procedures, any breach, attack, or failure as discussed above could have a material adverse impact on our business, financial condition, and results of operations or liquidity.

There is also an increasing attention on the importance of cybersecurity relating to infrastructure. This creates the potential for future developments in regulations relating to cybersecurity that may adversely impact us, our customers and how we offer our services to our customers.

We may be exposed to certain regulatory and financial risks related to climate change.

Climate change is receiving ever increasing attention from scientists and legislators alike. The debate is ongoing as to the extent to which our climate is changing, the potential causes of this change and its potential impacts. Some attribute global warming to increased levels of greenhouse gases, including carbon dioxide, which has led to significant legislative and regulatory efforts to limit greenhouse gas emissions. Presently there are no federally mandated greenhouse gas reduction requirements in the United States. However, there are a number of legislative and regulatory proposals to address greenhouse gas emissions, which are in various phases of discussion or implementation. The outcome of federal and state actions to address global climate change could result in a variety of regulatory programs including potential new regulations. Any adoption by federal or state governments mandating a substantial reduction in greenhouse gas emissions could increase costs associated with our operations. Until the timing, scope and extent of any future regulation becomes known, we cannot predict the effect on our financial position, operating results and cash flows.

We believe our proprietary technology is important to us.

We believe that it is important that we maintain our proprietary technologies. There can be no assurance that the steps taken by us to protect our proprietary technologies will be adequate to prevent misappropriation of these technologies by third parties. Misappropriation of our proprietary technology could have an adverse effect on our operations and financial condition. Changes to current environmental laws and regulations also could limit the use of our proprietary technology.

Failure to maintain effective internal control over financial reporting or failure to remediate a material weakness in internal control over financial reporting could have a material adverse effect on our business, operating results, and stock price.

Maintaining effective internal control over financial reporting is necessary for us to produce reliable financial reports and is important in helping to prevent financial fraud. If we are unable to maintain adequate internal controls, our business and operating results could be harmed. We are required to satisfy the requirements of Section 404 of Sarbanes Oxley and the related rules of the Commission, which require, among other things, management to assess annually the effectiveness of our internal control over financial reporting. If we are unable to maintain adequate internal control over financial reporting or effectively remediate any material weakness identified in internal control over financial reporting, there is a reasonable possibility that a misstatement of our annual or interim financial statements will not be prevented or detected in a timely manner. If we cannot produce reliable financial reports, investors could lose confidence in our reported financial information, the market price of our common stock could decline significantly, and our business, financial condition, and reputation could be harmed.

Delaware law, certain of our charter provisions, our stock option plans, outstanding warrants and our Preferred Stock may inhibit a change of control under circumstances that could give you an opportunity to realize a premium over prevailing market prices.

We are a Delaware corporation governed, in part, by the provisions of Section 203 of the General Corporation Law of Delaware, an anti-takeover law. In general, Section 203 prohibits a Delaware public corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. As a result of Section 203, potential acquirers may be discouraged from attempting to effect acquisition transactions with us, thereby possibly depriving our security holders of certain opportunities to sell, or otherwise dispose of, such securities at above-market prices pursuant to such transactions. Further, certain of our option plans provide for the immediate acceleration of, and removal of restrictions from, options and other awards under such plans upon a “change of control” (as defined in the respective plans). Such provisions may also have the result of discouraging acquisition of us.

We have authorized and unissued 17,120,061 (which include shares issuable under outstanding options to purchase 658,400 shares of our Common Stock and shares issuable under an outstanding warrant to purchase 60,000 shares of our Common Stock) shares of our Common Stock and 2,000,000 shares of our Preferred Stock as of December 31, 2020 (which includes 50,000 shares of our Preferred Stock reserved for issuance under our new preferred share rights plan discussed below). These unissued shares could be used by our management to make it more difficult for, and thereby discourage an attempt to acquire control of us.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not Applicable.

ITEM 2. PROPERTIES

Our principal executive office is in Atlanta, Georgia. Our Business Center is located in Oak Ridge, Tennessee. Our Treatment Segment facilities are located in Gainesville, Florida; Kingston, Tennessee; Richland, Washington; and Oak Ridge, Tennessee. All of the properties where these facilities operate on are held by our senior lender as collateral for our credit facility with the exception of the property at Oak Ridge, Tennessee which is leased which an option to purchase. Our Services Segment maintains offices, which are all leased properties. We maintain properties in Valdosta, Georgia and Memphis, Tennessee, which are all non-operational and are included within our discontinued operations.

The Company currently leases properties in the following locations for operations and administrative functions within our Treatment and Services Segments, including our corporate office and Business Center:

Location	Square Footage (SF)/ Acreage (AC)	Expiration of Lease
Oak Ridge, TN (Business Center)	14,932 SF	May 1, 2022
Oak Ridge, TN (Services)	5,000 SF	September 30, 2021
Blaydon On Tyne, England (Services)	1,000 SF	Monthly
New Brighton, PA (Services)	3,558 SF	June 30, 2022
Newport, KY (Services)	1,566 SF	Monthly
Pembroke, Ontario, Canada (Services)	800 SF	Monthly
Atlanta, GA (Corporate)	6,499 SF	July 31, 2024
Oak Ridge, TN (Treatment)	8.7 AC, including 17,400 SF	October 1, 2021

We believe that the above facilities currently provide adequate capacity for our operations and that additional facilities are readily available in the regions in which we operate, which could support and supplement our existing facilities.

ITEM 3. LEGAL PROCEEDINGS

See “Part II” – “Item 8 - Financial Statements and Supplementary Data” – “Notes to Consolidated Financial Statements” – “Note 14 – Commitments and Contingencies” – “Legal Matters” for a discussion of our legal proceedings.

ITEM 4. MINE SAFETY DISCLOSURE

Not Applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Our Common Stock is traded on the NASDAQ Capital Markets (“NASDAQ”) under the symbol “PESI.” The following table sets forth the high and low market trade prices quoted for the Common Stock during the periods shown. The source of such quotations and information is the NASDAQ online trading history reports.

		2020		2019	
		Low	High	Low	High
Common Stock	1 st Quarter	\$ 3.82	\$ 9.50	\$ 2.50	\$ 3.94
	2 nd Quarter	4.76	6.54	3.40	4.46
	3 rd Quarter	5.94	7.40	3.10	4.77
	4 th Quarter	5.80	7.13	4.30	9.98

At February 12, 2021, there were approximately 137 stockholders of record of our Common Stock. The actual number of our stockholders is greater than this number, and includes beneficial owners whose shares are held in “street name” by banks, brokers, and other nominees.

Since our inception, we have not paid any cash dividends on our Common Stock and have no dividend policy. Our loan agreement dated May 8, 2020 prohibits us from paying any cash dividends on our Common Stock without prior approval from our lender. We do not anticipate paying cash dividends on our outstanding Common Stock in the foreseeable future.

There were no purchases made by us or on behalf of us or any of our affiliated members of shares of our Common Stock during 2020.

We adopted a preferred share rights plan (the “Rights Plan”), as amended, which is designed to protect us against certain creeping acquisitions, open market purchases, and certain mergers and other combinations with acquiring companies. The Rights Plan is to terminate at the earliest of (1) close of business on May 2, 2021 (the “Final Expiration Date”), (2) the time at which the Rights are redeemed, (3) the time at which the Rights are exchange, or (4) closing of any merger or acquisition of the Company approved by the Board prior to any person becoming acquiring person.

See Item 1A. - Risk Factors – “Our Preferred Share Rights Plan may adversely affect our stockholders” as to further discussion relating to the terms of our Rights Plan in addition to its termination date.

See Note 7 “Capital Stock, Stock Plans, Warrants, and Stock Based Compensation” in Part II, Item 8, “Financial Statements and Supplementary Data” and “Equity Compensation Plans” in Part III, Item 12, “Security Ownership of Certain Beneficial Owners and Management and Related Stockholders Matter” for securities authorized for issuance under equity compensation plans which are incorporated herein by reference.

ITEM 6. SELECTED FINANCIAL DATA

Not required under Regulation S-K for smaller reporting companies.

ITEM 7. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Certain statements contained within this “Management’s Discussion and Analysis of Financial Condition and Results of Operations” (“MD&A”) may be deemed “forward-looking statements” within the meaning of Section 27A of the Act, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the “Private Securities Litigation Reform Act of 1995”). See “Special Note regarding Forward-Looking Statements” contained in this report.

Management’s discussion and analysis is based, among other things, upon our audited consolidated financial statements and includes our accounts, the accounts of our wholly-owned subsidiaries, the accounts of our majority-owned Polish subsidiary, and the account of a variable interest entity for which we are the primary beneficiary, after elimination of all significant intercompany balances and transactions.

The following discussion and analysis should be read in conjunction with our consolidated financial statements and the notes thereto included in Item 8 of this report.

COVID-19 Impact

Since the outbreak of COVID-19 in early part of 2020, we have remained focused on keeping our employees working and, at the same time, focusing on protecting the health and wellbeing of our employees and the communities in which we operate while assuring the continuity of our business operations.

Our management team has proactively implemented our business continuity and safety plans and has taken a variety of measures to ensure the ongoing availability of our waste treatment and remediation services, while taking health and safety measures, including separating employee and customer contact, social distancing between employees, implementing enhanced cleaning and hygiene protocols in all of our facilities, and implementing remote work policies, when necessary.

The COVID-19 pandemic presents potential new risks to our business and results in significant volatility in the U.S. and international markets. We continue to closely monitor the impact of the COVID-19 pandemic on all aspects of our business. Starting in late March 2020, our operations were impacted by the shutdown of a number of projects and the delays of certain waste shipments. Since the latter part of the second quarter of 2020, all of the projects that were previously shutdown within our Services Segment restarted as stay-at-home orders and certain other restrictions resulting from the pandemic were lifted. Despite the shutdown of certain projects for part of 2020, revenues generated within our Services Segment in 2020 exceeded our revenue generated in 2019 by approximately \$42,188,000. We continue to experience delays in waste shipments from certain customers within our Treatment Segment directly related to the impact of COVID-19 including generator shutdowns and limited sustained operations, along with other factors. However, we expect to see a gradual return in waste receipts from these customers starting in the first half of 2021 as they accelerate operations. As the impact of COVID-19 remains fluid, the uncertainty in waste receipt shipments may impact our results of operations for the first quarter of 2021 and potentially the second quarter of 2021. The potential for a material impact on our business increases the longer COVID-19 impacts the level of economic activities in the United States and globally as our customers may continue to delay waste shipments and project work may shut down again. For this reason, we cannot reasonably estimate with any degree of certainty the future impact COVID-19 may have on our results of operations, financial position, and liquidity during the next twelve months.

At this time, we believe we have sufficient liquidity on hand to continue business operations during the next twelve months. At December 31, 2020, our borrowing availability under our revolving credit facility was approximately \$14,220,000 which was based on a percentage of eligible receivables and subject to certain reserves and included our cash on hand of approximately \$7,924,000. In April 2020, we entered into a promissory note ("PPP Loan") with our credit facility lender in the amount of approximately \$5,666,000 under the Paycheck Protection Program ("PPP") that was established under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act" - see "CARES Act - PPP Loan" under "Liquidity and Capital Resources" below for a discussion of the PPP Loan). During the third quarter of 2020, we repaid approximately \$348,000 of the PPP Loan resulting from clarification in the loan calculation at the time of the loan origination. On October 5, 2020, we applied for forgiveness on the entire PPP Loan balance as permitted under the program, which is subject to the review and approval of our lender and Small Business Administration ("SBA"). Proceeds from the PPP Loan have allowed us to avoid having to furlough or layoff certain eligible employees as a result of the COVID-19 pandemic, although there are no assurances that such will not be required going forward. We continue to assess reducing operating costs during this volatile time, which include curtailing capital expenditures, eliminating non-essential expenditures and implementing a hiring freeze as needed. We elected to defer payment of our share of social security taxes as permitted under the CARES Act, as amended (see "CARES Act - Deferral of Employment Tax Deposits" within this MD&A for a discussion of this deferral). Based on our current projection, we believe that we will be able to meet the current covenant requirements under our loan agreement for the next twelve months despite the impact of COVID-19.

We are closely monitoring our customers' payment performance. However, since a significant portion of our revenues is derived from government related contracts, we do not expect our accounts receivable collections to be materially impacted due to COVID-19.

Review

Revenue increased \$31,967,000 or 43.5% to \$105,426,000 for the twelve months ended December 31, 2020 from \$73,459,000 for the corresponding period of 2019. The increase was entirely within our Services Segment where revenue increased \$42,188,000 or 127.5% from increased projects and the sizable value of certain projects. Our Treatment Services revenue decreased by \$10,221,000 or 25.3% primarily due to delays in waste shipments from certain customers resulting from the impact of COVID-19 as discussed above. The delays in waste shipments were also partly attributed to the transition of new prime contractors at certain DOE sites which resulted in delays in waste shipments to us as subcontractors under certain contracts. Additionally, lower averaged price waste from revenue mix contributed to the decrease in revenue within the Treatment Segment. Gross profit increased \$309,000 or 2.0% due to the increase in revenues in the Services Segment. Selling, General, and Administrative ("SG&A") expenses decreased by approximately \$88,000 or 0.7% for the twelve months ended December 31, 2020 as compared to the corresponding period of 2019. At December 31, 2020, we had working capital of approximately \$3,672,000 as compared to working capital of \$26,000 at December 31, 2019. Our working capital at December 31, 2020 included the classification of approximately \$3,191,000 of the outstanding PPP Loan balance of \$5,318,000 as "Current portion of long-term debt" on our Consolidated Balance Sheets. As previously discussed, we have applied for forgiveness on repayment of the entire PPP Loan balance which is subject to the review and approval of our lender and the SBA.

Business Environment and Outlook

Our Treatment and Services Segments' business continues to be heavily dependent on services that we provide to governmental clients directly as the contractor or indirectly as a subcontractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including, without limitation, the economic conditions, the manner in which the applicable government will be required to spend funding to remediate various sites, and/or the impact resulting from COVID-19 as discussed above. In addition, our governmental contracts and subcontracts relating to activities at governmental sites in the United States are generally subject to termination or renegotiation on 30 days' notice at the government's option, and our governmental contracts/task orders with the Canadian government authorities allow the authorities to terminate the contract/task orders at any time for convenience. Significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows. As previously disclosed, our Medical Segment has substantially reduced its R&D costs and activities due to the need for capital to fund such activities. We anticipate that our Medical Segment will not resume full R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise or obtaining new partners willing to fund its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

We are continually reviewing methods to raise additional capital to supplement our liquidity requirements, when needed, and reducing our operating costs. We continue to aggressively bid on various contracts, including potential contracts within the international markets.

Results of Operations

The reporting of financial results and pertinent discussions are tailored to our three reportable segments: The Treatment Segment ("Treatment"), the Services Segment ("Services"), and the Medical Segment ("Medical"). Our Medical Segment has not generated any revenue and all costs incurred are included within R&D.

Summary - Years Ended December 31, 2020 and 2019

Below are the results of continuing operations for years ended December 31, 2020 and 2019 (amounts in thousands):

(Consolidated)	2020	%	2019	%
Net revenues	\$ 105,426	100.0	\$ 73,459	69.7
Cost of goods sold	89,533	84.9	57,875	78.8
Gross profit	15,893	15.1	15,584	21.2
Selling, general and administrative	11,774	11.2	11,862	16.1
Research and development	762	.7	750	1.0
Loss on disposal of property and equipment	29	—	3	—
Income from operations	3,328	3.2	2,969	4.0
Interest income	140	.1	337	.5
Interest expense	(398)	(.4)	(432)	(.6)
Interest expense – financing fees	(294)	(.3)	(208)	(.3)
Other	211	.2	223	.3
Loss on extinguishment of debt	(27)	—	—	—
Income from continuing operations before taxes	2,960	2.8	2,889	3.9
Income tax (benefit) expense	(189)	(.2)	157	.2
Income from continuing operations	\$ 3,149	3.0	\$ 2,732	3.7

Revenue

Consolidated revenues increased \$31,967,000 for the year ended December 31, 2020 compared to the year ended December 31, 2019, as follows:

(In thousands)	2020	% Revenue	2019	% Revenue	Change	% Change
Treatment						
Government waste	\$ 21,234	20.1	\$ 27,277	37.1	\$ (6,043)	(22.2)
Hazardous/non-hazardous ⁽¹⁾	5,072	4.8	6,376	8.7	(1,304)	(20.5)
Other nuclear waste	3,837	3.6	6,711	9.1	(2,874)	(42.8)
Total	30,143	28.6	40,364	54.9	(10,221)	(25.3)
Services						
Nuclear	73,458	69.7	30,371	41.4	43,087	141.9
Technical	1,825	1.7	2,724	3.7	(899)	(33.0)
Total	75,283	71.4	33,095	45.1	42,188	127.5
Total	\$ 105,426	100.0	\$ 73,459	100.0	\$ 31,967	43.5

¹⁾ Includes wastes generated by government clients of \$1,976,000 and \$2,422,000 for the twelve months ended December 31, 2020 and 2019, respectively.

Treatment Segment revenue decreased \$10,221,000 or 25.3 % for the twelve months ended December 31, 2020 over the same period in 2019. The revenue decrease was primarily due to lower revenue generated from lower waste volume resulting from waste shipment delays since late March 2020 from certain of our customers due to the impact of COVID-19 including generator shutdowns and limited sustained operations. The delays in waste shipments were also partly attributed to the transition of new prime contractors at certain DOE sites which resulted in delays in waste shipments to us as subcontractors under certain contracts. Additionally, lower averaged price waste from revenue mix contributed to the decrease in revenue. Our Services Segment revenue increased \$42,188,000 or 127.1% due to the increase in number of projects and the sizeable value of certain projects. Our Services Segment experienced this increase in revenue despite a number of our projects being shut down starting in late March 2020 due to COVID-19. These projects did not restart until the latter part of the second quarter of 2020. Our Services Segment revenues are project based; as such, the scope, duration and completion of each project vary. As a result, our Services Segment revenues are subject to differences relating to timing and project value.

Cost of Goods Sold

Cost of goods sold increased \$31,658,000 for the year ended December 31, 2020, as compared to the year ended December 31, 2019, as follows:

(In thousands)	2020	% Revenue	2019	% Revenue	Change
Treatment	\$ 24,652	81.8	\$ 28,116	69.7	\$ (3,464)
Services	64,881	86.2	29,759	89.9	35,122
Total	\$ 89,533	84.9	\$ 57,875	78.8	\$ 31,658

Cost of goods sold for the Treatment Segment decreased approximately \$3,464,000 or 12.3%. Treatment Segment costs of goods sold for the twelve months ended December 31, 2019 included additional closure costs recorded in the amount of \$330,000 for our East Tennessee Materials and Energy Corporation (“M&EC”) facility due to finalization of closure requirements in connection with the closure of the facility. Excluding the closure costs recorded in 2019, Treatment Segment cost of goods sold decreased \$3,134,000 or 11.3% primarily due to the decrease in revenue. Excluding the closure costs recorded in 2019, Treatment Segment variable costs decreased by approximately \$3,516,000 primarily due to lower disposal, transportation, material and supplies and outside services costs. Our overall fixed costs were higher by approximately \$382,000 resulting from the following: maintenance expenses were higher by \$280,000; regulatory expenses were higher by approximately \$190,000; depreciation expenses were higher by approximately \$219,000 primarily due to more financed leases; general expenses were lower by approximately \$61,000 in various categories; salaries and payroll costs were lower by approximately \$175,000; and travel expenses were lower by approximately \$71,000 due to restrictions implemented resulting from COVID-19. Services Segment cost of goods sold increased \$35,122,000 or 118.0% primarily due to increased revenue as discussed above. The increase in cost of goods sold within our Services Segment was primarily due to higher salaries and payroll costs, travel, and outside services expenses totaling approximately \$31,068,000, higher material and supplies, regulatory and disposal costs totaling approximately \$3,312,000, and higher general expenses of \$742,000 in various categories. Payroll costs within our Services Segment included higher expenses for project related incentives. Included within cost of goods sold is depreciation and amortization expense of \$1,555,000 and \$1,301,000 for the twelve months ended December 31, 2020, and 2019, respectively.

Gross Profit

Gross profit for the year ended December 31, 2020 was \$309,000 higher than 2019 as follows:

(In thousands)	2020	% Revenue	2019	% Revenue	Change
Treatment	\$ 5,491	18.2	\$ 12,248	30.3	\$ (6,757)
Services	10,402	13.8	3,336	10.1	7,066
Total	<u>\$ 15,893</u>	15.1	<u>\$ 15,584</u>	21.2	<u>\$ 309</u>

Treatment Segment gross profit decreased \$6,757,000 or 55.2% and gross margin decreased to 18.2% from 30.3%. Excluding the additional closure costs of \$330,000 recorded in the twelve months ended December 31, 2019 in connection with the closure of our M&EC facility as discussed above, gross profit decreased \$7,087,000 or 56.3% and gross margin decreased to 18.2% from 31.2% primarily due to lower revenue from lower waste volume and lower averaged price waste from revenue mix. In the Services Segment, gross profit increased \$7,066,000 or 211.8% and gross margin increased from 10.1% to 13.8% primarily due to the increase in revenue. Our overall Services Segment gross margin is impacted by our current projects which are competitively bid on and will therefore, have varying margin structures.

SG&A

SG&A expenses decreased \$88,000 for the year ended December 31, 2020 as compared to the corresponding period for 2019 as follows:

(In thousands)	2020	% Revenue	2019	% Revenue	Change
Administrative	\$ 5,537	—	\$ 5,395	—	\$ 142
Treatment	3,819	12.7	3,955	9.8	(136)
Services	2,418	3.2	2,512	7.6	(94)
Total	<u>\$ 11,774</u>	11.2	<u>\$ 11,862</u>	16.1	<u>\$ (88)</u>

The increase in Administrative SG&A was primarily due to the following: general expenses were higher by approximately \$84,000 in various categories; director stock option expenses were higher by approximately \$75,000 due to options granted to new directors in addition to higher fair value of options granted to re-elected directors; outside services expenses were higher by approximately \$16,000 resulting from more consulting/subcontract matters; depreciation expenses were higher by approximately \$14,000; salaries and payroll costs were higher by approximately \$13,000; and travel expenses were lower by approximately \$60,000 due to restrictions implemented resulting from the impact of COVID-19. Treatment SG&A was lower primarily due to the following: travel expenses were lower by approximately \$109,000 due to restrictions implemented resulting from the impact of COVID-19; general expenses were lower by \$123,000 in various categories which included lower trade show expenses of \$122,000 resulting from the cancellation of certain trade shows due to impact of COVID-19; and salaries and payroll costs were higher by approximately \$96,000. Services Segment SG&A was lower primarily due to the following: travel expenses were lower by approximately \$119,000 due to restrictions implemented resulting from the impact of COVID-19; bad debt expenses were lower by approximately \$432,000 as certain customer accounts which we had previously reserved for were collected in 2020 and additional bad debt expenses were recorded in 2019 for a certain account receivable which was determined not to be collectible at December 31, 2019; and salaries and payroll costs were higher by approximately \$457,000. Included in SG&A expenses is depreciation and amortization expense of \$41,000 and \$41,000 for the twelve months ended December 31, 2020 and 2019, respectively.

R&D

R&D expenses increased \$12,000 for the year ended December 31, 2020 as compared to the corresponding period of 2019 as follows:

(In thousands)	2020	2019	Change
Administrative	\$ 76	\$ 23	\$ 53
Treatment	243	401	(158)
Services	132	12	132
PF Medical	311	314	(3)
Total	<u>\$ 762</u>	<u>\$ 750</u>	<u>\$ 12</u>

Research and development costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development of new technologies and technological enhancement of new potential waste treatment processes.

Interest Income

Interest income decreased by approximately \$197,000 for the twelve months ended December 31, 2020 as compared to the corresponding period of 2019. The decrease was primarily due to lower interest earned on the finite risk sinking funds from lower interest rate. The decrease in interest income was also attributed to lower interest earned from lower finite risk sinking fund balance resulting from the release of \$5,000,000 in finite risk sinking funds by AIG Specialty Insurance Company ("AIG") to us at the end of July 2019 in connection with the closure of our M&EC facility. The \$5,000,000 in finite sinking funds represented a partial release of the total collateral held under our finite risk insurance policy.

Interest Expense

Interest expense decreased by approximately \$34,000 for the twelve months ended December 31, 2020 as compared to the corresponding period of 2019 primarily due to lower interest expense from our declining term loan balance outstanding and lower interest rate. Also, interest expense was lower from accelerated declining loan balance outstanding resulting from payments of principal on the \$2,500,000 loan that we entered into with Robert Ferguson on April 1, 2019. This loan was paid-in-full by us by the end December 2020. The overall decrease in interest expense was partially offset by higher interest expense from more finance leases and interest accrued for the PPP Loan (see "Liquidity and Capital Resources – Financing Activities" and "The CARES Act – PPP Loan" for further information of these loans).

Interest Expense- Financing Fees

Interest expense-financing fees increased approximately \$86,000 for the twelve months ended December 31, 2020 as compared to the corresponding period of 2019. The increase was primarily due to debt discount/debt issuance costs amortized as financing fees in connection with the issuance of our Common Stock and a purchase Warrant as consideration for us receiving the \$2,500,000 loan from Robert Ferguson which was paid off early by us at the end of December 2020.

Income Taxes

We had income tax benefit of \$189,000 and income tax expense of \$157,000 for continuing operations for the years ended December 31, 2020 and 2019, respectively. The Company's effective tax rates were approximately 6.4% and 5.4% for the twelve months ended December 31, 2020 and 2019, respectively. The tax benefit for the year ended December 31, 2020 resulted primarily from state tax true-ups related to our amended tax returns and a reduction in the naked credit deferred tax liabilities ("DTL") resulting from a reduction in estimated state apportionment percentage.

Discontinued Operations

Our discontinued operations consist of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

Our discontinued operations had no revenue for the twelve months ended December 31, 2020 and 2019. We incurred net losses of \$412,000 and \$547,000 for our discontinued operations for the twelve months ended December 31, 2020 and 2019, respectively (net of taxes of \$0 for each period). The losses incurred for each period were primarily due to the administration and continued monitoring of our discontinued operations. Our net loss for the year ended December 31, 2019 also included an increase of approximately \$50,000 in remediation reserve for our Perma-Fix of Memphis (“PFM”) subsidiary due to reassessment of the remediation reserve.

Liquidity and Capital Resources

Our cash flow requirements during 2020 were primarily financed by our operations, credit facility availability, and the PPP Loan that we received under the CARES Act as discussed below (see “CARES Act – PPP Loan”). We generated approximately \$7,867,000 of cash from our continuing operations. Subject to the impact of COVID-19 as discussed above, our cash flow requirements for the next twelve months will consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, and planned capital expenditures. We plan to fund these requirements from our operations, credit facility availability, and cash on hand which was approximately \$7,924,000 at December 31, 2020. We continue to explore all sources of increasing our capital to supplement our liquidity requirements, when needed, and to improve our revenue and working capital. We are continually reviewing operating costs and reviewing the possibility of further reducing operating costs and non-essential expenditures to bring them in line with revenue levels, when necessary. At this time, we believe that our cash flows from operations, our available liquidity from our credit facility, and our cash on hand should be sufficient to fund our operations for the next twelve months. However, due to the uncertainty of COVID-19, there are no assurances such will be the case in the events that certain of our customers continue to delay waste shipments and/or elect to shut down projects again due to COVID-19. As previously disclosed, our Medical Segment substantially reduced its R&D costs and activities due to the need for capital to fund such activities. We continue to seek various sources of potential funding for our Medical Segment. We anticipate that our Medical Segment will not resume full R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise or obtaining new partners willing to fund its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

The following table reflects the cash flow activity for the year ended December 31, 2020 and the corresponding period of 2019:

(In thousands)	2020	2019
Cash provided by (used in) operating activities of continuing operations	\$ 7,867	\$ (4,023)
Cash used in operating activities of discontinued operations	(499)	(660)
Cash used in investing activities of continuing operations	(1,711)	(1,533)
Cash provided by investing activities of discontinued operations	118	121
Cash provided by financing activities of continuing operations	1,892	992
Effect of exchange rate changes on cash	6	19
Increase (decrease) in cash and finite risk sinking fund (restricted cash)	\$ 7,673	\$ (5,084)

At December 31, 2020, we were in a positive cash position with no revolving credit balance. At December 31, 2020, we had cash on hand of approximately \$7,924,000, which included account balances of our foreign subsidiaries totaling approximately \$377,000. At December 31, 2020, we had finite risk sinking funds (restricted cash) of approximately \$11,446,000, which represents cash held as collateral under our financial assurance policy.

Operating Activities

Accounts receivable, net of allowances for doubtful accounts, totaled \$9,659,000 at December 31, 2020, a decrease of \$3,519,000 from the December 31, 2019 balance of \$13,178,000. The decrease was primarily due to timing of invoicing which was reflective of the increase in our unbilled receivables and timing of our accounts receivable collection. We provide a variety of payment terms to our customers; therefore, our accounts receivable are impacted by these terms and the related timing of accounts receivable collections. The amount of our accounts receivables and collection could be materially impacted the longer COVID-19 persists.

Accounts payable, totaled \$15,382,000 at December 31, 2020, an increase of \$6,105,000 from the December 31, 2019 balance of \$9,277,000. The increase in accounts payable was attributed to an increase in costs within our Services Segment resulting from the significant increase in revenue. Additionally, our accounts payable are impacted by the timing of payments as we are continually managing payment terms with our vendors to maximize our cash position throughout all segments.

We had working capital of \$3,672,000 (which included working capital of our discontinued operations) at December 31, 2020, as compared to working capital of \$26,000 at December 31, 2019. The improvement in our working capital was primarily due to the proceeds that we received from the PPP Loan under the Paycheck Protection Program (see "PPP Loan" under "CARES Act" below for a discussion of this loan) and the increase in our unbilled receivables from the significant increase in revenues within our Services Segment. The improvement in our working capital was partially offset by the increase in our accounts payable. Additionally, at December 31, 2020, we classified approximately \$3,191,000 of the outstanding PPP Loan balance of \$5,318,000 as "Current portion of long-term debt" on our Consolidated Balance Sheets. We have applied for forgiveness on repayment of the entire PPP Loan balance which is subject to the review and approval of our lender and the SBA.

Investing Activities

During 2020, our purchases of capital equipment totaled approximately \$2,598,000, of which \$883,000 was subject to financing, with the remaining funded from cash from operations and our credit facility. We have budgeted approximately \$2,000,000 for 2021 capital expenditures primarily for our Treatment and Services Segments to maintain operations and regulatory compliance requirements and support revenue growth. Certain of these budgeted projects may either be delayed until later years or deferred altogether. We plan to fund our capital expenditures from cash from operations and/or financing. The initiation and timing of projects are also determined by financing alternatives or funds available for such capital projects.

Financing Activities

We entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 ("Amended Loan Agreement"), with PNC National Association ("PNC"), acting as agent and lender. The Amended Loan Agreement had been amended from time to time since the execution of the Amended Loan Agreement. The Amended Loan Agreement, as subsequently amended ("Revised Loan Agreement"), provided us with the following credit facility with a maturity date of March 24, 2021: (a) up to \$12,000,000 revolving credit ("revolving credit") and (b) a term loan ("term loan") of approximately \$6,100,000. The maximum that we can borrow under the revolving credit was based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

Payment of annual rate of interest due on the revolving credit under the Revised Loan Agreement was at prime (3.25% at December 31, 2020) plus 2% and the term loan at prime plus 2.5%.

On May 8, 2020, we entered into a Second Amended and Restated Revolving Credit, Term Loan and Security Agreement (the "New Loan Agreement") with PNC, replacing our previous Revised Loan Agreement with PNC. The New Loan Agreement provides us with the following credit facility:

- up to \$18,000,000 revolving credit facility, subject to the amount of borrowings based on a percentage of eligible receivables and subject to certain reserves; and

- a term loan of \$1,741,818, which requires monthly installments of \$35,547.

The New Loan Agreement terminates as of May 15, 2024, unless sooner terminated.

Similar to our Revised Loan Agreement, the New Loan Agreement requires us to meet certain customary financial covenants, including, among other things, a minimum Tangible Adjusted Net Worth requirement of \$27,000,000 at all times; maximum capital spending of \$6,000,000 annually; and a minimum fixed charge coverage ratio (“FCCR”) requirement of 1.15:1.

Under the New Loan Agreement, payment of annual rate of interest due on the credit facility is as follows:

- revolving credit at prime plus 2.50% or London InterBank Offer Rate (“LIBOR”) plus 3.50% and the term loan at prime plus 3.00% or LIBOR plus 4.00%. We can only elect to use the LIBOR interest payment option after we become compliant with meeting the minimum FCCR of 1.15:1; and
- Upon the achievement of a FCCR of greater than 1.25:1, we have the option of paying an annual rate of interest due on the revolving credit at prime plus 2.00% or LIBOR plus 3.00% and the term loan at prime plus 2.50% or LIBOR plus 3.50%. We met this FCCR in each of the quarters of 2020. Upon meeting the FCCR of 1.25:1, this interest payment option will remain in place in the event that our future FCCR falls below 1.25:1.

Under the LIBOR option of interest payment noted above, a LIBOR floor of 0.75% shall apply in the event that LIBOR falls below 0.75% at any point in time.

Pursuant to the New Loan Agreement, we may terminate the New Loan Agreement upon 90 days’ prior written notice upon payment in full of our obligations under the New Loan Agreement. We have agreed to pay PNC 1.0% of the total financing in the event we pay off our obligations on or before May 7, 2021 and 0.5% of the total financing if we pay off our obligations after May 7, 2021 but prior to or on May 7, 2022. No early termination fee shall apply if we pay off our obligations under the New Loan Agreement after May 7, 2022.

At December 31, 2020, the borrowing availability under our revolving credit was approximately \$14,220,000, based on our eligible receivables and includes a reduction in borrowing availability of approximately \$3,026,000 from outstanding standby letters of credit.

Our credit facility under our Revised and New Loan Agreement with PNC contains certain financial covenant requirements, along with customary representations and warranties. A breach of any of these financial covenant requirements, unless waived by PNC, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. We met our financial covenant requirements in 2020, including our quarterly FCCR requirements. We expect to meet our financial covenant requirements in the next twelve months; however, if we fail to meet any of our financial covenant requirements and our lender does not waive the non-compliance or revise our covenant so that we are in compliance, our lender could accelerate the repayment of borrowings under our credit facility and terminate our credit facility. In the event that our lender accelerates the payment of our borrowings and terminate our credit facility, we may not have sufficient liquidity to repay our debt under our credit facility and other indebtedness.

As previously disclosed, on April 1, 2019, we completed a lending transaction with Robert Ferguson (the “Lender”), whereby we borrowed from the Lender the sum of \$2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the “Loan”). The Lender is a shareholder of ours and also serves as a consultant to us in connection with our Test Bed Initiative (“TBI”) at our Perma-Fix Northwest Richland, Inc. (“PFNWR”) subsidiary. The proceeds from the Loan were used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately \$208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also allows for prepayment of principal payments over the term of the Loan without penalty with such prepayment of principal payments to be applied to the second year of the loan payments at our discretion. In December 2020, the Loan was paid-in-full. In connection with this capital raise transaction described above and consideration for us receiving the Loan, we issued a Warrant (the “Warrant”) to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of \$3.51 per share, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant expires on April 1, 2024 and remains outstanding at December 31, 2020. As further consideration for this capital raise transaction relating to the Loan, we also issued 75,000 shares of its Common Stock to the Lender. The fair value of the Warrant and Common Stock and the related closing fees incurred from the transaction totaled approximately \$398,000 and was recorded as debt discount/debt issuance costs which has been fully amortized as interest expense – financing fees. The 75,000 shares of Common Stock, the Warrant and the 60,000 shares of Common Stock that may be purchased under the Warrant were and will be issued in a private placement that was and will be exempt from registration under Rule 506 and/or Sections 4(a)(2) and 4(a)(5) of the Securities Act of 1933, as amended (the “Act”) and bear a restrictive legend against resale except in a transaction registered under the Act or in a transaction exempt from registration thereunder.

The CARES Act

PPP Loan

On April 14, 2020, we entered into a promissory note with PNC, our credit facility lender, in the amount of approximately \$5,666,000 under the PPP (the “PPP Loan”). The PPP was established under the CARES Act and is administered by the SBA. On June 5, 2020, the Paycheck Protection Program Flexibility Act of 2020 (“Flexibility Act”) was signed into law which amended the CARES Act. The note evidencing the PPP Loan contains events of default relating to, among other things, payment defaults, breach of representations and warranties, and provisions of the promissory note. During the third quarter of 2020, we repaid approximately \$348,000 of the PPP Loan to PNC resulting from clarification in the loan calculation at the time of the loan origination.

Under the terms of the Flexibility Act, we can apply for and be granted forgiveness for all or a portion of the PPP Loan. Such forgiveness will be determined, subject to limitations, based on the use of loan proceeds by us for eligible payroll costs, mortgage interest, rent and utility costs and the maintenance of employee and compensation levels for the covered period (which is defined as a 24 week period, beginning April 14, 2020, the date in which proceeds from the PPP Loan was disbursed to us by PNC). At least 60% of such forgiven amount must be used for eligible payroll costs. On October 5, 2020, we applied for forgiveness on repayment of the loan balance as permitted under the program, which is subject to the review and approval of our lender and the SBA. If all or a portion of the PPP Loan is not forgiven, all or the remaining portion of the loan will be for a term of two years but can be prepaid at any time prior to maturity without any prepayment penalties. The annual interest rate on the PPP Loan is 1.0% and no payments of principal or interest are due until the date that the SBA remits the loan forgiveness amount to our lender. While our PPP Loan currently has a two year maturity, the Flexibility Act permits us to request a five year maturity with our lender. At December 31, 2020, we have not received a determination on potential forgiveness on any portion of the PPP Loan balance; therefore, we have classified approximately \$3,191,000 of the PPP Loan balance as “Current portion of long-term debt,” on our Consolidated Balance Sheets, which was based on payment of the PPP Loan starting in July 2021 (10 months from end of our covered period) in accordance with the terms of our PPP Loan agreement.

Deferral of Employment Tax Deposits

The CARES Act, as amended by the Flexibility Act, provides employers the option to defer the payment of an employer’s share of social security taxes beginning on March 27, 2020 through December 31, 2020, with 50% of the amount of social security taxes deferred to become due on December 31, 2021 with the remaining 50% due on December 31, 2022. We elected to defer such taxes starting in mid-April 2020. At December 31, 2020, we deferred payment of approximately \$1,252,000 in our share of social security taxes, of which approximately \$626,000 is included in “Other long-term liabilities,” with the remaining balance included in “Accrued expenses” within current liabilities in the Company’s Consolidated Balance Sheets.

Off Balance Sheet Arrangements

From time to time, we are required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At December 31, 2020, the total amount of standby letters of credit outstanding totaled approximately \$3,026,000 and the total amount of bonds outstanding totaled approximately \$46,388,000. We also provide closure and post-closure requirements through a financial assurance policy for certain of our Treatment Segment facilities through AIG. At December 31, 2020, the closure and post-closure requirements for these facilities were approximately \$19,651,000.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared based upon the selection and application of accounting principles generally accepted in the United States of America (“US GAAP”), which may require us to make estimates, judgments and assumptions that affect amounts reported in our financial statements and accompanying notes. The accounting policies below are those we believe affect the more significant estimates and judgments used in preparation of our financial statements. Our other accounting policies are described in the accompanying notes to our consolidated financial statements of this Form 10-K (see “Item 8 – Financial Statements and Supplementary Data” – “Notes to Consolidated Financial Statements” – “Note 2 – Summary of Significant Accounting Policies”):

Intangible Assets. Intangible assets consist primarily of the recognized value of the permits required to operate our business. We continually monitor the propriety of the carrying amount of our permits to determine whether current events and circumstances warrant adjustments to the carrying value.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, we perform a quantitative test to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Significant judgments are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long-term discount rates.

Impairment testing of our permits related to our Treatment reporting unit as of October 1, 2020 and 2019 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. Intangible assets with definite useful lives are also tested for impairment whenever events or changes in circumstances indicate that the asset’s carrying value may not be recoverable.

Accrued Closure Costs and Asset Retirement Obligations (“ARO”). Accrued closure costs represent our estimated environmental liability to clean up our facilities as required by our permits, in the event of closure. Accounting Standards Codification (“ASC”) 410, “Asset Retirement and Environmental Obligations” requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO’s are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, we must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flow. Increases in the ARO liability due to passage of time impact net income as accretion expense and are included in cost of goods sold in the Consolidated Statements of Operations. Changes in the estimated future cash flows costs underlying the obligations (resulting from changes or expansion at the facilities) require adjustment to the ARO liability calculated and are capitalized and charged as depreciation expense, in accordance with our depreciation policy.

Recent Accounting Pronouncements

See “Item 8 – Financial Statements and Supplementary Data” – “Notes to Consolidated Financial Statements” – “Note 2 – Summary of Significant Accounting Policies” for the recent accounting pronouncements that have been adopted during the year ended December 31, 2020, or will be adopted in future periods.

Known Trends and Uncertainties

Economic Conditions. Our business continues to be heavily dependent on services that we provide to governmental clients, primarily as subcontractors for others who are prime contractors to government authorities (particularly the U.S. Department of Energy and U.S. Department of Defense) or directly as the prime contractor. We believe demand for our services will continue to be subject to fluctuations due to a variety of factors beyond our control, including the economic conditions and the manner in which the government entity will be required to spend funding to remediate various sites. In addition, our U.S. governmental contracts and subcontracts relating to activities at governmental sites are generally subject to termination or renegotiation on 30 days notice at the government’s option. The TOAs with the Canadian government generally provide that the government may terminate a TOA at any time for convenience. Significant reductions in the level of governmental funding or specifically mandated levels for different programs that are important to our business could have a material adverse impact on our business, financial position, results of operations and cash flows.

Significant Customers. Our Treatment and Services Segments have significant relationships with the U.S and Canadian governmental authorities through contracts entered into indirectly as subcontractors for others who are prime contractors or directly as the prime contractor to government authorities. Our inability to continue under existing contracts that we have with the U.S government and Canadian government authorities (directly or indirectly as a subcontractor) or significant reductions in the level of governmental funding in any given year could have a material adverse impact on our operations and financial condition.

We performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either directly as a prime contractor or indirectly for others as a subcontractor to government entities, representing approximately \$96,582,000, or 91.6%, of our total revenue during 2020, as compared to \$59,985,000, or 81.7%, of our total revenue during 2019.

Revenue generated by us as a subcontractor to a customer for a remediation project performed for a government entity (the “DOE”) within our Services Segment in 2020 and 2019 accounted for approximately \$41,011,000 or 38.9% and \$8,529,000 or 11.6% (included in revenue generated relating to government clients above) of our total revenue for 2020 and 2019, respectively. This remediation project included among other things, decontamination support of a building. As work progressed throughout stages of this project in 2020, additional contaminations were regularly discovered which resulted in approval for additional work to be performed under this project. This project is expected to be completed by the first half of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, we do not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

COVID-19 Impact. The extent of the impact of the COVID-19 pandemic on our business is uncertain and difficult to predict, as the responses to the pandemic continue to evolve rapidly. Since the latter part of the second quarter of 2020, all of the projects within our Services Segment that were previously shutdown have restarted as stay-at-home orders and certain other restrictions resulting from the pandemic were lifted. Within our Treatment Segment, we continue to experience delays in waste shipment from certain customers directly related to the impact of COVID-19 including generator shutdowns and limited sustained operations, along with other factors. However, we expect to see a gradual return in waste receipts from these customers starting in the first half of 2021 as they accelerate operations. COVID-19 disruption could have a material adverse effect on our business as our customers could curtail and reduce capital and overall spending.

The severity of the impact the COVID-19 pandemic on our business will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic, the extent and severity of the impact on our customers, the impact on governmental programs and budgets, distribution of COVID-19 vaccines, the rate at which people are inoculated with the vaccines, and how quickly and to what extent normal economic and operating conditions resume, all of which are uncertain and cannot be predicted with any accuracy or confidence at this time. Our future results of operations and liquidity could be adversely impacted by continued delays in waste shipments and/or the recurrence of project work shut downs as well as potential partial/full shutdown of any of our facilities due to COVID-19.

Environmental Contingencies

We are engaged in the waste management services segment of the pollution control industry. As a participant in the on-site treatment, storage and disposal market and the off-site treatment and services market, we are subject to rigorous federal, state and local regulations. These regulations mandate strict compliance and therefore are a cost and concern to us. Because of their integral role in providing quality environmental services, we make every reasonable attempt to maintain complete compliance with these regulations; however, even with a diligent commitment, we, along with many of our competitors, may be required to pay fines for violations or investigate and potentially remediate our waste management facilities.

We routinely use third party disposal companies, who ultimately destroy or secure landfill residual materials generated at our facilities or at a client's site. In the past, numerous third-party disposal sites have improperly managed waste and consequently require remedial action; consequently, any party utilizing these sites may be liable for some or all of the remedial costs. Despite our aggressive compliance and auditing procedures for disposal of wastes, we could further be notified, in the future, that we are a potentially responsible party ("PRP") at a remedial action site, which could have a material adverse effect.

We have three remediation projects, which are currently in progress relating to our Perma-Fix of Dayton, Inc. ("PFD"), PFM and Perma-Fix of South Georgia, Inc. ("PFSG") subsidiaries, all within our discontinued operations. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators. While no assurances can be made that we will be able to do so, we expect to fund the expenses to remediate these sites from funds generated internally.

At December 31, 2020, we had total accrued environmental remediation liabilities of \$854,000, a decrease of \$73,000 from the December 31, 2019 balance of \$927,000. The decrease represents payments made on remediation projects for our PFSG and PFD subsidiaries. At December 31, 2020, \$744,000 of the total accrued environmental liabilities was recorded as current.

Related Party Transactions

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$181,000 and \$177,000 for 2020 and 2019, respectively. David Centofanti is the son of Dr. Louis Centofanti, our Executive Vice President ("EVP") of Strategic Initiatives and a member of our Board of Directors ("Board"). We believe the compensation received by David Centofanti for his technical expertise which he provides to us is competitive and comparable to compensation we would have to pay to an unaffiliated third party with the same technical expertise.

Employment Agreements

We entered into an employment agreement with each of Mark Duff, President and Chief Executive Officer ("CEO"), Dr. Louis Centofanti, EVP of Strategic Initiatives, Ben Naccarato, Chief Financial Officer ("CFO"), Andrew Lombardo, EVP of Nuclear and Technical Services, and Richard Grondin, EVP of Waste Treatment Operations, with each employment agreement dated July 22, 2020 (each employment agreement referred to as the "New Employment Agreement"). We had entered into an employment agreement with each of Mark Duff, Dr. Louis Centofanti and Ben Naccarato on September 8, 2017 which each of the employment agreement was terminated effective July, 22, 2020 upon the execution of the New Employment Agreement with Mark Duff, Dr. Louis Centofanti and Ben Naccarato.

Each New Employment Agreement is effective for three years from July 22, 2020 (the “Initial Term”) unless earlier terminated by the Company or by the executive officer. At the end of the Initial Term of each New Employment Agreement, each New Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, we or the executive officer provides written notice not to extend the terms of the New Employment Agreement. Each New Employment Agreement provides for annual base salary, performance bonuses (as provided in the Management Incentive Plan (“MIP”) as approved by our Compensation and Stock Option Committee (the “Compensation Committee”) and Board) and other benefits commonly found in such agreement.

Pursuant to each New Employment Agreement, if the executive officer’s employment is terminated due to death/disability or for cause (as defined in the agreements), we will pay to the executive officer or to his estate an amount equal to the sum of any unpaid base salary and accrued unused vacation time through the date of termination and any benefits due to the executive officer under any employee benefit plan (the “Accrued Amounts”) plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If the executive officer terminates his employment for “good reason” (as defined in the agreements) or is terminated by us without cause (including any such termination for “good reason” or without cause within 24 months after a Change in Control (as defined in the agreement)), we will pay the executive officer the Accrued Amounts, two years of full base salary, and two times the performance compensation (under the MIP) earned with respect to the fiscal year immediately preceding the date of termination provided the performance compensation earned with respect to the fiscal year immediately preceding the date of termination has not been paid. If performance compensation earned with respect to the fiscal year immediately preceding the date of termination has been made to the executive officer, the executive officer will be paid an additional year of the performance compensation earned with respect to the fiscal year immediately preceding the date of termination. If the executive terminates his employment for a reason other than for good reason, we will pay to the executive an amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an executive officer, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the executive officer’s death. In the event an executive officer terminates his employment for “good reason” or is terminated by the Company without cause, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the executive’s date of termination. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a “separation from service” (as defined under Treasury Regulation Section 1.409A-1(h)).

MIPs

On January 16, 2020, our Board and the Compensation Committee approved individual MIP for each Mark Duff, CEO and President, Ben Naccarato, EVP and CFO, Dr. Louis Centofanti, EVP of Strategic Initiatives and Andy Lombardo, who was appointed by our Board to the position of EVP of Nuclear and Technical Services and an executive officer of the Company on January 16, 2020. Mr. Lombardo previously held the position of Senior Vice President (“SVP”) of Nuclear and Technical Services. Additionally, on July 22, 2020, our Board and our Compensation Committee approved a MIP for Richard Grondin who was appointed by our Board to the position of EVP of Waste Treatment Operations and an executive officer of the Company. Mr. Grondin previously held the position of Vice President of Western Operations within our Treatment Segment. Each of the MIPs is effective January 1, 2020 and applicable for year ended December 31, 2020. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive’s 2020 annual base salary. The potential target performance compensation ranges from 5% to 150% of the base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% (\$12,000 to \$240,000) of the base salary for the EVP of Waste Treatment Operations. The total incentive compensation earned under the 2020 MIPs for the executive officers was approximately \$419,000 and is payable on or about 90 days after year-end, or sooner, based on finalization of our audited financial statements for 2020 in accordance to the MIPs.

On January 21, 2021, our Board and the Company Compensation Committee approved individual MIP for the calendar year 2021 for each CEO, EVP and CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations. Each of the MIPs is effective January 1, 2021 and applicable for year 2021. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive’s 2021 annual base salary at the time of the approval of the MIP. The potential target performance compensation ranges from 5% to 150% of the base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% (\$12,000 to \$240,000) of the base salary for the EVP of Waste Treatment Operations.

Salary

On January 16, 2020, the Board, with the approval of the Compensation Committee approved the following salary increase for the Company’s executive officers effective January 1, 2020:

- Annual base salary for Mark Duff, CEO and President, was increased to \$344,400 from \$287,000.
- Annual base salary for Ben Naccarato, who was promoted to EVP and CFO from VP and CFO, was increased to \$280,000 from \$235,231; and
- Annual base salary for Andy Lombardo, who was appointed to the position of EVP of Nuclear and Technical Services as discussed above, was increased to \$280,000 from \$258,662, which was the annual base salary that Mr. Lombardo earned as SVP of Nuclear and Technical Services and prior to his appointment as an executive officer of the Company by the Board.

Additionally, as a result of Richard Grondin’s appointment by the Board to the position of EVP of Waste Treatment and an executive officer on July 22, 2020, his annual salary was increased from \$208,000 as Vice President of Western Operations within our Treatment Segment to \$240,000, effective July 22, 2020.

In February 2021, the Compensation Committee approved an annual salary cost of living adjustment of approximately 2.3% to take into effect April 1, 2021 for each of our executive officers.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not required under Regulation S-K for smaller reporting companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

Forward-looking Statements

Certain statements contained within this report may be deemed “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (collectively, the “Private Securities Litigation Reform Act of 1995”). All statements in this report other than a statement of historical fact are forward-looking statements that are subject to known and unknown risks, uncertainties and other factors, which could cause actual results and performance of the Company to differ materially from such statements. The words “believe,” “expect,” “anticipate,” “intend,” “will,” and similar expressions identify forward-looking statements. Forward-looking statements contained herein relate to, among other things,

- demand for our services;
- reductions in the level of government funding in future years;
- R&D activity and necessary capital of our Medical Segment;
- business strategy;
- reducing operating costs and non-essential expenditures;
- ability to meet loan agreement covenant requirements;
- cash flow requirements;
- accounts receivable impact;
- sufficient liquidity to continue business;
- PPP Loan forgiveness;
- furlough or layoff eligible employees;
- future results of operations and liquidity;
- effect of economic disruptions on our business;
- curtail capital expenditures;
- government funding for our services;
- may not have liquidity to repay debt if our lender accelerates payment of our borrowings;
- manner in which the applicable government will be required to spend funding to remediate various sites;
- funding operations;
- fund capital expenditures from cash from operations and/or financing;
- impact from COVID-19;
- completion of material contract;
- gradual return in waste shipments;
- fund remediation expenditures for sites from funds generated internally;
- collection of accounts receivables;
- compliance with environmental regulations;
- potential effect of being a PRP;
- potential sites for violations of environmental laws and remediation of our facilities;
- continuation of contracts with federal government;
- loss of contracts;
- permitting and licensing requirements;
- partial or full shutdown of any of our facilities;
- liability from Tetra Tech claims;
- shutdown of projects and continued waste shipments delays by clients; and
- R&D costs.

While the Company believes the expectations reflected in such forward-looking statements are reasonable, it can give no assurance such expectations will prove to be correct. There are a variety of factors, which could cause future outcomes to differ materially from those described in this report, including, but not limited to:

- general economic conditions;
- contract bids, including international markets;
- material reduction in revenues;
- inability to meet PNC covenant requirements;
- inability to collect in a timely manner a material amount of receivables;
- increased competitive pressures;

- inability to maintain and obtain required permits and approvals to conduct operations;
- public not accepting our new technology;
- inability to develop new and existing technologies in the conduct of operations;
- inability to maintain and obtain closure and operating insurance requirements;
- inability to retain or renew certain required permits;
- discovery of additional contamination or expanded contamination at any of the sites or facilities leased or owned by us or our subsidiaries which would result in a material increase in remediation expenditures;
- delays at our third-party disposal site can extend collection of our receivables greater than twelve months;
- refusal of third-party disposal sites to accept our waste;
- changes in federal, state and local laws and regulations, especially environmental laws and regulations, or in interpretation of such;
- requirements to obtain permits for TSD activities or licensing requirements to handle low level radioactive materials are limited or lessened;
- potential increases in equipment, maintenance, operating or labor costs;
- management retention and development;
- financial valuation of intangible assets is substantially more/less than expected;
- the requirement to use internally generated funds for purposes not presently anticipated;
- inability to continue to be profitable on an annualized basis;
- inability of the Company to maintain the listing of its Common Stock on the NASDAQ;
- terminations of contracts with government agencies (domestic and foreign) or subcontracts involving government agencies (domestic or foreign), or reduction in amount of waste delivered to the Company under the contracts or subcontracts;
- renegotiation of contracts involving government agencies (domestic and foreign);
- federal government's inability or failure to provide necessary funding to remediate contaminated federal sites;
- disposal expense accrual could prove to be inadequate in the event the waste requires re-treatment;
- inability to raise capital on commercially reasonable terms;
- inability to increase profitable revenue;
- impact of the COVID-19;
- audit of our PPP Loan;
- new governmental regulations;
- lender refuses to waive non-compliance or revise our covenant so that we are in compliance; and
- risk factors contained in Item 1A of this report.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Financial Statement Schedules

In accordance with the rules of Regulation S-X, schedules are not submitted because they are not applicable to or required by the Company.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Perma-Fix Environmental Services, Inc.

Opinion on the financial statements

We have audited the accompanying consolidated balance sheets of Perma-Fix Environmental Services, Inc. (a Delaware corporation) and subsidiaries (the “Company”) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive income, stockholders’ equity, and cash flows for the years then ended, and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical audit matters

Critical audit matters are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. We determined that there are no critical audit matters.

/s/ GRANT THORNTON LLP

We have served as the Company’s auditor since 2014.

Atlanta, Georgia
March 29, 2021

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED BALANCE SHEETS

As of December 31,

(Amounts in Thousands, Except for Share and Per Share Amounts)

	2020	2019
ASSETS		
Current assets:		
Cash	\$ 7,924	\$ 390
Accounts receivable, net of allowance for doubtful accounts of \$404 and \$487, respectively	9,659	13,178
Unbilled receivables	14,453	7,984
Inventories	610	487
Prepaid and other assets	3,967	2,983
Current assets related to discontinued operations	22	104
Total current assets	<u>36,635</u>	<u>25,126</u>
Property and equipment:		
Buildings and land	20,139	19,967
Equipment	22,090	20,068
Vehicles	457	410
Leasehold improvements	23	23
Office furniture and equipment	1,413	1,418
Construction-in-progress	1,569	1,609
Total property and equipment	<u>45,691</u>	<u>43,495</u>
Less accumulated depreciation	<u>(27,908)</u>	<u>(26,919)</u>
Net property and equipment	17,783	16,576
Property and equipment related to discontinued operations	81	81
Operating lease right-of-use assets	2,287	2,545
Intangibles and other long term assets:		
Permits	8,922	8,790
Other intangible assets - net	875	1,065
Finite risk sinking fund (restricted cash)	11,446	11,307
Other assets	890	989
Other assets related to discontinued operations	—	36
Total assets	<u>\$ 78,919</u>	<u>\$ 66,515</u>

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED BALANCE SHEETS, CONTINUED

As of December 31,

(Amounts in Thousands, Except for Share and per Share Amounts)

	2020	2019
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 15,382	\$ 9,277
Accrued expenses	6,381	6,118
Disposal/transportation accrual	1,220	1,156
Deferred revenue	4,614	5,456
Accrued closure costs - current	75	84
Current portion of long-term debt	3,595	1,300
Current portion of operating lease liabilities	273	244
Current portion of finance lease liabilities	525	471
Current liabilities related to discontinued operations	898	994
Total current liabilities	32,963	25,100
Accrued closure costs	6,290	5,957
Deferred tax liabilities	471	590
Long-term debt, less current portion	3,134	2,580
Long-term operating lease liabilities, less current portion	2,070	2,342
Long-term finance lease liabilities, less current portion	662	466
Other long-term liabilities	626	—
Long-term liabilities related to discontinued operations	252	244
Total long-term liabilities	13,505	12,179
Total liabilities	46,468	37,279
Commitments and Contingencies (Note 14)		
Stockholders' Equity:		
Preferred Stock, \$.001 par value; 2,000,000 shares authorized, no shares issued and outstanding	-	-
Common Stock, \$.001 par value; 30,000,000 shares authorized; 12,161,539 and 12,123,520 shares issued, respectively; 12,153,897 and 12,115,878 shares outstanding, respectively	12	12
Additional paid-in capital	108,931	108,457
Accumulated deficit	(74,455)	(77,315)
Accumulated other comprehensive loss	(207)	(211)
Less Common Stock in treasury, at cost; 7,642 shares	(88)	(88)
Total Perma-Fix Environmental Services, Inc. stockholders' equity	34,193	30,855
Non-controlling interest	(1,742)	(1,619)
Total stockholders' equity	32,451	29,236
Total liabilities and stockholders' equity	\$ 78,919	\$ 66,515

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

For the years ended December 31,

(Amounts in Thousands, Except for Per Share Amounts)

	2020	2019
Net revenues	\$ 105,426	\$ 73,459
Cost of goods sold	89,533	57,875
Gross profit	15,893	15,584
Selling, general and administrative expenses	11,774	11,862
Research and development	762	750
Loss on disposal of property and equipment	29	3
Income from operations	3,328	2,969
Other income (expense):		
Interest income	140	337
Interest expense	(398)	(432)
Interest expense-financing fees	(294)	(208)
Other	211	223
Loss on debt extinguishment of debt	(27)	-
Income from continuing operations before taxes	2,960	2,889
Income tax (benefit) expense	(189)	157
Income from continuing operations, net of taxes	3,149	2,732
Loss from discontinued operations, net of taxes of \$0	(412)	(541)
Net income	2,737	2,191
Net loss attributable to non-controlling interest	(123)	(124)
Net income attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$ 2,860	\$ 2,315
Net income (loss) per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - basic:		
Continuing operations	\$.27	\$.24
Discontinued operations	(.03)	(.05)
Net income per common share	\$.24	\$.19
Net income (loss) per common share attributable to Perma-Fix Environmental Services, Inc. stockholders - diluted:		
Continuing operations	\$.26	\$.24
Discontinued operations	(.03)	(.05)
Net income per common share	\$.23	\$.19
Number of common shares used in computing net income (loss) per share:		
Basic	12,139	12,046
Diluted	12,347	12,060

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31,

<u>(Amounts in Thousands)</u>	<u>2020</u>	<u>2019</u>
Net Income	<u>\$ 2,737</u>	<u>\$ 2,191</u>
Other comprehensive income:		
Foreign currency translation adjustments	<u>4</u>	<u>3</u>
Total other comprehensive income	<u>4</u>	<u>3</u>
Comprehensive income	2,741	2,194
Comprehensive loss attributable to non-controlling interest	<u>(123)</u>	<u>(124)</u>
Comprehensive income attributable to Perma-Fix Environmental Services, Inc. common stockholders	<u>\$ 2,864</u>	<u>\$ 2,318</u>

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

*For the years ended December 31,
(Amounts in Thousands, Except for Share Amounts)*

	Common Stock		Additional Paid-In Capital	Common Stock Held In Treasury	Accumulated Other Comprehensive Loss	Non- controlling Interest in Subsidiary	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount						
Balance at December 31, 2018	<u>11,944,215</u>	<u>\$ 12</u>	<u>\$ 107,548</u>	<u>\$ (88)</u>	<u>\$ (214)</u>	<u>\$ (1,495)</u>	<u>\$ (79,630)</u>	<u>\$ 26,133</u>
Net income (loss)	—	—	—	—	—	(124)	2,315	2,191
Foreign currency translation	—	—	—	—	3	—	—	3
Issuance of Common Stock for services	71,905	—	241	—	—	—	—	241
Stock-Based Compensation	—	—	179	—	—	—	—	179
Issuance of Common Stock with debt	75,000	—	263	—	—	—	—	263
Issuance of warrant with debt	—	—	93	—	—	—	—	93
Issuance of Common Stock upon exercise of options	32,400	—	133	—	—	—	—	133
Balance at December 31, 2019	<u>12,123,520</u>	<u>\$ 12</u>	<u>\$ 108,457</u>	<u>\$ (88)</u>	<u>\$ (211)</u>	<u>\$ (1,619)</u>	<u>\$ (77,315)</u>	<u>\$ 29,236</u>
Net income (loss)	—	—	—	—	—	(123)	2,860	2,737
Foreign currency translation	—	—	—	—	4	—	—	4
Issuance of Common Stock for services	34,135	—	232	—	—	—	—	232
Stock-Based Compensation	—	—	236	—	—	—	—	236
Issuance of Common Stock upon exercise of options	3,884	—	6	—	—	—	—	6
Balance at December 31, 2020	<u>12,161,539</u>	<u>\$ 12</u>	<u>\$ 108,931</u>	<u>\$ (88)</u>	<u>\$ (207)</u>	<u>\$ (1,742)</u>	<u>\$ (74,455)</u>	<u>\$ 32,451</u>

The accompanying notes are an integral part of these condensed consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

For the years ended December 31,

(Amounts in Thousands)	2020	2019
Cash flows from operating activities:		
Net income	\$ 2,737	\$ 2,191
Less: loss on discontinued operations, net of taxes of \$0 (Note 9)	(412)	(541)
Income from continuing operations	3,149	2,732
Adjustments to reconcile net income from continuing operations to cash provided by (used in) operating activities:		
Depreciation and amortization	1,596	1,342
Interest on finance lease with purchase option	9	3
Loss on extinguishment of debt	27	—
Amortization of debt issuance/debt discount costs	294	208
Deferred tax (benefit) expense	(119)	4
(Recovery of) provision for bad debt reserves	(101)	386
Loss on disposal of property and equipment	29	3
Issuance of common stock for services	232	241
Stock-based compensation	236	179
Changes in operating assets and liabilities of continuing operations:		
Accounts receivable	3,620	(5,829)
Unbilled receivables	(6,469)	(4,879)
Prepaid expenses, inventories and other assets	1,147	923
Accounts payable, accrued expenses and unearned revenue	4,217	664
Cash provided by (used in) continuing operations	7,867	(4,023)
Cash used in discontinued operations	(499)	(660)
Cash provided by (used in) operating activities	7,368	(4,683)
Cash flows from investing activities:		
Purchases of property and equipment (net)	(1,715)	(1,535)
Proceeds from sale of property and equipment	4	2
Cash used in investing activities of continuing operations	(1,711)	(1,533)
Cash provided by investing activities of discontinued operations	118	121
Cash used in investing activities	(1,593)	(1,412)
Cash flows from financing activities:		
Borrowing on revolving credit	102,788	59,333
Repayments of revolving credit borrowings	(103,109)	(59,651)
Proceeds from issuance of long-term debt	5,666	2,500
Proceeds from finance leases	—	405
Principal repayment of finance lease liabilities	(615)	(272)
Principal repayments of long term debt	(2,759)	(1,344)
Payment of debt issuance costs	(85)	(112)
Proceeds from issuance of common stock upon exercise of options	6	133
Cash provided by financing activities of continuing operations	1,892	992
Effect of exchange rate changes on cash	6	19
Increase (decrease) in cash and finite risk sinking fund (restricted cash) (Note 2)	7,673	(5,084)
Cash and finite risk sinking fund (restricted cash) at beginning of period (Note 2)	11,697	16,781
Cash and finite risk sinking fund (restricted cash) at end of period (Note 2)	\$ 19,370	\$ 11,697
Supplemental disclosure:		
Interest paid	\$ 366	\$ 422
Income taxes paid	70	245
Non-cash investing and financing activities:		
Equipment purchase subject to finance lease	856	393
Equipment purchase subject to financing	27	—
Issuance of Common Stock with debt	—	263
Issuance of Warrant with debt	—	93

The accompanying notes are an integral part of these consolidated financial statements.

PERMA-FIX ENVIRONMENTAL SERVICES, INC.
Notes to Consolidated Financial Statements
December 31, 2020 and 2019

NOTE 1
DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Perma-Fix Environmental Services, Inc. (the Company, which may be referred to as we, us, or our), an environmental and technology know-how company, is a Delaware corporation, engaged through its subsidiaries, in three reportable segments:

TREATMENT SEGMENT, which includes:

- nuclear, low-level radioactive, mixed waste (containing both hazardous and low-level radioactive constituents), hazardous and non-hazardous waste treatment, processing and disposal services primarily through four uniquely licensed and permitted treatment and storage facilities; and
- R&D activities to identify, develop and implement innovative waste processing techniques for problematic waste streams.

In 2020, we expanded our low-level radioactive waste processing and treatment capability within our Treatment Segment through the addition of our Oak Ridge Environmental Waste Operations Center (“EWOC”) facility. The EWOC facility serves primarily as a multi-disciplinary equipment and component processing center for large component, size/volume reduction, sort/segregation, waste transload, and system operability testing. The ultimate objective will be receipt, preparation, packaging, and transportation of low-level radioactive waste to final disposal facilities (landfills, approved radiological waste repositories). Operations at the facility have been limited to date as we continue to complete transition of the site. No revenue was generated at EWOC in 2020.

SERVICES SEGMENT, which includes:

- Technical services, which include:
 - o professional radiological measurement and site survey of large government and commercial installations using advanced methods, technology and engineering;
 - o integrated Occupational Safety and Health services including IH assessments; hazardous materials surveys, e.g., exposure monitoring; lead and asbestos management/abatement oversight; indoor air quality evaluations; health risk and exposure assessments; health & safety plan/program development, compliance auditing and training services; and OSHA citation assistance;
 - o global technical services providing consulting, engineering, project management, waste management, environmental, and decontamination and decommissioning field, technical, and management personnel and services to commercial and government customers; and
 - o on-site waste management services to commercial and governmental customers.
- Nuclear services, which include:
 - o technology-based services including engineering, D&D, specialty services and construction, logistics, transportation, processing and disposal;
 - o remediation of nuclear licensed and federal facilities and the remediation cleanup of nuclear legacy sites. Such services capability includes: project investigation; radiological engineering; partial and total plant D&D; facility decontamination, dismantling, demolition, and planning; site restoration; logistics; transportation; and emergency response; and
- A company owned equipment calibration and maintenance laboratory that services, maintains, calibrates, and sources (i.e., rental) health physics, IH and customized NIOSH instrumentation.
- A company owned gamma spectroscopy laboratory for the analysis of oil and gas industry solids and liquids.

MEDICAL SEGMENT, which includes: R&D of the Company’s medical isotope production technology by our majority-owned Polish subsidiary, Perma-Fix Medical (“PF Medical” or the “Medical Segment”). The Company’s Medical Segment has not generated any revenue as it remains in the R&D stage and has substantially reduced its R&D costs and activities due to the need for capital to fund these activities. All costs incurred by the Medical Segment are reflected within R&D in the accompanying consolidated financial statements.

The Company’s continuing operations consist of the operations of our subsidiaries/facilities as follow: Diversified Scientific Services, Inc. (“DSSI”), Perma-Fix of Florida, Inc. (“PFF”), Perma-Fix of Northwest Richland, Inc. (“PFNWR”), Safety & Ecology Corporation (“SEC”), Perma-Fix Environmental Services UK Limited (“PF UK Limited”), Perma-Fix of Canada, Inc. (“PF Canada”), PF Medical, East Tennessee Materials & Energy Corporation (“M&EC”) (facility closure completed in 2019), EWOC and Perma-Fix ERRG, a variable interest entity (“VIE”) for which we are the primary beneficiary (See “Note 19 - Variable Interest Entities (“VIE”) for a discussion of this VIE).

The Company’s discontinued operations (see Note 9) consist of operations of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

NOTE 2
SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Principles of Consolidation

The Company's consolidated financial statements include our accounts, those of our wholly-owned subsidiaries, our majority-owned Polish subsidiary, Perma-Fix Medical and Perma-Fix ERRG, a VIE for which we are the primary beneficiary as discussed above, after elimination of all significant intercompany accounts and transactions.

Use of Estimates

The Company prepares financial statements in conformity with accounting standards generally accepted in U.S. GAAP, which may require estimates of future cash flows and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as, the reported amounts of revenues and expenses during the reporting period. Due to the inherent uncertainty involved in making estimates, actual results could differ from those estimates.

Cash and Finite Risk Sinking Fund (Restricted Cash)

At December 31, 2020, the Company had cash on hand of approximately \$7,924,000, which included account balances of our foreign subsidiaries totaling approximately \$377,000. At December 31, 2019, the Company had cash on hand of approximately \$390,000, which reflected primarily account balances of our foreign subsidiaries totaling approximately \$388,000. At December 31, 2020 and 2019, the Company had finite risk sinking funds of approximately \$11,446,000 and \$11,307,000, respectively, which represented cash held as collateral under the Company's financial assurance policy (see "Note 14 – Commitment and Contingencies – Insurance" for a discussion of this fund).

Accounts Receivable

Accounts receivable are customer obligations due under normal trade terms requiring payment within 30 or 60 days from the invoice date based on the customer type (government, broker, or commercial). The carrying amount of accounts receivable is reduced by an allowance for doubtful accounts, which is a valuation allowance that reflects management's best estimate of the amounts that will not be collected. The Company regularly reviews all accounts receivable balances that exceed 60 days from the invoice date and based on an assessment of current credit worthiness, estimates the portion, if any, of the balance that will not be collected. This analysis excludes government related receivables due to our past successful experience in their collectability. Specific accounts that are deemed to be uncollectible are reserved at 100% of their outstanding balance. The remaining balances aged over 60 days have a percentage applied by aging category, based on historical experience that allows us to calculate the total allowance required. Once the Company has exhausted all options in the collection of a delinquent accounts receivable balance, which includes collection letters, demands for payment, collection agencies and attorneys, the account is deemed uncollectible and subsequently written off. The write off process involves approvals from senior management based on required approval thresholds.

The following table sets forth the activity in the allowance for doubtful accounts for the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31,	
	2020	2019
Allowance for doubtful accounts - beginning of year	\$ 487	\$ 105
(Recovery of) provision for bad debt reserve	(101)	386
Recovery of write-off (write-off)	18	(4)
Allowance for doubtful accounts - end of year	<u>\$ 404</u>	<u>\$ 487</u>

Unbilled Receivables

Unbilled receivables are generated by differences between invoicing timing and our over time revenue recognition methodology used for revenue recognition purposes. As major processing and contract completion phases are completed and the costs are incurred, the Company recognizes the corresponding percentage of revenue. Within our Treatment Segment, the facilities experience delays in processing invoices due to the complexity of the documentation that is required for invoicing, as well as the difference between completion of revenue recognition milestones and agreed upon invoicing terms, which results in unbilled receivables. The timing differences occur for several reasons which include: partially from delays in the final processing of all wastes associated with certain work orders and partially from delays for analytical testing that is required after the facilities have processed waste but prior to our release of waste for disposal. The tasks relating to these delays can take months to complete but are generally completed within twelve months.

Unbilled receivables within our Services Segment can result from: (1) revenue recognized by our Earned Value Management program (a program which integrates project scope, schedule, and cost to provide an objective measure of project progress) but invoice milestones have not yet been met and/or (2) contract claims and pending change orders, including Requests for Equitable Adjustments (“REAs”) when work has been performed and collection of revenue is reasonably assured.

Inventories

Inventories consist of treatment chemicals, saleable used oils, and certain supplies. Additionally, the Company has replacement parts in inventory, which are deemed critical to the operating equipment and may also have extended lead times should the part fail and need to be replaced. Inventories are valued at the lower of cost or net realizable value with cost determined by the first-in, first-out method.

Disposal and Transportation Costs

The Company accrues for waste disposal based upon a physical count of the waste at each facility at the end of each accounting period. Current market prices for transportation and disposal costs are applied to the end of period waste inventories to calculate for the transportation and disposal accruals.

Property and Equipment

Property and equipment expenditures are capitalized and depreciated using the straight-line method over the estimated useful lives of the assets for financial statement purposes, while accelerated depreciation methods are principally used for income tax purposes. Generally, asset lives range from ten to forty years for buildings (including improvements and asset retirement costs) and three to seven years for office furniture and equipment, vehicles, and decontamination and processing equipment. Leasehold improvements are capitalized and amortized over the lesser of the term of the lease or the life of the asset. Maintenance and repairs are charged directly to expense as incurred. The cost and accumulated depreciation of assets sold or retired are removed from the respective accounts, and any gain or loss from sale or retirement is recognized in the accompanying Consolidated Statements of Operations. Renewals and improvements, which extend the useful lives of the assets, are capitalized.

Certain property and equipment expenditures are financed through leases. Amortization of financed leased assets is computed using the straight-line method over the estimated useful lives of the assets. At December 31, 2020, assets recorded under finance leases were \$2,285,000 less accumulated depreciation of \$291,000, resulting in net fixed assets under finance leases of \$1,994,000. At December 31, 2019, assets recorded under finance leases were \$1,410,000 less accumulated depreciation of \$71,000, resulting in net fixed assets under finance leases of \$1,339,000. These assets are recorded within net property and equipment on the Consolidated Balance Sheets.

Long-lived assets, such as property, plant and equipment, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, an impairment charge is recognized in the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of are separately presented in the balance sheet and reported at the lower of the carrying amount or fair value less costs to sell, and are no longer depreciated.

Our depreciation expense totaled approximately \$1,357,000 and \$1,086,000 in 2020 and 2019, respectively.

Leases

The Company accounts for leases in accordance with Financial Accounting Standards Board's ("FASB") Accounting Standards Update ("ASU") 2016-02, "Leases (Topic 842)." At the inception of an arrangement, the Company determines if an arrangement is, or contains, a lease based on facts and circumstances present in that arrangement. Lease classifications, recognition, and measurement are then determined at the lease commencement date.

The Company's operating lease right-of-use ("ROU") assets and operating lease liabilities represent primarily leases for office and warehouse spaces used to conduct our business. These leases have remaining terms of approximately 3 to 9 years which include one or more options to renew. The Company includes renewal options in valuing its ROU assets and liabilities when it determines that it is reasonably certain to exercise these renewal options. As most of our operating leases do not provide an implicit rate, the Company uses its incremental borrowing rate as the discount rate when determining the present value of the lease payments. The incremental borrowing rate is determined based on the Company's secured borrowing rate, lease terms and current economic environment. Some of our operating leases include both lease (rent payments) and non-lease components (maintenance costs such as cleaning and landscaping services). The Company has elected the practical expedient to account for lease component and non-lease component as a single component for all leases under ASU 2016-02. Lease expense for operating leases is recognized on a straight-line basis over the lease term.

Finance leases primarily consist of processing and transport equipment used by our facilities' operations. Our finance leases also include a building with land for our waste treatment operations. The Company's finance leases generally have initial terms between one to six years and some of the leases include options to purchase the underlying assets at fair market value at the conclusion of the lease term. The lease for the building and land has a term of two years with an option to buy at the end of the lease term, which the Company is reasonably certain to exercise. See "Property and Equipment" above for assets recorded under financed leases. Borrowing rates for our finance leases are either explicitly stated in the lease agreements or implicitly determined from available terms in the lease agreements.

The Company adopted the policy to not recognize ROU assets and liabilities for short term leases.

Capitalized Interest

The Company's policy is to capitalize interest cost incurred on debt during the construction of projects for its use. A reconciliation of our total interest cost to "Interest Expense" as reported on our Consolidated Statements of Operations for 2020 and 2019 is as follows:

(Amounts in Thousands)	2020	2019
Interest cost capitalized	\$ —	\$ 29
Interest cost charged to expense	398	432
Total interest	<u>\$ 398</u>	<u>\$ 461</u>

Intangible Assets

Intangible assets consist primarily of the recognized value of the permits required to operate our business. Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of October 1, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, a quantitative test is performed to determine the fair value. The impairment loss, if any, is measured as the excess of the carrying value of the asset over its fair value. Judgments and estimates are inherent in these analyses and include assumptions for, among other factors, forecasted revenue, gross margin, growth rate, operating income, timing of expected future cash flows, and the determination of appropriate long-term discount rates. Impairment testing of our indefinite-lived permits related to our Treatment reporting unit as of October 1, 2020 and 2019 resulted in no impairment charges.

Intangible assets that have definite useful lives are amortized using the straight-line method over the estimated useful lives (with the exception of customer relationships which are amortized using an accelerated method) and are excluded from our annual intangible asset valuation review as of October 1. Definite-lived intangible assets are also tested for impairment whenever events or changes in circumstances suggest impairment might exist.

R&D

Operational innovation and technical know-how are very important to the success of our business. Our goal is to discover, develop, and bring to market innovative ways to process waste that address unmet environmental needs and to develop new company service offerings. The Company conducts research internally and also through collaborations with other third parties. R&D costs consist primarily of employee salaries and benefits, laboratory costs, third party fees, and other related costs associated with the development and enhancement of new potential waste treatment processes and new technology and are charged to expense when incurred in accordance with ASC Topic 730, "Research and Development." The Company's R&D expenses included approximately \$311,000 and \$314,000 for the years ended December 31, 2020 and 2019, respectively, incurred by our Medical Segment.

Accrued Closure Costs and ARO

Accrued closure costs represent our estimated environmental liability to clean up our facilities, as required by our permits, in the event of closure. ASC 410, "Asset Retirement and Environmental Obligations" requires that the discounted fair value of a liability for an ARO be recognized in the period in which it is incurred with the associated ARO capitalized as part of the carrying cost of the asset. The recognition of an ARO requires that management make numerous estimates, assumptions and judgments regarding such factors as estimated probabilities, timing of settlements, material and service costs, current technology, laws and regulations, and credit adjusted risk-free rate to be used. This estimate is inflated, using an inflation rate, to the expected time at which the closure will occur, and then discounted back, using a credit adjusted risk free rate, to the present value. ARO's are included within buildings as part of property and equipment and are depreciated over the estimated useful life of the property. In periods subsequent to initial measurement of the ARO, the Company must recognize period-to-period changes in the liability resulting from the passage of time and revisions to either the timing or the amount of the original estimate of undiscounted cash flows. Increases in the ARO liability due to passage of time impact net income as accretion expense, which is included in cost of goods sold. Changes in costs resulting from changes or expansion at the facilities require adjustment to the ARO liability and are capitalized and charged as depreciation expense, in accordance with the Company's depreciation policy.

Income Taxes

Income taxes are accounted for in accordance with ASC 740, "Income Taxes." Under ASC 740, the provision for income taxes is comprised of taxes that are currently payable and deferred taxes that relate to the temporary differences between financial reporting carrying values and tax bases of assets and liabilities. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Any effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

ASC 740 requires that deferred income tax assets be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred income tax assets will not be realized. The Company regularly assesses the likelihood that the deferred tax asset will be recovered from future taxable income. The Company considers projected future taxable income and ongoing tax planning strategies, then records a valuation allowance to reduce the carrying value of the net deferred income taxes to an amount that is more likely than not to be realized.

ASC 740 sets out a consistent framework for preparers to use to determine the appropriate recognition and measurement of uncertain tax positions. ASC 740 uses a two-step approach wherein a tax benefit is recognized if a position is more-likely-than-not to be sustained. The amount of the benefit is then measured to be the highest tax benefit which is greater than 50% likely to be realized. ASC 740 also sets out disclosure requirements to enhance transparency of an entity's tax reserves. The Company recognizes accrued interest and income tax penalties related to unrecognized tax benefits as a component of income tax expense.

The Company reassesses the validity of our conclusions regarding uncertain income tax positions on a quarterly basis to determine if facts or circumstances have arisen that might cause us to change our judgment regarding the likelihood of a tax position's sustainability under audit.

Foreign Currency

The Company's foreign subsidiaries include PF UK Limited, PF Canada and PF Medical. Assets and liabilities are translated to U.S. dollars at the exchange rate in effect at the balance sheet date and revenue and expenses at the average exchange rate for the period. Foreign currency translation adjustments for these subsidiaries are accumulated as a separate component of accumulated other comprehensive income (loss) in stockholders' equity. Gains and losses resulting from foreign currency transactions are recognized in the Consolidated Statements of Operations.

Concentration Risk

The Company performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either indirectly for others as a subcontractor to government entities or directly as a prime contractor, representing approximately \$96,582,000, or 91.6%, of our total revenue during 2020, as compared to \$59,985,000, or 81.7%, of our total revenue during 2019.

Revenue generated by the Company as a subcontractor to a customer for a remediation project performed for a government entity (the "DOE") within our Services Segment in 2020 and 2019 accounted for approximately \$41,011,000 or 38.9% and \$8,529,000 or 11.6% (included in revenues generated relating to government clients above) of the Company's total revenue for 2020 and 2019, respectively. This remediation project included among other things, decontamination support of a building. As work progressed throughout stages of this project in 2020, additional contaminations were regularly discovered which resulted in approval in additional work to be performed under this project. This project is expected to be completed by the first half of 2021.

As our revenues are project/event based where the completion of one contract with a specific customer may be replaced by another contract with a different customer from year to year, the Company does not believe the loss of one specific customer from one year to the next will generally have a material adverse effect on our operations and financial condition.

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash and accounts receivable. The Company maintains cash with high quality financial institutions, which may exceed Federal Deposit Insurance Corporation ("FDIC") insured amounts from time to time. Concentration of credit risk with respect to accounts receivable is limited due to the Company's large number of customers and their dispersion throughout the United States as well as with the significant amount of work that we perform for the federal and Canadian government.

The Company had three government related customers whose total unbilled and net outstanding receivable balances represented 41.1%, 19.0% and 12.5% of the Company's total consolidated unbilled and net accounts receivable at December 31, 2020. The Company had two government related customers whose total unbilled and net outstanding receivable balances represented 12.5% and 34.3% of the Company's total consolidated unbilled and net accounts receivable at December 31, 2019.

Revenue Recognition and Related Policies

The Company recognizes revenue in accordance with FASB's ASC 606, "Revenue from Contracts with Customers." ASC 606 provides a single, comprehensive revenue recognition model for all contracts with customers. Under ASC 606, a five-step process is utilized in order to determine revenue recognition, depicting the transfer of goods or services to a customer at an amount that reflects the consideration it expects to receive in exchange for those goods or services. Under ASC 606, a performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract transaction price is allocated to each distinct performance obligation and recognized as revenues as the performance obligation is satisfied.

Treatment Segment Revenues:

Contracts in our Treatment Segment primarily have a single performance obligation as the promise to receive, treat and dispose of waste is not separately identifiable in the contract and, therefore, not distinct. Performance obligations are generally satisfied over time using the input method. Under the input method, the Company uses a measure of progress divided into major phases which include receipt (ranging from 9.0% to 50%), treatment/processing (ranging from 15% to 89%) and shipment/final disposal (ranging from 2% to 52%). As major processing phases are completed and the costs are incurred, the proportional percentage of revenue is recognized. Transaction price for Treatment Segment contracts are determined by the stated fixed rate per unit price as stipulated in the contract.

Services Segment Revenues:

Revenues for our Services Segment are generated from time and materials, cost reimbursement or fixed price arrangements:

The Company's primary obligation to customers in time and materials contracts relate to the provision of services to the customer at the direction of the customer. This provision of services at the request of the customer is the performance obligation, which is satisfied over time. Revenue earned from time and materials contracts is determined using the input method and is based on contractually defined billing rates applied to services performed and materials delivered.

The Company's primary performance obligation to customers in cost reimbursement contracts is to complete certain tasks and work streams. Each specified work stream or task within the contract is considered to be a separate performance obligation. The transaction price is calculated using an estimated cost to complete the various scope items to achieve the performance obligation as stipulated in the contract. An estimate is prepared for each individual scope item in the contract and the transaction price is allocated on a time and materials basis as services are provided. Revenue from cost reimbursement contracts is recognized over time using the input method based on costs incurred, plus a proportionate amount of fee earned.

Under fixed price contracts, the objective of the project is not attained unless all scope items within the contract are completed and all of the services promised within fixed fee contracts constitute a single performance obligation. Transaction price is estimated based upon the estimated cost to complete the overall project. Revenue from fixed price contracts is recognized over time using the output or input method. For the output method, revenue is recognized based on milestone attained on the project. For the input method, revenue is recognized based on costs incurred on the project relative to the total estimated costs of the project.

The majority of our revenue is derived from short term contracts with an original expected length of one year or less. Also, the nature of our contracts generally does not give rise to variable consideration.

Significant Payment Terms

Invoicing is based on schedules established in customer contracts. Payment terms vary by customers but are generally established at 30 days from invoicing.

Incremental Costs to Obtain a Contract

Costs incurred to obtain contracts with our customers are immaterial and as a result, the Company expenses (within selling, general and administration expenses (“SG&A”)) incremental costs incurred in obtaining contracts with our customer as incurred.

Remaining Performance Obligations

The Company applies the practical expedient in ASC 606-10-50-14 and does not disclose information about remaining performance obligations that have original expected durations of one year or less.

Within our Services Segment, there are service contracts which provide that the Company has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of our performance completed to date. For those contracts, the Company has utilized the practical expedient in ASC 606-10-55-18, which allows the Company to recognize revenue in the amount for which we have the right to invoice; accordingly, the Company does not disclose the value of remaining performance obligations for those contracts.

Stock-Based Compensation

Stock-based compensation granted to employees are accounted for in accordance with ASC 718, “Compensation – Stock Compensation.” Stock-based payment transactions for acquiring goods and services from nonemployees are also accounted for under ASC 718. ASC 718 requires stock-based payments to employees and nonemployees, including grant of options, to be recognized in the Statement of Operations based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock-based awards include the exercise price of the award, the expected term, the expected volatility of our stock over the stock-based award’s expected term, the risk-free interest rate over the award’s expected term, and the expected annual dividend yield. The Company accounts for forfeitures when they occur.

Comprehensive Income (Loss)

The components of comprehensive income (loss) are net income (loss) and the effects of foreign currency translation adjustments.

Income (Loss) Per Share

Basic income (loss) per share is calculated based on the weighted-average number of outstanding common shares during the applicable period. Diluted income (loss) per share is based on the weighted-average number of outstanding common shares plus the weighted-average number of potential outstanding common shares. In periods where they are anti-dilutive, such amounts are excluded from the calculations of dilutive earnings per share. Income (loss) per share is computed separately for each period presented.

Fair Value of Financial Instruments

Certain assets and liabilities are required to be recorded at fair value on a recurring basis, while other assets and liabilities are recorded at fair value on a nonrecurring basis. Fair value is determined based on the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants. The three-tier value hierarchy, which prioritizes the inputs used in the valuation methodologies, is:

Level 1—Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2—Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3—Valuations based on unobservable inputs reflecting the Company’s own assumptions, consistent with reasonably available assumptions made by other market participants.

Financial instruments include cash (Level 1), accounts receivable, accounts payable, and debt obligations (Level 3). Credit is extended to customers based on an evaluation of a customer's financial condition and, generally, collateral is not required. At December 31, 2020 and December 31, 2019, the fair value of the Company's financial instruments approximated their carrying values. The fair value of the Company's revolving credit and term loan approximate its carrying value due to the variable interest rate.

Recently Adopted Accounting Standards

In August 2018, the FASB issued ASU 2018-13, "Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement." ASU 2018-13 improves the disclosure requirements on fair value measurements. ASU 2018-13 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The adoption of ASU No. 2018-13 by the Company effective January 1, 2020 did not have a material impact on the Company's financial statements or disclosures.

In March 2020, the FASB issued ASU 2020-04, "Reference Rate Reform ("ASU 848"): Facilitation of the Effects of Reference Rate Reform on Financial Reporting." ASU 2020-04 provides optional expedients and exceptions for applying U.S. GAAP to contract modifications and hedging relationships, subject to meeting certain criteria, that reference London Interbank Offered Rate ("LIBOR") or another rate that is expected to be discontinued. The amendments in the ASU are effective for all entities as of March 12, 2020 through December 31, 2022. The adoption of ASU 2020-04 on March 12, 2020 by the Company did not have a material impact on the Company's financial statements. The Company will continue to assess the potential impact of this ASU through the effective period.

Recently Issued Accounting Standards – Not Yet Adopted

In June 2016, the FASB issued ASU No. 2016-13, "Credit Losses (Topic 326) - Measurement of Credit Losses on Financial Instruments and subsequent amendments to the initial guidance: ASU 2018-19 "Codification Improvements to Topic 326, Financial Instruments - Credit Losses," ASU 2019-04 "Codification Improvements to Topic 326, Financial Instruments - Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments," ASU 2019-05 "Financial Instruments - Credit Losses (Topic 326): Targeted Transition Relief," ASU 2019-11 "Codification Improvements to Topic 326, Financial Instruments - Credit Losses" and ASU 2020-02, "Financial Instruments—Credit Losses (Topic 326) and Leases (Topic 842)" (collectively, "Topic 326"). Topic 326 introduces an approach, based on expected losses, to estimate credit losses on certain types of financial instruments and modifies the impairment model for available-for-sale debt securities. The new approach to estimating credit losses (referred to as the current expected credit losses model) applies to most financial assets measured at amortized cost and certain other instruments, including trade and other receivables and loans. Entities are required to apply the standard's provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. These ASUs are effective January 1, 2023 for the Company as a smaller reporting company. The Company had expected to early adopt these ASUs effective January 1, 2020; however, due to the need for reallocation of the Company's resources to manage COVID-19 related matters, the Company has deferred adoption of these ASUs effective January 1, 2020 and expect to adopt these ASUs by January 1, 2023.

In December 2019, the FASB issued ASU No. 2019-12, "Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes," which is intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020, with early adoption permitted. This ASU is effective January 1, 2021 for the Company. The Company does not expect the adoption of this ASU will have a material impact on the Company's financial statements.

In January 2020, the FASB issued ASU 2020-01, "Investments - Equity Securities (Topic 321), Investments - Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815), clarifying the Interactions between Topic 321, Topic 323, and Topic 815." This guidance addresses accounting for the transition into and out of the equity method and provides clarification of the interaction of rules for equity securities, the equity method of accounting, and forward contracts and purchase options on certain types of securities. This standard is effective for fiscal years and interim periods within those fiscal years beginning after December 15, 2020. Early adoption is permitted. This ASU is effective January 1, 2021 for the Company. The Company does not expect the adoption of this ASU will have a material impact on the Company's financial statements.

In August 2020, the FASB issued ASU No. 2020-06, "Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity." ASU 2020-06 simplifies the accounting for convertible instruments by removing major separation models and removing certain settlement condition qualifiers for the derivatives scope exception for contracts in an entity's own equity, and simplifies the related diluted net income per share calculation for both Subtopics. ASU 2020-06 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2023, for the Company as a smaller reporting company. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. The Company is currently evaluating the impact of this ASU on its consolidated financial statements and disclosures.

In October 2020, the FASB issued ASU No 2020-10, "Codification Improvements." ASU 2020-10 updates various codification topics by clarifying or improving disclosure requirements. ASU 2020-10 is effective for public entities for fiscal years beginning after December 15, 2020, with early adoption permitted. This ASU is effective January 1, 2021 for the Company. The Company does not expect the adoption of this ASU will have a material impact on the Company's financial statements and disclosures.

NOTE 3
COVID-19 IMPACT

The COVID-19 pandemic that started in early part of 2020 continues to present potential new risks to our business and continues to result in significant volatility in the U.S. and international markets. The Company continues to closely monitor the impact of the COVID-19 pandemic on all aspects of our business. Starting in late March 2020, the Company's operations were impacted by the shutdown of a number of projects and the delays of certain waste shipments. Since the latter part of the second quarter of 2020, all of the projects that were previously shutdown within our Services Segment restarted as stay-at-home orders and certain other restrictions resulting from the pandemic were lifted. Despite the shutdown of certain projects for part of 2020, revenues generated within our Services Segment in 2020 exceeded our revenue generated in 2019 by approximately \$42,188,000. The Company continues to experience delays in waste shipments from certain customers within our Treatment Segment directly related to the impact of COVID-19 including generator shutdowns and limited sustained operations, along with other factors. However, the Company expects to see a gradual return in waste receipts from these customers starting in the first half of 2021 as they accelerate operations. As the impact of COVID-19 remains fluid, the uncertainty in waste receipt shipments may impact our results of operations for the first quarter of 2021 and potentially the second quarter of 2021. The potential for a material impact on the Company's business increases the longer COVID-19 impacts the level of economic activities in the United States and globally as our customers may continue to delay waste shipments and project work may shut down again. For this reason, we cannot reasonably estimate with any degree of certainty the future impact COVID-19 may have on our results of operations, financial position, and liquidity which may impact our ability to meet our financial covenant requirements under our credit facility.

The Company's cash flow requirements during 2020 were primarily financed by our operations, credit facility availability, and proceeds from the PPP Loan (established under the CARES Act) that the Company entered into with its credit facility lender in April 2020 (see "Note 10 – Long Term Debt – PPP Loan" for further detail of this loan). At December 31, 2020, the Company had borrowing availability under its revolving credit facility of approximately \$14,220,000 which was based on a percentage of eligible receivables and subject to certain reserves and included its cash on hand of approximately \$7,924,000. The Company's working capital at December 31, 2020 was approximately \$3,672,000 as compared to working capital of \$26,000 at December 31, 2019. Our working capital at December 31, 2020 included the classification of approximately \$3,191,000 of the outstanding PPP Loan balance of \$5,318,000 at December 31, 2020 as "Current portion of long-term debt" on our Consolidated Balance Sheets. We have applied for forgiveness on repayment of the entire PPP Loan balance which is subject to the review and approval of our lender and the SBA.

At this time, the Company believes it has sufficient liquidity on hand to fund cash flow requirements for the next twelve months which consist primarily of general working capital needs, scheduled principal payments on our debt obligations, remediation projects, and planned capital expenditures. The Company plans to fund these requirements from our operations, credit facility availability, and cash on hand. The Company is continually reviewing operating costs during this volatile time and is committed to further reducing operating costs to bring them in line with revenue levels, when necessary. These measures include curtailing capital expenditures, eliminating non-essential expenditures and implementing a hiring freeze as needed.

The Company is closely monitoring our customers' payment performance. However, as a significant portion of our revenues is derived from government related contracts, the Company does not expect its accounts receivable collections to be materially impacted due to COVID-19.

As previously disclosed, the Company's Medical Segment has not generated any revenue. The Company anticipates that its Medical Segment will not resume full R&D activities until it obtains the necessary funding through obtaining its own credit facility or additional equity raise or obtaining new partners willing to fund its R&D activities. If the Medical Segment is unable to raise the necessary capital, the Medical Segment could be required to further reduce, delay or eliminate its R&D program.

NOTE 4
REVENUE

Disaggregation of Revenue

In general, the Company's business segmentation is aligned according to the nature and economic characteristics of our services and provides meaningful disaggregation of each business segment's results of operations. The following tables present further disaggregation of our revenues by different categories for our Services and Treatment Segments:

Revenue by Contract Type

(In thousands)

	Twelve Months Ended			Twelve Months Ended		
	December 31, 2020			December 31, 2019		
	Treatment	Services	Total	Treatment	Services	Total
Fixed price	\$ 30,143	\$ 8,970	\$ 39,113	\$ 40,364	\$ 12,162	\$ 52,526
Time and materials	—	66,313	66,313	—	20,788	20,788
Cost reimbursement	—	—	—	—	145	145
Total	\$ 30,143	\$ 75,283	\$ 105,426	\$ 40,364	\$ 33,095	\$ 73,459

Revenue by generator

(In thousands)

	Twelve Months Ended			Twelve Months Ended		
	December 31, 2020			December 31, 2019		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	\$ 22,795	\$ 68,237	\$ 91,032	\$ 29,420	\$ 25,077	\$ 54,497
Domestic commercial	6,933	1,825	8,758	10,601	2,724	13,325
Foreign government	415	5,135	5,550	279	5,209	5,488
Foreign commercial	—	86	86	64	85	149
Total	\$ 30,143	\$ 75,283	\$ 105,426	\$ 40,364	\$ 33,095	\$ 73,459

Contract Balances

The timing of revenue recognition, billings, and cash collections results in accounts receivable and unbilled receivables (contract assets). The Company's contract liabilities consist of deferred revenues which represents advance payment from customers in advance of the completion of our performance obligation.

The following table represents changes in our contract assets and contract liabilities balances:

(In thousands)	December 31, 2020	December 31, 2019	Year-to-date Change (\$)	Year-to-date Change (%)
Contract assets				
Account receivables, net of allowance	\$ 9,659	\$ 13,178	\$ (3,519)	(26.7)%
Unbilled receivables - current	14,453	7,984	6,469	81.0%
Contract liabilities				
Deferred revenue	\$ 4,614	\$ 5,456	\$ (842)	(15.4)%

During the twelve months ended December 31, 2020 and 2019, the Company recognized revenue of \$8,094,000 and \$10,354,000, respectively, related to untreated waste that was in the Company's control as of the beginning of each respective year. Revenue recognized in each period related to performance obligations satisfied within the respective period.

NOTE 5
LEASES

The components of lease cost for the Company's leases were as follows (in thousands):

	Twelve Months Ended December 31,	
	2020	2019
Operating Leases:		
Lease cost	\$ 456	\$ 456
Finance Leases:		
Amortization of ROU assets	220	63
Interest on lease liability	143	63
	<u>363</u>	<u>126</u>
Short-term lease rent expense	<u>15</u>	<u>43</u>
Total lease cost	<u>\$ 834</u>	<u>\$ 625</u>

The weighted average remaining lease term and the weighted average discount rate for operating and finance leases at December 31, 2020 was:

	Operating Leases	Finance Leases
Weighted average remaining lease terms (years)	8.0	3.5
Weighted average discount rate	8.0%	7.3%

The weighted average remaining lease term and the weighted average discount rate for operating and finance leases at December 31, 2019 was:

	Operating Leases	Finance Leases
Weighted average remaining lease terms (years)	8.8	2.0
Weighted average discount rate	8.0%	9.3%

The following table reconciles the undiscounted cash flows for the operating and finance leases at December 31, 2020 to the operating and finance lease liabilities recorded on the balance sheet (in thousands):

	Operating Leases		Finance Leases	
2021	\$	450	\$	587
2022		458		271
2023		466		150
2024		342		146
2025		304		146
2025 and thereafter		1,154		18
Total undiscounted lease payments		3,174		1,318
Less: Imputed interest		(831)		(131)
Present value of lease payments	\$	2,343	\$	1,187
Current portion of operating lease obligations	\$	273	\$	—
Long-term operating lease obligations, less current portion	\$	2,070	\$	—
Current portion of finance lease obligations	\$	—	\$	525
Long-term finance lease obligations, less current portion	\$	—	\$	662

Supplemental cash flow and other information related to our leases were as follows (in thousands):

	Twelve Months Ended December 31,	
	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flow from operating leases	\$ 442	\$ 434
Operating cash flow from finance leases	\$ 143	\$ 63
Financing cash flow from finance leases	\$ 615	\$ 272
ROU assets obtained in exchange for lease obligations for:		
Finance liabilities	\$ 874	\$ 893
Operating liabilities	\$ —	\$ 182

NOTE 6
PERMIT AND OTHER INTANGIBLE ASSETS

The following table summarizes changes in the carrying value of permits. No permit exists at our Services and Medical Segments.

Permit (amount in thousands)	Treatment
Balance as of December 31, 2018	\$ 8,443
PCB permit amortized ⁽¹⁾	(7)
Permit in progress	354
Balance as of December 31, 2019	8,790
Permit in progress	132
Balance as of December 31, 2020	\$ 8,922

The following table summarizes information relating to the Company's definite-lived intangible assets:

Intangibles (amount in thousands)	Weighted Average Amortization Period (Years)	December 31, 2020			December 31, 2019		
		Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patent	13	\$ 742	\$ (334)	\$ 408	\$ 760	\$ (358)	\$ 402
Software	3	418	(411)	7	414	(408)	6
Customer relationships	10	3,370	(2,910)	460	3,370	(2,713)	657
Permit	—	—	—	—	545	(545)	—
Total		\$ 4,530	\$ (3,655)	\$ 875	\$ 5,089	\$ (4,024)	\$ 1,065

The intangible assets noted above were amortized on a straight-line basis over their useful lives with the exception of customer relationships which were amortized using an accelerated method.

The following table summarizes the expected amortization over the next five years for our definite-lived intangible assets:

Year	Amount (In thousands)
2021	199
2022	172
2023	132
2024	11
2025	11

Amortization expense recorded for definite-lived intangible assets was approximately \$239,000 and \$256,000, for the years ended December 31, 2020 and 2019, respectively.

NOTE 7
CAPITAL STOCK, STOCK PLANS, WARRANTS, AND STOCK BASED COMPENSATION

Stock Option Plans

The Company adopted the 2003 Outside Directors Stock Plan (the “2003 Plan”), which was approved by our stockholders at the Company’s July 29, 2003 Annual Meeting of Stockholders. Non-Qualified Stock Options (“NQSOs”) granted under the 2003 Plan generally have a vesting period of six months from the date of grant and a term of 10 years, with an exercise price equal to the closing trade price on the date prior to grant date. The 2003 Plan also provides for the issuance to each outside director a number of shares of the Company’s Common Stock in lieu of 65% or 100% (based on option elected by each director) of the fee payable to the eligible director for services rendered as a member of the Board. The number of shares issued is determined at 75% of the market value as defined in the plan (the Company recognizes 100% of the market value of the shares issued). The 2003 Plan, as amended, also provides for the grant of an NQSO to purchase up to 6,000 shares of our Common Stock for each outside director upon initial election to the Board, and the grant of an NQSO to purchase 2,400 shares of our Common Stock upon each re-election. The number of shares of the Company’s Common Stock authorized under the 2003 Plan is 1,100,000. At December 31, 2020, the 2003 Plan had available for issuance 218,577 shares.

The Company’s 2017 Stock Option Plan (“2017 Plan”) authorizes the grant of options to officers and employees of the Company, including any employee who is also a member of the Board, as well as to consultants of the Company. The 2017 Plan authorizes an aggregate grant of 1,140,000 NQSOs and ISOs, which includes a rollover of 140,000 shares that had remained available for issuance under the 2010 Stock Option Plan (“2010 Plan”) immediately upon the approval of the 2017 Plan and an increase of 600,000 shares to the 2017 Plan which was approved by the Company’s stockholders at the 2020 Annual Meeting of Stockholders held on July 22, 2020 (“2020 Annual Meeting”). Consultants of the Company can only be granted NQSOs. The term of each stock option granted under the 2017 Plan shall be fixed by the Compensation Committee, but no stock options will be exercisable more than ten years after the grant date, or in the case of an ISO granted to a 10% stockholder, five years after the grant date. The exercise price of any ISO granted under the 2017 Plan to an individual who is not a 10% stockholder at the time of the grant shall not be less than the fair market value of the shares at the time of the grant, and the exercise price of any ISO granted to a 10% stockholder shall not be less than 110% of the fair market value at the time of grant. The exercise price of any NQSOs granted under the plan shall not be less than the fair market value of the shares at the time of grant. At December 31, 2020, the 2017 Plan had available for issuance 647,500 shares.

Upon the approval of the 2017 Plan as discussed above, no further options remained available for issuance under the 2010 Plan. On September 29, 2020, the 2010 Plan expired; however, an option (ISO) issued under the 2010 Plan prior to the expiration of the 2010 Plan for the purchase of up to 50,000 shares of our Common Stock at \$3.97 per share will remain in effect until the earlier of the exercise date by the optionee or the maturity date of May 15, 2022.

Stock Options to Employees and Outside Director

On February 4, 2020, the Company granted 6,000 NQSOs from the Company's 2003 Plan to a new director elected by the Company's Board to fill a vacancy on the Board. The options granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the options was \$7.00 per share, which was equal to the Company's closing stock price per share the day preceding the grant date, pursuant to the 2003 Plan.

On July 22, 2020, the Company granted an aggregate of 12,000 NQSOs from the Company's 2003 Plan to five of the six re-elected directors at the Company's 2020 Annual Meeting. Dr. Louis F. Centofanti, the Company's EVP of Strategic Initiatives and also a Board member, was not eligible to receive options under the 2003 Plan as an employee of the Company, pursuant to the 2003 Plan. The NQSOs granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO was \$6.70 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On August 10, 2020, the Company granted 6,000 NQSOs from the Company's 2003 Plan to a new director elected by the Company's Board to fill a vacancy on the Board. The options granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the options was \$7.29 per share, which was equal to the Company's closing stock price per share the day preceding the grant date, pursuant to the 2003 Plan.

On January 17, 2019 the Company granted 105,000 ISOs from the 2017 Plan to certain employees, which included our executive officers as follows: 25,000 ISOs to our CEO; 15,000 ISOs to our CFO; and 15,000 ISOs to our EVP of Strategic Initiatives. The ISOs granted were for a contractual term of six years with one-fifth vesting annually over a five-year period. The exercise price of the ISO was \$3.15 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

On July 25, 2019, the Company granted an aggregate of 12,000 NQSOs from the Company's 2003 Plan to five of the six re-elected directors at the Company's Annual Meeting of Stockholders held on July 25, 2019. Dr. Louis F. Centofanti (a Board member) was not eligible to receive options under the 2003 Plan as an employee of the Company, pursuant to the 2003 Plan. The NQSOs granted were for a contractual term of ten years with a vesting period of six months. The exercise price of the NQSO was \$3.31 per share, which was equal to our closing stock price the day preceding the grant date, pursuant to the 2003 Plan.

On August 29, 2019 the Company granted an aggregate of 12,500 ISOs from the 2017 Plan to certain employees. The ISOs granted were for a contractual term of six years with one-fifth vesting annually over a five-year period. The exercise price of the ISO was \$3.90 per share, which was equal to the fair market value of the Company's Common Stock on the date of grant.

During 2020, the Company issued 2,000 shares of its Common Stock resulting from the exercise of options from the Company's 2017 Plan for total proceeds of \$6,300. Additionally, the Company issued 1,884 shares of its Common Stock from cashless exercises of 8,000 and 2,500 options at \$3.60 per share and \$3.15 per share, respectively. The Company issued an aggregate of 32,400 shares of Common Stock in 2019 from exercises of options resulting in total proceed of approximately \$133,000.

The Company estimates fair value of stock options using the Black-Scholes valuation model. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company's stock over the option's expected term, the risk-free interest rate over the option's expected term, and the expected annual dividend yield. The fair value of the options granted during 2020 and 2019 and the related assumptions used in the Black-Scholes option model used to value the options granted were as follows. No options were granted to employees in 2020:

	Employee Stock Option Granted	
	2019	
Weighted-average fair value per share	\$	1.46
Risk -free interest rate ⁽¹⁾		1.40%-2.58%
Expected volatility of stock ⁽²⁾		48.67%-51.38%
Dividend yield		None
Expected option life ⁽³⁾		5.0 years

	Outside Director Stock Options Granted	
	2020	2019
Weighted-average fair value per share	\$ 4.66	\$ 2.27
Risk -free interest rate ⁽¹⁾	0.59%-1.61%	2.08%
Expected volatility of stock ⁽²⁾	55.83%-56.68%	54.28%
Dividend yield	None	None
Expected option life ⁽³⁾	10.0 years	10.0 years

⁽¹⁾ The risk-free interest rate is based on the U.S. Treasury yield in effect at the grant date over the expected term of the option.

⁽²⁾ The expected volatility is based on historical volatility from our traded Common Stock over the expected term of the option.

⁽³⁾ The expected option life is based on historical exercises and post-vesting data.

The following table summarizes stock-based compensation recognized for fiscal years 2020 and 2019.

	Year Ended	
	2020	2019
Employee Stock Options	\$ 132,000	\$ 150,000
Director Stock Options	104,000	29,000
Total	\$ 236,000	\$ 179,000

At December 31, 2020, the Company has approximately \$274,000 of total unrecognized compensation costs related to unvested options for employee and directors. The weighted average period over which the unrecognized compensation costs are expected to be recognized is approximately 2.1 years.

Stock Options to Consultant

The Company granted a NQSO to Robert Ferguson on July 27, 2017 from the Company's 2017 Plan for the purchase of up to 100,000 shares of the Company's Common Stock ("Ferguson Stock Option") in connection with his work as a consultant to the Company's Test Bed Initiative ("TBI") at our PFNWR facility at an exercise price of \$3.65 per share, which was the fair market value of the Company's Common Stock on the date of grant. The term of the Ferguson Stock Option is seven years from the grant date. The vesting of the Ferguson Stock Option is subject to the achievement of three separate milestones by certain dates. On January 17, 2019, the Company's Compensation and Board approved an amendment to the Ferguson Stock Option whereby the vesting date for the second milestone for the purchase of up to 30,000 shares of the Company's Common Stock was extended to March 31, 2020 from January 27, 2019. On March 27, 2020, the Compensation Committee and the Board approved another amendment to the Ferguson Stock Option whereby the vesting date for the second milestone was further extended to December 31, 2021 from March 31, 2020 and the vesting date for the third milestone for the purchase of up to 60,000 shares of the Company's Common Stock was extended to December 31, 2022 from January 27, 2021. The 10,000 options under the first milestone were exercised by Robert Ferguson in May 2018. The Company has not recognized compensation costs (fair value of approximately \$262,000 at December 31, 2020) for the remaining 90,000 Ferguson Stock Option under the remaining two milestones since achievement of the performance obligation under each of the two remaining milestones is uncertain at December 31, 2020. All other terms of the Ferguson Stock Option remain unchanged.

Summary of Stock Option Plans

The summary of the Company's total plans as of December 31, 2020 and 2019, and changes during the period then ended are presented as follows:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value ⁽⁴⁾
Options outstanding January 1, 2020	681,300	\$ 3.84		
Granted	24,000	\$ 6.92		
Exercised	(12,500)	\$ 3.47		\$ 16,060
Forfeited/expired	(34,400)	\$ 5.52		
Options outstanding end of period ⁽¹⁾	<u>658,400</u>	\$ 3.87	3.5	\$ 1,426,143
Options exercisable at December 31, 2020 ⁽²⁾	<u>356,400</u>	\$ 3.99	3.3	\$ 732,163

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value ⁽⁴⁾
Options outstanding January 1, 2019	616,000	\$ 4.23		
Granted	129,500	3.24		
Exercised	(32,400)	4.10		\$ 93,000
Forfeited/expired	(31,800)	8.68		
Options outstanding end of period ⁽³⁾	<u>681,300</u>	\$ 3.84	4.2	\$ 3,587,000
Options exercisable as of December 31, 2019 ⁽³⁾	<u>286,800</u>	\$ 4.28	3.8	\$ 1,383,000

⁽¹⁾ Options with exercise prices ranging from \$2.79 to \$7.29

⁽²⁾ Options with exercise prices ranging from \$2.79 to \$7.05

⁽³⁾ Options with exercise prices ranging from \$2.79 to \$8.40

⁽⁴⁾ The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price

The summary of the Company's nonvested options as of December 31, 2020 and changes during the period then ended are presented as follows:

	Shares	Weighted Average Grant-Date Fair Value
Non-vested options January 1, 2020	394,500	\$ 1.77
Granted	24,000	4.66
Vested	(96,500)	2.00
Forfeited	(20,000)	1.62
Non-vested options at December 31, 2020	<u>302,000</u>	\$ 1.94

Warrant

In connection with a \$2,500,000 loan that the Company executed April 1, 2019 with Mr. Robert Ferguson, the Company issued a Warrant to Mr. Ferguson for the purchase of up to 60,000 shares of our Common Stock at an exercise price of \$3.51 per share. The Warrant is exercisable six months from April 1, 2019 and expires on April 1, 2024 and remains outstanding at December 31, 2020 (see "Note 10 – Long Term Debt" for further information of this Warrant).

Common Stock Issued for Services

The Company issued a total of 34,135 and 71,905 shares of our Common Stock in 2020 and 2019, respectively, under our 2003 Plan to our outside directors as compensation for serving on our Board. As a member of the Board, each director elects to receive either 65% or 100% of the director's fee in shares of our Common Stock. The number of shares received is calculated based on 75% of the fair market value of our Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. The Company recorded approximately \$250,000 and \$232,000 in compensation expense (included in SG&A expenses) for the twelve months ended December 31, 2020 and 2019, respectively, for the portion of director fees earned in the Company's Common Stock.

Shares Reserved

At December 31, 2020, the Company has reserved approximately 658,400 shares of our Common Stock for future issuance under all of the option arrangements.

NOTE 8
INCOME (LOSS) PER SHARE

The following table reconciles the income (loss) and average share amounts used to compute both basic and diluted loss per share:

(Amounts in Thousands, Except for Per Share Amounts)	Years Ended December 31,	
	2020	2019
Net income attributable to Perma-Fix Environmental Services, Inc., common stockholders:		
Income from continuing operations, net of taxes	\$ 3,149	\$ 2,732
Net loss attributable to non-controlling interest	(123)	(124)
Income from continuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$ 3,272	\$ 2,856
Loss from discontinuing operations attributable to Perma-Fix Environmental Services, Inc. common stockholders	(412)	(541)
Net income attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$ 2,860	\$ 2,315
Basic income per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$.24	\$.19
Diluted income per share attributable to Perma-Fix Environmental Services, Inc. common stockholders	\$.23	\$.19
Weighted average shares outstanding:		
Basic weighted average shares outstanding	12,139	12,046
Add: dilutive effect of stock options	184	14
Add: dilutive effect of warrants	24	—
Diluted weighted average shares outstanding	12,347	12,060
Potential shares excluded from above weighted average share calculations due to their anti-dilutive effect include:		
Stock options	42	482
Warrant	—	60

NOTE 9
DISCONTINUED OPERATIONS

The Company's discontinued operations consist of all our subsidiaries included in our Industrial Segment which encompasses subsidiaries divested in 2011 and prior and three previously closed locations.

The Company incurred losses from discontinued operations of \$412,000 and \$541,000 for the years ended December 31, 2020 and 2019 (net of taxes of \$0 for each period), respectively. The loss for the year ended 2019 included an increase of approximately \$50,000 in remediation reserve for our PFM subsidiary due to reassessment of the remediation reserve. The remaining loss for each of the periods noted above was primarily due to costs incurred in the administration and continued monitoring of our discontinued operations.

The following table presents the major class of assets of discontinued operations at December 31, 2020 and December 31, 2019. No assets and liabilities were held for sale at each of the periods noted.

(Amounts in Thousands)	December 31, 2020	December 31, 2019
Current assets		
Other assets	\$ 22	\$ 104
Total current assets	<u>22</u>	<u>104</u>
Long-term assets		
Property, plant and equipment, net ⁽¹⁾	81	81
Other assets	—	36
Total long-term assets	<u>81</u>	<u>117</u>
Total assets	<u>\$ 103</u>	<u>\$ 221</u>
Current liabilities		
Accounts payable	\$ 4	\$ 8
Accrued expenses and other liabilities	150	169
Environmental liabilities	744	817
Total current liabilities	<u>898</u>	<u>994</u>
Long-term liabilities		
Closure liabilities	142	134
Environmental liabilities	110	110
Total long-term liabilities	<u>252</u>	<u>244</u>
Total liabilities	<u>\$ 1,150</u>	<u>\$ 1,238</u>

⁽¹⁾ net of accumulated depreciation of \$10,000 for each period presented.

The Company's discontinued operations included a note receivable in the original amount of approximately \$375,000 recorded in May 2016 resulting from the sale of property at our Perma-Fix of Michigan, Inc. ("PFMI") subsidiary. This note required 60 equal monthly installment payments by the buyer of approximately \$7,250 (which includes interest). On July 24, 2020, the purchaser of the property paid off the outstanding note receivable balance of approximately \$105,000.

Environmental Liabilities

The Company has three remediation projects, which are currently in progress relating to our PFD, PFM and PFSG (closed locations) subsidiaries. The Company divested PFD in 2008; however, the environmental liability of PFD was retained by the Company upon the divestiture of PFD. These remediation projects principally entail the removal/remediation of contaminated soil and, in most cases, the remediation of surrounding ground water. The remediation activities are closely reviewed and monitored by the applicable state regulators.

At December 31, 2020, we had total accrued environmental remediation liabilities of \$854,000, a decrease of \$73,000 from the December 31, 2019 balance of \$927,000. The decrease represents payments made on remediation projects for our PFSG and PFD subsidiaries. At December 31, 2020, \$744,000 of the total accrued environmental liabilities was recorded as current.

The current and long-term accrued environmental liabilities at December 31, 2020 are summarized as follows (in thousands).

	Current Accrual	Long-term Accrual	Total
PFD	\$ 17	\$ 60	\$ 77
PFM	\$ 50	15	65
PFSG	\$ 677	35	712
Total liability	<u>\$ 744</u>	<u>\$ 110</u>	<u>\$ 854</u>

**NOTE 10
LONG-TERM DEBT**

Long-term debt consists of the following at December 31, 2020 and December 31, 2019:

(Amounts in Thousands)	December 31, 2020	December 31, 2019
Revolving Credit facility dated May 8, 2020, borrowings based upon eligible accounts receivable, subject to monthly borrowing base calculation, balance due on May 15, 2024. Effective interest rate for 2020 and 2019 was 6.1% and 6.6%, respectively. ⁽¹⁾	\$ —	\$ 321
Term Loan dated May 8, 2020, payable in equal monthly installments of principal, balance due on May 15, 2024. Effective interest rate for 2020 and 2019 was 5.2% and 6.9%, respectively. ⁽¹⁾	1,388(2)	1,827(2)
Promissory Note dated April 1, 2019, payable in twelve monthly installments of interest only, starting May 1, 2019 followed with twelve monthly installments of approximately \$208 in principal plus accrued interest. Interest accrues at annual rate of 4.0%. ⁽³⁾	—(4)	1,732(4)
Promissory Note dated April 14, 2020, balance subject to loan forgiveness. Interest accrues at annual rate of 1.0%. ⁽³⁾	5,318(5)	—
Note Payable dated June 10, 2020, payable in 36 monthly installments, starting in July 2020 at annual interest rate of 5.64%.	23	—
Total debt	<u>6,729</u>	<u>3,880</u>
Less current portion of long-term debt	3,595(4)	1,300(4)
Long-term debt	<u>\$ 3,134</u>	<u>\$ 2,580</u>

⁽¹⁾ Our revolving credit facility is collateralized by our accounts receivable and our term loan is collateralized by our property, plant, and equipment. Effective July 1, 2019, monthly installment principal payment on the Term Loan was amended to approximately \$35,500 from approximately \$101,600. See “Revolving Credit and Term Loan Agreement” below for terms of the Company’s credit facility prior to the New Loan Agreement dated May 8, 2020.

⁽²⁾ Net of debt issuance costs of (\$105,000) and (\$92,000) at December 31, 2020 and December 31, 2019, respectively.

⁽³⁾ Uncollateralized note.

⁽⁴⁾ Net of debt discount/debt issuance costs of (\$0) and (\$248,000) at December 31, 2020 and December 31, 2019, respectively. The Promissory Note provided for prepayment of principal over the term of the Note without penalty. In 2019, the Company made total prepayment of principal of \$520,000 which was reflected in the current portion of the debt. In 2020, the outstanding principal balance of \$1,980,000 was paid-in-full of which of which \$416,000 was prepaid.

⁽⁵⁾ Entered into with the Company’s credit facility lender under the PPP under the CARES Act (see “PPP Loan” below for further information on this loan and its terms).

Revolving Credit and Term Loan Agreement

The Company entered into an Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated October 31, 2011 (“Amended Loan Agreement”), with PNC National Association (“PNC”), acting as agent and lender. The Amended Loan Agreement had been amended from time to time since the execution of the Amended Loan Agreement. The Amended Loan Agreement, as subsequently amended (“Revised Loan Agreement”), provided the Company with the following credit facility with a maturity date of March 24, 2021: (a) up to \$12,000,000 revolving credit (“revolving credit”) and (b) a term loan (“term loan”) of approximately \$6,100,000. The maximum that the Company can borrow under the revolving credit was based on a percentage of eligible receivables (as defined) at any one time reduced by outstanding standby letters of credit and borrowing reductions that our lender may impose from time to time.

Payment of annual rate of interest due on the revolving credit under the Revised Loan Agreement was at prime (3.25% at December 31, 2020) plus 2% and the term loan at prime plus 2.5%.

On May 8, 2020, the Company entered into a Second Amended and Restated Revolving Credit, Term Loan and Security Agreement (the “New Loan Agreement”) with PNC, replacing our previous Revised Loan Agreement with PNC. The New Loan Agreement provides the Company with the following credit facility:

- up to \$18,000,000 revolving credit facility, subject to the amount of borrowings based on a percentage of eligible receivables and subject to certain reserves; and
- a term loan of \$1,741,818, which requires monthly installments of \$35,547.

The New Loan Agreement terminates as of May 15, 2024, unless sooner terminated.

Similar to our Revised Loan Agreement, the New Loan Agreement requires the Company to meet certain customary financial covenants, including, among other things, a minimum Tangible Adjusted Net Worth requirement of \$27,000,000 at all times; maximum capital spending of \$6,000,000 annually; and a minimum FCCR requirement of 1.15:1.

Under the New Loan Agreement, payment of annual rate of interest due on the credit facility is as follows:

- revolving credit at prime plus 2.50% or LIBOR plus 3.50% and the term loan at prime plus 3.00% or LIBOR plus 4.00%. The Company can only elect to use the LIBOR interest payment option after it becomes compliant with meeting the minimum FCCR of 1.15:1; and
- Upon the achievement of a FCCR of greater than 1.25:1, the Company has the option of paying an annual rate of interest due on the revolving credit at prime plus 2.00% or LIBOR plus 3.00% and the term loan at prime plus 2.50% or LIBOR plus 3.50%. The Company met this FCCR in each of the quarters in 2020. Upon meeting the FCCR of 1.25:1, this interest payment option will remain in place in the event that the Company's future FCCR falls below 1.25:1.

Under the LIBOR option of interest payment noted above, a LIBOR floor of 0.75% shall apply in the event that LIBOR falls below 0.75% at any point in time.

Pursuant to the New Loan Agreement, the Company may terminate the New Loan Agreement upon 90 days' prior written notice upon payment in full of our obligations under the New Loan Agreement. The Company has agreed to pay PNC 1.0% of the total financing in the event we pay off our obligations on or before May 7, 2021 and 0.5% of the total financing if we pay off our obligations after May 7, 2021 but prior to or on May 7, 2022. No early termination fee shall apply if we pay off our obligations under the New Loan Agreement after May 7, 2022.

In connection with New Loan Agreement, the Company paid its lender a fee of \$50,000 and incurred other direct costs of approximately \$35,000, which are being amortized over the term of the New Loan Agreement as interest expense-financing fees. As a result of the termination of the Revised Loan Agreement, the Company recorded approximately \$27,000 in loss on extinguishment of debt in accordance with ASC 470-50, "Debt – Modifications and Extinguishment."

At December 31, 2020, the borrowing availability under our revolving credit was approximately \$14,220,000, based on our eligible receivables and includes a reduction in borrowing availability of approximately \$3,026,000 from outstanding standby letters of credit.

The Company's credit facility under its Revised and New Loan Agreement with PNC contains certain financial covenants, along with customary representations and warranties. A breach of any of these financial covenants, unless waived by PNC, could result in a default under our credit facility allowing our lender to immediately require the repayment of all outstanding debt under our credit facility and terminate all commitments to extend further credit. The Company met its financial covenant requirements in 2020, including its quarterly FCCR requirements.

Loan and Securities Purchase Agreement, Promissory Note and Subordination Agreement

On April 1, 2019, the Company completed a lending transaction with Robert Ferguson (the "Lender"), whereby the Company borrowed from the Lender the sum of \$2,500,000 pursuant to the terms of a Loan and Security Purchase Agreement and promissory note (the "Loan"). The Lender is a shareholder of the Company and also serves as a consultant to the Company in connection with the Company's TBI at its PFNWR subsidiary. Proceeds from the Loan were used for general working capital purposes. The Loan is unsecured, with a term of two years with interest payable at a fixed interest rate of 4.00% per annum. The Loan provides for monthly payments of accrued interest only during the first year of the Loan, with the first interest payment due May 1, 2019 and monthly payments of approximately \$208,333 in principal plus accrued interest starting in the second year of the Loan. The Loan also allows for prepayment of principal payments over the term of the Loan without penalty with such prepayment of principal payments to be applied to the second year of the loan payments at the Company's discretion. In December 2020, the Loan was paid-in-full. In connection with this capital raise transaction described above and consideration for us receiving the Loan, the Company issued a Warrant (the "Warrant") to the Lender to purchase up to 60,000 shares of our Common Stock at an exercise price of \$3.51 per share, which was the closing bid price for a share of our Common Stock on NASDAQ.com immediately preceding the execution of the Loan and Warrant. The Warrant expires on April 1, 2024 and remains outstanding at December 31, 2020. As further consideration for this capital raise transaction relating to the Loan, the Company also issued 75,000 shares of its Common Stock to the Lender. The fair value of the Warrant and Common Stock and the related closing fees incurred from the transaction totaled approximately \$398,000 and was recorded as debt discount/debt issuance costs which has been fully amortized as interest expense – financing fees. The 75,000 shares of Common Stock, the Warrant and the 60,000 shares of Common Stock that may be purchased under the Warrant were and will be issued in a private placement that was and will be exempt from registration under Rule 506 and/or Sections 4(a)(2) and 4(a)(5) of the Securities Act of 1933, as amended (the "Act") and bear a restrictive legend against resale except in a transaction registered under the Act or in a transaction exempt from registration thereunder.

PPP Loan

On April 14, 2020, the Company entered into a promissory note with PNC, our credit facility lender, in the amount of approximately \$5,666,000 ("PPP Loan") under the PPP. The PPP was established under the CARES Act and is administered by the SBA. On June 5, 2020, the Flexibility Act was signed into law which amended the CARES Act. The note evidencing the PPP Loan contains events of default relating to, among other things, payment defaults, breach of representations and warranties, and provisions of the promissory note. During the third quarter of 2020, the Company repaid approximately \$348,000 of the PPP Loan to PNC resulting from clarification made in the loan calculation at the time of the loan origination.

Under the terms of the Flexibility Act, the Company can apply for and be granted forgiveness for all or a portion of the PPP Loan. Such forgiveness will be determined, subject to limitations, based on the use of loan proceeds by the Company for eligible payroll costs, mortgage interest, rent and utility costs and the maintenance of employee and compensation levels for the covered period (which is defined as a 24 week period, beginning April 14, 2020, the date in which proceeds from the PPP Loan was disbursed to the Company by PNC). At least 60% of such forgiven amount must be used for eligible payroll costs. On October 5, 2020, the Company applied for forgiveness on repayment of the loan balance as permitted under the program, which is subject to the review and approval of our lender and the SBA. If all or a portion of the PPP Loan is not forgiven, all or the remaining portion of the loan will be for a term of two years but can be prepaid at any time prior to maturity without any prepayment penalties. The annual interest rate on the PPP Loan is 1.0% and no payments of principal or interest are due until SBA remits the loan forgiveness amount to our lender. While the Company's PPP Loan currently has a two year maturity, the Flexibility Act permits the Company to request a five year maturity with our lender. At December 31, 2020, the Company has not received a determination on potential forgiveness on any portion of the PPP Loan balance; therefore, the Company has classified approximately \$3,191,000 of the PPP Loan balance as "Current portion of long-term debt," on its Consolidated Balance Sheets, which was based on payment of the PPP Loan starting in July 2021 (10 months from end of our covered period) in accordance with the terms of our PPP Loan agreement.

The following table details the amount of the maturities of long-term debt maturing in future years at December 31, 2020 (excludes debt issuance costs of \$105,000).

Year ending December 31:		
(In thousands)	2021	3,627
	2022	2,562
	2023	431
	2024	214
	Total	<u>\$ 6,834</u>

NOTE 11 ACCRUED EXPENSES

Accrued expenses include the following (in thousands) at December 31:

	2020	2019
Salaries and employee benefits	\$ 4,203	\$ 3,908
Accrued sales, property and other tax	589	793
Interest payable	50	17
Insurance payable	1,145	935
Other	394	465
Total accrued expenses	<u>\$ 6,381</u>	<u>\$ 6,118</u>

Accrued expenses for 2020 included a total of approximately \$419,000 in compensation expenses accrued under the 2020 Management Incentive Plans ("MIPs") for our executives (see "Note 16 – Related Party Transactions – MIPs" for further discussion of the 2020 MIPs) in addition to a 2020 discretionary bonus of approximately \$27,000 payable to the Company's EVP of Nuclear and Technical Services approved by the Company's Compensation Committee. Accrued expenses for 2019 included an aggregate of approximately \$360,000 in compensation expenses accrued under 2019 MIPs for our executive officers and our SVP of Nuclear and Technical Services, which total amount was paid at the end of May 2020.

NOTE 12
ACCRUED CLOSURE COSTS AND ARO

Accrued closure costs represent our estimated environmental liability to clean up our fixed-based regulated facilities as required by our permits, in the event of closure. Changes to reported closure liabilities (current and long-term) for the years ended December 31, 2020 and 2019, were as follows:

Amounts in thousands	
Balance as of December 31, 2018	6,750
Accretion expense	320
Spending	(1,359)
Adjustment to closure liability	330
Balance as of December 31, 2019	<u>\$ 6,041</u>
Accretion expense	335
Spending	(11)
Balance as of December 31, 2020	<u>\$ 6,365</u>

The Company recorded an additional \$330,000 of closure costs and current closure liabilities in 2019 due to finalization of closure requirements for the Company's M&EC facility. In 2019, the Company completed the closure and decommissioning activities of its M&EC facility in accordance with M&EC's license and permit requirements.

The spending of approximately \$11,000 and \$1,359,000 in 2020 and 2019, respectively, was primarily for the closure of the Company's M&EC facility. Closure liabilities of M&EC are classified as current in the Consolidated Balance Sheets for 2020 and 2019.

The reported closure asset or ARO, is reported as a component of "Net Property and equipment" in the Consolidated Balance Sheets at December 31, 2020 and 2019 with the following activity for the years ended December 31, 2020 and 2019:

Amounts in thousands	
Balance as of December 31, 2018	3,730
Amortization of closure and post-closure asset	(191)
Balance as of December 31, 2019	<u>\$ 3,539</u>
Amortization of closure and post-closure asset	(191)
Balance as of December 31, 2020	<u>\$ 3,348</u>

NOTE 13
INCOME TAXES

The components of income (loss) before income tax (benefit) expense by jurisdiction for continuing operations for the years ended December 31, consisted of the following (in thousands):

	2020	2019
United States	4,778	4,120
Canada	(1,391)	(735)
United Kingdom	(121)	(184)
Poland	(306)	(312)
Total income before tax (benefit) expense	<u>\$ 2,960</u>	<u>\$ 2,889</u>

The components of current and deferred federal and state income tax (benefit) expense for continuing operations for the years ended December 31, consisted of the following (in thousands):

	2020	2019
Federal income tax expense - deferred	4	5
State income tax (benefit) expense - current	(70)	153
State income tax (benefit) expense - deferred	(123)	(1)
Total income tax (benefit) expense	<u>\$ (189)</u>	<u>\$ 157</u>

An overall reconciliation between the expected tax (benefit) expense using the federal statutory rate of 21% for each of the years ended 2020 and 2019 and the (benefit) expense for income taxes from continuing operations as reported in the accompanying Consolidated Statement of Operations is provided below (in thousands).

	2020	2019
Federal tax expense at statutory rate	\$ 622	\$ 607
State tax (benefit) expense, net of federal benefit	(192)	152
Change in deferred tax rates	(71)	106
Permanent items	126	54
Difference in foreign rate	(68)	(27)
Change in deferred tax liabilities	(256)	835
Other	117	(218)
Decrease in valuation allowance	(467)	(1,352)
Income tax (benefit) expense	<u>\$ (189)</u>	<u>\$ 157</u>

The global intangible low-taxed income (“GILTI”) provisions under the Tax Cuts and Jobs Act of 2017 (the “TCJA”) require the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. The Company has elected to account for GILTI tax in the period in which it is incurred, and therefore has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the years ended December 31, 2020 and 2019. As the foreign subsidiaries are all in loss positions for 2020, there is no GILTI inclusion for the current year.

On March 27, 2020, the CARES Act was enacted and signed into law. The CARES Act included a number of income tax law changes, including modifications to the interest limitation under Internal Revenue Code (“IRC”) §163(j) and reinstatement of the ability to carry back net operating losses. The income tax items in the CARES Act did not have a material impact on the Company’s 2020 income tax provision.

The Company had temporary differences and net operating loss carry forwards from both our continuing and discontinued operations, which gave rise to deferred tax assets and liabilities at December 31, 2020 and 2019 as follows (in thousands):

	2020	2019
Deferred tax assets:		
Net operating losses	\$ 8,662	\$ 9,391
Environmental and closure reserves	1,839	1,977
Lease liability	642	742
Other	1,734	1,295
Deferred tax liabilities:		
Depreciation and amortization	(3,447)	(3,211)
Goodwill and indefinite lived intangible assets	(471)	(590)
Right-of-use lease asset	(627)	(730)
481(a) adjustment	(209)	(336)
Prepaid expenses	(22)	(22)
	<u>8,101</u>	<u>8,516</u>
Valuation allowance	<u>(8,572)</u>	<u>(9,106)</u>
Net deferred income tax liabilities	<u>(471)</u>	<u>(590)</u>

In 2020 and 2019, the Company concluded that it was more likely than not that \$8,572,000 and \$9,106,000 of our deferred income tax assets would not be realized, and as such, a full valuation allowance was applied against those deferred income tax assets.

The Company has estimated net operating loss carryforwards (“NOLs”) for federal and state income tax purposes of approximately \$14,264,000 and \$71,316,000, respectively, as of December 31, 2020. The estimated consolidated federal and state NOLs include approximately \$2,455,000 and \$3,774,000, respectively, of our majority-owned subsidiary, PF Medical, which is not part of our consolidated group for tax purposes. These net operating losses can be carried forward and applied against future taxable income, if any, and expire in various amounts starting in 2021. Approximately \$12,199,000 of our federal NOLs were generated after December 31, 2017 and thus do not expire. However, as a result of various stock offerings and certain acquisitions, which in the aggregate constitute a change in control, the use of these NOLs will be limited under the provisions of Section 382 of the Internal Revenue Code of 1986, as amended. Additionally, NOLs may be further limited under the provisions of Treasury Regulation 1.1502-21 regarding Separate Return Limitation Years.

The tax years 2017 through 2020 remain open to examination by taxing authorities in the jurisdictions in which the Company operates.

No uncertain tax positions were identified by the Company for the years currently open under statute of limitations.

The Company had no federal income tax payable for the years ended December 31, 2020 and 2019.

NOTE 14
COMMITMENTS AND CONTINGENCIES

Hazardous Waste

In connection with our waste management services, the Company processes both hazardous and non-hazardous waste, which we transport to our own, or other, facilities for destruction or disposal. As a result of disposing of hazardous substances, in the event any cleanup is required at the disposal site, the Company could be a potentially responsible party for the costs of the cleanup notwithstanding any absence of fault on our part.

Legal Matters

In the normal course of conducting our business, we are involved in various litigation. We are not a party to any litigation or governmental proceeding which our management believes could result in any judgments or fines against us that could have a material adverse effect on our financial position, liquidity or results of future operations.

During July 2020, Tetra Tech EC, Inc. (“Tetra Tech”) filed a complaint in the United States District Court for the Northern District of California against CH2M Hill, Inc. (“CH2M”) and four subcontractors of CH2M, including the Company (“Defendants”). The complaint alleges claims for negligence, negligent misrepresentation and equitable indemnification against all defendants related to alleged damages suffered by Tetra Tech in respect of certain draft reports prepared by defendants at the request of the U.S. Navy as part of an investigation and review of certain whistleblower complaints about Tetra Tech’s environmental restoration at the Hunter’s Point Naval Shipyard in San Francisco.

CH2M was hired by the Navy in 2016 to review Tetra Tech’s work. CH2M subcontracted with environmental consulting and cleanup firms Battelle Memorial Institute, Cabrera Services, Inc., SC&A, Inc. and the Company to assist with the review, according to the complaint.

The complaint alleges that the subject draft reports were prepared negligently and in a biased manner, made public, and caused damage to Tetra Tech’s reputation; triggering related lawsuits and costing it opportunities for both government and commercial contracts.

The Company has provided notice of this lawsuit to our insurance carrier. Our insurance carrier is providing a defense on our behalf in connection with this lawsuit, subject to a \$100,000 self-insured retention and the terms and limitations contained in the insurance policy.

On January 7, 2021 Defendants’ motion to dismiss the complaint in its entirety was granted without prejudice, with leave to amend. Tetra Tech subsequently filed a First Amended Complaint (“FAC”) and Defendants filed a motion to dismiss Tetra Tech’s FAC. At this time, the Company continues to believe it does not have any liability to Tetra Tech.

Insurance

The Company has a 25-year finite risk insurance policy entered into in June 2003 (“2003 Closure Policy”) with AIG which provides financial assurance to the applicable states for our permitted facilities in the event of unforeseen closure. The 2003 Closure Policy, as amended, provides for a maximum allowable coverage of \$28,177,000 which includes available capacity to allow for annual inflation and other performance and surety bond requirements. Total coverage under the 2003 Closure Policy, as amended, was \$19,651,000 at December 31, 2020. At December 31, 2020 and December 31, 2019, finite risk sinking funds contributed by the Company related to the 2003 Closure Policy which is included in other long term assets on the accompanying Consolidated Balance Sheets totaled \$11,446,000 and \$11,307,000, respectively, which included interest earned of \$1,975,000 and \$1,836,000 on the finite risk sinking funds as of December 31, 2020 and December 31, 2019, respectively. Interest income for the year ended 2020 and 2019 was approximately \$139,000 and \$337,000, respectively. If the Company so elects, AIG is obligated to pay us an amount equal to 100% of the finite risk sinking fund account balance in return for complete release of liability from both us and any applicable regulatory agency using this policy as an instrument to comply with financial assurance requirements.

Letter of Credits and Bonding Requirements

From time to time, the Company is required to post standby letters of credit and various bonds to support contractual obligations to customers and other obligations, including facility closures. At December 31, 2020, the total amount of standby letters of credit outstanding was approximately \$3,026,000 and the total amount of bonds outstanding was approximately \$46,388,000.

NOTE 15
PROFIT SHARING PLAN

The Company adopted a 401(k) Plan in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. The Company, at its discretion, may make matching contributions of 25% based on the employee’s elective contributions. Company contributions vest over a period of five years. In 2020 and 2019, the Company contributed approximately \$594,000 and \$395,000 in 401(k) matching funds, respectively.

NOTE 16
RELATED PARTY TRANSACTIONS

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$181,000 and \$177,000 for 2020 and 2019, respectively. David Centofanti is the son of our EVP of Strategic Initiatives and a Board member.

Employment Agreements

The Company entered into an employment agreement with each of Mark Duff, President and CEO, Dr. Louis Centofanti, EVP of Strategic Initiatives, Ben Naccarato, EVP and CFO, Andrew Lombardo, EVP of Nuclear and Technical Services, and Richard Grondin, EVP of Waste Treatment Operations, with each employment agreement dated July 22, 2020 (each employment agreement referred to as the “New Employment Agreement”). The Company had entered into an employment agreement with each of Mark Duff, Dr. Louis Centofanti and Ben Naccarato on September 8, 2017 which each of the employment agreement was terminated effective July 22, 2020 upon the execution of the New Employment Agreement with Mark Duff, Dr. Louis Centofanti and Ben Naccarato.

Each New Employment Agreement is effective for three years from July 22, 2020 (the “Initial Term”) unless earlier terminated by the Company or by the executive officer. At the end of the Initial Term of each New Employment Agreement, each New Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, we or the executive officer provides written notice not to extend the terms of the New Employment Agreement. Each New Employment Agreement provides for annual base salary, performance bonuses (as provided in the MIP as approved by our Compensation Committee and Board) and other benefits commonly found in such agreement.

Pursuant to each New Employment Agreement, if the executive officer’s employment is terminated due to death/disability or for cause (as defined in the agreements), the Company will pay to the executive officer or to his estate an amount equal to the sum of any unpaid base salary and accrued unused vacation time through the date of termination and any benefits due to the executive officer under any employee benefit plan (the “Accrued Amounts”) plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If the executive officer terminates his employment for “good reason” (as defined in the agreements) or is terminated by us without cause (including any such termination for “good reason” or without cause within 24 months after a Change in Control (as defined in the agreement)), the Company will pay the executive officer the Accrued Amounts, two years of full base salary, and two times the performance compensation (under the MIP) earned with respect to the fiscal year immediately preceding the date of termination provided the performance compensation earned with respect to the fiscal year immediately preceding the date of termination has not been paid. If performance compensation earned with respect to the fiscal year immediately preceding the date of termination has been made to the executive officer, the executive officer will be paid an additional year of the performance compensation earned with respect to the fiscal year immediately preceding the date of termination. If the executive terminates his employment for a reason other than for good reason, the Company will pay to the executive an amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP with respect to the fiscal year immediately preceding the date of termination.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an executive officer, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the executive officer’s death. In the event an executive officer terminates his employment for “good reason” or is terminated by the Company without cause, all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the executive’s date of termination. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a “separation from service” (as defined under Treasury Regulation Section 1.409A-1(h)).

MIPs

On January 16, 2020, the Company's Board and the Compensation Committee approved individual MIP for each Mark Duff, CEO and President, Ben Naccarato, EVP and CFO, Dr. Louis Centofanti, EVP of Strategic Initiatives and Andy Lombardo, who was appointed by our Board to the position of EVP of Nuclear and Technical Services and an executive officer of the Company on January 16, 2020. Mr. Lombardo previously held the position of SVP of Nuclear and Technical Services. Additionally, on July 22, 2020, the Company's Board and the Compensation Committee approved a MIP for Richard Grondin who was appointed by the Board to the position of EVP of Waste Treatment Operations and an executive officer of the Company. Mr. Grondin previously held the position of Vice President of Western Operations within our Treatment Segment. Each of the MIPs is effective January 1, 2020 and applicable for year ended December 31, 2020. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive's 2020 annual base salary. The potential target performance compensation ranges from 5% to 150% of the base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% (\$12,000 to \$240,000) of the base salary for the EVP of Waste Treatment Operations.

Each of the three executives in 2019 (Mark Duff, Ben Naccarato, Dr. Louis Centofanti) also had a MIP for 2019 which also provided guidelines for the calculation of annual cash incentive-based compensation, similar to the 2020 MIPs discussed above. An aggregate of approximately \$271,000 in compensation expenses was earned under the MIPs for the Company's three executives for 2019 which was paid to the executives at the end of May 2020. Prior to being named an executive officer of the Company on January 16, 2020, Andy Lombardo had a MIP for 2019 as the SVP of Nuclear and Technical Services. Andy Lombardo earned approximately \$89,000 under the 2019 MIP which was also paid by the Company to him at the end of May 2020.

Salary

On January 16, 2020, the Board, with the approval of the Compensation Committee approved the following salary increase for the Company's NEO effective January 1, 2020:

- Annual base salary for Mark Duff, CEO and President, was increased to \$344,400 from \$287,000.
- Annual base salary for Ben Naccarato, who was promoted to EVP and CFO from VP and CFO, was increased to \$280,000 from \$235,231; and
- Annual base salary for Andy Lombardo, who was appointed to the position of EVP of Nuclear and Technical Services as discussed above, was increased to \$280,000 from \$258,662, which was the annual base salary that Mr. Lombardo earned as SVP of Nuclear and Technical Services and prior to his appointment as an executive officer of the Company by the Board.

Additionally, as a result of Mr. Grondin's appointment by the Board to the position of EVP of Waste Treatment and an executive officer on July 22, 2020, his annual salary was increased from \$208,000 as Vice President of Western Operations within our Treatment Segment to \$240,000, effective July 22, 2020.

NOTE 17
SEGMENT REPORTING

In accordance with ASC 280, “Segment Reporting”, we define an operating segment as a business activity:

- from which we may earn revenue and incur expenses;
- whose operating results are regularly reviewed by the chief operating decision maker (“CODM”) to make decisions about resources to be allocated to the segment and assess its performance; and
- for which discrete financial information is available.

We currently have three reporting segments, which include Treatment and Services Segments, which are based on a service offering approach; and Medical, whose primary purpose is the R&D of a medical isotope production technology. The Medical Segment has not generated any revenues and all costs incurred are reflected within R&D in the accompanying consolidated financial statements. As previously disclosed, the Medical Segment has substantially reduced its R&D costs and activities due to the need for capital to fund these activities. The Company anticipates that the Medical Segment will not resume full R&D activities until the necessary capital is obtained through its own credit facility or additional equity raise, or obtains partners willing to provide funding for its R&D. Our reporting segments exclude our corporate headquarter, business center and our discontinued operations (see “Note 9 – Discontinued Operations”) which do not generate revenues.

The table below shows certain financial information of our reporting segments as of and for the years ended December 31, 2020 and 2019 (in thousands).

Segment Reporting as of and for the year ended December 31, 2020

	Treatment	Services	Medical	Segments Total	Corporate ⁽²⁾	Consolidated Total
Revenue from external customers	\$ 30,143	\$ 75,283	—	\$ 105,426 ⁽³⁾⁽⁴⁾	\$ —	\$ 105,426
Intercompany revenues	1,493	25	—	1,518	—	—
Gross profit	5,491	10,402	—	15,893	—	15,893
Research and development	243	132	311	686	76	762
Interest income	1	—	—	1	139	140
Interest expense	(115)	(27)	—	(142)	(256)	(398)
Interest expense-financing fees	—	—	—	—	(294)	(294)
Depreciation and amortization	1,204	354	—	1,558	38	1,596
Segment income (loss) before income taxes	1,494	7,826	(311)	9,009	(6,049)	2,960
Income tax (benefit) expense	(264)	6	—	(258)	69	(189)
Segment income (loss)	1,758	7,820	(311)	9,267	(6,118)	3,149
Segment assets ⁽¹⁾	32,324	22,368 ⁽⁸⁾	17	54,709	24,210 ⁽⁵⁾	78,919
Expenditures for segment assets (net)	1,264	451	—	1,715	—	1,715 ⁽⁷⁾
Total debt	—	23	—	23	6,706	6,729 ⁽⁶⁾

Segment Reporting as of and for the year ended December 31, 2019

	Treatment	Services	Medical	Segments Total	Corporate ⁽²⁾	Consolidated Total
Revenue from external customers	\$ 40,364	\$ 33,095	—	\$ 73,459 ⁽³⁾⁽⁴⁾	\$ —	\$ 73,459
Intercompany revenues	329	38	—	367	—	—
Gross profit	12,248	3,336	—	15,584	—	15,584
Research and development	401	12	314	727	23	750
Interest income	—	—	—	—	337	337
Interest expense	(129)	(23)	—	(152)	(280)	(432)
Interest expense-financing fees	—	—	—	—	(208)	(208)
Depreciation and amortization	999	318	—	1,317	25	1,342
Segment income (loss) before income taxes	7,973	795	(314)	8,454	(5,565)	2,889
Income tax expense	153	—	—	153	4	157
Segment income (loss)	7,820	795	(314)	8,301	(5,569)	2,732
Segment assets ⁽¹⁾	34,260	15,410 ⁽⁸⁾	16	49,686	16,829 ⁽⁵⁾	66,515
Expenditures for segment assets (net)	1,366	169	—	1,535	—	1,535 ⁽⁷⁾
Total debt	—	—	—	—	3,880	3,880 ⁽⁶⁾

(1) Segment assets have been adjusted for intercompany accounts to reflect actual assets for each segment.

(2) Amounts reflect the activity for corporate headquarters not included in the segment information.

- (3) The Company performed services relating to waste generated by government clients (domestic and foreign (primarily Canadian)), either directly as a prime contractor or indirectly for others as a subcontractor to government entities, representing approximately 96,582,000 or 91.6% of total revenue for 2020 and \$59,985,000 or 81.7% of total revenue for 2019. The following reflects such revenue generated by our two segments:

	2020			2019		
	Treatment	Services	Total	Treatment	Services	Total
Domestic government	\$ 22,795	\$ 68,237	\$ 91,032	\$ 29,420	\$ 25,077	\$ 54,497
Foreign government	415	5,135	5,550	279	5,209	5,488
Total	\$ 23,210	\$ 73,372	\$ 96,582	\$ 29,699	\$ 30,286	\$ 59,985

- (4) The following table reflects revenue based on customer location:

	2020	2019
United States	\$ 99,790	\$ 67,822
Canada	5,550	5,488
United Kingdom	86	149
Total	\$ 105,426	\$ 73,459

- (5) Amount includes assets from our discontinued operations of \$103,000 and \$221,000 at December 31, 2020 and 2019, respectively.
- (6) Net of debt discount/debt issuance costs of (\$105,000) and (\$340,000) for 2020 and 2019, respectively (see “Note 10 – “Long-Term Debt” for additional information).
- (7) Net of financed amount of \$883,000 and \$393,000 for the year ended December 31, 2020 and 2019, respectively.
- (8) Includes long-lived asset (net) for our PF Canada, Inc. subsidiary of \$33,000 and \$41,000 for the year ended December 31, 2020 and 2019, respectively.

NOTE 18
DEFERRAL OF EMPLOYMENT TAX DEPOSITS

The CARES Act, as amended by the Flexibility Act which was signed into law on June 5, 2020, provides employers the option to defer the payment of an employer's share of social security taxes beginning on March 27, 2020 through December 31, 2020 with 50% of the amount of social security taxes deferred to become due on December 31, 2021 with the remaining 50% due on December 31, 2022. The Company elected to defer such taxes starting in mid-April 2020. At December 31, 2020, the Company has deferred payment of approximately \$1,252,000 in its share of social security taxes, of which approximately \$626,000 is included in "Other long-term liabilities," with the remaining balance included in "Accrued expenses" within current liabilities in the Company's Consolidated Balance Sheets.

NOTE 19
VARIABLE INTEREST ENTITIES ("VIE")

On May 24, 2019, the Company and Engineering/Remediation Resources Group, Inc. ("ERRG") entered into an unpopulated joint venture agreement for project work bids within the Company's Services Segment. The joint venture is doing business as Perma-Fix ERRG, a general partnership. The Company has a 51% partnership interest in the joint venture and ERRG has a 49% partnership interest in the joint venture. Activities under Perma-Fix ERRG did not commence until the first quarter of 2020.

The Company determines whether joint ventures in which it has invested meet the criteria of a VIE at the start of each new venture and when a reconsideration event has occurred. A VIE is a legal entity that satisfies any of the following characteristics: (a) the legal entity does not have sufficient equity investment at risk; (b) the equity investors at risk as a group, lack the characteristics of a controlling financial interest; or (c) the legal entity is structured with disproportionate voting rights.

The Company consolidates a VIE if it is determined to be the primary beneficiary of the VIE. The primary beneficiary has both the power to direct the activities of the VIE that most significantly impact the entity's economic performance and the obligation to absorb losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

Based on the Company's evaluation of Perma-Fix ERRG and related agreements with Perma-Fix ERRG, the Company determined that Perma-Fix ERRG is a VIE in which we are the primary beneficiary. At December 31, 2020, Perma-Fix ERRG had total assets of \$2,723,000 and total liabilities of \$2,723,000 which are all recorded as current.

NOTE 20
SUBSEQUENT EVENTS

Management evaluated events occurring subsequent to December 31, 2020 through March 29, 2021, the date these consolidated financial statements were available for issuance, and other than as noted below determined that no material recognizable subsequent events occurred.

MIPs

On January 21, 2021, the Company's Compensation Committee and the Board approved individual MIP for the calendar year 2021 for each CEO, EVP and CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations. Each of the MIPs is effective January 1, 2021 and applicable for year 2021. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive's 2021 annual base salary at the time of the approval of the MIP. The potential target performance compensation ranges from 5% to 150% of the base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% (\$12,000 to \$240,000) of the base salary for the EVP of Waste Treatment Operations.

Executive Officer Salary

In February 2021, the Company's Compensation Committee approved an annual salary cost of living adjustment of approximately 2.3% to take into effect April 1, 2021 for each of our executive officers.

Board Compensation

On January 21, 2021, the Company's Compensation Committee and the Board approved the following revision to the compensation of each non-employee Board member and the Board Committee(s) for which the Board member serves, effective January 1, 2021.

- each director is to be paid a quarterly fee of \$11,500 from \$8,000;
- the Chairman of the Board is to be paid an additional quarterly fee of \$8,750 from \$7,500;
- the Chairman of the Audit Committee is to be paid an additional quarterly fee of \$6,250 from \$5,500;
- the Chairman of each of the Compensation Committee, the Corporate Governance and Nominating Committee (the "Nominating Committee"), and the Strategic Advisory Committee (the "Strategic Committee") is to receive \$3,125 in quarterly fee. No such quarterly fee was previously paid. The Chairman of the Board is not eligible to receive a quarterly fee for serving as the Chairman of any the aforementioned Committees ;
- each Audit Committee member (excluding the Chairman of the Audit Committee) is to receive \$1,250 in quarterly fee; and
- each member of the Compensation Committee, the Nominating Committee, and the Strategic Committee is to receive a quarterly fee of \$500. Such fee is payable only if the member does not serve as the Chairman of the Audit Committee, the Nominating Committee, the Strategic Committee or as the Chairman of the Board.

Each non-employee Board member will continue to receive \$1,000 for each board meeting attendance and a \$500 fee for meeting attendance via conference call.

Each non-employee director may continue to elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Plan, with the balance, if any, payable in cash (see "Note 7 – Capital Stock, Stock Plans, Warrants, and Stock Based Compensation – Stock Option Plans" for a discussion of the 2003 Plan).

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of disclosure controls and procedures.

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our periodic reports filed with the Securities and Exchange Commission (the “Commission”) is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Commission and that such information is accumulated and communicated to our management, including the Chief Executive Officer (“CEO”) (Principal Executive Officer), and Chief Financial Officer (“CFO”) (Principal Financial Officer), as appropriate to allow timely decisions regarding the required disclosure. In designing and assessing our disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their stated control objectives and are subject to certain limitations, including the exercise of judgment by individuals, the difficulty in identifying unlikely future events, and the difficulty in eliminating misconduct completely. Our management, with the participation of our CEO and CFO, evaluated the effectiveness of our disclosure controls and procedures pursuant to Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended. Based upon this assessment, our CEO and CFO have concluded that our disclosure controls and procedures were effective as of December 31, 2020.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act of 1934. Internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraudulent acts. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. A control system, no matter how well designed, can provide only reasonable assurance with respect to financial statement preparation and presentation.

Internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the consolidated financial statements in accordance with generally accepted accounting principles in the United States of America, and that receipts and expenditures of the Company are being made only in accordance with appropriate authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company’s assets that could have a material effect on the consolidated financial statements.

Management, with the participation of our CEO and CFO, conducted an assessment of the effectiveness of internal control over financial reporting as of December 31, 2020 based on the framework in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”). Based on this assessment, management, with the participation of our CEO and CFO, concluded that the Company’s internal control over financial reporting was effective as of December 31, 2020.

This Form 10-K does not include an attestation report of the Company’s independent registered public accounting firm regarding internal control over financial reporting. Since the Company is not a large accelerated filer or an accelerated filer, management’s report was not subject to attestation by the Company’s independent registered public accounting firm pursuant to the rules of the Commission that permit the Company to provide only management’s report in this Form 10-K.

Changes in Internal Control over Financial Reporting

There was no other change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

DIRECTORS

The following table sets forth, as of the date of this Report, information concerning our Board of Directors (“Board”):

NAME ⁽¹⁾	AGE	POSITION
Dr. Louis F. Centofanti	76	Director; Executive Vice President (“EVP”) of Strategic Initiatives; President of Perma-Fix Medical (“PF Medical”)
Mr. Thomas P. Bostick ⁽¹⁾	64	Director
Mr. Joseph T. Grumski ⁽²⁾	59	Director
The Honorable Joe R. Reeder	73	Director
Mr. Larry M. Shelton	67	Chairman of the Board
The Honorable Zach P. Wamp	63	Director
Mr. Mark A. Zwecker	70	Director

Each director is elected to serve until the next annual meeting of stockholders.

- (1) Mr. Bostick was unanimously elected by the Board effective August 10, 2020 to fill a Board vacancy.
- (2) Mr. Grumski was unanimously elected by the Board effective February 4, 2020 to fill a Board vacancy.

Director Information

Our directors and executive officers, their ages, the positions with us held by each of them, the periods during which they have served in such positions and a summary of their recent business experience are set forth below. Each of the biographies of the current directors listed below also contains information regarding such person’s service as a director, business experience, director positions with other public companies held currently or at any time during the past five years, and the experience, qualifications, attributes and skills that our Board considered in nominating or appointing each of them to serve as one of our directors.

Dr. Louis F. Centofanti

Dr. Centofanti, the founder of the Company and a director of the Company since its inception in 1991, currently holds the position of EVP of Strategic Initiatives. Effective January 26, 2018, Dr. Centofanti was appointed to the position of President of PF Medical and no longer a member of the Supervisory Board of PF Medical (a position he had held since June 2, 2015). From March 1996 to September 8, 2017 and from February 1991 to September 1995, Dr. Centofanti held the position of President and Chief Executive Officer (“CEO”) of the Company. Dr. Centofanti served as Chairman of the Board from the Company’s inception in February 1991 until December 16, 2014. In January 2015, Dr. Centofanti was appointed by the U.S. Secretary of Commerce Penny Prizker to serve on the U.S. Department of Commerce’s Civil Nuclear Trade Advisory Committee (“CINTAC”). The CINTAC is composed of industry representatives from the civil nuclear industry and meets periodically throughout the year to discuss the critical trade issues facing the U.S. civil nuclear sector. From 1985 until joining the Company, Dr. Centofanti served as Senior Vice President (“SVP”) of USPCI, Inc., a large publicly-held hazardous waste management company, where he was responsible for managing the treatment, reclamation and technical groups within USPCI. In 1981, he and Mark Zwecker, a current Board member of the Company, founded PPM, Inc. (later sold to USPCI), a hazardous waste management company specializing in treating PCB-contaminated oil. From 1978 to 1981, Dr. Centofanti served as Regional Administrator of the U.S. Department of Energy for the southeastern region of the United States. Dr. Centofanti has a Ph.D. and a M.S. in Chemistry from the University of Michigan, and a B.S. in Chemistry from Youngstown State University.

As founder of Perma-Fix and PPM, Inc., and as a senior executive at USPCI, Dr. Centofanti combines extensive business experience in the waste management industry with a drive for innovative technology which is critical for a waste management company. In addition, his service in the government sector provides a solid foundation for the continuing growth of the Company, particularly within the Company's Nuclear business. Dr. Centofanti's comprehensive understanding of the Company's operations and his extensive knowledge of its history, coupled with his drive for innovation and excellence, positions Dr. Centofanti to optimize our role in this competitive, evolving market, and led the Board to conclude that he should serve as a director.

Mr. Thomas P. Bostick

Effective August 10, 2020, Mr. Bostick was unanimously elected by the Board to serve as a member of the Company's Board of Directors. Mr. Bostick is currently the CEO of Bostick Global Strategies, LLC, a position he has held since July 2016. Bostick Global Strategies, LLC provides strategic advisory support in the areas of Engineering, Environmental Sustainability, Human Resources, Biotechnology, Education, Executive Coaching, and Agile Project Management. In February 2021, Mr. Bostick was selected by U. S. Senator Jack Reed, Chairman of the Senate Armed Services Committee, to serve as a member of a new commission consisting of eight appointed individuals, tasked with renaming Confederate-named military bases and property. Mr. Bostick previously served as the Chief Operating Officer ("COO") and President of Intrexon Bioengineering from November 2017 to February 2020, a division of Intrexon Corporation (formerly NASDAQ: XON; now NASDAQ: PGEN). Intrexon Bioengineering addresses global challenges across food, agriculture, environmental, energy, and industrial fields by advancing biologically engineered solutions to improve sustainability and efficiency. As the COO and President of Intrexon Bioengineering, Mr. Bostick oversaw operations across the company's multiple technology divisions, driving efficiency and effectiveness in the application of the company's assets toward its development projects, and led a major restructuring of Intrexon Corporation. Mr. Bostick is a member of the board of HireVue, Inc., a privately-held company specializing in online video interviewing services for employers, and Streamside Systems, Inc., a privately-held, veteran-led company that provides services and solutions for global water resource problems. In October 2020, Mr. Bostick was appointed to the board of CSX Corporation (NASDAQ: CSX), a publicly-held rail transportation company, where in December 2020 he was appointed to serve as a member of both the Finance Committee and the Governance Committee. In addition to Mr. Bostick's service on the boards of for profit companies, he has since November 2016 also served on the board of American Corporate Partners, a 501(c)(3) nonprofit organization dedicated to assisting U.S. veterans in their transition from the armed services to the civilian workforce.

Mr. Bostick has also had a distinguished career in the U.S. military, retiring from the US Army in July 2016 with the rank of Lieutenant General. During his distinguished military career, he served as the 53rd U.S. Army Chief of Engineers and the Commanding General of the U.S. Army Corps of Engineers (USACE). As the senior military officer of the Army Corps of Engineers, General Bostick was responsible for overseeing and supervising most of the Nation's civil works infrastructure and military construction, hundreds of environmental protection projects, as well as managing 34,000 civilian employees and military personnel in over 110 countries around the world with a \$25 billion annual budget. As the Chief of Engineers, General Bostick led a \$5 billion recovery program after Superstorm Sandy.

Before his command of USACE, General Bostick served in a variety of command and staff assignments with the U.S. Army both in the U.S. and abroad, including as Deputy Chief of Staff, G-1, Personnel, U.S. Army; Commanding General, U.S. Army Recruiting Command; Assistant Division Commander, 1st Cavalry Division; Executive Officer to the Chief of Engineers; Executive Officer to the Army Chief of Staff; and Deputy Director of Operations for the National Military Command Center, J-3, the Joint Staff in the Pentagon.

General Bostick's military honors and decorations include the Distinguished Service Medal, the Defense Superior Service Medal, the Bronze Star, the Legion of Merit with two oak leaf clusters, the Defense Meritorious Service Medal, the Meritorious Service Medal with four oak leaf clusters, the Joint Service Commendation Medal, the Army Commendation Medal, the Army Achievement Medal with one oak leaf cluster, the Combat Action Badge, the U.S Parachutist badge, the Army Recruiter Badge, and the Ranger Tab.

As a White House Fellow, one of America's most prestigious programs for leadership and public service, General Bostick was a special assistant to the Secretary of Veterans Affairs. He graduated with a Bachelor of Science degree from the U.S. Military Academy at West Point and later returned to the Academy to serve as an Associate Professor of Mechanical Engineering. He holds Master's degrees in Civil Engineering and Mechanical Engineering from Stanford University and a Doctorate in Systems Engineering from George Washington University. He is a Member of the National Academy of Engineering and the National Academy of Construction.

Mr. Bostick's distinguished career in both the government and private sectors brings valuable experience and insight into solving complex issues domestically and globally. His extensive knowledge and problem-solving experiences enhance the Board's ability to address significant challenges in the nuclear market and led the Board to conclude that he should serve as a director.

Mr. Joseph T. Grumski

Effective February 4, 2020, Mr. Grumski was unanimously elected by the Board as a director to fill a vacancy on the Board. From May 2013 through March 2020, Mr. Grumski served as President and CEO and a board member of TAS Energy Inc. ("TAS"), a privately-held company that delivers efficient modular systems manufactured offsite and utilized in power, data centers, industrial and commercial applications. TAS has successfully managed over 400 projects in over 32 countries. In April 2020, TAS was acquired by Comfort Systems USA, Inc. (NYSE: FIX), and now operates as a wholly-owned subsidiary of that company. Comfort Systems USA, Inc. is a publicly-held company that provides mechanical and electrical contracting services in 139 locations in 114 cities throughout the United States. Mr. Grumski continues to serve as the President and CEO of TAS. From 1997 to February 2013, Mr. Grumski was employed with Science Applications International Corporation ("SAIC") (NYSE: SAIC), a publicly-held company that provides government services and information technology support. During his employment with SAIC, Mr. Grumski held various senior management positions, including the positions of President of SAIC's Energy, Environment & Infrastructure ("E2I") commercial subsidiary and General Manager of the E2I Business Unit. SAIC's E2I commercial subsidiary and Business Unit is comprised of approximately 5,200 employees performing over \$1.1 billion of services for federal, commercial, utility and state customers. Mr. Grumski's many accomplishments with SAIC included growing SAIC's \$300 million federal environmental business to a top ranked, \$1.1 billion business; receiving the National Safety Council "Industry Leader" award in 2009; and receiving highest senior executive performance rating three years in a row. Mr. Grumski began his career with Gulf Oil Company and has progressed through senior level engineering, operations management, and program management positions with various companies, including Westinghouse Electric Corporation and Lockheed Martin, Inc. Mr. Grumski received a B.S. in Mechanical Engineering from The University of Pittsburgh and a M.S in Mechanical Engineering from West Virginia University.

Mr. Grumski has had an extensive career in solving and overseeing solutions to complex issues involving both domestic and international concerns. In addition, his extensive experience in companies that provide services to the government sector as well as his experience in the commercial sector provide solid experience for the continuing growth of the Company's Treatment and Services Segment. Mr. Grumski's extensive knowledge and problem-solving experiences, executive operational leadership experience and governance experience enhance the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

The Honorable Joe R. Reeder

Mr. Reeder, a director since 2003, is a principal shareholder in the law firm of Greenberg Traurig LLP, one of the nation's largest U.S.-based law firms, with 41 offices and 2,200 attorneys worldwide, for which Mr. Reeder served as Shareholder-in-Charge of the law firm's Mid-Atlantic Region (1999-2008). His clientele includes celebrities, heads of state, sovereign nations, international corporations, and law firms. As the 14th Undersecretary of the U.S. Army (1993-97), Mr. Reeder also served three years as Chairman of the Panama Canal Commission's Board, overseeing a multibillion-dollar infrastructure program. For the past 18 years, he has served on the Canal's International Advisory Board. He has served on the boards of the National Defense Industry Association ("NDIA"), chairing NDIA's Ethics Committee, the Armed Services YMCA, the Marshall Legacy Institute, and many other private companies and charitable organizations. After successive 4-year appointments by Virginia Governors Mark Warner and Tim Kaine, Mr. Reeder served seven years as Chairman of two Commonwealth of Virginia military boards, and 10 years on the USO Board of Governors. Mr. Reeder was appointed by Governor Terry McAuliffe to the Virginia Military Institute's Board of Visitors (2014), and reappointed in 2018 by current Virginia Governor Ralph Northam. Mr. Reeder, who has been a television commentator on legal and national security issues, has consistently been named a Super Lawyer for Washington, D.C., most recently in 2020. Among other corporate positions, he's been a director since September 2005 for ELBIT Systems of America, LLC, a subsidiary of Elbit Systems Ltd. (NASDAQ: ESLT), a publicly-held company that provides product and system solutions focusing on defense, homeland security, and commercial aviation. Mr. Reeder served on the Washington First Bank ("WFB") board from 2004 to 2017, and, since January 2018, has served on the board of Sandy Spring Bancorp, Inc. (NASDAQ: SASR), which acquired WFB in January 2018. Since April 2018, Mr. Reeder has served on the Audit Committee of Sandy Spring Bancorp, Inc.

In May 2018 Mr. Reeder was appointed to the Advisory Council Bid Protest Committee to the United States Court of Federal Claims.

A West Point graduate who served in the 82nd Airborne Division after Ranger School, Mr. Reeder earned his J.D. from the University of Texas, and L.L.M. from Georgetown University.

Mr. Reeder's career has focused on solving and overseeing solutions to complex domestic and international issues. This experience has enhanced the Board's ability to address major challenges in the nuclear market, as well as day-to-day corporate challenges, which is why the Board values his service as a director.

Mr. Larry M. Shelton

Mr. Shelton, a director since July 2006, has also held the position of Chairman of the Board of the Company since December 16, 2014. Mr. Shelton served as the Chief Financial Officer ("CFO") of S K Hart Management, LLC, a private investment management company ("S K Hart Management"), from 1999 until August 2018. Mr. Shelton served as President of Pony Express Land Development, Inc. (an affiliate of SK Hart Management), a privately held land development company, from January 2013 until August 2017, and has served on its board since December 2005. Mr. Shelton served as Director and CFO of S K Hart Ranches (PTY) Ltd, a private South African Company involved in agriculture, from March 2012 to March 2020. Mr. Shelton continues to provide advisory services to S K Hart Ranches (PTY) Ltd. Mr. Shelton served as a member of the Supervisory Board of PF Medical from April 2014 to December 2016. Mr. Shelton has over 20 years of experience as an executive financial officer for several waste management companies, including as CFO of Envirocare of Utah, Inc. (now EnergySolutions, Inc. (1995-1999)), a privately held nuclear waste services company, and as CFO of USPCI, Inc. (1982-1987), then a NYSE-listed public company engaged in the hazardous waste business. Since July 1989, Mr. Shelton has served on the board of Subsurface Technologies, Inc., a privately held company specializing in providing environmentally sound innovative solutions for water well rehabilitation and development. Mr. Shelton has a B.A. in accounting from the University of Oklahoma.

With his years of accounting experience as CFO for various companies, including a number of waste management companies, Mr. Shelton combines extensive industry knowledge and understanding of accounting principles, financial reporting requirements, evaluating and overseeing financial reporting processes and business matters. These factors led the Board to conclude that he should serve as a director.

The Honorable Zach P. Wamp

Mr. Wamp, a director since January 2018, is currently the President of Zach Wamp Consulting, a position he has held since 2011. As the President and owner of Zach Wamp Consulting, he has served some of the most prominent companies from Silicon Valley to Wall Street as a business development consultant and advisor. From September 2013 to November 2017, Mr. Wamp chaired the Board of Directors for Chicago Bridge and Iron Federal Services, LLC (a subsidiary of Chicago Bridge & Iron Company, NYSE: CBI, which provides critical services primarily to the U.S. government). From January 1995 to January 2011, Mr. Wamp served as a member of the U.S. House of Representatives from Tennessee's 3rd Congressional District. His district included the Oak Ridge National Laboratory, with strong science and research missions from energy to homeland security. Among his many accomplishments, which included various leadership roles in the advancement of education and science, Mr. Wamp was instrumental in the formation and success of the Tennessee Valley Technology Corridor, which created thousands of jobs for Tennesseans in the areas of high-tech research, development, and manufacturing. During his career in the political arena, Mr. Wamp served on several prominent subcommittees during his 14 years on the House Appropriations Committee, including serving as a "ranking member" of the Subcommittee on Military Construction and Veterans Affairs and Related Agencies. Mr. Wamp has been a regular panelist on numerous media outlets and has been featured in a number of national publications effectively articulating sound social and economic policy. Mr. Wamp's business career has also included work in the real estate sector for a number of years as a licensed industrial-commercial real estate broker, for which he was named Chattanooga's Small Business Person of the Year. He is a founder and Board Chair of Learning Blade, the nation's premiere STEM education platform, which is now operating statewide in six states with deployment in another 10 states. Learning Blade is owned and operated by SAI Interactive, Inc., d/b/a Thinking Media, a privately-held educational products and services company.

Mr. Wamp has an extensive career in solving and overseeing solutions to complex issues involving domestic concerns. In addition, his wide-ranging career, particularly with respect to his government-related work, provides solid experience for the continuing growth of the Company's Treatment and Services Segments. His extensive knowledge and problem-solving expertise enhance the Board's ability to address significant challenges in the nuclear market, and led the Board to conclude that he should serve as a director.

Mr. Mark A. Zwecker

Mr. Zwecker, a director since the Company's inception in January 1991, previously served as the CFO and a board member for JCI US Inc. from 2013 to 2019. JCI US Inc. is a telecommunications company and wholly-owned subsidiary of Japan Communications, Inc. (Tokyo Stock Exchange (Securities Code: 9424)), which provides cellular service for M2M (machine to machine) applications. From 2006 to 2013, Mr. Zwecker served as Director of Finance for Communications Security and Compliance Technologies, Inc., a wholly-owned subsidiary of JCI US Inc. that develops security software products for the mobile workforce. From 1997 to 2006, Mr. Zwecker served as President of ACI Technology, LLC, a privately-held IT services provider, and from 1986 to 1998, he served as Vice President of Finance and Administration for American Combustion, Inc., a privately-held combustion technology solutions provider. In 1981, with Dr. Centofanti, Mr. Zwecker co-founded a start-up, PPM, Inc., a hazardous waste management company. He remained with PPM, Inc. until its acquisition in 1985 by USPCI. Mr. Zwecker has a B.S. in Industrial and Systems Engineering from the Georgia Institute of Technology and an M.B.A. from Harvard University.

As a director since our inception, Mr. Zwecker's understanding of our business provides valuable insight to the Board. With years of experience in operations and finance for various companies, including a number of waste management companies, Mr. Zwecker combines extensive knowledge of accounting principles, financial reporting rules and regulations, the ability to evaluate financial results, and understanding of financial reporting processes. He has an extensive background in operating complex organizations. Mr. Zwecker's experience and background position him well to serve as a member of our Board. These factors led the Board to conclude that he should serve as a director.

BOARD LEADERSHIP STRUCTURE

We currently separate the roles of Chairman of the Board and CEO. The Board believes that this leadership structure promotes balance between the Board's independent authority to oversee our business, and the CEO and his management team, who manage the business on a day-to-day basis.

The Company does not have a written policy with respect to the separation of the positions of Chairman of the Board and CEO. The Company believes it is important to retain its flexibility to allocate the responsibilities of the offices of the Chairman and CEO in any way that is in the best interests of the Company at a given point in time; therefore, the Company's leadership structure may change in the future as circumstances may dictate.

Mr. Mark Zwecker, a current member of our Board, continues to serve as the Independent Lead Director, a position he has held since February 2010. The Lead Director's role includes:

- convening and chairing meetings of the non-employee directors as necessary from time to time and Board meetings in the absence of the Chairman of the Board;
- acting as liaison between directors, committee chairs and management;
- serving as information sources for directors and management; and
- carrying out such responsibilities as the Board may delegate from time to time.

AUDIT COMMITTEE

We have a separately designated standing Audit Committee of our Board established in accordance with Section 3(a)(58)(A) of the Exchange Act. Members of the Audit Committee are Mark A. Zwecker (Chairperson), Larry M. Shelton, and Joseph T. Grumski, who replaced Zach Wamp as a member of the Audit Committee effective April 16, 2020.

Our Board has determined that each of our Audit Committee members is and was independent within the meaning of the rules of the NASDAQ and is an "audit committee financial expert" as defined by Item 407(d)(5)(ii) of Regulation S-K of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The Audit Committee has also discussed with Grant Thornton, LLP, the Company's independent registered accounting firm, the matters required to be discussed by Public Company Accounting Oversight Board ("PCAOB") Auditing Standard No. 16 (Communications with Audit Committee).

BOARD OF DIRECTOR INDEPENDENCE

The Board has determined that each director, other than Dr. Centofanti, is "independent" within the meaning of the applicable NASDAQ rules. Dr. Centofanti is not deemed to be an "independent director" because of his employment as an executive officer of the Company.

COMPENSATION AND STOCK OPTION COMMITTEE

The Compensation and Stock Option Committee (the "Compensation Committee") reviews and recommends to the Board the compensation and benefits of all of the Company's officers and reviews general policy matters relating to compensation and benefits of the Company's employees. The Compensation Committee also administers the Company's stock option plans. The Compensation Committee has the sole authority to retain and terminate a compensation consultant, as well as to approve the consultant's fees and other terms of engagement. It also has the authority to obtain advice and assistance from internal or external legal, accounting or other advisors. No compensation consultant was employed during 2020. Members of the Compensation Committee during 2020 were Larry M. Shelton (Chairperson), Joe R. Reeder, and Mark A. Zwecker. Effective January 21, 2021, Joseph T. Grumski replaced Larry M. Shelton as the Chairperson and a member of the Compensation Committee and Zach P. Wamp replaced Joe R. Reeder as a member of the Compensation Committee. None of the members of the Compensation Committee has been or is an officer or employee of the Company or has had or has any relationship with the Company requiring disclosure under applicable Commission regulations.

CORPORATE GOVERNANCE AND NOMINATING COMMITTEE

We have a separately-designated standing Corporate Governance and Nominating Committee (the "Nominating Committee"). Members of the Nominating Committee during 2020 were Joe R. Reeder (Chairperson), Zach P. Wamp, and Larry M. Shelton. Effective January 21, 2021, Mr. Bostick replaced Larry M. Shelton as a member of the Nominating Committee. All members of the Nominating Committee are and were "independent" as that term is defined by current NASDAQ listing standards.

The Nominating Committee recommends to the Board of Directors candidates to fill vacancies on the Board and the nominees for election as directors at each annual meeting of stockholders. In making such recommendation, the Nominating Committee takes into account information provided to them from the candidate, as well as the Nominating Committee's own knowledge and information obtained through inquiries to third parties to the extent the Nominating Committee deems appropriate. The Company's Bylaws sets forth certain minimum director qualifications to qualify for nomination for election as a director. To qualify for nomination or for election as a director, an individual must:

- be an individual at least 21 years of age who is not under legal disability;
- have the ability to be present, in person, at all regular and special meetings of the Board of Directors;
- not serve on the boards of more than three other publicly-held companies;
- satisfy the director qualification requirements of all environmental and nuclear commissions, boards or similar regulatory or law enforcement authorities to which the Company is subject so as not to cause the Company to fail to satisfy any of the licensing requirements imposed by any such authority;
- not be affiliated with, employed by or a representative of, or have or acquire a material personal involvement with, or material financial interest in, any "Business Competitor" (as defined in the Bylaws);
- not have been convicted of a felony or of any misdemeanor involving moral turpitude; and
- have been nominated for election to the Board of Directors in accordance with the terms of the Bylaws.

In addition to the minimum director qualifications as mentioned above, in order for any proposed nominee to be eligible to be a candidate for election to the Board, such candidate must deliver to the Nominating Committee a completed questionnaire with respect to the background, qualifications, stock ownership and independence of such proposed nominee. The Nominating Committee reviews each candidate's qualifications to include considerations of:

- standards of integrity, personal ethics and values, commitment, and independence of thought and judgment;
- ability to represent the interests of the Company's stockholders;
- ability to dedicate sufficient time, energy and attention to fulfill the requirements of the position; and
- diversity of skills and experience with respect to accounting and finance, management and leadership, business acumen, vision and strategy, charitable causes, business operations, and industry knowledge.

The Nominating Committee does not assign specific weight to any particular criteria and no particular criterion is necessarily applicable to all prospective nominees. The Nominating Committee does not have a formal policy for the consideration of diversity in identifying nominees for directors. However, diversity is one of the many factors taken into account when considering potential candidates to serve on the Board of Directors. The Company generally views and values diversity from the perspective of professional and life experiences, as well as geographic location, representative of the markets in which we do business. The Company recognizes that diversity in professional and life experiences may include consideration of gender, race, cultural background or national origin, in identifying individuals who possess the qualifications that the Nominating Committee believes are important to be represented on the Board. The Company believes that the inclusion of diversity as one of many factors considered in selecting director nominees is consistent with the Company's goal of creating a board of directors that best serves our needs and those of our shareholders.

Stockholder Nominees

There have been no changes to the stockholder nomination process since the Company's last proxy statement. The procedure for stockholder nominees to the Board of Directors is set out below.

The Nominating Committee will consider properly submitted stockholder nominations for candidates for membership on the Board of Directors from stockholders who meet each of the requirements set forth in the Bylaws, including, but not limited to, the requirements that any such stockholder own at least 1% of the Company's shares of the Common Stock entitled to vote at the meeting on such election, has held such shares continuously for at least one full year, and continuously holds such shares through and including the time of the annual or special meeting. Nominations of persons for election to the Board of Directors may be made at any Annual Meeting of Stockholders, or at any Special Meeting of Stockholders called for the purpose of electing directors. Any stockholder nomination ("Proposed Nominee") must comply with the requirements of the Company's Bylaws and the Proposed Nominee must meet the minimum qualification requirements as discussed above. For a nomination to be made by a stockholder, such stockholder must provide advance written notice to the Nominating Committee, delivered to the Company's principal executive office address (i) in the case of an Annual Meeting of Stockholders, no later than the 90th day nor earlier than the 120th day prior to the anniversary date of the immediately preceding Annual Meeting of Stockholders; and (ii) in the case of a Special Meeting of Stockholders called for the purpose of electing directors, not later than the 10th day following the day on which public disclosure of the date of the Special Meeting of Stockholders is made.

The Nominating Committee will evaluate the qualification of the Proposed Nominee and the Proposed Nominee's disclosure and compliance requirements in accordance with the Company's Bylaws. If the Board of Directors, upon the recommendation of the Nominating Committee, determines that a nomination was not made in accordance with the Company's Bylaws, the Chairman of the Meeting shall declare the nomination defective and it will be disregarded.

STRATEGIC ADVISORY COMMITTEE

We have a separately designated Strategic Advisory Committee (the "Strategic Committee"). The primary functions of the Strategic Committee are to investigate and evaluate strategic alternatives available to the Company and to work with management on long-range strategic planning and identification of potential new business opportunities. The members of the Strategic Advisory Committee are Dr. Louis Centofanti (Chairperson), Joe R. Reeder, Mark A. Zwecker, and Larry M. Shelton. The Strategic Advisory Committee does not have a charter.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following table sets forth, as of the date hereof, information concerning our executive officers:

NAME	AGE	POSITION
Mr. Mark Duff	58	President and CEO
Mr. Ben Naccarato	58	CFO, EVP, and Secretary; CFO and member of the Management Board of PF Medical
Dr. Louis Centofanti	76	EVP of Strategic Initiatives; President of PF Medical
Mr. Andrew Lombardo	61	EVP of Nuclear and Technical Services; Member of the Supervisory Board of PF Medical
Mr. Richard Grondin	62	EVP of Waste Treatment Operations; Member of the Supervisory Board of PF Medical

Mr. Mark Duff

Mr. Mark Duff has held the position of President and CEO of the Company since September 2017. Since joining the Company in June 2016 and prior to being named the President and CEO, Mr. Duff held the positions of Chief Operating Officer and Executive Vice President of the Company. Since joining Perma-Fix, Mr. Duff has developed and implemented strategies to meet aggressive growth objectives in both the Treatment and Services Segments. In the Treatment Segment, he has upgraded each facility to increase efficiency and modernize treatment capabilities to meet the changing markets associated with the waste management industry. In the Services Segment, which encompasses all field operations, he has completed the revitalization of business development programs which has resulted in increased competitive procurement effectiveness and broadened the market penetration within both the commercial and government sectors. Both of these implemented strategies have contributed to continuous growth in revenues and profitability. Mr. Duff has over 30 years of management and technical experience in the U.S. Department of Energy ("DOE") and U.S. Department of Defense ("DOD") environmental and construction markets as a corporate officer, senior project manager, co-founder of a consulting firm, and federal employee. Mr. Duff has an MBA from the University of Phoenix and received his B.S. from the University of Alabama.

Mr. Ben Naccarato

Mr. Naccarato has served as the Company's CFO since February 26, 2009. On January 16, 2020, the Company's Board, with the approval of the Compensation Committee, promoted Mr. Naccarato to EVP and CFO from Vice President and CFO. Mr. Naccarato joined the Company in September 2004 and served as Vice President, Finance of the Company's Industrial Segment until May 2006, when he was named Vice President, Corporate Controller/Treasurer. Since July 2015 and December 2015, Mr. Naccarato has served as the CFO of PF Medical and a member of the Management Board of PF Medical, respectively. Mr. Naccarato has over 30 years of experience in senior financial positions in the waste management and used oil industries. From December 2002 to September 2004, Mr. Naccarato was the CFO of a privately held company in the fuel distribution and used waste oil industry. Mr. Naccarato is a graduate of University of Toronto with a Bachelor of Commerce and Finance Degree and is a Chartered Professional Accountant, Certified Management Accountant (CPA, CMA).

On March 3, 2021, Mr. Naccarato was appointed to serve as an independent director of PyroGenesis Canada, Inc., a high-tech company involved in the design, development, manufacture and commercialization of advanced plasma processes and products and whose stock is listed for trading on the Toronto (PYR) and NASDAQ (PYR) Stock Exchange. Effective March 11, 2021, Mr. Naccarato was appointed to serve as a member of both the Audit and Compensation Committee of PyroGenesis.

Dr. Louis Centofanti

See "Director – Dr. Louis F. Centofanti" in this section for information on Dr. Centofanti.

Mr. Andrew ("Andy") Lombardo

On January 16, 2020, the Company's Board appointed Mr. Lombardo to the position of EVP of Nuclear and Technical Services and an executive officer of the Company. Since joining the Company in 2011, Mr. Lombardo has held various positions within the Company's Services Segment, including SVP of Nuclear and Technical Services. Since May 2019, Mr. Lombardo has served as a member of the Supervisory Board of PF Medical.

Mr. Lombardo, a Certified Health Physicist ("CHP"), has over 35 years of management and technical experience in the commercial nuclear reactor market, and the DOE and DOD environmental and construction markets as a senior director, senior project manager, senior CHP and chemist. Prior to joining the Company, Mr. Lombardo held the position of Vice President of Technical Services for Safety and Ecology Corporation ("SEC"), a subsidiary of Homeland Security Capital Corporation, a publicly traded environmental services company, prior to the acquisition of SEC by the Company in 2011. In his positions with both the Company and SEC, Mr. Lombardo procured and performed greater than \$20 million a year in health physics and radioactive material management projects across the DOE and DOD complex while managing a professional staff of engineers and health physicists and an instrumentation laboratory. Prior to his employment with the Company and SEC, he managed decommissioning projects for two engineering firms which included the successful deployment of soil segregation technology, resulting in client savings of more than \$100 million in transportation and disposal costs. During this time, he developed an expertise characterizing and managing naturally occurring radioactive material ("NORM") and technologically enhanced NORM ("TENORM") waste streams across multiple industries including oil and gas exploration and production. As a result of his expertise, he was recently appointed to the National Council on Radiation Protection and Measurement Committee to provide a commentary on the generation and disposal of TENORM waste. Mr. Lombardo began his career as a chemist and health physicist for the Duquesne Light Company at two commercial reactor sites and one joint DOE/Naval Reactors Duquesne Light test reactor in Shippingport, PA. Mr. Lombardo is certified in comprehensive practice of health physics, and has a M.S. degree in Health Physics from the University of Pittsburgh and a B.S. in Natural Sciences from Indiana University of Pennsylvania.

Mr. Richard Grondin

On July 22, 2020, the Company's Board appointed Mr. Richard Grondin to the position of EVP of Waste Treatment Operations and an executive officer of the Company. Effective January 21, 2021, Mr. Grondin was elected to serve as a member of the Supervisory Board of PF Medical. Since joining the Company in 2002, Mr. Grondin has held various positions within the Company's Treatment Segment, including Vice President of Technical Services, Vice President/General Manager of the Perma-Fix Northwest Richland, Inc. ("PFNWR") Facility and Vice President of Western Operations. Mr. Grondin, a Project Management Professional ("PMP"), has over 35 years of management and technical experience in the highly regulated and specialized radioactive/hazardous waste management industry with the majority of his experience concentrated on managing start-up waste management processing and disposal facilities for four different organizations in the commercial and government sectors. Prior to joining the Company, Mr. Grondin held the position of Vice President of Mixed Waste Operations for Allied Technology Group ("ATG") in Richland, Washington; Vice President of Operations for Waste Control Specialists ("WCS") in Andrews Texas; and Technical Manager/Director of Operations for Rollins Environmental Services Facility in Deer Trail, Colorado. In his positions with the Company, Mr. Grondin, together with others, transformed the PFNWR facility to a profitable subsidiary after its acquisition by the Company. Mr. Grondin is recognized in the United States and Canada as an authority in hazardous and mixed waste treatment. He has been involved in the treatment of several hundred thousand tons of waste in the last 35 years. Mr. Grondin has a Diploma of Collegial Studies in Pure and Applied Sciences from CEGEP of Amiante (Thetford-Mines, Canada) and Analytical Chemistry Techniques from CEGEP of Ahuntsic (Montreal, Canada), a Geography minor from Montreal University (Montreal, Canada) and a Certificate of Business Management from the School of Higher Commercial Studies from Montreal University (Montreal, Canada).

Certain Relationships

There are no family relationships between any of the directors or executive officers.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act, and the regulations promulgated thereunder require our executive officers and directors and beneficial owners of more than 10% of our Common Stock to file reports of ownership and changes of ownership of our Common Stock with the Commission, and to furnish us with copies of all such reports. Based solely on a review of the copies of such reports furnished to us and written information provided to us, we believe that during 2020 none of our executive officers, directors, or beneficial owners of more than 10% of our Common Stock failed to timely file reports under Section 16(a).

Capital Bank–Grawe Gruppe AG ("Capital Bank") has advised us that it is a banking institution regulated by the banking regulations of Austria, which holds shares of our Common Stock as agent on behalf of numerous investors. Capital Bank has represented that all of such investors are accredited investors under Rule 501 of Regulation D promulgated under the Act. In addition, Capital Bank has advised us that none of such investors, individually or as a group, beneficially own more than 4.9% of our Common Stock as calculated in accordance with Rule 13d-3 of the Exchange Act. Capital Bank has further informed us that its clients (and not Capital Bank) maintain full voting and dispositive power over such shares. Consequently, Capital Bank has advised us that it believes it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of our Common Stock registered in the name of Capital Bank because it has neither voting nor investment power, as such terms are defined in Rule 13d-3, over such shares. Capital Bank has informed us that it does not believe that it is required to file, and has not filed, (a) reports under Section 16(a) of the Exchange Act or (b) either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Capital Bank.

If the representations of, or information provided by Capital Bank, are incorrect or Capital Bank was historically acting on behalf of its investors as a group, rather than on behalf of each investor independent of other investors, then Capital Bank and/or the investor group would have become a beneficial owner of more than 10% of our Common Stock on February 9, 1996, as a result of the acquisition of 1,100 shares of our Preferred Stock that were convertible into a maximum of 256,560 shares of our Common Stock. If either Capital Bank or a group of Capital Bank's investors became a beneficial owner of more than 10% of our Common Stock on February 9, 1996, or at any time thereafter, and thereby required to file reports under Section 16(a) of the Exchange Act, then Capital Bank has failed to file a Form 3 or any Forms 4 or 5 since February 9, 1996. (See "Item 12 - Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matter – Security Ownership of Certain Beneficial Owners" for a discussion of Capital Bank's current record ownership of our securities).

Code of Ethics

Our Code of Ethics applies to all our executive officers and is available on our website at www.perma-fix.com. If any amendments are made to the Code of Ethics or any grants of waivers are made to any provision of the Code of Ethics to any of our executive officers, we will promptly disclose the amendment or waiver and nature of such amendment or waiver on our website at the same web address.

ITEM 11. EXECUTIVE COMPENSATION

Summary Compensation

The following table summarizes the total compensation paid or earned by each of the named executive officers (“NEOs”) for the fiscal years ended December 31, 2020 and 2019.

Name and Principal Position	Year	Salary (\$)	Bonus (\$)	Option Awards (\$) ⁽⁵⁾	Non-Equity Incentive Plan Compensation (\$)	All other Compensation (\$) ⁽⁸⁾	Total Compensation (\$)
Mark Duff President and CEO	2020	344,400	—	—	107,010 ⁽⁶⁾	29,930	481,340
	2019	287,000	—	35,564	110,699 ⁽⁷⁾	29,680	462,943
Ben Naccarato EVP and CFO	2020	280,000	—	—	86,000 ⁽⁶⁾	41,594	407,594
	2019	235,231	—	21,338	81,070 ⁽⁷⁾	40,861	378,500
Dr. Louis Centofanti EVP of Strategic Initiatives	2020	233,336	—	—	71,668 ⁽⁶⁾	33,780	338,784
	2019	228,985	—	21,338	78,918 ⁽⁷⁾	32,264	361,505
Andy Lombardo ⁽¹⁾ EVP of Nuclear & Technical Services	2020	280,000	27,000 ⁽³⁾	—	83,000 ⁽⁶⁾	12,385	402,385
	2019	258,662	—	14,225	89,147 ⁽⁷⁾	5,168	367,202
Richard Grondin ⁽²⁾ EVP of Waste Treatment Operations	2020	223,151	—	—	71,143 ⁽⁶⁾	29,216	323,510
	2019	183,904	30,341 ⁽⁴⁾	14,225	— ⁽⁷⁾	29,137	257,607

- (1) On January 16, 2020, the Board appointed Mr. Lombardo to the position of EVP of Nuclear and Technical Services and an executive officer of the Company. Previously, Mr. Lombardo held the position of SVP of Nuclear and Technical Services (within the Services Segment). As the EVP of Nuclear and Technical Services, Mr. Lombardo’s annual base salary was increased to \$280,000, effective January 1, 2020.
- (2) On July 22, 2020, the Board appointed Mr. Grondin to the position of EVP of Waste Treatment Operations and an executive officer of the Company. Previously, Mr. Grondin held the position of Vice President of Western Operations. As the EVP of Waste Treatment Operations, Mr. Grondin’s annual base salary was increased to \$240,000, effective July 22, 2020.
- (3) Reflects a discretionary bonus earned by Mr. Lombardo which was approved by the Company’s Compensation Committee and which is to be paid upon payment of the compensation earned under Mr. Lombardo’s 2020 MIP as described in footnote (6) below.

- (4) Reflects a discretionary bonus earned by Mr. Grondin which was approved by the Company's CEO and paid in May 2020. See also footnote (7) below.
- (5) Reflects the aggregate grant date fair value of awards computed in accordance with ASC 718, "Compensation – Stock Compensation." Assumptions used in the calculation of this amount are included in "Note 7 – Capital Stock, Stock Plans, Warrants and Stock Based Compensation" to "Notes to Consolidated Financial Statement."
- (6) Represents performance compensation earned under the Company's Management Incentive Plan ("MIP"). The MIP for each individual in the table is described under the heading "2020 MIPs." Compensation earned under the 2020 MIPs is to be paid on or about 90 days after year-end, or sooner based on final Form 10-K filing.
- (7) Represents performance compensation earned under the Company's 2019 MIP. As discussed above, Mr. Lombardo was named an executive officer of the Company effective January 16, 2020. Mr. Lombardo had a MIP for 2019 as the SVP of Nuclear and Technical Services, prior to his election as an executive officer by the Board on January 16, 2020. Mr. Lombardo's MIP as SVP of Nuclear and Technical Services was subject to the approval of the CEO. Mr. Grondin did not have a MIP for 2019 but earned a bonus which is described in footnote (4) above. Compensation earned under the MIPs for 2019 was paid by the Company at the end of May 2020.
- (8) The amount shown includes a monthly automobile allowance, insurance premiums (health, disability and life) paid by the Company on behalf of the NEO, and 401(k) matching contributions.

Name	Insurance Premium	Auto Allowance	401(k) match	Total
Mark Duff	\$ 14,430	\$ 9,000	\$ 6,500	\$ 29,930
Ben Naccarato	\$ 26,853	\$ 9,000	\$ 5,741	\$ 41,594
Dr. Louis Centofanti	\$ 18,516	\$ 9,000	\$ 6,264	\$ 33,780
Andy Lombardo	\$ —	\$ 5,885	\$ 6,500	\$ 12,385
Richard Grondin	\$ 18,516	\$ 4,200	\$ 6,500	\$ 29,216

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth unexercised options held by the NEOs as of the fiscal year-end.

Outstanding Equity Awards at December 31, 2020

Name	Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) ⁽¹⁾ Unexercisable	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price (\$)	Option Expiration Date
Mark Duff	50,000 ⁽²⁾	— ⁽²⁾	—	3.97	5/15/2022
	60,000 ⁽³⁾	40,000 ⁽³⁾	—	3.65	7/27/2023
	5,000 ⁽⁴⁾	20,000 ⁽⁴⁾	—	3.15	1/17/2025
Ben Naccarato	30,000 ⁽³⁾	20,000 ⁽³⁾	—	3.65	7/27/2023
	3,000 ⁽⁴⁾	12,000 ⁽⁴⁾	—	3.15	1/17/2025
Dr. Louis Centofanti	30,000 ⁽³⁾	20,000 ⁽³⁾	—	3.65	7/27/2023
	3,000 ⁽⁴⁾	12,000 ⁽⁴⁾	—	3.15	1/17/2025
Andy Lombardo	4,000 ⁽⁵⁾	8,000 ⁽⁵⁾	—	3.60	10/19/2023
	— ⁽⁴⁾	8,000 ⁽⁴⁾	—	3.15	1/17/2025
Richard Grondin	12,000 ⁽⁵⁾	8,000 ⁽⁵⁾	—	3.60	10/19/2023
	2,000 ⁽⁴⁾	8,000 ⁽⁴⁾	—	3.15	1/17/2025

- (1) Pursuant to each of the employment agreements between the Company and, respectively, Mark Duff, Ben Naccarato, Dr. Lou Centofanti, Andy Lombardo, and Richard Grondin, each dated July 22, 2020, in the event of a change in control, death of the executive officer, the executive officer terminates his employment for "good reason" or the executive officer is terminated by the Company without cause, each outstanding option and award shall immediately become exercisable in full (see "Employment Agreements" below for further discussion of the event pursuant to which accelerated exercise of the respective NEO's outstanding options can arise).
- (2) Incentive stock option granted on May 15, 2016 under the Company's 2010 Stock Option Plan. The option has a contractual term of six years with one-third yearly vesting over a three-year period.

- (3) Incentive stock option granted on July 27, 2017 under the Company’s 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.
- (4) Incentive stock option granted on January 17, 2019 under the Company’s 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.
- (5) Incentive stock option granted on October 19, 2017 under the Company’s 2017 Stock Option Plan. The option has a contractual term of six years with one-fifth yearly vesting over a five-year period.

Option Exercises

The table below reflects options exercised by our NEO’s in 2020.

Name	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$) ⁽¹⁾
Andy Lombardo	2,000	\$ 7,700

(1) Realized value determined based on the difference between (a) the total proceeds received by the Company from the exercise of options for the purchase of 2,000 shares of the Company’s Common Stock at \$3.15 per share, and (b) the market value (\$7.00 per share) of the 2,000 shares of the Company’s Common Stock acquired by Mr. Lombardo on the date of the exercise of the options.

Employment Agreements

Effective July 22, 2020, each of the NEOs entered into an employment agreement with the Company (each, an “Employment Agreement” and, collectively, the “Employment Agreements”). Each of the Employment Agreements, which are substantially identical, provides for a specified annual base salary, which annual salary may be increased from time to time, but not reduced, as determined by the Compensation Committee. In addition, each of the NEOs is entitled to participate in the Company’s broad-based benefits plans and to certain performance compensation payable under separate MIPs as approved by the Company’s Compensation Committee and Board. The Company’s Compensation Committee and the Board approved individual 2020 MIPs on January 16, 2020 (which were effective January 1, 2020 and applicable for the 2020 fiscal year) for each of Mark Duff, Ben Naccarato, Dr. Louis Centofanti, and Andy Lombardo. Additionally, the Compensation Committee and the Board approved a 2020 MIP for Richard Grondin on July 22, 2020 (which was effective January 1, 2020 and applicable for the 2020 fiscal year) (see discussion of each of the 2020 MIPs below under “2020 MIPs”). The Employment Agreements for each of Mark Duff, Dr. Louis Centofanti, and Ben Naccarato replaced existing employment agreements between the Company and each such individual originally entered into on September 8, 2017.

Each of the Employment Agreements is effective for three years from July 22, 2020 (the “Initial Term”) unless earlier terminated by the Company or by the respective NEO. At the end of the Initial Term of each Employment Agreement, each Employment Agreement will automatically be extended for one additional year, unless at least six months prior to the expiration of the Initial Term, the Company or the respective NEO provides written notice not to extend the terms of the Employment Agreement.

Each of the Employment Agreements provides that, if an NEO’s employment is terminated due to death/disability or for cause (as defined in the agreements), the Company will pay to the NEO or to his estate an amount equal to the sum of any unpaid base salary, accrued unused vacation time through the date of termination, any benefits due to the NEO under any employee benefit plan (the “Accrued Amounts”) and any performance compensation payable pursuant to the MIP applicable to such NEO.

If the NEO terminates his employment for “good reason” (as defined in the agreements) or is terminated by the Company without cause (including any such termination for “good reason” or without cause within 24 months after a Change in Control (as defined in the agreements), the Company will pay the NEO the Accrued Amounts, two years of full base salary, and two times the performance compensation (under the NEO’s MIP) earned with respect to the fiscal year immediately preceding the date of termination provided the performance compensation earned with respect to the fiscal year immediately preceding the date of termination has not yet been paid. If performance compensation earned with respect to the fiscal year immediately preceding the date of termination has been paid to the NEO, the NEO will be paid an additional year of the performance compensation earned with respect to the fiscal year immediately preceding the date of termination. If the NEO terminates his employment for a reason other than for good reason, the Company will pay to the executive an amount equal to the Accrued Amounts plus any performance compensation payable pursuant to the MIP applicable to such NEO.

If there is a Change in Control (as defined in the agreements), all outstanding stock options to purchase the common stock held by the NEO will immediately become exercisable in full commencing on the date of termination through the original term of the options. In the event of the death of an NEO, all outstanding stock options to purchase common stock held by the NEO will immediately become exercisable in full commencing on the date of death, with such options exercisable for the lesser of the original option term or twelve months from the date of the NEO's death. In the event an NEO terminates his employment for "good reason" or is terminated by the Company without cause, all outstanding stock options to purchase common stock held by the NEO will immediately become exercisable in full commencing on the date of termination, with such options exercisable for the lesser of the original option term or within 60 days from the date of the NEO's date of termination. Severance benefits payable with respect to a termination (other than Accrued Amounts) shall not be payable until the termination constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h)).

Potential Payments

The following table sets forth the potential (estimated) payments and benefits to which each NEO would be entitled upon termination of employment or following a Change in Control of the Company, as specified under each of their respective Employment Agreements with the Company, assuming each circumstance described below occurred on December 31, 2020, the last day of our most recent fiscal year.

Name and Principal Position Potential Payment/Benefit	Disability/ Retirement	For Cause	Death	By Executive for Good Reason or by Company Without Cause	Change in Control of the Company
Mark Duff					
President and CEO					
Accrued Amounts	\$ 24,163(6)	\$ 24,163(6)	\$ 24,163(6)	\$ 712,963(1)	\$ 712,963(1)
Performance compensation	\$ 107,010(2)	\$ 107,010(2)	\$ 107,010(2)	\$ 214,020(3)	\$ 214,020(3)
Stock Options	\$ 253,300(5)	\$ 253,300(5)	\$ 402,500(4)	\$ 402,500(4)	\$ 402,500(4)
Ben Naccarato					
EVP and CFO					
Accrued Amounts	\$ 54,762(6)	\$ 54,762(6)	\$ 54,762(6)	\$ 614,762(1)	\$ 614,762(1)
Performance compensation	\$ 86,000(2)	\$ 86,000(2)	\$ 86,000(2)	\$ 172,000(3)	\$ 172,000(3)
Stock Options	\$ 78,060(5)	\$ 78,060(5)	\$ 158,300(4)	\$ 158,300(4)	\$ 158,300(4)
Dr. Louis Centofanti					
EVP of Strategic Initiatives					
Accrued Amounts	\$ 166,967(6)	\$ 166,967(6)	\$ 166,967(6)	\$ 633,639(1)	\$ 633,639(1)
Performance compensation	\$ 71,668(2)	\$ 71,668(2)	\$ 71,668(2)	\$ 143,336(3)	\$ 143,336(3)
Stock Options	\$ 78,060(5)	\$ 78,060(5)	\$ 158,300(4)	\$ 158,300(4)	\$ 158,300(4)
Andy Lombardo					
EVP of Nuclear and Technical Services					
Accrued Amounts	\$ 19,276(6)	\$ 19,276(6)	\$ 19,276(6)	\$ 579,276(1)	\$ 579,276(1)
Performance compensation	\$ 83,000(2)	\$ 83,000(2)	\$ 83,000(2)	\$ 166,000(3)	\$ 166,000(3)
Stock Options	\$ 9,480(5)	\$ 9,480(5)	\$ 51,000(4)	\$ 51,000(4)	\$ 51,000(4)
Richard Grondin					
EVP of Waste Treatment Operations					
Accrued Amounts	\$ 91,201(6)	\$ 91,201(6)	\$ 91,201(6)	\$ 571,201(1)	\$ 571,201(1)
Performance compensation	\$ 71,143(2)	\$ 71,143(2)	\$ 71,143(2)	\$ 142,286(3)	\$ 142,286(3)
Stock Options	\$ 34,080(5)	\$ 34,080(5)	\$ 75,600(4)	\$ 75,600(4)	\$ 75,600(4)

(1) Represents two times the base salary of the NEO at December 31, 2020 plus "Accrued Amounts" noted in footnote (6) below.

(2) Represents performance compensation earned for fiscal year 2020 (see "2020 MIPs" below). Pursuant to each MIP, performance compensation is to be paid about 90 days after year-end, or sooner based on final Form 10-K filing.

(3) Represents two times the performance compensation earned for fiscal year 2020 (see "2020 MIPs" below). Pursuant to the MIP, performance compensation is to be paid about 90 days after fiscal year-end, or sooner based on final Form 10-K filing.

(4) Benefit is calculated based on the difference between the exercise price of each option and the market value of the Company's Common Stock per share (as reported on the NASDAQ) at December 31, 2020 times the number of options outstanding at December 31, 2020.

- (5) Benefit is calculated based on the difference between the exercise price of each option and the market value of the Company's Common Stock per share (as reported on the NASDAQ) at December 31, 2020 times the number of options vested at December 31, 2020.
- (6) Represents accrued base salary earned for 2020 but paid in 2021, as well as accrued unused vacation/sick time and benefits (defined as "Accrued Amounts" in each of the respective per the Employment Agreement).

2020 Executive Compensation Components

For the fiscal year ended December 31, 2020, the principal components of compensation for executive officers were:

- base salary;
- performance-based incentive compensation;
- long term incentive compensation;
- retirement and other benefits; and
- perquisites.

Based on the amounts set forth in the Summary Compensation table, during 2020, salary accounted for approximately 69.7% of the total compensation of our NEOs, while equity option awards, MIP compensation, and other compensation accounted for approximately 30.3% of the total compensation of the NEOs.

Base Salary

The NEOs, other officers, and other employees of the Company receive a base annual salary. Base salary ranges for executive officers are determined for each executive based on his or her position and responsibility by using market data and comparisons to companies in similar industry.

During its review of base salaries for executives, the Compensation Committee primarily considers:

- market data and comparisons to companies in similar industry;
- internal review of the executive's compensation, both individually and relative to other officers; and
- individual performance of the executive.

Salary levels are typically considered annually as part of the performance review process as well as upon a promotion or other change in job responsibility. Merit-based salary increases for executives are based on the Compensation Committee's assessment of the individual's performance. The base salary and potential annual base salary adjustments for the NEOs are set forth in their respective employment agreements. On January 16, 2020, the Compensation Committee and the Board approved a base salary increase for each of the following individuals, which became effective January 1, 2020: (a) approximately \$57,400 increase from \$287,000 to \$344,400 for Mark Duff, CEO and President; (b) approximately \$44,769 increase from \$235,231 to \$280,000 for Ben Naccarato who was named EVP and CFO from VP and CFO; and (c) approximately \$21,338 increase from \$258,662 to \$280,000 for Andy Lombardo, who was named an executive officer of the Company effective January 16, 2020 and appointed to the position of EVP of Nuclear and Technical Services from SVP of Nuclear and Technical Services. Lou Centofanti, EVP of Strategic Initiatives, was approved a base salary increase of 1.9%, effective January 1, 2020 (from \$228,985 to \$233,336). As a result of Richard Grondin's promotion to EVP of Waste Treatment and being named an executive officer of the Company, his annual salary was increased from \$208,000 as the Vice President of Western Operations to \$240,000, effective July 22, 2020. In February 2021, the Compensation Committee approved a cost of living adjustment of approximately 2.3% of each NEO's base salary, effective April 1, 2021.

Performance-Based Incentive Compensation

The Compensation Committee has the latitude to design cash and equity-based incentive compensation programs to promote high performance and achievement of our corporate objectives by directors and the NEOs, encourage the growth of stockholder value and enable employees to participate in our long-term growth and profitability. The Compensation Committee may grant stock options and/or performance bonuses. In granting these awards, the Compensation Committee may establish any conditions or restrictions it deems appropriate. In addition, the CEO has discretionary authority to grant stock options to certain high-performing executives or officers, subject to the approval of the Compensation Committee. The exercise price for each stock option granted is at or above the market price of our Common Stock on the date of grant. Stock options may be awarded to newly hired or promoted executives at the discretion of the Compensation Committee. Grants of stock options to eligible newly hired executive officers are generally made at the next regularly scheduled Compensation Committee meeting following the hire date.

2020 MIPs

On January 16, 2020, the Board and the Compensation Committee approved individual MIPs for the CEO, CFO, EVP of Strategic Initiatives and EVP of Nuclear and Technical Services. Additionally, on July 22, 2020, the Board and the Compensation Committee approved a MIP for the EVP of Treatment Waste Operations in connection with his appointment to such position on that date. The MIPs were effective January 1, 2020 and applicable for the 2020 fiscal year. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awarded cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of the executive's 2020 annual base salary. The potential target performance compensation ranged from 5% to 150% of the base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% of the base salary for the EVP of Waste Treatment Operations (\$12,000 to \$240,000).

Performance compensation, if any, is to be paid on or about 90 days after year-end, or sooner, based on final Form 10-K filing. The Compensation Committee retains the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason.

The total performance compensation paid to the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations as a group is not to exceed 50% of the Company's pre-tax net income computed prior to the calculation of performance compensation.

The following describes the principal terms of the respective 2020 MIP applicable to each NEO:

CEO MIP:

CEO performance compensation for fiscal 2020 was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2020, all with respect to the Company's operations. The Compensation Committee believes performance compensation payable under each of the 2020 MIPs as discussed herein and below should be based on achievement of an EBITDA target, which excludes certain non-cash items, as this target provides a better indicator of operating performance. However, EBITDA has certain limitations as it does not reflect all items of income or cash flows that affect the Company's financial performance under GAAP. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the 2020 base salary, weighted 60% based on the EBITDA goal, 10% on the revenue goal, and 15% on the number of health and safety claim incidents that occurred during fiscal 2020, with the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during the fiscal 2020. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation was payable at 75% to 150% of the CEO's 2020 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on the Board-approved revenue target and EBITDA target. The 2020 target performance incentive compensation for the CEO was as follows:

Annualized Base Pay:	\$	344,400
Performance Incentive Compensation Target (at 100% of Plan):	\$	172,200
Total Annual Target Compensation (at 100% of Plan):	\$	<u>516,600</u>

Perma-Fix Environmental Services, Inc.
2020 Management Incentive Plan
CEO MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,722	\$ 8,610	\$ 17,220	\$ 29,520	\$ 41,820	\$ 66,420
EBITDA (2)	-	10,332	51,660	103,320	177,120	250,920	398,520
Health & Safety (3) (5)	-	2,583	12,915	25,830	25,830	25,830	25,830
Permit & License Violations (4) (5)	-	2,583	12,915	25,830	25,830	25,830	25,830
	<u>\$ -</u>	<u>\$ 17,220</u>	<u>\$ 86,100</u>	<u>\$ 172,200</u>	<u>\$ 258,300</u>	<u>\$ 344,400</u>	<u>\$ 516,600</u>

- 1) Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2020 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2020 to the Board approved Revenue Target for 2020, which was \$86,201,000. The Board reserved the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2) EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2020, which was \$6,913,000. The Board reserved the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 3) The Health and Safety Incentive Target was based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds was established for the annual Incentive Compensation Plan calculation for 2020.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 4) Permits or License Violations incentive was earned/determined according to the scale set forth below: An "official notice of non-compliance" was defined as an official communication during 2020 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 5) No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target was achieved.

CFO MIP:

CFO performance compensation for fiscal 2020 was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2020, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the 2020 base salary, weighted 75% based on EBITDA goal, 10% on the revenue goal, and 7.5% on the number of health and safety claim incidents that occurred during fiscal 2020, with the remaining 7.5% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during the fiscal 2020. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the CFO's 2020 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on the Board-approved revenue target and EBITDA target. The 2020 target performance incentive compensation for the CEO was as follows:

Annualized Base Pay:	\$	280,000
Performance Incentive Compensation Target (at 100% of Plan):	\$	140,000
Total Annual Target Compensation (at 100% of Plan):	\$	420,000

Perma-Fix Environmental Services, Inc.
2020 Management Incentive Plan
CFO MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,400	\$ 7,000	\$ 14,000	\$ 23,000	\$ 31,000	\$ 37,000
EBITDA (2)	-	10,500	52,500	105,000	138,000	186,000	222,000
Health & Safety (3) (5)	-	1,050	5,250	10,500	10,500	10,500	10,500
Permit & License Violations (4) (5)	-	1,050	5,250	10,500	10,500	10,500	10,500
	<u>\$ -</u>	<u>\$ 14,000</u>	<u>\$ 70,000</u>	<u>\$ 140,000</u>	<u>\$ 182,000</u>	<u>\$ 238,000</u>	<u>\$ 280,000</u>

- Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2020 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2020 to the Board approved Revenue Target for 2020, which was \$86,201,000. The Board reserved the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2020, which was \$6,913,000. The Board reserved the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- The Health and Safety Incentive Target was based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds was established for the annual Incentive Compensation Plan calculation for 2020.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- Permits or License Violations incentive was earned/determined according to the scale set forth below: An "official notice of non-compliance" was defined as an official communication during 2020 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target was achieved.

EVP of Strategic Initiatives MIP:

The 2020 performance compensation plan for the EVP of Strategic Initiative was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2020, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the 2020 base salary, weighted 75% based on EBITDA goal, 10% on revenue goal, and 7.5% on the number of health and safety claim incidents that occurred during fiscal 2020, with the remaining 7.5% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during fiscal 2020. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the EVP of Strategic Initiative's 2020 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on the Board-approved revenue target and EBITDA target. The 2020 target performance incentive compensation for the EVP of Strategic Initiatives was as follows:

Annualized Base Pay:	\$ 233,336
Performance Incentive Compensation Target (at 100% of Plan):	\$ 116,668
Total Annual Target Compensation (at 100% of Plan):	<u>\$ 350,004</u>

Perma-Fix Environmental Services, Inc.
2020 Management Incentive Plan
EVP OF STRATEGIC INITIATIVES MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,167	\$ 5,833	\$ 11,667	\$ 19,167	\$ 25,834	\$ 30,834
EBITDA (2)	-	8,750	43,751	87,501	115,001	155,002	185,002
Health & Safety (3) (5)	-	875	4,375	8,750	8,750	8,750	8,750
Permit & License Violations (4) (5)	-	875	4,375	8,750	8,750	8,750	8,750
	<u>\$ -</u>	<u>\$ 11,667</u>	<u>\$ 58,334</u>	<u>\$ 116,668</u>	<u>\$ 151,668</u>	<u>\$ 198,336</u>	<u>\$ 233,336</u>

- 1) Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2020 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2020 to the Board approved Revenue Target for 2020, which was \$86,201,000. The Board reserved the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2) EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2020, which was \$6,913,000. The Board reserved the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 3) The Health and Safety Incentive Target was based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds was established for the annual Incentive Compensation Plan calculation for 2020.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 4) Permits or License Violations incentive was earned/determined according to the scale set forth below: An “official notice of non-compliance” was defined as an official communication during 2020 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility’s implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 5) No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target was achieved.

EVP of Nuclear and Technical Services MIP:

The 2020 performance compensation plan for the EVP of Nuclear and Technical Services was based upon meeting corporate revenue, EBITDA, health and safety compliance, and Cost Performance Index (“CPI”) (a metric used in measuring project performance) objectives for fiscal 2020, all with respect to the Company’s operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the 2020 base salary, weighted 60% based on the EBITDA goal, 10% on the revenue goal, and 15% on the number of health and safety claim incidents that occur during fiscal 2020, with the remaining 15% on CPI metric goals. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the SVP of Nuclear and Technical Services’ 2020 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on the Board-approved revenue target and the EBITDA target. The 2020 target performance incentive compensation for the EVP of Nuclear and Technical Services was as follows:

Annualized Base Pay:	\$ 280,000
Performance Incentive Compensation Target (at 100% of Plan):	\$ 140,000
Total Annual Target Compensation (at 100% of Plan):	<u>\$ 420,000</u>

Perma-Fix Environmental Services, Inc.
2020 Management Incentive Plan
EVP OF NUCLEAR & TECHNICAL SERVICES MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,400	\$ 7,000	\$ 14,000	\$ 20,000	\$ 28,000	\$ 34,000
EBITDA (2)	-	8,400	42,000	84,000	120,000	168,000	204,000
Health & Safety (3) (5)	-	2,100	10,500	21,000	21,000	21,000	21,000
CPI (4) (5)	-	2,100	10,500	21,000	21,000	21,000	21,000
	<u>\$ -</u>	<u>\$ 14,000</u>	<u>\$ 70,000</u>	<u>\$ 140,000</u>	<u>\$ 182,000</u>	<u>\$ 238,000</u>	<u>\$ 280,000</u>

- 1) Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2020 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2020 to the Board approved Revenue Target for 2020, which was \$86,201,000. The Board reserved the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2) EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2020, which was \$6,913,000. The Board reserved the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 3) The Health and Safety Incentive target was based upon the actual number of Worker's Compensation Lost Time Accidents in the Company's Services Segment, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds was established for the annual Incentive Compensation Plan calculation for 2020.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 4) CPI incentive was earned/determined by maintaining project performance metrics for all Firm Fixed Price task orders and projects to include monitoring CPI based on recognized earned value calculations. As defined through monthly project reviews, all CPI metrics should exceed 1.0 for Nuclear Services Projects. A cumulative CPI (CCPI) was calculated from all fixed cost contracts. The following CCPI and corresponding Performance Target Thresholds were established for annual incentive compensation plan calculation for 2020.

CPI (if CCPI is)	Performance Target Achieved
<0.60	(n/a)
0.60-0.74	60%-74%
0.75-0.89	75%-89%
0.90-1.10	90%-110%
1.11-1.29	111%-129%
1.30-1.50	130%-150%
>1.50	>150%

- 5) No performance incentive compensation was payable for achieving the health and safety, and CPI, and revenue targets unless a minimum of 60% of the EBITDA Target was achieved.

EVP of Waste Treatment Operations:

The 2020 performance compensation plan for the EVP of Waste Treatment Operations was based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2020, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation was payable at 5% to 50% of the 2020 base salary, weighted 60% based on EBITDA goal, 10% on revenue goal, and 15% on the number of health and safety claim incidents that occurred during fiscal 2020, with the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occurred during fiscal 2020. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation was payable at 65% to 100% of the EVP of Waste Treatment Waste Operation's 2020 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components was based on the Board-approved revenue target and EBITDA target. The 2020 target performance incentive compensation for the EVP of Waste Treatment Operations was as follows:

Annualized Base Pay:	\$	240,000
Performance Incentive Compensation Target (at 100% of Plan):	\$	120,000
Total Annual Target Compensation (at 100% of Plan):	\$	<u>360,000</u>

Perma-Fix Environmental Services, Inc.
2020 Management Incentive Plan
EVP OF WASTE TREATMENT OPERATIONS MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,200	\$ 6,000	\$ 12,000	\$ 17,143	\$ 24,000	\$ 29,143
EBITDA (2)	-	7,200	36,000	72,000	102,857	144,000	174,857
Health & Safety (3) (5)	-	1,800	9,000	18,000	18,000	18,000	18,000
Permit & License Violations (4) (5)	-	1,800	9,000	18,000	18,000	18,000	18,000
	<u>\$ -</u>	<u>\$ 12,000</u>	<u>\$ 60,000</u>	<u>\$ 120,000</u>	<u>\$ 156,000</u>	<u>\$ 204,000</u>	<u>\$ 240,000</u>

- Revenue was defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2020 financial statements. The percentage achieved was determined by comparing the actual consolidated revenue for 2020 to the Board approved Revenue Target for 2020, which was \$86,201,000. The Board reserved the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- EBITDA was defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved was determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2020, which was \$6,913,000. The Board reserved the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- The Health and Safety Incentive Target was based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller submitted a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims were identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds was established for the annual Incentive Compensation Plan calculation for 2020.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- Permits or License Violations incentive was earned/determined according to the scale set forth below: An "official notice of non-compliance" was defined as an official communication during 2020 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which resulted in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- No performance incentive compensation was payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target was achieved.

2020 MIP Targets

As discussed above, 2020 MIPs approved by the Board and the Compensation Committee for the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EPV of Waste Treatment Operations provided for the award of cash compensation based on achievement of performance targets which included revenue and EBITDA targets as approved by our Board. The 2020 MIP revenue target of \$86,201,000 and EBITDA target of \$6,913,000 were set by the Compensation Committee taking into account the Board-approved budget for 2020 as well as the committee's expectations for performance that in its estimation would warrant payment of incentive cash compensation. In formulating the revenue target of \$86,201,000, the Board considered 2019 results, economic conditions, and forecasts for 2020 government (U.S DOE) spending. The Compensation Committee believed the performance targets were likely to be achieved, but not assured.

The following tables set forth the MIP compensation earned by the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations for fiscal year 2020.

CEO

Target Objectives:	Performance Target Threshold Achieved	MIP Compensation Earned
Revenue	111%-129%	\$ 29,520
EBITDA	75%-89%	51,660
Health & Safety	<60%	—
Permit & License Violations	111%-129%	25,830

CFO

Target Objectives:	Performance Target Threshold Achieved	MIP Compensation Earned
Revenue	111%-129%	\$ 23,000
EBITDA	75%-89%	52,500
Health & Safety	<60%	—
Permit & License Violations	111%-129%	10,500
Total Performance Compensation		\$ 86,000

EVP of Strategic Initiatives

Target Objectives:	Performance Target Threshold Achieved	MIP Compensation Earned
Revenue	111%-129%	\$ 19,167
EBITDA	75%-89%	43,751
Health & Safety	<60%	—
Permit & License Violations	111%-129%	8,750
Total Performance Compensation		\$ 71,668

EVP of Nuclear and Technical Services

Target Objectives:	Performance Target Threshold Achieved	MIP Compensation Earned
Revenue	111%-129%	\$ 20,000
EBITDA	75%-89%	42,000
Health & Safety	<60%	—
CPI	90%-110%	21,000
Total Performance Compensation		\$ 83,000

EVP of Waste Treatment Operations

Target Objectives:	Performance Target Threshold Achieved	MIP Compensation Earned
Revenue	111%-129%	\$ 17,143
EBITDA	75%-89%	36,000
Health & Safety	<60%	—
Permit & License Violations	111%-129%	18,000
Total Performance Compensation		\$ 71,143

2021 MIPs

On January 21, 2021, the Company Compensation Committee and the Board approved individual MIPs for the calendar year 2021 for the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations. The MIPs are effective January 1, 2021 and applicable for the 2021 fiscal year. Each MIP provides guidelines for the calculation of annual cash incentive-based compensation, subject to Compensation Committee oversight and modification. Each MIP awards cash compensation based on achievement of performance thresholds, with the amount of such compensation established as a percentage of base salary at the time of the approval of the MIP. The potential target performance compensation ranges from 5% to 150% of the 2021 base salary for the CEO (\$17,220 to \$516,600), 5% to 100% of the 2021 base salary for the CFO (\$14,000 to \$280,000), 5% to 100% of the 2021 base salary for the EVP of Strategic Initiatives (\$11,667 to \$233,336), 5% to 100% of the 2021 base salary for the EVP of Nuclear and Technical Services (\$14,000 to \$280,000) and 5% to 100% (\$12,000 to \$240,000) of the 2021 base salary for the EVP of Waste Treatment Operations.

Performance compensation, if any, is to be paid on or about 90 days after year-end, or sooner, based on final Form 10-K filing. The Compensation Committee retains the right to modify, change or terminate each MIP and may adjust the various target amounts described below, at any time and for any reason. Subsequent to the approval of the MIPs for fiscal year 2021 on January 21, 2021 as described below, in February 2021, the Compensation Committee approved a cost of living adjustment of approximately 2.3% of each NEO's base salary, effective April 1, 2021. As such, compensation payable, if any, under each of the MIPs for fiscal year 2021 as discussed below for our NEOs will be adjusted accordingly to reflect this cost of living adjustment.

The total performance compensation, if any, to be paid to the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations is not to exceed 50% of the Company's pre-tax net income prior to the calculation of performance compensation.

The following describes the principal terms of each 2021 MIP as approved on January 21, 2021:

CEO MIP:

CEO performance compensation for 2021 is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal year 2021, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the CEO's 2021 base salary, weighted 60% based on the EBITDA goal, 10% on the revenue goal, and 15% on the number of health and safety claim incidents that occur during fiscal 2021, with the remaining 15% on the number of notices alleging environmental, health or safety violations under our permit or licenses that occur during the fiscal 2021. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation is payable at 75% to 150% of the CEO's 2021 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on our Board-approved revenue target and EBITDA target. The 2021 target performance incentive compensation for our CEO is as follows:

Annualized Base Pay:	\$ 344,400
Performance Incentive Compensation Target (at 100% of Plan):	\$ 172,200
Total Annual Target Compensation (at 100% of Plan):	\$ 516,600

Perma-Fix Environmental Services, Inc.
2021 Management Incentive Plan
CEO MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,722	\$ 8,610	\$ 17,220	\$ 29,520	\$ 41,820	\$ 66,420
EBITDA (2)	-	10,332	51,660	103,320	177,120	250,920	398,520
Health & Safety (3) (5)	-	2,583	12,915	25,830	25,830	25,830	25,830
Permit & License Violations (4) (5)	-	2,583	12,915	25,830	25,830	25,830	25,830
	<u>\$ -</u>	<u>\$ 17,220</u>	<u>\$ 86,100</u>	<u>\$ 172,200</u>	<u>\$ 258,300</u>	<u>\$ 344,400</u>	<u>\$ 516,600</u>

- Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue Target for 2021, which is \$101,810,000. The Board reserves the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2021, which is \$3,623,000. The Board reserves the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- The Health and Safety Incentive Target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- Permits or License Violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2021 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target is achieved.

CFO MIP:

CFO performance compensation for fiscal 2021 is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2021, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the 2021 base salary, weighted 75% based on EBITDA goal, 10% on the revenue goal, and 7.5% on the number of health and safety claim incidents that occur during fiscal 2021, with the remaining 7.5% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occur during the fiscal 2021. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the CFO's 2021 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on the Board-approved revenue target and EBITDA target. The 2021 target performance incentive compensation for the CEO is as follows:

Annualized Base Pay:	\$ 280,000
Performance Incentive Compensation Target (at 100% of Plan):	\$ 140,000
Total Annual Target Compensation (at 100% of Plan):	\$ 420,000

Perma-Fix Environmental Services, Inc.
2021 Management Incentive Plan
CFO MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,400	\$ 7,000	\$ 14,000	\$ 23,000	\$ 31,000	\$ 37,000
EBITDA (2)	-	10,500	52,500	105,000	138,000	186,000	222,000
Health & Safety (3) (5)	-	1,050	5,250	10,500	10,500	10,500	10,500
Permit & License Violations (4) (5)	-	1,050	5,250	10,500	10,500	10,500	10,500
	<u>\$ -</u>	<u>\$ 14,000</u>	<u>\$ 70,000</u>	<u>\$ 140,000</u>	<u>\$ 182,000</u>	<u>\$ 238,000</u>	<u>\$ 280,000</u>

- Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue Target for 2021, which is \$101,810,000. The Board reserves the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2021, which is \$3,623,000. The Board reserves the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- The Health and Safety Incentive Target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- Permits or License Violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2021 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target is achieved.

EVP of Strategic Initiatives MIP:

EVP of Strategic Initiatives performance compensation for fiscal 2021 is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2021, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the 2021 base salary, weighted 75% based on EBITDA goal, 10% on the revenue goal, and 7.5% on the number of health and safety claim incidents that occur during fiscal 2021, with the remaining 7.5% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occur during the fiscal 2021. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the EVP of Strategic Initiative's 2021 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on the Board-approved revenue target and EBITDA target. The 2021 target performance incentive compensation for the EVP of Strategic Initiative is as follows:

Annualized Base Pay:	\$ 233,336
Performance Incentive Compensation Target (at 100% of Plan):	\$ 116,668
Total Annual Target Compensation (at 100% of Plan):	<u>\$ 350,004</u>

Perma-Fix Environmental Services, Inc.
2021 Management Incentive Plan
EVP OF STRATEGIC INITIATIVES MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,167	\$ 5,833	\$ 11,667	\$ 19,167	\$ 25,834	\$ 30,834
EBITDA (2)	-	8,750	43,751	87,501	115,001	155,002	185,002
Health & Safety (3) (5)	-	875	4,375	8,750	8,750	8,750	8,750
Permit & License Violations (4) (5)	-	875	4,375	8,750	8,750	8,750	8,750
	<u>\$ -</u>	<u>\$ 11,667</u>	<u>\$ 58,334</u>	<u>\$ 116,668</u>	<u>\$ 151,668</u>	<u>\$ 198,336</u>	<u>\$ 233,336</u>

- Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue Target for 2021, which is \$101,810,000. The Board reserves the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2021, which is \$3,623,000. The Board reserves the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- The Health and Safety Incentive Target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- Permits or License Violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2021 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target is achieved.

EVP of Nuclear and Technical Services MIP:

EVP of Nuclear and Technical Services performance compensation for 2021 is based upon meeting corporate revenue, EBITDA, health and safety compliance, and Cost Performance Index ("CPI") (a metric used in measuring project performance) objectives for fiscal 2021, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the 2021 base salary, weighted 60% based on the EBITDA goal, 10% on the revenue goal, and 15% on the number of health and safety claim incidents that occur during fiscal 2021, with the remaining 15% on CPI metric goals. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the EVP of Nuclear and Technical Service's 2021 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on the Board-approved revenue target and the EBITDA target. The 2021 target performance incentive compensation for the EVP of Nuclear and Technical Services is as follows:

Annualized Base Pay:	\$ 280,000
Performance Incentive Compensation Target (at 100% of Plan):	\$ 140,000
Total Annual Target Compensation (at 100% of Plan):	\$ 420,000

Perma-Fix Environmental Services, Inc.
2021 Management Incentive Plan
EVP OF NUCLEAR & TECHNICAL SERVICES MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,400	\$ 7,000	\$ 14,000	\$ 20,000	\$ 28,000	\$ 34,000
EBITDA (2)	-	8,400	42,000	84,000	120,000	168,000	204,000
Health & Safety (3) (5)	-	2,100	10,500	21,000	21,000	21,000	21,000
CPI (4) (5)	-	2,100	10,500	21,000	21,000	21,000	21,000
	<u>\$ -</u>	<u>\$ 14,000</u>	<u>\$ 70,000</u>	<u>\$ 140,000</u>	<u>\$ 182,000</u>	<u>\$ 238,000</u>	<u>\$ 280,000</u>

- 1) Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue Target for 2021, which is \$101,810,000. The Board reserves the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2) EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2021, which is \$3,623,000. The Board reserves the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 3) The Health and Safety Incentive target is based upon the actual number of Worker's Compensation Lost Time Accidents in the Company's Services Segment, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 4) CPI incentive is earned/determined by maintaining project performance metrics for all Firm Fixed Price task orders and projects to include monitoring CPI based on recognized earned value calculations. As defined through monthly project reviews, all CPI metrics should exceed 1.0 for Nuclear Services Projects. A cumulative CPI (CCPI) will be calculated from all fixed cost contracts. The following CCPI and corresponding Performance Target Thresholds have been established for annual incentive compensation plan calculation for 2021.

CPI (if CCPI is)	Performance Target Achieved
<0.60	(n/a)
0.60-0.74	60%-74%
0.75-0.89	75%-89%
0.90-1.10	90%-110%
1.11-1.29	111%-129%
1.30-1.50	130%-150%
>1.50	>150%

- 5) No performance incentive compensation will be payable for achieving the health and safety, and CPI, and revenue targets unless a minimum of 60% of the EBITDA Target is achieved.

EVP of Waste Treatment Operations MIP:

EVP of Waste Treatment Operation's performance compensation for fiscal 2021 is based upon meeting corporate revenue, EBITDA, health and safety, and environmental compliance (permit and license violations) objectives for fiscal 2021, all with respect to the Company's operations. At achievement of 60% to 110% of each of the revenue and EBITDA targets, the potential performance compensation is payable at 5% to 50% of the 2021 base salary, weighted 60% based on EBITDA goal, 10% on the revenue goal, and 15% on the number of health and safety claim incidents that occur during fiscal 2021, with the remaining 15% on the number of notices alleging environmental, health or safety violations under our permits or licenses that occur during the fiscal 2021. Upon achievement of 111% to 150%+ of each of the revenue and EBITDA targets, the potential performance compensation is payable at 65% to 100% of the EVP of Waste Treatment Operation's 2021 base salary, based on the four objectives noted above, with the payment of such performance compensation weighted more heavily toward the EBITDA objective. Each of the revenue and EBITDA components is based on the Board-approved revenue target and EBITDA target. The 2021 target performance incentive compensation for the EVP of Waste Treatment Operations is as follows:

Annualized Base Pay:	\$	240,000
Performance Incentive Compensation Target (at 100% of Plan):	\$	120,000
Total Annual Target Compensation (at 100% of Plan):	\$	<u>360,000</u>

Perma-Fix Environmental Services, Inc.
2021 Management Incentive Plan
EVP OF WASTE TREATMENT OPERATIONS MIP MATRIX

	Performance Target Achieved						
	<u><60%</u>	<u>60%-74%</u>	<u>75%-89%</u>	<u>90%-110%</u>	<u>111%-129%</u>	<u>130%-150%</u>	<u>>150%</u>
Revenue (1) (5)	\$ -	\$ 1,200	\$ 6,000	\$ 12,000	\$ 17,143	\$ 24,000	\$ 29,143
EBITDA (2)	-	7,200	36,000	72,000	102,857	144,000	174,857
Health & Safety (3) (5)	-	1,800	9,000	18,000	18,000	18,000	18,000
Permit & License Violations (4) (5)	-	1,800	9,000	18,000	18,000	18,000	18,000
	<u>\$ -</u>	<u>\$ 12,000</u>	<u>\$ 60,000</u>	<u>\$ 120,000</u>	<u>\$ 156,000</u>	<u>\$ 204,000</u>	<u>\$ 240,000</u>

- 1) Revenue is defined as the total consolidated third-party top line revenue as publicly reported in the Company's 2021 financial statements. The percentage achieved is determined by comparing the actual consolidated revenue for 2021 to the Board approved Revenue Target for 2021, which is \$101,810,000. The Board reserves the right to modify or change the Revenue Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 2) EBITDA is defined as earnings before interest, taxes, depreciation, and amortization from continuing and discontinued operations, including PF Medical. The percentage achieved is determined by comparing the actual EBITDA to the Board approved EBITDA Target for 2021, which is \$3,623,000. The Board reserves the right to modify or change the EBITDA Targets as defined herein in the event of the sale or disposition of any of the assets of the Company or in the event of an acquisition.
- 3) The Health and Safety Incentive Target is based upon the actual number of Worker's Compensation Lost Time Accidents, as provided by the Company's Worker's Compensation carrier. The Corporate Controller will submit a report on a quarterly basis documenting and confirming the number of Worker's Compensation Lost Time Accidents, supported by the Worker's Compensation Loss Report provided by the company's carrier or broker. Such claims will be identified on the loss report as "indemnity claims." The following number of Worker's Compensation Lost Time Accidents and corresponding Performance Target Thresholds has been established for the annual Incentive Compensation Plan calculation for 2021.

Work Comp. Claim Number	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 4) Permits or License Violations incentive is earned/determined according to the scale set forth below: An "official notice of non-compliance" is defined as an official communication during 2021 from a local, state, or federal regulatory authority alleging one or more violations of an otherwise applicable Environmental, Health or Safety requirement or permit provision, which results in a facility's implementation of corrective action(s).

Permit and License Violations	Performance Target Achieved
4	60%-74%
3	75%-89%
2	90%-110%
1	111%-129%
1	130%-150%
1	>150%

- 5) No performance incentive compensation will be payable for achieving the health and safety, permit and license violation, and revenue targets unless a minimum of 60% of the EBITDA Target is achieved.

2021 MIP Targets

As discussed above, 2021 MIPs approved by the Board and the Compensation Committee for the CEO, CFO, EVP of Strategic Initiatives, EVP of Nuclear and Technical Services and EVP of Waste Treatment Operations provide for the award of cash compensation based on achievement of performance targets which include revenue and EBITDA targets as approved by our Board. The 2021 MIP revenue target of \$101,810,000 and EBITDA target of \$3,623,000 were set by the Compensation Committee taking into account the Board-approved budget for 2021 as well as the committee's expectations for performance that in its estimation would warrant payment of incentive cash compensation. In formulating the revenue target of \$101,810,000, the Board considered 2020 results, economic conditions, impact of COVID-19 and forecasts for 2021 government (U.S. DOE) spending. The Compensation Committee believes the performance targets are likely to be achieved, but not assured, particularly in light of the uncertainty from the impact of COVID-19.

Long-Term Incentive Compensation

Employee Stock Option Plans

The 2017 Stock Option Plan ("2017 Option Plan") encourages participants to focus on long-term performance and provides an opportunity for executive officers and certain designated key employees to increase their stake in the Company. Stock options succeed by delivering value to executives only when the value of our stock increases. The 2017 Option Plan authorizes the grant of Non-Qualified Stock Options ("NQSOs") and Incentive Stock Options ("ISOs") for the purchase of our Common Stock.

The 2017 Option Plan assists the Company to:

- enhance the link between the creation of stockholder value and long-term executive incentive compensation;
- provide an opportunity for increased equity ownership by executives; and
- maintain competitive levels of total compensation;

Stock option award levels are determined based on market data, vary among participants based on their positions with the Company and are granted generally at the Compensation Committee's regularly scheduled July or August meeting. Newly hired or promoted executive officers who are eligible to receive options are generally awarded such options at the next regularly scheduled Compensation Committee meeting following their hire or promotion date.

Options are awarded with an exercise price equal to or not less than the closing price of the Company's Common Stock on the date of the grant as reported on the NASDAQ. In certain limited circumstances, the Compensation Committee may grant options to an executive at an exercise price in excess of the closing price of the Company's Common Stock on the grant date.

The Company's NEOs have outstanding options from the Company's 2017 Option Plan (See "Item 11 – Executive Compensation – Outstanding Equity Awards at Fiscal Year-End - Outstanding Equity Awards at December 31, 2020" for outstanding options for each of our NEOs). An option granted to our President and CEO in May 2016 for the purchase of up to 50,000 shares of the Company's Common Stock at \$3.97 per share with an expiration date of May 15, 2022 remains outstanding under the 2010 Stock Option Plan. The 2010 Stock Option Plan expired on September 29, 2020; however, the option remains in effect until the earlier of the exercise date by the optionee or the maturity date of May 15, 2022.

In cases of termination of an executive officer's employment due to death, by the executive for "good reason," by the Company without cause, and due to a "change of control," all outstanding stock options to purchase common stock held by the executive officer will immediately become exercisable in full (see further discussion of the exercisability term of these options in each of these circumstances in "Item 11 – EXECUTIVE COMPENSATION – Employment Agreements"). Otherwise, vesting of option awards ceases upon termination of employment and exercise right of the vested option amount ceases upon three months from termination of employment except in the case of retirement (subject to a six-month limitation) and disability (subject to a one-year limitation).

Accounting for Stock-Based Compensation

We account for stock-based compensation in accordance with Accounting Standards Codification (“ASC”) 718, “Compensation – Stock Compensation.” ASC 718 establishes accounting standards for entity exchanges of equity instruments for goods or services. It also addresses transactions in which an entity incurs liabilities in exchange for goods or services that are based on the fair value of the entity’s equity instruments or that may be settled by the issuance of those equity instruments. ASC 718 requires all stock-based payments to employees, including grants of employee stock options, to be recognized in the income statement based on their fair values. The Company uses the Black-Scholes option-pricing model to determine the fair-value of stock-based awards which requires subjective assumptions. Assumptions used to estimate the fair value of stock options granted include the exercise price of the award, the expected term, the expected volatility of the Company’s stock over the option’s expected term, the risk-free interest rate over the option’s expected term, and the expected annual dividend yield. We recognize stock-based compensation expense using a straight-line amortization method over the requisite period, which is the vesting period of the stock option grant.

Retirement and Other Benefits

401(k) Plan

The Company adopted the Perma-Fix Environmental Services, Inc. 401(k) Plan (the “401(k) Plan”) in 1992, which is intended to comply with Section 401 of the Internal Revenue Code and the provisions of the Employee Retirement Income Security Act of 1974. All full-time employees who have attained the age of 18 are eligible to participate in the 401(k) Plan. Eligibility is immediate upon employment but enrollment is only allowed during four quarterly open periods of January 1, April 1, July 1, and October 1. Participating employees may make annual pretax contributions to their accounts up to 100% of their compensation, up to a maximum amount as limited by law. At our discretion, we may make matching contributions based on the employee’s elective contributions. Company contributions vest over a period of five years. In 2020, the Company contributed approximately \$594,000 in 401(k) matching funds, of which approximately \$31,500 was for our NEOs (see the “Summary Compensation” table in this section for 401(k) matching fund contributions made for the NEOs for 2020).

Perquisites and Other Personal Benefits

The Company provides executive officers with limited perquisites and other personal benefits (health/disability/life insurance) that the Company and the Compensation Committee believe are reasonable and consistent with its overall compensation program to better enable the Company to attract and retain superior employees for key positions. The Compensation Committee periodically reviews the levels of perquisites and other personal benefits provided to executive officers. The executive officers are provided an auto allowance.

Compensation of Directors

Directors who are employees receive no additional compensation for serving on the Board or its committees. In 2020, the Company provided the following annual compensation to non-employee directors:

- options to purchase 2,400 shares of Common Stock with each option having a 10-year term and being fully vested after six months from grant date;
- a quarterly director fee of \$8,000;
- an additional quarterly fee of \$5,500 and \$7,500 to the Chairman of the Audit Committee and Chairman of the Board (non-employee), respectively; and
- a fee of \$1,000 for each board meeting attendance and a \$500 fee for meeting attendance via conference call.

Each director may elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Outside Directors Stock Plan (“2003 Outside Directors Plan”), with the balance, if any, payable in cash.

Dr. Louis Centofanti, a current member of the Board, is not eligible to receive compensation for his service as a director of the Company as he is an employee of the Company (see “Summary Compensation” table in this section for Dr. Centofanti’s annual salary and other compensation as an employee of the Company).

The table below summarizes the director compensation expenses recognized by the Company for director options and stock awards (resulting from fees earned) for the year ended December 31, 2020. The terms of the 2003 Outside Directors Plan are further described below under “2003 Outside Directors Plan.”

Director Compensation

Name	Fees Earned or Paid In Cash (\$) ⁽¹⁾	Stock Awards (\$) ⁽²⁾	Option Awards (\$) ⁽⁵⁾	Non-Equity Incentive Plan Compensation (\$)	Nonqualified Deferred Compensation Earnings (\$)	All Other Compensation (\$)	Total (\$)
Thomas P. Bostick	—	18,027	26,160(4)	—	—	—	44,187
Joseph T. Grumski	—	43,343	40,656(3)	—	—	—	83,999
Joe R. Reeder	—	48,662	11,256(3)	—	—	—	59,918
Larry M. Shelton	23,275	57,633	11,256(3)	—	—	—	92,164
Zach P. Wamp	12,775	31,630	11,256(3)	—	—	—	55,661
Mark A. Zwecker	20,475	50,701	11,256(3)	—	—	—	82,432

- (1) Under the 2003 Outside Directors Plan, each director elects to receive 65% or 100% of the director's fees in shares of our Common Stock. The amounts set forth above represent the portion of the director's fees paid in cash and exclude the value of the directors' fee elected to be paid in Common Stock under the 2003 Outside Directors Plan, which values are included under "Stock Awards."
- (2) The number of shares of Common Stock comprising stock awards granted under the 2003 Outside Directors Plan is calculated based on 75% of the closing market value of the Common Stock as reported on the NASDAQ on the business day immediately preceding the date that the quarterly fee is due. Such shares are fully vested on the date of grant. The value of the stock award is based on the market value of our Common Stock at each quarter end times the number of shares issuable under the award. The amount shown is the fair value of the Common Stock on the date of the award.
- (3) Reflects options granted under the Company's 2003 Outside Directors Plan resulting from re-election to the Board on July 22, 2020. Options are for a 10-year period with an exercise price of \$6.70 per share and are fully vested in six months from grant date. The value of the option award for each outside director is calculated based on the fair value of the option per share (approximately \$4.69) on the date of grant times the number of options granted, which was 2,400 for each director, pursuant to ASC 718, "Compensation – Stock Compensation." Option awards for Joseph T. Grumski also included the grant of options for the purchase of up to 6,000 shares of our Common Stock granted to him upon initial election to the Board on February 4, 2020. The option is for a 10-year period with an exercise price of \$7.00 per share and are fully vested six months from date of grant. The fair value of the 6,000 options was determined to be approximately \$29,400 based on fair value of \$4.90 per share.
- (4) Reflects options for the purchase of up to 6,000 shares of the Company's Common Stock granted under the Company's 2003 Outside Directors Plan resulting from initial election to the Board on August 10, 2020. The options are for a 10-year period with an exercise price of \$7.29 per share and are fully vested six months from date of grant. The fair value of the option was determined to be approximately \$26,160 based on fair value of \$4.36 per share.
- (5) The following table reflects the aggregate number of outstanding non-qualified stock options held by the Company's directors at December 31, 2020. As an employee of the Company or its subsidiaries, Dr. Centofanti is not eligible to participate in the 2003 Outside Directors Plan. Options reflected below for Dr. Centofanti were granted from the 2017 Stock Option Plan as discussed previously:

Name	Options Outstanding at December 31, 2020
Dr. Louis Centofanti	65,000
Thomas P. Bostick	6,000
Joseph T. Grumski	8,400
Joe R. Reeder	24,000
Larry M. Shelton	24,000
Zach P. Wamp	13,200
Mark A. Zwecker	24,000
Total	164,600

On January 21, 2021, the Company's Compensation Committee and the Board approved the following revision to the annual compensation of each non-employee Board member and the Board Committee(s) for which the Board member serves, effective January 1, 2021.

- each director is to be paid a quarterly fee of \$11,500, compared to the previous quarterly fee of \$8,000;
- the Chairman of the Board is to be paid an additional quarterly fee of \$8,750, compared to the Chairman's previous additional quarterly fee of \$7,500;
- the Chairman of the Audit Committee is to be paid an additional quarterly fee of \$6,250, compared to the Audit Chair's previous additional quarterly fee of \$5,500;
- the Chairman of each of the Compensation Committee, the Nominating Committee, and the Strategic Committee is to receive \$3,125 in additional quarterly fees. No additional quarterly fees were previously paid to the chairs of such committees. The Chairman of the Board is not eligible to receive a quarterly fee for serving as the Chairman of any the aforementioned committees ;
- each Audit Committee member (excluding the Chairman of the Audit Committee) is to receive an additional quarterly fee of \$1,250; and
- each member of the Compensation Committee, the Nominating Committee, and the Strategic Committee is to receive a quarterly fee of \$500. Such fee is payable only if the member does not serve as the Chairman of the Audit Committee, the Nominating Committee, the Strategic Committee or as the Chairman of the Board.

Each non-employee Board member will continue to receive \$1,000 for each board meeting attendance and a \$500 fee for meeting attendance via conference call. Also, each director will continue to receive an option to purchase up to 2,400 shares of the Company's Common Stock on the date of his re-election to the Board at the annual meeting of stockholders, with each option having a 10-year term and becoming fully vested after six months from grant date.

Each director may continue to elect to have either 65% or 100% of such fees payable in Common Stock under the 2003 Outside Directors Plan, with the balance, if any, payable in cash.

2003 Outside Directors Plan

We believe that it is important for our directors to have a personal interest in our success and growth and for their interests to be aligned with those of our stockholders; therefore, under our 2003 Outside Directors Plan, as amended, each outside director is granted a 10-year option to purchase up to 6,000 shares of Common Stock on the date such director is initially elected to the Board, and receives on each re-election date an option to purchase up to another 2,400 shares of our Common Stock, with the exercise price being the fair market value of the Common Stock preceding the option grant date. No option granted under the 2003 Outside Directors Plan is exercisable until after the expiration of six months from the date the option is granted and no option shall be exercisable after the expiration of ten years from the date the option is granted. At December 31, 2020, options to purchase 146,400 shares of Common Stock were outstanding under the 2003 Outside Directors Plan, of which 128,400 were vested at December 31, 2020.

As a member of the Board, each director may elect to receive either 65% or 100% of his director's fee in shares of our Common Stock. The number of shares received by each director is calculated based on 75% of the fair market value of the Common Stock determined on the business day immediately preceding the date that the quarterly fee is due. The balance of each director's fee, if any, is payable in cash. In 2020, the fees earned by our outside directors totaled approximately \$307,000. Reimbursements of expenses for attending meetings of the Board are paid in cash at the time of the applicable Board meeting. As a management director, Dr. Centofanti is not eligible to participate in the 2003 Outside Directors Plan.

As of December 31, 2020, we have issued 714,623 shares of our Common Stock in payment of director fees since the inception of the 2003 Outside Directors Plan.

In the event of a “change of control” (as defined in the 2003 Outside Directors Plan), each outstanding stock option and stock award shall immediately become exercisable in full notwithstanding the vesting or exercise provisions contained in the stock option agreement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Security Ownership of Certain Beneficial Owners

The table below sets forth information as to the shares of Common Stock beneficially owned as of February 12, 2021 by each person known by us to be the beneficial owners of more than 5% of any class of our voting securities.

Name of Beneficial Owner	Title Of Class	Amount and Nature of Ownership	Percent Of Class ⁽¹⁾
Heartland Advisors, Inc. ⁽²⁾	Common	1,352,530	11.1%

⁽¹⁾ The number of shares and the percentage of outstanding Common Stock shown as beneficially owned by a person are based upon 12,165,734 shares of Common Stock outstanding on February 12, 2021, and the number of shares of Common Stock which such person has the right to acquire beneficial ownership of within 60 days. Beneficial ownership by our stockholders has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act.

⁽²⁾ This information is based on the Schedule 13D of Heartland Advisors, Inc., an investment advisor, filed with the Commission on January 13, 2021, disclosing that at January 8, 2021, each Heartland Advisors, Inc. and Mr. William Nasgovitz, as a control person of Heartland Advisors, Inc. had shared dispositive power over all shares shown above and shared voting power over 1,346,030 of such shares. The address of Heartland Advisors, Inc. is 789 North Water Street, Milwaukee, WI 53202.

As of February 12, 2021, Capital Bank–Grawe Gruppe AG (“Capital Bank”), a banking institution regulated by the banking regulations of Austria, holds of record as a nominee for, and as an agent of, certain accredited investors, 2,057,359 shares of our Common Stock. None of such investors beneficially own more than 4.9% of our Common Stock and to the best knowledge of Capital Bank, as far as stocks held by such investors in accounts with Capital Bank, none of such investors act together as a group or otherwise act in concert for the purpose of voting on matters subject to the vote of our stockholders or for purpose of disposition or investment of such stock. Additionally, the investors for whom Capital Bank acts as nominee with respect to such shares maintain full voting and dispositive power over the Common Stock beneficially owned by such investors, and Capital Bank has neither voting nor investment power over such shares. Accordingly, Capital Bank believes that (i) it is not the beneficial owner, as such term is defined in Rule 13d-3 of the Exchange Act, of the shares of Common Stock registered in Capital Bank’s name because (a) Capital Bank holds the Common Stock as a nominee only, (b) Capital Bank has neither voting nor investment power over such shares, and (c) Capital Bank has not nominated or sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board; and (ii) it is not required to file reports under Section 16(a) of the Exchange Act or to file either Schedule 13D or Schedule 13G in connection with the shares of our Common Stock registered in the name of Capital Bank.

Notwithstanding the previous paragraph, if Capital Bank's representations to us described above are incorrect or if the investors for whom Capital Bank acts as nominee are acting as a group, then Capital Bank or a group of such investors could be a beneficial owner of more than 5% of our voting securities. If Capital Bank was deemed the beneficial owner of such shares, the following table sets forth information as to the shares of voting securities that Capital Bank may be considered to beneficially own on February 12, 2021:

Name of Record Owner	Title Of Class	Amount and Nature of Ownership	Percent Of Class (*)
Capital Bank-Grawe Gruppe	Common	2,057,359(+)	16.9%

(*) This calculation is based upon 12,165,734 shares of Common Stock outstanding on February 12, 2021, plus the number of shares of Common Stock which Capital Bank, as agent for certain accredited investors has the right to acquire within 60 days, which is none.

(+) This amount is the number of shares that Capital Bank has represented to us that it holds of record as nominee for, and as an agent of, certain accredited investors. As of the date of this report, Capital Bank has no warrants or options to acquire, as agent for certain investors, additional shares of our Common Stock. Although Capital Bank is the record holder of the shares of Common Stock described in this note, Capital Bank has advised us that it does not believe it is a beneficial owner of the Common Stock or that it is required to file reports under Section 16(a) or Section 13(d) of the Exchange Act. Capital Bank has advised us that it (a) holds the Common Stock as a nominee only and that it does not exercise voting or investment power over the Common Stock held in its name and that no one investor for which it holds our Common Stock holds more than 4.9% of our issued and outstanding Common Stock and (b) has not nominated, and has not sought to nominate, and does not intend to nominate in the future, any person to serve as a member of our Board. Accordingly, we do not believe that Capital Bank is our affiliate. Capital Bank's address is Burgring 16, A-8010 Graz, Austria.

Security Ownership of Management

The following table sets forth information as to the shares of voting securities beneficially owned as of February 12, 2021, by each of our directors and NEOs and by all of our directors and NEOs as a group. Beneficial ownership has been determined in accordance with the rules promulgated under Section 13(d) of the Exchange Act. A person is deemed to be a beneficial owner of any voting securities for which that person has the right to acquire beneficial ownership within 60 days.

Name of Beneficial Owner (2)	Amount and Nature of Beneficial Owner (1)	Percent of Class (1)
Thomas P. Bostick	8,865(3)	*
Dr. Louis F. Centofanti (4)	266,325(4)	2.18%
Joseph T. Grumski (5)	15,376(5)	*
Joe R. Reeder (6)	218,253(6)	1.79%
Larry M. Shelton (7)	151,657(7)	1.24%
Zack P. Wamp (8)	33,785(8)	*
Mark A. Zwecker (9)	213,858(9)	1.75%
Mark Duff (10)	138,321(10)	1.13%
Richard Grondin (11)	16,036(11)	*
Andy Lombardo (12)	11,900(12)	*
Ben Naccarato (13)	39,318(13)	*
Directors and Executive Officers as a Group (11 persons)	1,113,694(14)	8.92%

*Indicates beneficial ownership of less than one percent (1%).

(1) See footnote (1) of the table under "Security Ownership of Certain Beneficial Owners."

(2) The business address of each person, for the purposes hereof, is c/o Perma-Fix Environmental Services, Inc., 8302 Dunwoody Place, Suite 250, Atlanta, Georgia 30350.

- (3) Mr. Bostick has sole and voting and investment power over all shares shown, which include: (i) 2,865 shares of Common Stock held of record by Mr. Bostick, and (ii) immediately exercisable options to purchase 6,000 shares.
- (4) These shares include (i) 167,525 shares held of record by Dr. Centofanti, (ii) immediately exercisable options to purchase 36,000 shares, and (iii) 62,800 shares held by Dr. Centofanti's wife. Dr. Centofanti has sole voting and investment power over all such shares, except for the shares held by Dr. Centofanti's wife, over which Dr. Centofanti shares voting and investment power. Dr. Centofanti also owns 700 shares of PF Medical's Common Stock.
- (5) Mr. Grumski has sole and voting and investment power over all shares shown, which include: (i) 6,976 shares of Common Stock held of record by Mr. Grumski, and (ii) immediately exercisable options to purchase 8,400 shares.
- (6) Mr. Reeder has sole voting and investment power over all shares shown, which include: (i) 194,253 shares of Common Stock held of record by Mr. Reeder, and (ii) immediately exercisable options to purchase 24,000 shares.
- (7) Mr. Shelton has sole voting and investment power over all shares shown, which include: (i) 127,657 shares of Common Stock held of record by Mr. Shelton, and (ii) immediately exercisable options to purchase 24,000 shares. Mr. Shelton also owns 750 shares of PF Medical's Common Stock.
- (8) Mr. Wamp has sole voting and investment power over all shares shown, which include: (i) 20,585 shares of Common Stock held of record by Mr. Wamp, and (ii) immediately exercisable options to purchase 13,200 shares.
- (9) Mr. Zwecker has sole voting and investment power over all shares shown, which include: (i) 189,858 shares of Common Stock held of record by Mr. Zwecker, and (ii) immediately exercisable options to purchase 24,000 shares.
- (10) Mr. Duff has sole voting and investment power over all shares shown, which include: (i) 18,321 shares of Common Stock held of record by Mr. Duff, and (ii) immediately exercisable options to purchase 120,000 shares.
- (11) Mr. Grondin has sole voting and investment power over all shares shown, which include: (i) 36 shares of Common Stock held of record by Mr. Grondin, and (ii) immediately exercisable options to purchase 16,000 shares.
- (12) Mr. Lombardo has sole voting and investment power over all shares shown, which include: (i) 5,900 shares of Common Stock held of record by Mr. Lombardo, and (ii) immediately exercisable options to purchase 6,000 shares.
- (13) Mr. Naccarato has sole voting and investment power over all shares shown, which include: (i) 3,318 shares of Common Stock held of record by Mr. Naccarato, and (ii) immediately exercisable options to purchase 36,000 shares. Mr. Naccarato also owns 100 shares of PF Medical's Common Stock.
- (14) Amount includes 313,600 immediately exercisable options.

Equity Compensation Plans

The following table sets forth information as of December 31, 2020, with respect to our equity compensation plans.

Plan Category	Equity Compensation Plan		
	Number of securities to be issued upon exercise of outstanding options warrants and rights (a)	Weighted average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by stockholders	658,400	\$ 3.87	866,077
Equity compensation plans not approved by stockholders	—	—	—
Total	658,400	\$ 3.87	866,077

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

We describe below transactions to which we were a party during our last two fiscal years or to which we currently propose to be a party in the future, and in which:

- the amounts involved exceeded or will exceed the lesser of \$120,000 or one percent of the average of our total assets at year-end for the last two completed fiscal years; and
- any of our directors, executive officers or beneficial owners of more than 5% of any class of our voting securities, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest.

Audit Committee Review

Our Audit Committee Charter provides for the review by the Audit Committee of any related party transactions, other than transactions involving an employment relationship with the Company, which are reviewed by the Compensation Committee. Although we do not have written policies for the review of related party transactions, the Audit Committee reviews transactions between the Company and its directors, executive officers, holders of more than 5% of any class of the Company's voting securities, and their respective immediate family members. In reviewing a proposed transaction, the Audit Committee takes into account, among other factors it deems appropriate:

- (1) the extent of the related person's interest in the transaction;
- (2) whether the transaction is on terms generally available to an unaffiliated third-party under the same or similar circumstances;
- (3) the cost and benefit to the Company;
- (4) the impact or potential impact on a director's independence in the event the related party is a director, an immediate family member of a director or an entity in which a director is a partner, stockholder or executive officer;
- (5) the availability of other sources for comparable products or services;
- (6) the terms of the transaction; and
- (7) the risks to the Company.

In addition, as applicable, the Audit Committee considers Section 144 of the Delaware General Corporation Law ("DGCL") and the Company's Code of Ethics.

The provisions of Section 144 of the DGCL apply to transactions between the Company and any of its officers or directors, or any organization in which any such individual has a financial interest or serves as a director or officer (individually, a "Section 144 Related Party," and, collectively, "Section 144 Related Parties"). Section 144 provides that a transaction between a corporation and any Section 144 Related Party will not be void or voidable solely because such transaction involves the corporation and the Section 144 Related Party, or solely because the Section 144 Related Party is present at or participates or votes in the meeting of the board or committee which authorizes the transaction, if the transaction (a) is approved in good faith after full disclosure of the material facts of the transaction by a majority vote of (i) the disinterested directors, or (ii) the stockholders, and (b) is fair as to the corporation as of the time it is authorized, approved, or ratified by the board, a committee or the stockholders.

The provisions of the Code of Ethics apply to our NEOs and provides that such individuals must exhibit and promote honest and ethical conduct in connection with the performance of his or her duties for and on behalf of the Company, including the ethical handling of actual or apparent conflicts of interest involving such individual and the Company, by, among other considerations:

- not entering into a transaction that would result in a conflict of interest with what is in the best interest of the Company and that is reasonably likely to result in material personal gain to any such individuals or their affiliates;
- not having a personal financial interest in any of the Company's suppliers, customers or competitors that could cause divided loyalty as a result of having the ability to influence the Company's decisions with that particular supplier or customer or actions to be taken by the Company that could materially benefit a competitor.

Related party transactions are reviewed by the Audit Committee prior to the consummation of the transaction. With respect to a related party transaction arising between Audit Committee meetings, the CFO may present it to the Audit Committee Chairperson, who will review and may approve the related party transaction subject to ratification by the Audit Committee at the next scheduled meeting. Our Audit Committee shall approve only those transactions that, in light of known circumstances, are not inconsistent with the Company's best interests.

Related Party Transactions

David Centofanti

David Centofanti serves as our Vice President of Information Systems. For such position, he received annual compensation of \$181,000 and \$177,000 for 2020 and 2019, respectively. David Centofanti is the son of Dr. Louis F. Centofanti, our EVP of Strategic Initiatives and a Board member.

Employment Agreements and MIPs

We entered into an employment agreement with each of our NEOs, Mark Duff (President and CEO), Ben Naccarato (CFO), Dr. Louis Centofanti (EVP of Strategic Initiatives), Andy Lombardo (EVP of Nuclear and Technical Services) and Richard Grondin (EVP of Waste Treatment Operations), with each employment agreement dated July 22, 2020 (see "Item 11. Executive Compensation – Employment Agreements" for a discussion of these employment agreements). Each of our NEOs also has a MIP for fiscal years 2020 and 2021 (see "Item 11. Executive Compensation - Performance-Based Incentive Compensation – 2020 MIPs and 2021 MIPs" for a discussion of these MIPs).

Board Independence

Our Common Stock is listed on the Nasdaq Capital Market. Rule 5605 of the Nasdaq Marketplace Rules requires a majority of a listed company's board of directors to be comprised of independent directors. In addition, the Nasdaq Marketplace Rules require that, subject to specified exceptions, each member of a listed company's audit, compensation and nominating and corporate governance committees be independent under applicable provisions of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Audit committee members must also satisfy independence criteria set forth in Rule 10A-3 under the Exchange Act, and compensation committee members must also satisfy the independence criteria set forth in Rule 10C-1 under the Exchange Act. Under Nasdaq Rule 5605(a)(2), a director will only qualify as an "independent director" if, in the opinion of our Board, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries. In order to be considered independent for purposes of Rule 10C-1, the board must consider, for each member of a compensation committee of a listed company, all factors specifically relevant to determining whether a director has a relationship to such company which is material to that director's ability to be independent from management in connection with the duties of a compensation committee member, including, but not limited to: the source of compensation of the director, including any consulting advisory or other compensatory fee paid by such company to the director; and whether the director is affiliated with the company or any of its subsidiaries or affiliates.

Our Board annually undertakes a review of the composition of our Board of Directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his background, employment and affiliations, including family relationships, our Board of Directors has determined that each of Messrs. Thomas P. Bostick, Joseph T. Grumski, Joe R. Reeder, Larry M. Shelton, Zach P. Wamp and Mark A. Zwecker is an “independent director” as defined under the Nasdaq Marketplace Rules. Our Board of Directors has also determined that each member of our Audit Committee, consisting of Mark A. Zwecker (Chairperson), Zach Wamp (who was a member of the Audit Committee until April 16, 2020), Larry M. Shelton, and Joseph T. Grumski (who became a member of the Audit Committee effective April 16, 2020), and each member of our Compensation Committee, consisting of Joseph T. Grumski (who became a member and the Chairperson effective January 21, 2021), Zach P. Wamp (who became a member effective January 21, 2021), Mark A. Zwecker, Larry M. Shelton (who was replaced by Joseph T. Grumski as a member and the Chairperson effective January 21, 2021), and Joe R. Reeder (who was replaced by Zach P. Wamp as a member effective January 21, 2021) satisfy/satisfied the independence standards for such committees established by the Commission and the Nasdaq Marketplace Rules, as applicable. In making such determination, our Board of Directors considered the relationships that each such non-employee director has with our Company and all other facts and circumstances our Board of Directors deemed relevant in determining independence, including the beneficial ownership of our capital stock by each non-employee director.

Our Board of Directors has determined that Dr. Centofanti is not deemed to be an “independent director” because of his employment as a senior executive of the Company.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table reflects the aggregate fees for the audit and other services provided by Grant Thornton LLP, the Company’s independent registered public accounting firm, for fiscal years 2020 and 2019:

Fee Type	2020	2019
Audit Fees ⁽¹⁾	\$ 557,000	608,000
Tax Fees ⁽²⁾	104,000	113,000
Total	\$ 661,000	721,000

(1) Audit fees consist of audit work performed in connection with the annual financial statements, the reviews of unaudited quarterly financial statements, and work generally only the independent registered accounting firm can reasonably provide, such as consents and review of regulatory documents filed with the Securities and Exchange Commission.

(2) Fees for income tax planning, filing, and consulting.

Engagement of the Independent Auditor

To ensure that our independent registered public accounting firm is engaged only to provide audit and non-audit services that are compatible with maintaining its independence, the Audit Committee has a policy that requires the Committee to review and approve in advance all services to be provided by the Company’s independent accounting firm before the firm is engaged to provide those services. The Audit Committee considers non-audit services and fees when assessing auditor independence, and determined that tax return preparation and other tax compliance services is compatible with maintaining our accounting firm’s independence. All services under the headings Audit Fees and Tax Fees were approved by the Audit Committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X of the Exchange Act. The Audit Committee’s pre-approval policy provides as follows:

- The Audit Committee will review and pre-approve on an annual basis all audits, audit-related, tax and other services, along with acceptable cost levels, to be performed by the independent accounting firm and any member of the independent accounting firm’s alliance network of firms, and may revise the pre-approved services during the period based on later determinations. Pre-approved services typically include: audits, quarterly reviews, regulatory filing requirements, consultation on new accounting and disclosure standards, employee benefit plan audits, reviews and reporting on management’s internal controls and specified tax matters.
- Any proposed service that is not pre-approved on the annual basis requires a specific pre-approval by the Audit Committee, including cost level approval.
- The Audit Committee may delegate pre-approval authority to one or more of the Audit Committee members. The delegated member must report to the Audit Committee, at the next Audit Committee meeting, any pre-approval decisions made.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

The following documents are filed as a part of this report:

- (a)(1) Consolidated Financial Statements

See Item 8 for the Index to Consolidated Financial Statements.

- (a)(2) Financial Statement Schedule

Schedules are not required, are not applicable or the information is set forth in the consolidated financial statements or notes thereto.

- (a)(3) Exhibits

The Exhibits listed in the Exhibit Index are filed or incorporated by reference as a part of this report.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Perma-Fix Environmental Services, Inc.

By /s/ Mark Duff Date March 29, 2021
Mark Duff
Chief Executive Officer, President and
Principal Executive Officer

By /s/ Ben Naccarato Date March 29, 2021
Ben Naccarato
Chief Financial Officer and
Principal Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in capacities and on the dates indicated.

By /s/ Thomas P. Bostick Date March 29, 2021
Thomas P. Bostick, Director

By /s/ Dr. Louis F. Centofanti Date March 29, 2021
Dr. Louis F. Centofanti, Director

By /s/ Joseph T. Grumski Date March 29, 2021
Joseph T. Grumski

By /s/ Joe R. Reeder Date March 29, 2021
Joe R. Reeder, Director

By /s/ Larry M. Shelton Date March 29, 2021
Larry M. Shelton, Chairman of the Board

By /s/ Zach P. Wamp Date March 29, 2021
Zach P. Wamp, Director

By /s/ Mark A. Zwecker Date March 29, 2021
Mark A. Zwecker, Director

EXHIBIT INDEX

Exhibit No.	Description
3(i)	<u>Restated Certificate of Incorporation, as amended, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(i) to the Company's 2018 Form 10-K filed on April 1, 2019.</u>
3(ii)	<u>Second Amended and Restated Bylaws, as amended effective January 21, 2021, of Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 3(ii) to the Company's 8-K filed on January 26, 2021.</u>
4.1	<u>Shareholder Rights Agreement dated and effective as of May 2, 2018 between Perma-Fix Environmental Services, Inc. as the Company and Continental Stock Transfer & Trust Company, as Rights Agent, as incorporated by reference from Exhibit 4.1 to the Company's Form 8-K filed on May 2, 2018.</u>
4.2	<u>First Amendment to Shareholder Rights Agreement dated May 2, 2019 between Perma-Fix Environmental Services, Inc. and Continental Stock Transfer & Trust Company as Rights Agent, as incorporated by reference from Exhibit 4.2 to the Company's Form 8-K filed on May 3, 2019.</u>
4.3	<u>Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association (as Lender and as Agent), dated October 31, 2011, as incorporated by reference from Exhibit 4.8 to the Company 2016 Form 10-K filed on March 24, 2017.</u>
4.4	<u>First Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement, dated November 7, 2012, between the Company and PNC Bank, National Association, as incorporated by reference from Exhibit 4.4 to the Company 2017 Form 10-K filed on March 16, 2018.</u>
4.5	<u>Second Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement and Waiver, dated May 9, 2013, between the Company and PNC Bank, National Association, as incorporated by reference from Exhibit 4.4 to the Company 2018 Form 10-K filed on April 1, 2019.</u>
4.6	<u>Third Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated August 2, 2013, as incorporated by reference from Exhibit 4.5 to the Company 2018 Form 10-K filed on April 1, 2019.</u>
4.7	<u>Third Amended, Restated and Substituted Revolving Credit Note between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated August 2, 2013, as incorporated by reference from Exhibit 4.6 to the Company 2018 Form 10-K filed on April 1, 2019.</u>
4.8	<u>Fourth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement and Waiver between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated April 14, 2014, as incorporated by reference from Exhibit 4.8 to the Company's 2019 Form 10-K filed on March 20, 2020.</u>
4.9	<u>Fifth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated July 25, 2014, as incorporated by reference from Exhibit 4.9 to the Company's 2019 Form 10-K filed on March 20, 2020.</u>
4.10	<u>Sixth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated July 28, 2014, as incorporated by reference from Exhibit 4.10 to the Company's 2019 Form 10-K filed on March 20, 2020.</u>
4.11	<u>Seventh Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated March 24, 2016, as incorporated by reference from Exhibit 4.17 to the Company's 2015 Form 10-K filed on March 24, 2016.</u>
4.12	<u>Eighth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated August 22, 2016, as incorporated by reference from Exhibit 4.9 to the Company's Form 10-Q for the quarter ended June 30, 2016 filed on August 22, 2016.</u>

- 4.13 [Ninth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated November 17, 2016, as incorporated by reference from Exhibit 4.10 to the Company's Form 10-Q for the quarter ended September 30, 2016 filed on November 18, 2016.](#)
- 4.14 [Tenth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated July 26, 2018, as incorporated by reference from Exhibit 4.1 to the Company's Form 8-K filed on July 30, 2018.](#)
- 4.15 [Eleventh Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement and Waiver between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated March 29, 2019, as incorporated by reference from Exhibit 4.14 to the Company's 2018 Form 10-K filed on April 1, 2019.](#)
- 4.16 [Twelfth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated June 20, 2019, as incorporated by reference from Exhibit 4.1 to the Company's Form 8-K filed on June 21, 2019.](#)
- 4.17 [Thirteenth Amendment to Amended and Restated Revolving Credit, Term Loan and Security Agreement between PNC Bank, National Association and Perma-Fix Environmental Services, Inc., dated December 13, 2019, as incorporated by reference from Exhibit 4.17 to the Company's 2019 Form 10-K filed on March 20, 2020.](#)
- 4.18 [Second Amended and Restated Revolving Credit, Term Loan and Security Agreement between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association \(as Lender and as Agent\), dated May 8, 2020, as incorporated by reference from Exhibit 4.1 to the Company's Form 10-Q for the Quarter ended March 31, 2020 filed on May 12, 2020.](#)
- 4.19 [Payment Protection Program Term Note dated April 11, 2020, by and between Perma-Fix Environmental Services, Inc. and PNC Bank, National Association, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on April 15, 2020.](#)
- 4.20 [Loan and Securities Purchase Agreement, dated April 1, 2019 between Robert L. Ferguson and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 4.15 to the Company's 2018 Form 10-K filed on April 1, 2019.](#)
- 4.21 [Common Stock Purchase Warrant dated April 1, 2019 for Robert L. Ferguson, as incorporated by reference from Exhibit 4.16 to the Company's 2018 Form 10-K filed on April 1, 2019.](#)
- 10.1 [2003 Outside Directors' Stock Plan of the Company, as incorporated by reference from Exhibit 10.1 to the Company's 2019 Form 10-K filed on March 20, 2020.](#)
- 10.2 [First Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.2 to the Company's 2019 Form 10-K filed on March 20, 2020.](#)
- 10.3 [Second Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.3 to the Company's 2017 Form 10-K filed on March 16, 2018.](#)
- 10.4 [Third Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit 10.4 to the Company's 2017 Form 10-K filed on March 16, 2018.](#)
- 10.5 [Fourth Amendment to 2003 Outside Directors Stock Plan, as incorporated by reference from Exhibit A to the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders filed on June 22, 2017.](#)
- 10.6 [2017 Stock Option Plan, as incorporated by reference from Exhibit B to the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders filed on June 22, 2017.](#)
- 10.7 [Employment Agreement dated July 22, 2020 between Mark Duff, Chief Executive Officer, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.8 [Employment Agreement dated July 22, 2020 between Dr. Louis Centofanti, Executive Vice President of Strategic Initiatives, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on July 27, 2020.](#)

- 10.9 [Employment Agreement dated July 22, 2020 between Ben Naccarato, Chief Financial Officer, and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.10 [Employment Agreement dated July 22, 2020 between Andy Lombardo, EVP of Nuclear and Technical Services, Inc. and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.11 [Employment Agreement dated July 22, 2020 between Richard Grondin, EVP of Waste Treatment Operations and Perma-Fix Environmental Services, Inc., as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.12 [2020 Incentive Compensation Plan for Chief Executive Officer, effective January 1, 2020, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on January 22, 2020.](#)
- 10.13 [2020 Incentive Compensation Plan for Chief Financial Officer, effective January 1, 2020, as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on January 22, 2020.](#)
- 10.14 [2020 Incentive Compensation Plan for Executive Vice President of Strategic Initiatives, effective January 1, 2020, as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on January 22, 2020.](#)
- 10.15 [2020 Incentive Compensation Plan for Executive Vice President of Nuclear and Technical Services, effective January 1, 2020, as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on January 22, 2020.](#)
- 10.16 [2020 Incentive Compensation Plan for Executive Vice President of Waste Treatment Operations, effective January 1, 2020, as incorporated by reference from Exhibit 99.6 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.17 [Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Chief Executive Officer, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on August 2, 2017.](#)
- 10.18 [Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Executive Vice President/Chief Operating Officer, as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on August 2, 2017.](#)
- 10.19 [Incentive Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Chief Financial Officer, as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on August 2, 2017.](#)
- 10.20 [Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Chief Executive Officer, as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on January 23, 2019.](#)
- 10.21 [Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Chief Financial Officer, as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on January 23, 2019.](#)
- 10.22 [Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and EVP of Strategic Initiatives, as incorporated by reference from Exhibit 99.6 to the Company's Form 8-K filed on January 23, 2019.](#)
- 10.23 [Incentive Stock Option Agreement dated October 19, 2017 between Perma-Fix Environmental Services, Inc., and Richard Grondin, as incorporated by reference from Exhibit 99.11 to the Company's Form 8-K filed on July 27, 2020.](#)
- 10.24 [Incentive Stock Option Agreement dated January 17, 2019 between Perma-Fix Environmental Services, Inc., and Richard Grondin, as incorporated by reference from Exhibit 99.12 to the Company's Form 8-K filed July 27, 2020.](#)
- 10.25 [Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc., and Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 10.6 to the Company's third quarter Form 10-Q filed on August 9, 2017.](#)
- 10.26 [First Amendment to Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc. Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 10.23 to the Company 2018 Form 10-K filed on April 1, 2019.](#)

- 10.27 [Second Amendment to Stock Option Agreement dated July 27, 2017 between Perma-Fix Environmental Services, Inc. Mr. Robert L. Ferguson, as incorporated by reference from Exhibit 99.3 to the Company Form 8-K filed on March 31, 2020.](#)
- 10.28 [Task Order Agreement for Small Scales Remediation Package between Canadian Nuclear Laboratories LTD and Perma-Fix Canada Inc., as incorporated by reference from Exhibit 10.1 to the Company's Form 10-Q for the quarter ended March 31, 2019 filed on May 9, 2019. CERTAIN INFORMATION WITHIN SCHEDULE 2 – PRICE INFORMATION OF THIS EXHIBIT HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.](#)
- 10.29 [2021 Incentive Compensation Plan for Chief Executive Officer, effective January 1, 2021, as incorporated by reference from Exhibit 99.1 to the Company's Form 8-K filed on January 26, 2021.](#)
- 10.30 [2021 Incentive Compensation Plan for Chief Financial Officer, effective January 1, 2021, as incorporated by reference from Exhibit 99.2 to the Company's Form 8-K filed on January 26, 2021.](#)
- 10.31 [2021 Incentive Compensation Plan for EVP of Strategic Initiatives, effective January 1, 2021, as incorporated by reference from Exhibit 99.3 to the Company's Form 8-K filed on January 26, 2021.](#)
- 10.32 [2021 Incentive Compensation Plan for EVP of Nuclear and Technical Services, effective January 1, 2021, as incorporated by reference from Exhibit 99.4 to the Company's Form 8-K filed on January 26, 2021.](#)
- 10.33 [2021 Incentive Compensation Plan for EVP of Waste Treatment Operations, effective January 1, 2021, as incorporated by reference from Exhibit 99.5 to the Company's Form 8-K filed on January 26, 2021.](#)
- 10.34 [Time and Material Master Task Ordering Agreement Subcontract Form of Agreement \(subcontract 573512\) dated February 23, 2020 and Modification 4 between Perma-Fix Environmental Services, Inc. and Triad National Security, LLC. CERTAIN INFORMATION OF THIS EXHIBIT WITHIN “EXHIBIT C” – “FORM A-1 SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS” HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBICLY DISCLOSED.](#)
- 10.35 [Time and Material Master Task Ordering Agreement Subcontract Form of Agreement \(subcontract 554628\) dated August 21, 2019 and Modification 6 between Perma-Fix Environmental Services, Inc. and Triad National Security, LLC. CERTAIN INFORMATION OF THIS EXHIBIT WITHIN “EXHIBIT C” – “FORM A-1 SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS” HAS BEEN EXCLUDED FROM THE EXHIBIT BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBICLY DISCLOSED.](#)
- 21.1 [List of Subsidiaries](#)
- 23.1 [Consent of Grant Thornton, LLP](#)
- 31.1 [Certification by Mark Duff, Chief Executive Officer and Principal Executive Officer of the Company pursuant to Rule 13a-14\(a\) and 15d-14\(a\).](#)
- 31.2 [Certification by Ben Naccarato, Chief Financial Officer and Principal Financial Officer of the Company pursuant to Rule 13a-14\(a\) and 15d-14\(a\).](#)
- 32.1 [Certification by Mark Duff, Chief Executive Officer and Principal Executive Officer of the Company furnished pursuant to 18 U.S.C. Section 1350.](#)
- 32.2 [Certification by Ben Naccarato, Chief Financial Officer and Principal Financial Officer of the Company furnished pursuant to 18 U.S.C. Section 1350.](#)
- 101.INS XBRL Instance Document*
- 101.SCH XBRL Taxonomy Extension Schema Document*
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document*
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document*
- 101.LAB XBRL Taxonomy Extension Labels Linkbase Document*
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document*

*Pursuant to Rule 406T of Regulation S-T, the Interactive Data File in Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Section 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purpose of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

Dated 02/23/2020

**Time-and-Material
Master Task Ordering Agreement (MTOA)
Subcontract Form of Agreement ***

Subcontractor:	Perma-Fix Environmental Services, Inc.	Subcontract No.:	573512
Address:	1093 Commerce Park Drive, Ste. 300 Oak Ridge, TN 37830		
Contact:	Tracey Spencer, Contract Administration Manager		
Telephone:	(865) 690-0501 ext. 2081 - office		
E-mail:	<u>tspencer@perma-fix.com</u>		
D-U-N-S No.:	792117681	NAICS Code:	562910

This subcontract, effective on the date of signature by the last party to sign, is hereby made and entered into by and between Triad National Security, LLC (CONTRACTOR), and the above named SUBCONTRACTOR who hereby agree that all Work specified below, which is a portion of the goods and services to be provided by CONTRACTOR for the United States Department of Energy National Nuclear Security Administration (OWNER), shall be performed by the SUBCONTRACTOR in accordance with all the provisions of this subcontract.

1. **SUBCONTRACT DOCUMENTS:** This subcontract consists of the following documents:

- Subcontract Form of Agreement [Dated **02/23/2020**]
- T&M Appendix SFA-1, FAR & DEAR [DEVIATION] [Dated **02/23/2020**]
- T&M Exhibit "A" General Conditions [DEVIATION] [Dated **02/23/2020**]
- T&M Exhibit "B" Special Conditions [DEVIATION] [Dated **02/23/2020**]
- Exhibit "C" Form A-1 Schedule of Rates and Not-To-Exceed Amounts [Dated **02/23/2020**]
- Exhibit "D" Scope of Work and Technical Specifications [Dated **02/19/2020**]
- Appendix A- University of Washington Safety Requirements [Dated **10/14/19**]
- Appendix B - Example Task Order
- Appendix 8-1 Service Contract Labor Standards

2. **WORK TO BE PERFORMED (Work):** In accordance with the subcontract documents, SUBCONTRACTOR shall furnish all administrative, technical and professional services, and perform all operations, including the furnishing and supervision of all technical personnel and labor, and the furnishing of any equipment, material, tools, supplies and transportation necessary and required to satisfactorily:

Provide personnel, supervision, materials, supplies, equipment, tools, instrumentation, and all other incidental items and services necessary to complete tasks at University of Washington Harborview Campus in accordance with Exhibit D, Scope of Work dated February 19, 2020 and as amended.

Provide Waste Treatment Services at Washington Harborview Campus in accordance with Exhibit D, Scope of Work date February 19, 2020 and as amended.

Travel time by SUBCONTRACTOR personnel to and from the work assignment location is not considered Work under this subcontract and SUBCONTRACTOR will not be paid for such time unless otherwise specified in this subcontract or approved in writing by CONTRACTOR.

***CERTAIN INFORMATION IN THIS DOCUMENT HAS BEEN EXCLUDED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.**

3. ORDERING:

- a. All goods/services to be furnished under this subcontract including that, which is not explicitly set forth in Exhibit D (Scope of Work and Technical Specifications), shall be ordered through the issuance of a written Task Order by the Subcontract Administrator in a form substantially similar to the one set forth in Appendix B - Task Order Template. Such task orders may be issued anytime during the term of this subcontract.
- b. SUBCONTRACTOR shall accept or reject individual task orders within twenty-four (24) hours of the issuance of the task order. If SUBCONTRACTOR fails to reject the task order via written notice to the Subcontract Administrator within the allotted time, SUBCONTRACTOR shall be deemed to have accepted the task order.
- c. Each task order shall include a written scope of work, which includes any applicable specifications, terms, and conditions for completing the work. All work performed by SUBCONTRACTOR shall be on a time-and-material basis, subject to the schedule of rates set forth in Exhibit "C" Form A-1 Schedule of Rates to this subcontract unless different rates are explicitly set forth in an accepted task order. In the event of conflict between a task order's terms and conditions and this subcontract, the terms of the Task Order shall control.
- d. Any labor categories, rates, materials, supplies, or services (including subcontractors to be retained by SUBCONTRACTOR) required for SUBCONTRACTOR to complete task order work that is not set forth in Exhibit "C" shall be set forth in writing, incorporated, and made part of the Task Order terms and conditions. Any additional labor categories not already identified in Exhibit "C", but required for performance of existing or anticipated tasks shall be requested in advance of mobilization of personnel. Any additional equipment or services not already identified and priced in Exhibit "C" and required for performance of Task Orders shall be requested in advance of deployment and shall be added to relevant Task Orders and priced as required in advance of Task Order performance.

5. PERIOD OF PERFORMANCE:

- a. Initial Term

The initial term of this subcontract, during which CONTRACTOR may issue releases and SUBCONTRACTOR will deliver the goods/services specified on the releases issued hereunder, **is June 04, 2019 through June 03, 2020.**
- b. Option to Extend
 - (1) CONTRACTOR may extend the term of this subcontract by giving written notice to the SUBCONTRACTOR by the date specified as the expiration date of the subcontract. CONTRACTOR shall attempt to give the SUBCONTRACTOR a preliminary written notice of its intent to extend the term of the subcontract at least sixty (60) days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of the subcontract. Failure to provide the preliminary notice at least sixty (60) days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a bilateral written subcontract modification issued by CONTRACTOR.
 - (2) The term of this subcontract may be extended pursuant to this clause for up to twelve (12) months beyond the initial term. Such extension may be made from time to time or in one modification. However, the total duration of this subcontract, including the exercise of options under this clause, shall not exceed twenty-four (24) Months.

6. CEILING PRICE:

This subcontract is priced on a Time-and-Materials basis. The Ceiling Price for all work called for under this subcontract is **Twenty Five Million US Dollars (\$25,000,000.00)**. Payments will be made to SUBCONTRACTOR in accordance with the prices set forth in Exhibit "C" and with the payment provisions of this subcontract. The SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price.

This subcontract embodies the entire agreement between CONTRACTOR and SUBCONTRACTOR and supersedes all other writings. The parties shall not be bound by or be liable for any statement, representation, promise, inducement or understanding not set forth herein.

For the CONTRACTOR :

Tracey Digitally signed
by Tracey Spencer
Date: 2020.03.03
17:12:25+05:00

By: **Spencer**

Name: Tracey Spencer

Title: Contract Administration Manager

Date: March 3, 2020

For the SUBCONTRACTOR:

By: Gene Richardson

Name: Gene Richardson

Title: Subcontract Specialist 3

Date: March 03, 2020

Appendix SFA-1
FAR & DEAR Clauses Incorporated By Reference

- (a) The Federal Acquisition Regulation (FAR) and the Department of Energy Acquisition Regulation (DEAR) clauses which are incorporated by reference herein shall have the same force and effect as if printed in full text.
- (b) Full text of the referenced clauses may be accessed electronically by copying and pasting the appropriate URL address in your web browser:
- | | |
|-------------------|---|
| FAR clauses: | https://www.acquisition.gov/browse/far/52 |
| DEAR 952 clauses: | https://www.ecfr.gov/cgi-bin/text-idx?SID=838834e575ead9ec27ea415e492b42ee&mc=true&tpl=/ecfrbrowse/Title48/48cfr952_main_02.tpl |
| DEAR 970 clauses: | https://www.ecfr.gov/cgi-bin/text-idx?SID=838834e575ead9ec27ea415e492b42ee&mc=true&tpl=/ecfrbrowse/Title48/48cfr970_main_02.tpl |
- (c) The following alterations shall apply to FAR and DEAR clauses wherever necessary to make the context of the unmodified FAR and DEAR clauses applicable to this subcontract.
- (1) The term “Contractor” shall mean “SUBCONTRACTOR;”
 - (2) The term “Contract” shall mean this subcontract; and
 - (3) The term “DOE”, “Government,” “Contracting Officer” and equivalent phrases shall mean CONTRACTOR and/or CONTRACTOR’S representative, except the terms “Government” and “Contracting Officer” do not change:
 - (i) In the phrases “Government Property,” “Government-Furnished Property,” and “Government-Owned Property;”
 - (ii) In any patent clauses incorporated herein;
 - (iii) When a right, act, authorization or obligation can be granted or performed only by the Government or the prime contract Contracting Officer or his duly authorized representative;
 - (iv) When title to property is to be transferred directly to the Government;
 - (v) When access to proprietary financial information or other proprietary data is required except for authorized audit rights; and
 - (vi) Where specifically modified herein.
 - (4) For authorized audit rights, the term “Contracting Officer or an authorized representative of the Contracting Officer” shall also include “CONTRACTOR, or an authorized representative of CONTRACTOR.”
- (d) Each of the individual FAR/DEAR clauses listed below is incorporated by reference into this subcontract when the condition(s) for applicability is/are met.

THE FOLLOWING CLAUSES APPLY TO THIS SUBCONTRACT REGARDLESS OF THE AMOUNT OF THE SUBCONTRACT PRICE, UNLESS OTHERWISE NOTED:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-19	Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (Jan 2017)	Applies in all solicitations and resultant subcontracts, other than personal services subcontracts with individuals.
FAR 52.215-22	Limitations on Pass-Through Charges -- Identification of Subcontract Effort (Oct 2009)	Applies if subcontractor intends to subcontract to a lower-tier subcontractor more than 70 percent of the total cost of work to be performed under its subcontract.
FAR 52.216-7	Allowable Cost and Payment (Jun 2013)	Applies only to the portion of the T&M subcontract that provides for reimbursement of materials (as defined in FAR 52.232-7) at actual cost. This clause does not apply to labor- hour subcontracts.
FAR 52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation (May 2014)	Applies to subcontracts that may require or involve the employment of laborers and mechanics. If applicable, only paragraphs (a) through (d) apply to subcontracts. Furthermore, if applicable, SUBCONTRACTOR shall flow down paragraphs (a) through (d) to all its lower-tier subcontracts that may require or involve the employment of laborers and mechanics.
FAR 52.222-50	Combating Trafficking In Persons (Mar 2015)	Applies in all subcontracts and in all contracts with agents (as defined in FAR 52.222-50). The requirements in paragraph (h) of this clause apply only to any portion of a subcontract that— (A) Is for supplies, other than commercially available off-the- shelf items, acquired outside the United States, or services to be performed outside the United States; and (B) Has an estimated value that exceeds \$500,000.
FAR 52.222-62	Paid Sick Leave Under Executive Order 13706 (Jan 2017)	Applies in subcontracts for commercial items, as that term is defined in FAR subpart 2.101.
FAR 52.223-3	Hazardous Material Identification and Material Safety Data (Jan 1997) Alternate I (Jul 1995)	Applies only if subcontract involves delivery of hazardous materials as defined in FAR subpart 23.301. If applicable, the term “Government” as used in this clause means “CONTRACTOR and the Government.
FAR 52.225-13	Restrictions on Certain Foreign Purchases (Jun 2008)	
FAR 52.227-3	Patent Indemnity (Apr 1984)	Applies in subcontracts that may result in the delivery of commercial items, as that term is defined in 48 CFR subpart 2.1.
FAR 52.227-23	Rights to Proposal Data (Technical) (Jun 1987)	Applies if subcontract is based on consideration of a technical proposal.
FAR 52.232-7	Payments Under Time-and-Materials and Labor-Hour Contracts (Aug 2012)	
FAR 52.232-39	Unenforceability of Unauthorized Obligations (Jun 2013)	
FAR 52.242-1	Notice of Intent to Disallow Costs (Apr 1984)	
FAR 52.244-6	Subcontracts for Commercial Items (Jan 2017)	
FAR 52.245-1	Government Property (Jan 2017)	Applies to all time-and-material solicitations and subcontracts, and labor-hour solicitations when property is expected to be furnished.
FAR 52.245-9	Use and Charges (Apr 2012)	Applies when FAR 52.245-1 is applicable.
FAR 52.246-6	Inspection - Time-and-Materials and Labor-Hour (May 2001)	
FAR 52.247-63	Preference for U.S.-Flag Air Carriers (Jun 2003)	Applies if performance of subcontract may involve international air transportation.
FAR 52.247-64	Preference for Privately Owned U.S.- Flag Commercial Vessels (Feb 2006)	Applies in all subcontracts, except those described in paragraph (e)(4) of FAR 52.247-64.

THE FOLLOWING CLAUSES APPLY TO THIS SUBCONTRACT REGARDLESS OF THE AMOUNT OF THE SUBCONTRACT PRICE, UNLESS OTHERWISE NOTED:

FAR 52.249-6	Termination (Cost-Reimbursement) (May 2004) Alternate IV (Sep 1996)	Paragraphs (e), (j) and (n) are deleted, and the period for submitting the subcontractor's termination settlement proposal in paragraph (f) is reduced to 6 months.
FAR 52.249-14 DEAR 952.208-70 DEAR 952.250-70	Excusable Delays (Apr 1984) Printing (Apr 1984) Nuclear Hazards Indemnity Agreement (Aug 2016)	Applies only if performance of subcontract may involve the risk of public liability, as that term is defined in the Atomic Energy Act of 1954, as amended, with the additional conditions described in DEAR 952.250-70(d)(2).
DEAR 970.5225-1 DEAR 970.5229-1 DEAR 970.5232-3	Compliance with Export Control Laws and Regulations (Nov 2015) State and Local Taxes (Dec 2000) Accounts, Records, and Inspection (Dec 2010)	Paragraph (b) is deleted.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$2,500:

<u>Clause Number</u>	<u>Title and Date</u>	<u>Additional Conditions of Applicability</u>
FAR 52.222-41	Service Contract Labor Standards (May 2014)	Unless exempted, applies if the principal purpose of the subcontract is to furnish services in the United States through the use of service employees. See FAR subparts 22.1003-3 and 22.1003-4 for exemptions to SCA.
FAR 52.222-42	Statement of Equivalent Rates for Federal Hires (May 2014)	Applies if FAR 52.222-41 is applicable.
FAR 52.222-43	Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (Multiple Year and Option Contracts) (Aug 2018)	Applies if FAR 52.222-41 is applicable, and subcontract is a multiple year or has options to renew.
FAR 52.222-44	Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (May 2014)	Applies if FAR 52.222-41 is applicable, and subcontract is not a multiple year or does not have options to renew.
FAR 52.222-51	Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment— Requirements (May 2014)	Applies if SUBCONTRACTOR has made the certification specified in FAR 52.222-48(a).
FAR 52.222-53	Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services— Requirements (May 2014)	Applies if SUBCONTRACTOR has made the certification specified in FAR 52.222-52(a).
FAR 52.222-55	Minimum Wages Under Executive Order 13658 (Dec 2015)	Applies in all subcontracts, regardless of dollar value, that are subject to the Service Contract Labor Standards statute or the Wage Rate Requirements (Construction) statute, and are to be performed in whole or in part in the United States.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$3,500:

<u>Clause Number</u>	<u>Title and Date</u>	<u>Additional Conditions of Applicability</u>
FAR 52.222-54	Employment Eligibility Verification (Oct 2015)	Applies in each subcontract that— (1) Is for— (i) Commercial or noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or (ii) Construction; (2) Has a value of more than \$3,500; and (3) Includes work performed in the United States.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$10,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-3	Convict Labor (Jun 2003)	Applies if subcontract will be performed in the United States, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.
FAR 52.222-21	Prohibition of Segregated Facilities (Apr 2015)	Applies if FAR 52.222-26, Equal Opportunity, is applicable.
FAR 52.222-26	Equal Opportunity (Sep 2016)	Applies unless one of the exemptions listed in FAR Subpart 22.807(b) is applicable.
FAR 52.222-40	Notification of Employee Rights Under the National Labor Relations Act (Dec 2010)	Applies in subcontracts that will be performed wholly or partially in the United States, unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 3 of Executive Order 13496 of January 30, 2009.
FAR 52.223-18	Encouraging Contractor Policies to Ban Text Messaging While Driving (Aug 2011)	
FAR 52.225-1	Buy American Act – Supplies (May 2014)	Applies if the acquisition is for supplies for use within the United States; and none of the exceptions to the Buy American Act apply (e.g., nonavailability, public interest, or information technology that is a commercial item).
FAR 52.232-23	Assignment of Claims (May 2014) Alternate I (Apr 1984)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$15,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-36	Equal Opportunity for Workers with Disabilities (Jul 2014)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$100,000:

Clause Number	Title and Date	Additional Conditions of Applicability
DEAR 970.5227-5	Notice and Assistance Regarding Patent and Copyright Infringement (Dec 2000)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE IS \$150,000 OR MORE:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-35	Equal Opportunity for Veterans (Oct 2015)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.
FAR 52.222-37	Employment Reports on Veterans (Feb 2016)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$150,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-7	Anti-Kickback Procedures (May 2014)	Paragraph (c) (1) is deleted.
FAR 52.203-12	Limitation On Payments To Influence Certain Federal Transactions (Oct 2010)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$250,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-3	Gratuities (Apr 1984)	
FAR 52.203-5	Covenant Against Contingent Fees (May 2014)	Applies only if subcontract is for non-commercial items.
FAR 52.203-6	Restrictions on Subcontractor Sales to the Government (Sep 2006)	Alternate I (Oct 1995) is also applicable if subcontract is for commercial items.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$250,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-8	Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (May 2014)	Applies only if subcontract is for non-commercial items.
FAR 52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity (May 2014)	Applies only if subcontract is for non-commercial items. If applicable, in paragraph (d) the term "Government" means "Government or CONTRACTOR."
FAR 52.203-17	Contractor Employee Whistleblower Rights and Requirement to Inform Employees of Whistleblower Rights (Apr 2014)	
FAR 52.215-2	Audit and Records –Negotiation (Oct 2010)	Applies in solicitations and subcontracts that exceed the simplified acquisition threshold, and— (1) That are cost-reimbursement, incentive, time-and- materials, labor-hour, or price-redeterminable type or any combination of these; (2) For which certified cost or pricing data are required; or (3) That require subcontractor to furnish reports as discussed in paragraph (e) of this clause.
FAR 52.219-8	Utilization of Small Business Concerns (Nov 2016)	Applies if subcontract offers further subcontracting opportunities and is to be performed within the United States and its outlying areas. If applicable and the subcontract exceeds \$700,000 (\$1,500,000 for construction of any public facility), SUBCONTRACTOR shall include FAR 52.219-8 in its lower tier subcontracts (except subcontracts to small business concerns) that offer further subcontracting possibilities.
FAR 52.222-17	Nondisplacement of Qualified Workers (May 2014)	Applies in in solicitations and subcontracts for (1) service contracts, as defined at FAR 22.001, (2) that succeed subcontracts for performance of the same or similar work at the same location and (3) that are not exempted by FAR 22.1203-2 or waived in accordance with FAR 22.1203-3.
FAR 52.227-1 FAR 52.232-17	Authorization and Consent.(Dec 2007) Alternate I (Apr 1984) Interest (May 2014)	Applies unless one of the exemptions listed in FAR Subpart 32.611(a) is applicable.
DEAR 952.209-72	Organizational Conflicts of Interest (Aug 2009) with Alternate I	Applies if subcontract is for advisory and assistance services, as defined in FAR Subpart 2.101. The activities and programs listed in FAR Subpart 37.202 are excluded or exempted from the definition of advisory or assistance services.

THE FOLLOWING CLAUSES APPLY ONLY TO A NEGOTIATED SUBCONTRACT IF THE SUBCONTRACT PRICE EXCEEDS \$2,000,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.230-2	Cost Accounting Standards (Oct 2015), excluding paragraph (b)	Applies unless the subcontract is: (1) exempted from CAS (see 48 CFR 9903.201-1 (FAR Appendix)), or (2) subject to modified CAS coverage (see 48 CFR 9903.201-2 (FAR Appendix)) or (3) awarded to a foreign concern. When applicable, paragraph (b) is deleted and SUBCONTRACTOR shall include the substance of this clause, without paragraph (b), in all other subcontracts of any tier.
FAR 52.230-3	Disclosure And Consistency Of Cost Accounting Practices (Oct 2015), excluding paragraph (b)	Applies only to a negotiated subcontract that exceeds \$2,000,000 but is less than \$50 million, and the offeror certifies it is eligible for and elects to use modified CAS coverage. When applicable, paragraph (b) is excluded, and SUBCONTRACTOR shall include this clause in all other subcontracts of any tier, except those exempted by FAR 52.230-3 (d)).
FAR 52.230-6	Administration of Cost Accounting Standards (Jun 2010)	Applies if FAR 52.230-2, 52.230-3, 52.230-4 or 52.230-5 is applicable.

THE FOLLOWING CLAUSES APPLY ONLY TO A NEGOTIATED SUBCONTRACT IF THE SUBCONTRACT PRICE EXCEEDS \$2,000,000:

Clause Number	Title and Date	Additional Conditions of Applicability
DEAR 970.5232-5	Liability With Respect To Cost Accounting Standards (Dec 2000)	Applies if any Cost Accounting Standards clauses are included (i.e., FAR 52.230-2, 52.230-3, 52.230-6).

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$2,000,000 AND THE SUBCONTRACTOR IS REQUIRED TO SUBMIT COST OR PRICING DATA, OR WHERE PREAWARD OR POSTAWARD COST DETERMINATIONS WILL BE SUBJECT TO FAR PART 31, CONTRACT COST PRINCIPLES AND PROCEDURES:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.215-10	Price Reduction for Defective Certified Cost or Pricing Data (Aug 2011)	Applies unless one of the exceptions in FAR 15.403-1(b) is applicable.
FAR 52.215-11	Price Reduction for Defective Certified Cost or Pricing Data – Modifications (Aug 2011)	Applies if modification exceeds \$2,000,000, none of the exceptions in FAR 15.403-1(b) are applicable to modification, and FAR 52.215-10 was not applicable to subcontract.
FAR 52.215-12	Subcontractor Certified Cost or Pricing Data (Oct 2010)	Applies if FAR 52.215-10 is applicable.
FAR 52.215-13	Subcontractor Certified Cost or Pricing Data – Modifications (Oct 2010)	Applies if FAR 52.215-11 is applicable.
FAR 52.215-15	Pension Adjustments and Asset Reversions (Oct 2010)	
FAR 52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions (July 2005)	Applies in solicitations and subcontracts for which it is anticipated that certified cost or pricing data will be required <u>or</u> for which any preaward or postaward cost determinations will be subject to FAR part 31.
FAR 52.215-19	Notification of Ownership Changes (Oct 1997)	Applies in solicitations and subcontracts for which it is contemplated that certified cost or pricing data will be required <u>or</u> for which any preaward or postaward cost determinations will be subject to FAR part 31.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SCOPE OF WORK REQUIRES THE DESIGN / REDESIGN, DEVELOPMENT, OR OPERATION OF A SYSTEM OF RECORDS ON INDIVIDUALS THAT IS SUBJECT TO THE PRIVACY ACT OF 1974:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.224-1	Privacy Act Notification (Apr 1984)	Applies if subcontract scope of work requires redesign, development or operation of a system of records on individuals that is subject to the Privacy Act of 1974.
FAR 52.224-2	Privacy Act (Apr 1984)	

THE FOLLOWING CLAUSES APPLY AS STATED IN THE CONDITIONS OF APPLICABILITY:

Clause Number	Title and Date	Conditions of Applicability
FAR 52.203-13	Contractor Code of Business Ethics and Conduct (Oct 2015)	Applies only in subcontracts that have a value in excess of \$5.5 million and a performance period of more than 120 days.
FAR 52.203-15	Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (Jun 2010)	Applies only in subcontracts for commercial items as defined in FAR subpart 2.101 that are funded under the Act.
FAR 52.204-21	Basic Safeguarding of Covered Contractor Information Systems (Jun 2016)	Applies only in subcontracts for commercial items (other than commercially available off-the-shelf items), in which the subcontractor may have Federal contract information residing in or transiting through its information system.
FAR 52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (Oct 2015)	Applies in solicitations and subcontracts, other than a subcontract for commercially available off-the-shelf (COTS) items, where the subcontract value exceeds \$35,000.
FAR 52.222-1	Notice To The Government Of Labor Disputes (Feb 1997)	Applies if a potential labor dispute may delay the timely performance of the CONTRACTOR'S Prime Contract with DOE/NNSA.

THE FOLLOWING CLAUSES APPLY AS STATED IN THE CONDITIONS OF APPLICABILITY:

Clause Number	Title and Date	Conditions of Applicability
FAR 52.223-7	Notice of Radioactive Materials (Jan 1997)	Applies if items containing either radioactive material (requiring specific licensing under the regulations issued pursuant to the Atomic Energy Act of 1954, as amended) or other radioactive material (not requiring specific licensing in which the specific activity is greater than 0.002 microcuries per gram or the activity per item equals or exceeds 0.01 microcuries) are to be delivered or serviced under this subcontract. If applicable, SUBCONTRACTOR shall notify CONTRACTOR, in writing, 30 days prior to delivery of, or prior to completion of any servicing required by this subcontract.
FAR 52.224-3	Privacy Training.(Jan 2017)	Applies when subcontractor employees will– (1) Have access to a system of records; (2) Create, collect, use, process, store, maintain, disseminate, disclose, dispose, or otherwise handle personally identifiable information; or (3) Design, develop, maintain, or operate a system of records.
FAR 52.227-14	Rights in Data - General (May 2014) as modified by DEAR 927.409(a), including Alternate V (Dec 2007)	Applies in subcontracts in which technical data or computer software is expected to be produced and in subcontracts for supplies that contain a requirement for production or delivery of data.
FAR 52.227-16	Additional Data Requirements (Jun 1987)	Applies if subcontract involves experimental, developmental, research or demonstration work.
FAR 52.232-40	Providing Accelerated Payments to Small Business Subcontractors. (Dec 2013)	Applies only to subcontracts with Small Business Concerns.
DEAR 970.5208-1	Printing (Dec 2000)	Applies when printing is required, as “printing” is defined in Title I, Definitions, of the U.S. Government Printing and Binding Regulations (http://jcp.senate.gov/jcpregs.pdf)
DEAR 970.5227-12	Patent Rights Management and Operating Contracts, For-Profit Contractor, Advance Class Waiver (Dec 2000)	Applies if subcontract covers or is likely to cover subject matter that is classified for reasons of security.

EXHIBIT "A"
GENERAL CONDITIONS

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GC-1 DEFINITIONS (Nov 2018)

“CONTRACTOR” means Triad National Security, LLC (Triad), a limited liability company, which manages and operates Los Alamos National Laboratory (LANL) pursuant to Contract No. 89233218CNA000001 between the U.S. Department of Energy (DOE) / National Nuclear Security Administration (NNSA) and Triad. CONTRACTOR also means Subcontract Administrator, the individual authorized to act on behalf of Triad.

“Beneficial Occupancy” or “Use and Possession Prior to Completion”, if used in this subcontract or task order, means the procedure where CONTRACTOR occupies or makes use of any part of the Work, in accordance with General Condition GC-29 USE OF COMPLETED PORTIONS OF WORK.

“Days” means calendar days unless otherwise provided.

“FAR” means the Federal Acquisition Regulations at 48 CFR Chapter 1.

“Final Acceptance” means CONTRACTOR’S acceptance of all of the Work as a whole following SUBCONTRACTOR completion and successful inspection and testing. It is conclusive except for latent defects, gross mistakes or fraud.

“Final Completion”, if used in this subcontract or task order, means the point when all of the Work reasonably inferable from Subcontract Documents has been completed, as determined by CONTRACTOR. This includes the final cleanup of the premises, completion of all final inspection punch list items, and submission of all remaining contractual documents.

“GOVERNMENT” means the United States of America and includes the DOE / NNSA “Jobsite” means a site at which the Work shall be performed under this subcontract.

“Laboratory” or “LANL” means the geographical location of Los Alamos National Laboratory, a federally funded research and development center owned by the DOE / NNSA.

“Subcontract” means this agreement, including all attachments, appendices, sections, exhibits, schedules, and revisions hereto, as issued from time to time.

“Subcontract Documents” denotes this Subcontract and those appendices and exhibits referenced thereon.

“SUBCONTRACTOR” means the company, corporation, partnership, individual, or other entity to which this Subcontract is issued, its authorized representatives, successors, and permitted assigns

“Substantial Completion”, if used in this subcontract or task order, means the point when the Work or a designated portion of the Work is sufficiently complete, in accordance with the Subcontract Documents, so that CONTRACTOR may use or occupy the Work or designated portion thereof for its intended purpose, as determined by CONTRACTOR. Additional requirements for achieving Substantial Completion are provided in Exhibit D, Scope of Work and Technical Specifications.

“Work”, “Goods” or “Services” means all the stated or implied activities to be performed by SUBCONTRACTOR as required by the Subcontract Documents, including the furnishing and supervision of all technical personnel and labor, and the supply of equipment, materials, and supplies necessary to perform this Subcontract.

GC-2A AUTHORIZED REPRESENTATIVES, COMMUNICATIONS AND NOTICES (Jan 2010)

Unless otherwise specified, all notices and communications in accordance with or related to this subcontract shall be between authorized representatives designated in writing by the parties and shall comply with security requirements set forth in Exhibit G “Security Requirements”. Notices shall be in writing and may be served either personally on the authorized representative of the receiving party, by electronic scanned document attached to an email, by facsimile, by courier or express delivery, or by certified mail to the address shown on the face of this subcontract or as directed by notice.

GC-3 INDEPENDENT CONTRACTOR (Jun 2009)

SUBCONTRACTOR represents that it is fully experienced, properly qualified, registered, licensed, equipped, organized, and financed to perform the Work under this subcontract. SUBCONTRACTOR shall act as an independent contractor and not as the agent of CONTRACTOR or GOVERNMENT in performing this subcontract, maintaining complete control over its employees and all of its suppliers and subcontractors of any tier. Nothing contained in this subcontract or any lower-tier purchase order or subcontract awarded by SUBCONTRACTOR shall create any contractual relationship between any lower-tier supplier or subcontractor and either CONTRACTOR or GOVERNMENT. SUBCONTRACTOR shall perform the Work hereunder in accordance with its own methods subject to compliance with the subcontract.

GC-4 SUBCONTRACT INTERPRETATION (Jun 2009)

All questions concerning interpretation or clarification of this subcontract by SUBCONTRACTOR shall be immediately submitted in writing to CONTRACTOR for resolution. Subject to the provisions of the General Condition titled "CHANGES," all determinations, instructions, and clarifications of CONTRACTOR shall be final and conclusive unless SUBCONTRACTOR believes such determinations, instructions or clarifications are fraudulent or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence, in which case SUBCONTRACTOR shall proceed under the terms of the Disputes clause.

At all times SUBCONTRACTOR shall proceed with the Work in accordance with the determinations, instructions, and clarifications of CONTRACTOR. SUBCONTRACTOR shall be solely responsible for requesting instructions or interpretations and shall be solely liable for any costs and expenses arising from its failure to do so.

GC-5 NOTICE TO PROCEED (Jul 2011) [Deviation]

SUBCONTRACTOR shall not commence work prior to receipt of a notice to proceed issued by the Subcontract Administrator and/or PIC. A notice to proceed shall not be issued prior to:

- (1) receipt by CONTRACTOR of certificates of insurance and endorsements evidencing that required coverage and limits of insurance are in full force and effect, when such certificates and endorsements are required herein;
- (2) receipt by CONTRACTOR of executed payment and performance bonds, when such payment and performance bonds are required herein; and
- (3) receipt by CONTRACTOR of written confirmation that SUBCONTRACTOR has included or will include (i.e. flow down) in subcontracts with its lower-tier suppliers and subcontractors all contractual, environment, safety, health, security, and quality assurance requirements necessary to fulfill this subcontract as it relates to their portion of the Work; and
- (4) compliance by SUBCONTRACTOR with any other applicable requirements specified in the subcontract.

CONTRACTOR reserves the right to issue a limited notice to proceed (LNTP) where CONTRACTOR determines circumstances require specific pre-performance activities necessary to support the subcontract. However this LNTP does not constitute a formal Notice to Proceed as set forth in this clause.

GC-6 ORDER OF PRECEDENCE (Jun 2009)

In resolving conflicts, discrepancies, errors or omissions between Subcontract Documents, the following order of precedence from highest to lowest shall be used, with the acknowledgement that a particular subcontract may not be comprised of all the documents listed below.

- (1) Subcontract Form of Agreement
- (2) Appendix SFA-1 titled "FAR & DEAR Clauses Incorporated By Reference"
- (3) Exhibit "A" – General Conditions
- (4) Exhibit "B" – Special Conditions
- (5) Exhibit "F" – Environmental, Safety and Health Requirements
- (6) Exhibit "G" – Security Requirements
- (7) Exhibit "H" – Quality Assurance Requirements
- (8) Exhibit "C" – Schedule of Quantities and Prices
- (9) Exhibit "D" – Scope of Work
- (10) Exhibit "D" – Technical Specifications
- (11) Exhibit "E" – Drawings
- (12) All other subcontract documents

NOTE: If this subcontract is funded in whole or part under the American Recovery and Reinvestment Act of 2009, Exhibit A1, ADDITIONAL GENERAL CONDITIONS RELATING TO WORK FUNDED UNDER AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (May 2009) shall take precedence over all documents listed herein except for the Subcontract Form of Agreement.

GC-7 STANDARDS AND CODES (Jun 2009)

Wherever references are made in this subcontract to standards or codes in accordance with which the Work under this subcontract is to be performed, the edition or revision of the standards or codes current on the effective date of this subcontract shall apply unless otherwise expressly stated. In case of conflict between any referenced standards and codes and any Subcontract Documents, the General Condition titled "SUBCONTRACT INTERPRETATION" shall apply.

GC-8 LAWS AND REGULATIONS (Nov 2018)

- (a) SUBCONTRACTOR shall comply with the requirements of applicable federal, state, and local laws and regulations (including DOE regulations), unless relief has been granted in writing by the appropriate regulatory agency. SUBCONTRACTOR shall also comply with DOE Directives, NNSA Policy Letters, and Laboratory policies and procedures, or parts thereof, which are identified in the subcontract. Copies of any such directives, letters, policies and procedures will be provided to the SUBCONTRACTOR upon request.
- (b) If SUBCONTRACTOR discovers any discrepancy or inconsistency between this subcontract and any law, ordinance, statute, rule, regulation, order or decree, SUBCONTRACTOR shall immediately notify CONTRACTOR in writing.
- (c) Regardless of the performer of the work, SUBCONTRACTOR is responsible for compliance with the requirements of this clause. SUBCONTRACTOR agrees to insert the substance of this clause, including this paragraph (c), in its subcontracts at any tier.

GC-9 PERMITS (Jun 2009)

Except as otherwise specified, SUBCONTRACTOR shall procure and pay for all permits, licenses, certifications and other applicable governing authority requirements and inspections, other than inspections performed by CONTRACTOR or GOVERNMENT or permits which by law or regulation must be acquired by CONTRACTOR or GOVERNMENT. SUBCONTRACTOR shall furnish any documentation, bonds, securities, deposits or assistance required to permit performance of the Work.

GC-10 TAXES (Jun 2009)

- (a) SUBCONTRACTOR shall pay all taxes, levies, duties and assessments of every nature due in connection with the Work under this subcontract, and shall make any and all payroll deductions and withholdings required by law. SUBCONTRACTOR agrees to indemnify and hold harmless CONTRACTOR and GOVERNMENT from any liability on account of any and all such taxes, levies, duties, assessments and deductions.
- (b) SUBCONTRACTOR shall with the approval of CONTRACTOR apply for and obtain for the benefit of the project any available exemption, deduction or exclusion under applicable laws for which SUBCONTRACTOR, CONTRACTOR or GOVERNMENT qualify.

GC-11 NEW MEXICO GROSS RECEIPTS TAX (Jun 2009)

SUBCONTRACTOR is required to pay such New Mexico Gross Receipts Tax (NMGR) as may be required by law. CONTRACTOR will issue a New Mexico Nontaxable Transaction Certificate (NTTC) to all Subcontractors who provide goods or services to CONTRACTOR, on the condition that SUBCONTRACTOR only uses the NTTC as permitted by New Mexico law. In no event will the payment of NMGR by SUBCONTRACTOR or its immediate and lower-tier subcontractors be considered an allowable cost under this subcontract if SUBCONTRACTOR or its immediate and lower-tier subcontractors are eligible for applicable deductions or exemptions from NMGR under New Mexico law.

GC-12 FINES AND PENALTIES (Jun 2009)

If a state or federal agency takes an enforcement action with associated fines and penalties against CONTRACTOR and/or Government for regulatory and/or permit noncompliance that resulted from a failure of SUBCONTRACTOR to perform in accordance with this Subcontract (e.g., failure to meet regulatory reporting milestones, making false statements in reports, etc.), SUBCONTRACTOR shall reimburse CONTRACTOR and/or the Government for the amount of any resultant fine and/or the cost of additional Work required as a result of the enforcement action. CONTRACTOR may withhold such amounts from any payments due SUBCONTRACTOR.

GC-13 CONTRACTOR'S RIGHT TO OFFSET (Jan 2010)

CONTRACTOR may collect any amount determined by the Subcontract Administrator to be owed to CONTRACTOR by offsetting the amount against any payment due to the SUBCONTRACTOR under any subcontract it has with CONTRACTOR issued pursuant to CONTRACTOR'S contract with GOVERNMENT for management and operation of Los Alamos National Laboratory. Any challenge to the amount of an offset under this clause shall be resolved under the Disputes clause of this subcontract.

GC-14 LABOR, PERSONNEL AND WORK RULES (Jun 2009)

- (a) SUBCONTRACTOR shall employ only competent and skilled personnel to perform the Work and shall remove from the Jobsite any SUBCONTRACTOR personnel determined to be unfit or to be acting in violation of any provision of this subcontract. SUBCONTRACTOR is responsible for maintaining labor relations in such manner that there is harmony among workers and shall comply with and enforce project and Jobsite procedures, regulations, work rules and work hours established by CONTRACTOR and GOVERNMENT.
- (b) CONTRACTOR may, at its sole discretion, temporarily or permanently bar from the Work, and any other location within the Los Alamos National Laboratory (LANL), any employee of SUBCONTRACTOR or any of its lower-tier subcontractors by written notice to SUBCONTRACTOR. In the event an employee is excluded from the Jobsite, SUBCONTRACTOR shall, promptly replace such individual with another who is fully competent and skilled to perform the Work. SUBCONTRACTOR shall not be entitled to compensation for any costs resulting from the removal of such employee.

- (c) SUBCONTRACTOR shall, to the extent permissible under applicable law, comply with the provisions of all labor agreement(s) which apply to the Work performed under this subcontract. If required by the terms of any such labor agreement(s), SUBCONTRACTOR shall, immediately after subcontract award, agree to comply with and be bound by the terms of such labor agreement(s).
- (d) If SUBCONTRACTOR has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this subcontract, SUBCONTRACTOR shall immediately give notice, including all relevant information, to CONTRACTOR.
- (e) SUBCONTRACTOR shall include the substance of this clause in all lower-tier subcontracts which require work to be performed at LANL.

GC-15 COMMERCIAL ACTIVITIES (Jun 2009)

Neither SUBCONTRACTOR nor its employees shall establish any commercial activity or issue concessions or permits of any kind to third parties for establishing commercial activities on the Jobsite or any other lands owned or controlled by CONTRACTOR or GOVERNMENT.

GC-16 NONDISCLOSURE, PUBLICITY AND ADVERTISING (Jan 2010)

SUBCONTRACTOR'S disclosure to a third party of any information, material, data, charts, graphs, or records obtained, developed or maintained under this subcontract is prohibited, except as approved in writing in advance by CONTRACTOR. Furthermore, SUBCONTRACTOR shall not make any announcement, release any photographs, or release any information concerning this subcontract, or the Laboratory, or any part thereof to any member of the public, press, business entity, or any other third party unless prior written consent is obtained from CONTRACTOR. All SUBCONTRACTOR requests for review and approval shall be addressed to CONTRACTOR. Additionally, SUBCONTRACTOR will ensure that its employees, subcontractors and/or affiliates who work on this subcontract understand this non-disclosure requirement and provide written acknowledgement of the same if requested by CONTRACTOR'S Subcontract Administrator. SUBCONTRACTOR agrees to include a similar requirement in all lower-tier subcontracts. All requests for authorization to release information by lower-tier subcontractors shall be subject approval of CONTRACTOR'S Subcontract Administrator.

GC-17 ENVIRONMENTAL, SAFETY AND HEALTH REQUIREMENTS (Jun 2009)

- (a) SUBCONTRACTOR shall be solely responsible for conducting operations under this subcontract to avoid risk of harm to the health and safety of persons and property and for inspecting and monitoring all its equipment, materials and work practices to ensure compliance with its obligations under this subcontract.
- (b) Throughout performance of the Work, SUBCONTRACTOR shall conduct all operations in such a way as to minimize impact upon the natural environment and prevent any spread or release of contaminated or hazardous substances.
- (c) As more fully set forth in Exhibit D Statement of Work, SUBCONTRACTOR shall comply with the applicable provisions of the University of Washington Safety Requirements and provide a site specific safety plan for each task under the subcontract.

GC-25 OVERSIGHT OF WORK BY SUBCONTRACTOR (Jun 2009)

At all times during performance of this Subcontract and until the Work is completed and accepted, SUBCONTRACTOR shall directly oversee the Work, and when Work is performed on site at LANL, assign and have on site a competent individual, who is satisfactory to CONTRACTOR, who has authority to act for SUBCONTRACTOR.

GC-30 CONTRACTOR'S COMPLIANCE WITH DOE DIRECTIVES (Jun 2009)

When requested by CONTRACTOR, SUBCONTRACTOR shall provide such information, assistance and support as necessary to ensure CONTRACTOR'S compliance with any DOE directives that may be applicable to the scope of the work. If SUBCONTRACTOR believes that such request for information, assistance or support is not provided for elsewhere in the subcontract and constitutes a change under the General Condition titled "Changes", SUBCONTRACTOR shall proceed in accordance with the "Changes" clause.

GC-31A INSPECTION AND TESTING (Jun 2009)

- (a) All equipment and material furnished and work performed shall be properly inspected by SUBCONTRACTOR at its expense and shall at all times be subject to quality surveillance and quality audit by CONTRACTOR, GOVERNMENT or their authorized representatives who, upon reasonable notice, shall be afforded full and free access to the shops, factories or other places of business of SUBCONTRACTOR and its suppliers and subcontractors of any tier for such quality surveillance or audit. If any equipment, material or work is determined by CONTRACTOR or GOVERNMENT to be defective or not in conformance with this subcontract the provisions of the General Condition titled "WARRANTY" shall apply.
- (b) Unless otherwise provided in the subcontract, testing of equipment, materials or work shall be performed by SUBCONTRACTOR at its expense and in accordance with subcontract requirements. Should tests in addition to those required by this subcontract be desired by CONTRACTOR, SUBCONTRACTOR will be given reasonable notice to permit such testing. Such additional tests will be at CONTRACTOR'S expense.
- (c) SUBCONTRACTOR shall furnish samples as requested and shall provide reasonable assistance and cooperation necessary to permit tests to be performed on materials or work in place including reasonable stoppage of work during testing.

GC-35A CHANGES (Jun 2009)

- (a) CONTRACTOR may at any time, without notice to the sureties if any, unilaterally direct in writing subcontract changes, including additions, deletions, rescheduling and acceleration or deceleration, place of performance, to all or any part of the Work, and SUBCONTRACTOR agrees to perform such work as changed.
- (b) If any change under this clause, whether or not changed by any such order, or an act or omission of CONTRACTOR or GOVERNMENT, directly or indirectly causes an increase or decrease in the cost of or in the time required to perform any part of the Work an equitable adjustment shall be made to pricing or time of performance, or both. SUBCONTRACTOR shall, within thirty (30) calendar days of such change or act or omission, notify CONTRACTOR and submit detailed information substantiating its impact. SUBCONTRACTOR waives its rights, if any, to an equitable adjustment if it fails to comply with the requirements of this subclause. Upon agreement as to the impact of the change or act or omission, the subcontract shall be modified accordingly.
- (c) SUBCONTRACTOR shall proceed diligently with performance of the Work, pending final resolution of any request for adjustment, dispute, claim, appeal, or action arising under the subcontract, and comply with any decision of CONTRACTOR.

GC-36 DISPUTES (Jan 2010)

- (a) Definitions. For purposes of this clause:

"Board" means the Civilian Board of Contract Appeals or such successor Board as may be established by law.

"Arbitration decision" means a decision of the Board in an arbitration pursuant to this clause.

“Claim” means a written demand or written assertion by either contracting party seeking as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of a subcontract term, or other relief arising under, or relating to, this subcontract. A voucher, invoice, or other request for payment or equitable adjustment under the terms of the subcontract that is not in dispute when submitted is not a claim. The SUBCONTRACTOR may convert such submission into a claim if it is disputed either as to liability or amount, or is not acted upon in a reasonable time, by demanding a decision by the Subcontract Administrator.

“Counterclaim” means a claim asserted in a pleading filed with the Board in an arbitration proceeding pursuant to this clause which arises from the same occurrence or transaction that is the subject matter of the opposing party’s claim. Counterclaims do not need to be submitted to the Subcontract Administrator for decision.

- (b) Nature of the Subcontract. This subcontract is not a Government contract and, therefore, is not subject to the Contract Disputes Act of 1978 (41 U.S.C. §§601-613). SUBCONTRACTOR acknowledges that GOVERNMENT is not a party to the subcontract, and, for purposes of the subcontract CONTRACTOR is not an agent of GOVERNMENT. Consequently, the provision for arbitration by the Board, as provided for in this clause, does not create or imply the existence of privity of contract between SUBCONTRACTOR and GOVERNMENT.
- (c) Scope of Clause. The rights and procedures set forth in this clause are the exclusive rights and procedures for resolution of all claims and disputes arising under, or relating to, this subcontract, and no action based upon any claim or dispute arising under, or relating to, this subcontract shall be brought in any court except as provided in this clause. The parties shall be bound by any arbitration decision rendered pursuant to this clause, which shall be vacated, modified, or corrected only as provided in the Federal Arbitration Act (9 U.S.C. §§1-16). An arbitration decision may only be enforced in any court of competent jurisdiction in the State of New Mexico.
- (d) Filing a Claim/Subcontract Administrator’s Decision.
- (1) Unless otherwise provided in this subcontract, SUBCONTRACTOR must file any claim against CONTRACTOR within sixty (60) Days after SUBCONTRACTOR knew or should have known the facts giving rise to the claim. Failure to file a claim within the period prescribed by this paragraph shall constitute a waiver of SUBCONTRACTOR’S right, if any, to an equitable adjustment under the subcontract.
 - (2) SUBCONTRACTOR shall submit any claim in writing to the Subcontract Administrator who shall issue a decision on the matter within sixty (60) Days of receipt of the claim. If the Subcontract Administrator fails to issue a decision within sixty (60) Days, SUBCONTRACTOR may request mediation or demand for arbitration as provided in paragraphs (e) and (f) of this clause.
 - (3) CONTRACTOR may, at any time prior to final payment under the subcontract or expiration of any warranty period, whichever is later, file a claim against SUBCONTRACTOR by issuing a written decision by the Subcontract Administrator asserting such a claim.
 - (4) The decision of the Subcontract Administrator shall be final and conclusive unless SUBCONTRACTOR requests mediation or demands arbitration in accordance with the terms of this clause.

(e) Request for Mediation.

- (1) If the decision of the Subcontract Administrator is not satisfactory to SUBCONTRACTOR, or the Subcontract Administrator has failed to timely issue a decision in accordance with

subparagraph (d) 2) of this provision, and SUBCONTRACTOR desires to pursue further action, SUBCONTRACTOR may request that the matter be scheduled for mediation. The request for mediation must be made within forty-five (45) Days after receipt of the Subcontract Administrator's decision.

- (2) If the Subcontract Administrator believes that mediation of the dispute is likely to lead to a satisfactory resolution, he or she will so inform SUBCONTRACTOR and the matter will be scheduled for mediation. The parties will agree on the format of the mediation and will jointly select the mediator. The cost of the mediator and related expenses shall be divided evenly between the parties.
- (3) If the Subcontract Administrator decides that mediation is not likely to lead to a satisfactory resolution of the claim, or that a mediation undertaken pursuant to this clause has been unsuccessful, he or she will so inform SUBCONTRACTOR in writing.

- (f) Demand for Arbitration. If the decision of the Subcontract Administrator is not satisfactory to SUBCONTRACTOR, or if SUBCONTRACTOR'S request for mediation has been denied, or a mediation undertaken pursuant to paragraph (e) of this clause has been unsuccessful, or the Subcontract Administrator has failed to timely issue a decision in accordance with subparagraph(d) (2) of this clause, and SUBCONTRACTOR desires to pursue further action, SUBCONTRACTOR must submit to the Board a written demand for arbitration of the claim within forty-five (45) Days after receipt of the Subcontract Administrator's decision, or within forty-five (45) Days after the Subcontract Administrator notifies SUBCONTRACTOR that its request for mediation has been denied or that the mediation undertaken pursuant to paragraph (e) has been unsuccessful, whichever is later.

- (g) Arbitration Procedures/Costs. The Board shall arbitrate the claim and any counterclaims in accordance with the Rules of the Board. All claims for \$100,000 or less shall be arbitrated under the Board's Small Claims (Expedited) Procedure. All other claims, regardless of dollar amount, shall be arbitrated under the Board's Accelerated Procedure. Both parties shall be afforded an opportunity to be heard and to present evidence in accordance with the Rules of the Board. Unless the Board orders otherwise, each party shall pay its own costs of prosecuting or defending an arbitration before the Board.

- (h) Review of Arbitration Decision. An arbitration decision shall be final and conclusive unless a party files a timely action to vacate, modify, or correct the decision pursuant to the Federal Arbitration Act.

- (i) Subcontractor Performance Pending Claim Resolution. SUBCONTRACTOR shall proceed diligently with performance of the subcontract and shall comply with any decision of the Subcontract Administrator pending final resolution of any claim or dispute arising under, or relating to, the subcontract.

- (j) Choice of Law. The subcontract shall be governed by federal law as provided in this paragraph. Irrespective of the place of award, execution, or performance, the subcontract shall be construed and interpreted, and its validity determined, according to the federal common law of government contracts as enunciated and applied to prime government contracts by the federal boards of contract appeals and federal courts having appellate jurisdiction over their decisions rendered pursuant to the Contract Disputes Act of 1978. The Federal Arbitration Act, other federal statutes, and federal rules shall govern as applicable. To the extent that federal common law of government contracts is not dispositive, the laws of the State of New Mexico shall apply.

- (k) Interest. Interest on amounts adjudicated due and unpaid by a party shall be paid from the date the complaining party files a demand for arbitration with the Board. Interest on claims shall be paid at the rate established by the Secretary of the Treasury of the United States pursuant to Public Law 92-41 (85 Stat. 97).

GC-37 BANKRUPTCY (Jun 2009)

In the event SUBCONTRACTOR enters into proceedings relating to bankruptcy, whether voluntary or involuntary, SUBCONTRACTOR agrees to furnish CONTRACTOR written notification of the bankruptcy within five (5) days of the proceedings.

GC-38 RECORDS AND AUDIT (Jun 2009)

- (a) SUBCONTRACTOR shall maintain records and accounts in connection with the performance of this subcontract which will accurately document incurred costs, both direct and indirect, of whatever nature for a period of three (3) years from final payment unless otherwise specified by applicable law. CONTRACTOR, GOVERNMENT or their representatives shall have the right to examine and copy, at all reasonable times and with advance notification, such records and accounts for the purpose of verifying payments or requests for payment when costs are the basis of such payment and to evaluate the reasonableness of proposed subcontract price adjustments and claims.
- (b) If CONTRACTOR or GOVERNMENT establishes uniform codes of accounts for the project, SUBCONTRACTOR shall use such codes in identifying its records and accounts.
- (c) For subcontracts in excess of \$100,000.00, FAR clause 52.215-2, Audit and Records – Negotiation (JUN 1999) shall also apply, when included in Appendix SFA-1, FAR and DEAR Clauses Incorporated By Reference.

GC-39A WARRANTY (Jun 2009)

- (a) SUBCONTRACTOR warrants that it will perform the services under this subcontract with the degree of high professional skill, sound practices and good judgment normally exercised by recognized professional firms providing services of a similar nature. In addition to all other rights and remedies which CONTRACTOR or GOVERNMENT may have, SUBCONTRACTOR shall, at its expense re-perform the services to correct any deficiencies that result from SUBCONTRACTOR'S failure to perform in accordance with the above standards.
- (b) All equipment and materials, if any, furnished under this subcontract shall be new, of clear title and of the most suitable grade of their respective kinds for their intended uses unless otherwise specified. All workmanship shall be first class and performed in accordance with sound industry practices acceptable to CONTRACTOR.
- (c) SUBCONTRACTOR warrants all equipment, materials and services it furnishes or performs under this subcontract against all defects for a period from Work commencement to a date twelve (12) months after acceptance of the project as a whole by GOVERNMENT or SUBCONTRACTOR'S most favored customer warranty term, whichever is longer.
- (d) In the event CONTRACTOR or GOVERNMENT discover defects in design, equipment, materials or workmanship at any time before the expiration of the specified warranty period, SUBCONTRACTOR shall, upon written notice from CONTRACTOR or GOVERNMENT and at SUBCONTRACTOR'S sole expense, cure any such defect by re-performing defective services and/or workmanship and repairing or replacing defective equipment and/or materials. All costs incidental to such corrective action including, but not limited to, review, access, removal, retesting and re-inspection shall be borne by SUBCONTRACTOR. If SUBCONTRACTOR fails to take corrective action within a reasonable time, CONTRACTOR or GOVERNMENT may perform the corrective measures by other reasonable means and SUBCONTRACTOR agrees to pay CONTRACTOR all actual costs, including labor burden, reasonably incurred by CONTRACTOR in performing or in having performed corrective actions. SUBCONTRACTOR further warrants any and all corrective measures for a period of twelve (12) months following their acceptance by CONTRACTOR or GOVERNMENT.

GC-41 INDEMNITY (Jun 2009- REVISED JULY 2019)

- (a) To the maximum extent permitted by applicable law, but no further, and subject to the requirements in SC-999 **No Consequential or Indirect Damages**, SUBCONTRACTOR hereby releases and shall indemnify, defend and hold harmless CONTRACTOR, GOVERNMENT and their subsidiaries and affiliates and the officers, agents, employees, successors and assigns and authorized representatives of all the foregoing from and against any and all suits, actions, legal or administrative proceedings, claims, demands, damages, liabilities, interest, attorney's fees, costs, expenses, and losses of whatsoever kind or nature in connection with or incidental to the performance of this subcontract, in any manner directly or indirectly caused, occasioned, or contributed to in whole or in part by the negligence or willful misconduct of SUBCONTRACTOR, its lower-tier suppliers, subcontractors or of anyone acting under its direction or control or on its behalf. SUBCONTRACTOR'S aforesaid indemnity obligations shall apply to the fullest extent permitted by law, but in no event shall they apply to liability to the extent caused by the negligence or willful misconduct of CONTRACTOR, or the GOVERNMENT.
- (b) The foregoing shall include, but is not limited to, indemnity for:
- (1) Property damage and injury to or death of any person, including employees of CONTRACTOR, GOVERNMENT or SUBCONTRACTOR.
 - (2) The breach by SUBCONTRACTOR of any representation, warranty, covenant, or performance obligation of this subcontract.
- (c) SUBCONTRACTOR specifically waives any immunity provided against this indemnity by an industrial insurance or workers' compensation statute.

GC-42 PATENT AND INTELLECTUAL PROPERTY INDEMNITY (Jun 2009)

- (a) SUBCONTRACTOR hereby indemnifies and shall defend and hold harmless GOVERNMENT, CONTRACTOR, and their representatives from and against any and all claims, actions, losses, damages, and expenses, including attorney's fees, arising from any claim, whether rightful or otherwise, that any concept, product, design, equipment, material, process, copyrighted material or confidential information, or any part thereof, furnished by SUBCONTRACTOR under this subcontract constitutes an infringement of any patent or copyrighted material or a theft of trade secrets.
- (b) If use of any part of such concept, product, design, equipment, material, process, copyrighted material or confidential information is limited or prohibited, SUBCONTRACTOR shall, at its sole expense, procure the necessary licenses to use the infringing or a modified but non-infringing concept, product, design, equipment, material, process, copyrighted material or confidential information or, with CONTRACTOR'S prior written approval, replace it with substantially equal but non-infringing concepts, products, designs, equipment, materials, processes, copyrighted material or confidential information; provided, however,
- (1) That any such substituted or modified concepts, products, designs, equipment, material, processes, copyrighted material or confidential information shall meet all the requirements and be subject to all the provisions of this subcontract; and
 - (2) That such replacement or modification shall not modify or relieve SUBCONTRACTOR of its obligations under this subcontract.
- (c) The foregoing obligation shall not apply to any concept, product, design, equipment, material, process, copyrighted material or confidential information the detailed design of which (excluding rating and/or performance specifications) has been furnished in writing by CONTRACTOR or GOVERNMENT to SUBCONTRACTOR.

GC-43 ASSIGNMENTS (Jun 2009)

- (a) Any assignment of this subcontract or rights hereunder, in whole or part, without the prior written consent of CONTRACTOR shall be void, except that upon ten (10) calendar days written notice to CONTRACTOR, SUBCONTRACTOR may assign, with CONTRACTOR'S approval, claims for monies due or to become due hereunder to a bank, trust company, or other financial institution including any federal lending agency. Any such assignment may cover all amounts payable under this subcontract and not already paid, and shall not be made to more than one party, except that any such assignment may be made to one party, as agent or trustee of two or more parties participating in SUBCONTRACTOR'S financing. Payments to an assignee of any monies due, or to become due hereunder, shall be subject to setoff or recoupment for any present or future claim or claims, which CONTRACTOR may have against SUBCONTRACTOR arising under this and other subcontracts. Upon such assignment, SUBCONTRACTOR shall provide CONTRACTOR with two copies of any such assignment and shall indicate on each invoice to whom payment is to be made.
- (b) This subcontract may be assigned by CONTRACTOR, in whole or in part, to GOVERNMENT or to others upon written notice to SUBCONTRACTOR.
- (c) No assignment will be approved which would relieve SUBCONTRACTOR or its sureties, if any, of their responsibilities under this subcontract.

GC-45 EXPORT COMPLIANCE (Jun 2009)

- (a) SUBCONTRACTOR agrees that U.S. export control laws and regulations may govern aspects of the performance of this subcontract. SUBCONTRACTOR also acknowledges that all applicable export rules and regulations of the origin countries shall apply to the exports of commodities, software and technology (technical data and assistance) under this subcontract. Additionally, SUBCONTRACTOR acknowledges that other rules and regulations may restrict the use of certain parties under this subcontract. Such laws, rules and regulations are generally described below. SUBCONTRACTOR shall be responsible for any delay resulting from SUBCONTRACTOR'S failure to comply fully and timely with any such laws, rules or regulations described herein.

- (1) Restricted Parties Lists

The U.S. Government, foreign governments and international organizations publish Restricted Parties Lists ("Lists") that identify parties (such as known or suspected terrorists, money launderers and drug traffickers) restricted from certain or all types of transactions. SUBCONTRACTOR shall review all applicable Lists prior to initiating transactions with any third party for the performance of all or any portion of the Work to ensure such third party is not identified on any applicable Lists. SUBCONTRACTOR shall not enter into any transactions with any third party identified on any applicable Lists.

- (2) U.S. Export Control Requirements

- (i) SUBCONTRACTOR will comply with all U.S. export control laws and regulations, including the provisions of the Export Administration Act of 1979 and the U.S. Export Administration Regulations (15 C.F.R. 730-774) promulgated thereunder, the U.S. Department of Energy's export regulations (10 C.F.R. Part 810), the Arms Export Control Act, the International Traffic in Arms Regulations, and the sanctions and laws administered by the U.S. Treasury Department, Office of Foreign Assets Control (OFAC). SUBCONTRACTOR acknowledges that these statutes and regulations impose restrictions on the import and export to foreign countries and foreign nationals of certain categories of items and data and that licenses from the U.S. Department of Energy, U.S. Department of Commerce, U.S. State Department and/or OFAC may be required before such items or data can be disclosed, and that such licenses may impose further restrictions on use of and further disclosure of such data. SUBCONTRACTOR further acknowledges that the information which CONTRACTOR may disclose to SUBCONTRACTOR pursuant to the subcontract may be subject to these statutes and regulations.

- (ii) All work produced by SUBCONTRACTOR that is deemed to be export controlled shall be clearly marked with a legend on each page which states "Restricted access and distribution pursuant to U.S. export control laws."

(3) Licensing Requirements

- (i) General: The United States of America and each country have export regulations that control commodities, software and technology for various reasons, such as national security, foreign policy, anti-terrorism, and to avoid the proliferation of weapons and potential weapons, e.g. certain nuclear, chemical or biological agents. Numerous countries have export regulations that specifically address dual-use items, meaning commercial items with the potential to be applied to military and/or weapon proliferation uses. SUBCONTRACTOR shall ensure that all necessary export licenses are timely obtained, or license exceptions confirmed in writing to CONTRACTOR, prior to the export of any commodity, software or technology. SUBCONTRACTOR shall provide to CONTRACTOR a copy of any export license obtained upon receipt by SUBCONTRACTOR, and in any event prior to the export occurring.
 - (ii) United States of America (USA) Export Licensing Requirements: SUBCONTRACTOR is solely responsible for obtaining any required USA export licenses for all commodities, software, and technology being supplied in the performance of the Work, except for any commodity, software or technology supplied by CONTRACTOR. A copy of the export license, or SUBCONTRACTOR'S rationale as to why a license is not required, shall be provided to CONTRACTOR in writing upon receipt of the export license or SUBCONTRACTOR'S determination that a license is not required, and in any event prior to the export occurring.
- (b) In the event work under this subcontract is performed off shore, unless otherwise expressly provided for or otherwise approved in writing by CONTRACTOR:
- (1) SUBCONTRACTOR shall use the specifications and technical data only for purposes of this subcontract;
 - (2) SUBCONTRACTOR shall not disclosure the specifications and/or technical data to any other person, except a lower-tier subcontractor within the same country where SUBCONTRACTOR is performing the work under this subcontract;
 - (3) Nothing in this subcontract shall permit SUBCONTRACTOR or any other non U.S. person to acquire any rights in the specifications and/or technical data;
 - (4) SUBCONTRACTOR, and any lower-tier subcontractor, shall destroy or return to CONTRACTOR all of the specifications and technical data upon completion of its subcontract; and
 - (5) SUBCONTRACTOR shall deliver the deliverables under this subcontract directly to and only to CONTRACTOR.
- (c) SUBCONTRACTOR hereby agrees to indemnify, defend and hold CONTRACTOR, GOVERNMENT, each of their respective affiliates and the respective directors, officers, employees and representatives of each harmless from and against any and all claims, legal or regulatory actions, final judgments, reasonable attorneys' fees, civil fines and any other losses which any of them may incur as a result of SUBCONTRACTOR'S failure to comply with its obligations under this clause.

- (d) The substance of this clause shall be included in all subcontracts at every tier.

GC-46 SUBCONTRACTS (Jul 2011) [Deviation]

- (a) SUBCONTRACTOR shall not subcontract with any third party for the performance of all or any portion of the Work without the advance written approval of CONTRACTOR. Purchase orders and subcontracts of any tier must include provisions to secure all rights and remedies of CONTRACTOR and GOVERNMENT provided under this subcontract, and must impose upon the lower-tier supplier and subcontractor all of the duties and obligations required to fulfill this subcontract as it relates to their portion of the Work. SUBCONTRACTOR shall provide written confirmation prior to commencement of work that SUBCONTRACTOR has included or will include (i.e. flow down) in subcontracts with its lower-tier suppliers and subcontractors all contractual, environment, safety, health, security and quality assurance requirements necessary to fulfill this subcontract as it relates to their portion of the Work. Additionally, when requested by CONTRACTOR, SUBCONTRACTOR shall provide written confirmation that SUBCONTRACTOR has included (i.e. flowed down) in subcontracts with its lower-tier suppliers and subcontractors all other duties and obligations required to fulfill this Subcontract as it relates to their portion of the Work.
- (b) Copies of all purchase orders and subcontracts are to be provided to CONTRACTOR upon request. Pricing may be deleted unless the compensation to be paid there under is reimbursable under this subcontract.
- (c) No subcontract will be approved which would relieve SUBCONTRACTOR or its sureties, if any, of their responsibilities under this subcontract.

GC-48B TERMINATION (Jun 2009)

FAR clause 52.249-6 titled "TERMINATION (COST-REIMBURSEMENT) (May 2004)" applies to this subcontract, as specified in Appendix SFA-1.

GC-49A FINAL INSPECTION AND ACCEPTANCE (Jun 2009)

When SUBCONTRACTOR considers the Work under this subcontract, or any CONTRACTOR specified segment thereof, complete and ready for acceptance, SUBCONTRACTOR shall notify CONTRACTOR in writing. CONTRACTOR will conduct such reviews, inspections and tests as needed to satisfy CONTRACTOR that each segment, or upon completion, the Work conforms to subcontract requirements. CONTRACTOR will notify SUBCONTRACTOR of any nonconformance and SUBCONTRACTOR shall take corrective action and the acceptance procedure shall be repeated as required by CONTRACTOR until each segment or, upon completion, the Work is accepted. If the Work is accepted in segments such acceptance is provisional pending Final Acceptance of the Work as a whole. CONTRACTOR'S written Notice of Final Acceptance of the Work shall be conclusive except for latent defects, fraud, or CONTRACTOR'S and GOVERNMENT'S rights under the General Condition titled "WARRANTY".

GC-50 NON-WAIVER (Jan 2010)

- (a) Failure by CONTRACTOR to insist upon strict performance of any terms or conditions of this subcontract shall not operate as, nor be deemed to be, a waiver or release of SUBCONTRACTOR'S obligations under this subcontract. The following illustrative examples include but are not limited to:
- (1) Failure or delay to exercise any rights or remedies provided herein or by law;
 - (2) The acceptance of or payment for any goods or services hereunder;
 - (3) Failure to properly notify SUBCONTRACTOR in the event of breach of any obligation;
 - (4) The review or failure by CONTRACTOR to review SUBCONTRACTOR submissions;

- (5) The inspection and test by CONTRACTOR or the failure to inspect and test the Work; and
 - (6) The termination either in whole or in part of Work under this subcontract.
- (b) CONTRACTOR or GOVERNMENT reserves the right to insist upon strict performance hereof and to exercise any of its rights or remedies as to any prior or subsequent default hereunder.

GC-51A REPRESENTATIONS AND CERTIFICATIONS (Mar 2012) (Does not apply in subcontracts below \$2,500)

All Representations and Certifications provided by SUBCONTRACTOR are incorporated by reference and made part of this subcontract.

GC-52 SUBCONTRACT CLOSE-OUT CERTIFICATION AND RELEASE REQUIREMENTS (Jun 2009)

To administratively close out this subcontract, SUBCONTRACTOR shall submit, in addition to other requirements of this subcontract, the following documentation:

- (1) Property Status

Include a certification that states the following:

“All Government and CONTRACTOR-furnished property, material, special tooling, and special test equipment furnished, acquired, or generated and accountable to this subcontract has been consumed, delivered or otherwise disposed of by transfer, plant clearance or other authorized means as instructed by CONTRACTOR.”

- (2) Release and Certificate of Final Payment

SUBCONTRACTOR and each assignee, if any, under an assignment entered into under this subcontract and in effect at the time of final payment under this subcontract, shall execute and deliver, at the time of, and as a condition precedent to, final payment under this subcontract, a release in the format and content provided by CONTRACTOR, discharging CONTRACTOR, GOVERNMENT, and their respective officers, agents, and employees, of and from all liabilities, obligations and claims arising out of or under this subcontract.

GC-55 SEVERABILITY (Jun 2009)

The provisions of this subcontract are severable. If any provision shall be determined to be illegal or unenforceable, such determination shall have no effect on any other provision hereof, and the remainder of the subcontract shall continue in full force and effect so that the purpose and intent of this subcontract shall still be met and satisfied.

GC-56 SURVIVAL (Jun 2009)

All terms, conditions and provisions of this subcontract, which by their nature are independent of the period of performance, shall survive the cancellation, termination, expiration, default or abandonment of this subcontract.

GC-57 RELEASE AGAINST CLAIMS (Jun 2009)

SUBCONTRACTOR shall promptly pay all claims of persons or firms furnishing labor, equipment or materials used in performing the Work hereunder. CONTRACTOR reserves the right to require

SUBCONTRACTOR to submit satisfactory evidence of payment and releases of all such claims. CONTRACTOR may withhold any payment until SUBCONTRACTOR has furnished such evidence of payment and release and shall indemnify and defend CONTRACTOR and GOVERNMENT against any liability or loss from any such claim.

GC-58 ACCOUNTS, RECORDS AND INSPECTION (Jan 2010)

- (a) *Accounts.* The SUBCONTRACTOR shall maintain a separate and distinct set of accounts, records, documents, and other evidence showing and supporting: all allowable costs incurred; collections accruing to the SUBCONTRACTOR in connection with the work under this subcontract, other applicable credits, negotiated fixed amounts, and fee accruals under this subcontract; and the receipt, use, and disposition of all Government property coming into the possession of the SUBCONTRACTOR under this subcontract. The system of accounts employed by the SUBCONTRACTOR shall be satisfactory to CONTRACTOR and NNSA and in accordance with generally accepted accounting principles consistently applied.
- (b) *Inspection and audit of accounts and records.* All books of account and records relating to this subcontract shall be subject to inspection and audit by CONTRACTOR, NNSA or their designees, at all reasonable times, before and during the period of retention provided for in paragraph (d) of this clause, and the SUBCONTRACTOR shall afford CONTRACTOR and NNSA proper facilities for such inspection and audit.
- (c) *Audit of Lower Tier Subcontractors' records.* The SUBCONTRACTOR also agrees, with respect to any lower tier subcontracts (including fixed-price or unit-price subcontracts or purchase orders) where, under the terms of the lower tier subcontract, costs incurred are a factor in determining the amount payable to the subcontractor of any tier, to either conduct an audit of the lower tier subcontractor's costs or arrange for such an audit to be performed by the cognizant government audit agency through the Subcontract Administrator.
- (d) *Disposition of records.* Except as agreed upon by CONTRACTOR/NNSA and the SUBCONTRACTOR, all financial and cost reports, books of account and supporting documents, system files, data bases, and other data evidencing costs allowable, collections accruing to the SUBCONTRACTOR in connection with the work under this subcontract, other applicable credits, and fee accruals under this subcontract, shall be the property of the Government, and shall be delivered to CONTRACTOR or otherwise disposed of by the SUBCONTRACTOR either as the Subcontract Administrator may from time to time direct during the progress of the work or, in any event, as the Subcontract Administrator shall direct upon completion or termination of this subcontract and final audit of accounts hereunder. Except as otherwise provided in this subcontract, all other records in the possession of the SUBCONTRACTOR relating to this subcontract shall be preserved by the SUBCONTRACTOR for a period of three years after final payment under this subcontract or otherwise disposed of in such manner as may be agreed upon by CONTRACTOR and SUBCONTRACTOR.
- (e) *Reports.* The SUBCONTRACTOR shall furnish such progress reports and schedules, financial and cost reports, and other reports concerning the work under this subcontract as the Subcontract Administrator may from time to time require.
- (f) *Inspections.* CONTRACTOR and NNSA shall have the right to inspect the work and activities of the SUBCONTRACTOR under this subcontract at such time and in such manner as they shall deem appropriate.
- (g) *Lower Tier Subcontracts.* The SUBCONTRACTOR further agrees to require the inclusion of provisions similar to those in paragraphs (a) through (g) and paragraph (h) of this clause in all subcontracts (including fixed-price or unit-price subcontracts or purchase orders) of any tier entered into hereunder where, under the terms of such subcontract, costs incurred are a factor in determining the amount payable to the lower tier subcontractor.

(h) *Comptroller General.*

- (1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.
- (2) This paragraph may not be construed to require the contractor or subcontractor to create or maintain any record that the contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.
- (3) Nothing in this contract shall be deemed to preclude an audit by the Government Accountability Office of any transaction under this contract.

GC-59 CERTIFICATION REGARDING FORMER UC OR CONTRACTOR EMPLOYEES (Feb 2015)

- (a) Effective June 1, 2006, individuals who retire under CONTRACTOR'S Defined Benefit Pension Plan (i.e., TCP-1), who wish to begin a retirement benefit, are required to have a true and complete severance from CONTRACTOR with no prior prearrangement for reemployment with CONTRACTOR or any of CONTRACTOR'S affiliated companies or subcontractors to do similar work. This can be documented by completing a form at the time of termination stating that no prearrangement for reemployment existed prior to the termination, and by demonstrating a true and complete severance from CONTRACTOR, before working for any of CONTRACTOR'S affiliated companies or subcontractors, for at least:
 - one hundred eighty (180) days, if under the age of sixty (60) at the time of termination; or
 - ninety (90) days, if age sixty (60) or above at the time of termination.
- (b) Effective June 1, 2006, individuals who retire under CONTRACTOR'S 401(k) Retirement Plan (i.e., TCP-2), before attaining age sixty (60), are required to have a true and complete severance from CONTRACTOR with no prior prearrangement for reemployment with CONTRACTOR or any of CONTRACTOR'S affiliated companies or subcontractors to do similar work. This can be documented by completing a form at the time of termination stating that no prearrangement for reemployment existed prior to the termination and by demonstrating a true and complete severance from CONTRACTOR, before working for any of CONTRACTOR'S affiliated companies or subcontractors, for at least one hundred eighty (180) days. Individuals who retire under CONTRACTOR'S 401(k) Retirement Plan after age sixty (60) do not have any restrictions on reemployment.
- (c) An individual who retired under the University of California Retirement Plan (UCRP) or the Public Employees Retirement System (PERS) may be immediately reemployed by any of CONTRACTOR'S affiliated companies or subcontractors, unless that individual also retired under one of CONTRACTOR'S retirement plans in which case such individual must also comply with paragraph (a) or (b) above.
- (d) Any former employee of CONTRACTOR or of the University of California (UC) who was terminated for cause or who resigned in lieu of termination for cause is prohibited from returning to work at Los Alamos National Laboratory (LANL). SUBCONTRACTOR and its lower tier subcontractors may not employ any former employee of CONTRACTOR or of UC, who was terminated for cause or who resigned in lieu of termination for cause, for any on-site work at LANL or for any work under this subcontract in which such former employee may have any direct or indirect substantive contact with a current CONTRACTOR employee, unless approved by CONTRACTOR in writing prior to commencement of work by SUBCONTRACTOR.

- (e) In order to assure compliance with paragraphs (a) through (d), SUBCONTRACTOR shall, with respect to its employees who are assigned to work under this subcontract and those of its lower tier subcontractors' employees who are assigned to work under this subcontract, certify that all individuals who are assigned to work under this subcontract are in compliance with the requirement of paragraphs (a) through (d) of this clause. Such certification must be provided in writing to CONTRACTOR before the start of work under this subcontract. In making this certification SUBCONTRACTOR and its lower tier subcontractors may rely on information provided by applicants for employment or current employees, so long as SUBCONTRACTOR and its lower tier subcontractors have exercised due diligence and have, at a minimum, obtained the following information from each applicant or employee:
- (1) whether the employee was a former UC or CONTRACTOR employee, and if so:
 - (i) the date of separation;
 - (ii) age at separation; and
 - (iii) reason for separation.
 - (2) whether the employee is a member of CONTRACTOR'S Defined Benefit Pension Plan (i.e., TCP-1) or CONTRACTOR'S 401(k) Plan (i.e., TCP-2); and
 - (3) confirmation that, if the employee retired under one of CONTRACTOR'S retirement plans, to the extent described above, the employee had no prior prearrangement for reemployment by SUBCONTRACTOR or one of its lower tier subcontractors prior to separation.
- (f) CONTRACTOR may exclude SUBCONTRACTOR from future subcontracts for a reasonable, specified period, if CONTRACTOR determines that SUBCONTRACTOR breached any of the requirements contained in paragraphs (a) through (d) of this clause.
- (g) SUBCONTRACTOR shall ensure that the substance of this clause is included in all lower-tier subcontracts awarded pursuant to this subcontract.

GC-60 SUBCONTRACTS WITH CONTRACTOR'S TEAM MEMBERS AND TEAM MEMBER AFFILIATES (Nov 2018)

- (a) As used in this provision:
- (1) Team Members means any of the following entities: Battelle Memorial Institute, The Texas A&M University System, and The Regents of the University of California.
 - (2) Team Member Affiliate means any person or entity which is a wholly owned, majority owned, or otherwise an affiliate of any Team Member. The term 'affiliate' is defined at FAR 2.101.
- (b) Because of restrictions in the contract between NNSA and CONTRACTOR concerning the payment of fee or profit when subcontracting with any Team Member or any Team Member Affiliate, as well as Organizational Conflict of Interest concerns, neither SUBCONTRACTOR nor any tier of its lower tier subcontractors or suppliers shall enter into a subcontract with any Team Member or any Team Member Affiliate to provide goods or services under this subcontract without the advance written approval of the Subcontract Administrator. In the event that written approval is granted to enter into a subcontract with a Team Member or a Team Member Affiliate, no fee or profit shall be paid to such Team Member or Team Member Affiliate under the proposed subcontract. In the event it is later determined that a Team Member or a Team Member Affiliate has been paid a fee or profit, SUBCONTRACTOR shall reimburse CONTRACTOR the amount of this fee or profit.
- (c) SUBCONTRACTOR shall include the substance of this provision in all lower tier subcontracts and purchase orders.

GC-77 GREEN / SUSTAINABLE PRODUCTS (Feb 2015)

Whenever possible, SUBCONTRACTOR shall offer green/sustainable products and/or repair/spare parts, which meet the (1) minimum content levels for sustainable products or (2) Environmental Program certification or (3) product attributes, listed at the *Sustainable Facilities Tool* website found at

<http://www.sftool.gov/greenprocurement>. Minimum content levels, environmental program certifications and product attributes, if any, are listed under the column titled "Procurement Info" for each product.

When green/sustainable products and/or repair/spare parts are purchased under this subcontract, when requested by CONTRACTOR, SUBCONTRACTOR shall provide quarterly reports to CONTRACTOR describing green/sustainable products procured by CONTRACTOR in the preceding quarter. Reports shall (at a minimum) include the following information:

1. Total dollar value of CONTRACTOR purchases for the preceding quarter, separated into each product category shown at the Sustainable Facilities Tool website.
2. Total dollar value of CONTRACTOR green/sustainable product purchases for the preceding quarter, separated into each product category shown at the *Sustainable Facilities Tool* website.

GC-80B INVOICING AND PAYMENT (Nov 2018)

- (a) SUBCONTRACTOR shall prepare and submit invoices pursuant to the Special Condition titled "MEASUREMENT FOR PAYMENT." CONTRACTOR may reject all or part of an invoice because the measurement for payment provisions have not been met, noting the deficiencies for SUBCONTRACTOR correction and compliance with the subcontract requirements.

CONTRACTOR may require SUBCONTRACTOR to withhold amounts from its billings until a reserve is set aside in an amount that the Subcontract Administrator considers necessary to protect CONTRACTOR'S interests. The Subcontract Administrator may require a withhold of up to 5 percent (5%) of the amounts due to SUBCONTRACTOR, but the total amount shall not exceed \$50,000.

The amounts withheld shall be retained until the Subcontract Administrator no longer deems such action necessary to protect CONTRACTOR'S interests.

Within thirty (30) calendar days after receipt of an invoice, CONTRACTOR will pay SUBCONTRACTOR the approved invoice amount, less any withholds.

CONTRACTOR may, as a condition precedent to any payment, require SUBCONTRACTOR to submit for itself, its subcontractors, immediate and remote, and all material suppliers, vendors, laborers and other parties acting through or under it, complete waivers and releases of all claims against CONTRACTOR or GOVERNMENT arising under or by virtue of this subcontract. Upon request, SUBCONTRACTOR shall in addition furnish acceptable evidence that all such claims have been satisfied.

Failure to specify the subcontract number or to submit supporting documentation may be cause for invoice rejection or delay in payment.

- (b) Any amounts otherwise payable under this subcontract may be withheld, in whole or in part, if:
- (1) Any claims are filed against SUBCONTRACTOR by CONTRACTOR, GOVERNMENT or third parties (for which CONTRACTOR or GOVERNMENT is or may become liable);
 - (2) SUBCONTRACTOR is in default of any subcontract condition;
 - (3) Adjustments are due from previous overpayment or audit result; or
 - (4) Offsets in favor of CONTRACTOR in other transactions are asserted.

CONTRACTOR will pay SUBCONTRACTOR such withheld payments when all issues are resolved to CONTRACTOR'S satisfaction.

If claims filed against SUBCONTRACTOR connected with performance under this subcontract, for which CONTRACTOR may be held liable if unpaid (e.g., unpaid withholding and back taxes), are not promptly discharged by SUBCONTRACTOR after receipt of written notice from CONTRACTOR to do so, CONTRACTOR may discharge such claims and deduct all costs in

connection with such removal from withheld payments or other monies due, or which may become due, to SUBCONTRACTOR. If the amount of such withheld payment or other monies due SUBCONTRACTOR under this subcontract is insufficient to meet such costs, or if any claim against SUBCONTRACTOR is discharged by CONTRACTOR after final payment is made, SUBCONTRACTOR and its surety or sureties, if any, shall promptly pay CONTRACTOR all costs incurred thereby regardless of when such claim arose.

- (c) Upon final acceptance of the Work by CONTRACTOR, SUBCONTRACTOR shall submit to CONTRACTOR a completed final release of claims acceptable to CONTRACTOR and a final correct invoice. Within thirty (30) calendar days after receipt of the final release of claims and final correct invoice, CONTRACTOR shall pay SUBCONTRACTOR the amount then remaining due.
- (d) SUBCONTRACTOR shall submit all invoices, in form and format directed by CONTRACTOR, electronically to invoices@lanl.gov or through the U.S. Postal Service to:

Triad National Security, LLC Los Alamos National Laboratory
Accounting Department, MS P240
P.O. Box 1663
Los Alamos, NM 87545-1663

GC-82 ON-SITE USE OF RADIOACTIVE MATERIAL (Aug 2014)

No radioactive material may be used or stored at the work site unless approved in advance in writing by the Subcontract Administrator.

GC-84 ASSESSMENT OF SUBCONTRACTOR'S PERFORMANCE (Aug 2014)

CONTRACTOR shall periodically assess SUBCONTRACTOR'S performance to document how well SUBCONTRACTOR performed to the various standards/requirements described in this subcontract. That information will be used by CONTRACTOR in the future to determine whether SUBCONTRACTOR will be invited to submit proposals/bids for future solicitations for similar work.

GC-85 LOWER-TIER SUBCONTRACTORS (Aug 2014)

- (a) SUBCONTRACTOR shall submit to CONTRACTOR the list of all lower-tier (at all tiers) subcontractors and their function, together with a point of contact address and telephone number for each such subcontractor. Whenever, for any reason, SUBCONTRACTOR needs to substitute for, add to, or remove one or more of the aforementioned lower-tier subcontractors from Work under this Subcontract, SUBCONTRACTOR shall do so only with the prior approval of CONTRACTOR.
- (b) CONTRACTOR may not approve any proposed additional/substitute lower-tier subcontractor if CONTRACTOR has actual knowledge of the proposed additional/substitute lower-tier subcontractor's poor environmental compliance or safety performance under existing subcontracts with CONTRACTOR or any work performed for others even if the proposed lower-tier subcontractor has otherwise met all other ES&H qualification requirements in Exhibit F of this subcontract.
- (c) SUBCONTRACTOR'S request for CONTRACTOR approval of additional/substitute lower-tier subcontractor(s) must include the following information for each proposed additional/substitute lower-tier subcontractor:
- A brief explanation of the need to alter the list of lower-tier subcontractors
 - Name, address, contact, and phone number of proposed lower-tier subcontractor
 - Summary list of tasks to be performed under this Subcontract by the proposed lower-tier subcontractor

- ESH qualification data for the proposed lower-tier subcontractor if required under Exhibit F of this subcontract.

GC-86 PROGRESS REPORTS (Aug 2014)

When requested by CONTRACTOR, SUBCONTRACTOR shall provide to CONTRACTOR, on a monthly basis, a concise summary report, in form and format and at a time directed by CONTRACTOR, describing the Work accomplished during the reporting period, Work forecasted to be completed during the next reporting period and a summary of problem areas, if any.

When requested by CONTRACTOR, CONTRACTOR and SUBCONTRACTOR shall meet weekly to review the status of the Work.

GC-88 MINIMUM WAGES UNDER EXECUTIVE ORDER 13658 (Mar 2015)

This clause implements Executive Order 13658, Establishing a Minimum Wage for Contractors, dated February 12, 2014, and OMB Policy Memorandum M-14-09, dated June 12, 2014.

- (a) Each service employee, laborer, or mechanic employed in the United States (the 50 States and the District of Columbia) in the performance of this contract by SUBCONTRACTOR or any lower-tier subcontractor, regardless of any contractual relationship which may be alleged to exist between SUBCONTRACTOR and each service employee, laborer, or mechanic, shall be paid not less than the applicable minimum wage under Executive Order 13658. The minimum wage required to be paid to each service employee, laborer, or mechanic performing work on this subcontract between January 1, 2015, and December 31, 2015, shall be \$10.10 per hour.
- (b) SUBCONTRACTOR shall adjust the minimum wage paid under this subcontract each time that Secretary of Labor's annual determination of the applicable minimum wage under section 2(a)(ii) of Executive Order 13658 results in a higher minimum wage. Adjustments to the Executive Order minimum wage under section 2(a)(ii) of Executive Order 13658 will be effective for all service employees, laborers, or mechanics subject to the Executive Order beginning January 1 of the following year. The Secretary of Labor will publish annual determinations in the Federal Register no later than 90 days before such new wage is to take effect. The Secretary will also publish the applicable minimum wage on www.wdol.gov (or any successor website). The applicable published minimum wage is incorporated by reference into this subcontract.
- (c) CONTRACTOR will adjust the subcontract price or subcontract unit price under this clause only for the increase in labor costs resulting from the annual inflation increases in the Executive Order 13658 minimum wage beginning on January 1, 2016. CONTRACTOR shall consider documentation as to the specific costs and workers impacted in determining the amount of the adjustment.
- (d) CONTRACTOR will not adjust the subcontract price under this clause for any costs other than those identified in paragraph (c) of this clause, and will not provide price adjustments under this clause that result in duplicate price adjustments with the respective clause of this subcontract implementing the Service Contract Labor Standards statute (formerly known as the Service Contract Act) or the Wage Rate Requirements (Construction) statute (formerly known as the Davis Bacon Act).
- (e) SUBCONTRACTOR shall include the substance of this clause, including this paragraph (e) in all subcontracts.

GC-999 Stop-Work Order (Aug 1989) [DEVIATION]

- (a) The Contracting Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Contracting Officer shall either-
- (1) Cancel the stop-work order; or
 - (2) Terminate the work covered by the order as provided in the Default, or the Termination for Convenience of the Government, clause of this contract.
- (b) If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule or contract price, or both, and the contract shall be modified, in writing, accordingly, if-
- (1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and
 - (2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; provided, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon the claim submitted at any time before final payment under this contract.
- (c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.
- (d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

Dated February 23, 2020

EXHIBIT "B"
SPECIAL CONDITIONS

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SC-2 AUTHORITY OF PERSONNEL (Nov 2018)

- (a) CONTRACTOR designates the below named individual as the Subcontract Administrator to administer the subcontract and act as CONTRACTOR'S authorized representative.

Gena Richardson
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop E540
 Los Alamos, NM 87545-1663
 Phone: (505) 665-0504
 Email: griehardson@lanl.gov

Additionally, all correspondence shall be issued and received by the designated Subcontract Administrator. The Subcontract Administrator is the only individual authorized to direct SUBCONTRACTOR to deviate from the express, written terms of the subcontract.

- (b) CONTRACTOR designates the below named individuals as the Person(s) In Charge (hereafter PIC), who are the points of contact for all of the technical aspects of the subcontract and are responsible for oversight of SUBCONTRACTOR's technical performance under this subcontract. The PIC is also responsible for monitoring and facilitating SUBCONTRACTOR compliance with various subcontract requirements, such as submission of technical deliverables and evidence of completion of training requirements.

Carolyn Zerkle
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C938
 Los Alamos, NM 87545-1663
 Phone: (505) 665-3728
 Cell: (505) 412-8866
 Email: czerkle@lanl.gov

Mary Hockaday
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C938
 Los Alamos, NM 87545-1663
 Phone: (505) 665-3728
 Cell: (505) 699-8102
 Email: mhockaday@lanl.gov

Evelyn Mullen
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop A135
 Los Alamos, NM 87545-1663
 Phone: (505) 665-7576
 Cell: (505) 699-0984
 Email: emullen@lanl.gov

Raeanna Sharp-Geiger
 Triad National Security, LLC
 P.O. Box 1663, Mail Stop A106
 Los Alamos, NM 87545-1663
 Phone: (505) 665-0136
 Cell: (505) 660-2722
 Email: raeanna@lanl.gov

Jim Jones
 Triad National Security, LLC
 P.O. Box 1663, Mail Stop C938
 Los Alamos, NM 87545-1663
 Phone: (505) 665-0144
 Cell: (505) 699-0632
 Email: jjones@lanl.gov

Alternate: Steven Clement
 Triad National Security, LLC
 Phone: (702) 295-6633
 Cell: (702) 280-1296
 Email: clement@lanl.gov

The PIC may utilize qualified technical personnel and administrative assistants to assist him/her in the performance of the PIC's duties. However, the designated PIC is ultimately responsible for Technical Oversight of the Work (i.e., the process by which a subcontract technical representative monitors and surveils a subcontractor's performance and compliance with subcontract terms and conditions). Should SUBCONTRACTOR and the PIC disagree over the technical aspects of the subcontract such matters will be immediately referred to CONTRACTOR'S Subcontract Administrator for resolution. The PIC does not possess any authority, express or implied, to direct SUBCONTRACTOR to deviate from the terms and conditions of the subcontract.

- (c) The Subcontract Administrator's Property Representative (SAPR) is:

ASM-PM Disposition Office
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C308 Los Alamos, NM 87545
 Phone: (505) 665-8079
 Fax: (505) 667-3195
 Email: disposition@lanl.gov

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The ASM-PM Disposition Office is designated to monitor the government property provided, acquired, or used in the performance of this subcontract. Any questions concerning said government property should be addressed to the Subcontract Administrator with a copy to the SAPR. The SAPR is also authorized to take any action necessary to ensure compliance with Federal Property Management Regulations, DOE Property Management Regulations, the LANL Property Management Manual and the terms of this subcontract regarding the appropriate use, loss, replacement, transfer, return, or other disposition of government-furnished property or subcontractor-acquired property. Notwithstanding the foregoing, the SAPR does not possess authority to change any of the requirements under this subcontract.

- (d) The Acquisition Services Management Division Manager, or the Manager's designee, may change the Subcontract Administrator, STR or SAPR at any time upon written notice to the SUBCONTRACTOR.

SC-3C COMMENCEMENT, PROGRESS AND COMPLETION OF THE WORK [Task Order Agreement] (Jun 2009)

- (a) Notwithstanding anything contained in the subcontract documents to the contrary, this "subcontract" does not procure or specify a firm quantity of services from SUBCONTRACTOR. It is a blanket agreement for the work or services specified in Exhibit D, Scope of Work, and provides the terms and conditions that will be applicable to any bilateral written task orders (i.e., orders for the performance of tasks during the period of performance) issued hereunder.

Period of Performance: June 04, 2019 through June 03, 2020.

- (b) SUBCONTRACTOR'S authority to perform work under this "subcontract" is contingent upon the issuance of one or more task orders. When a task order is issued, SUBCONTRACTOR shall furnish sufficient personnel, equipment, and facilities and shall work such hours to assure prosecution of the work to completion in accordance with the schedule contained in any task order.
- (c) The initial term of this "subcontract" during which task orders may be issued hereunder is **twelve (12) months** beginning on the effective date of this "subcontract". The term of this "subcontract" may be extended for up to **twelve (12) months** beyond the initial term by giving written notice to the SUBCONTRACTOR by the date specified as the expiration date of the subcontract. CONTRACTOR will attempt to give the SUBCONTRACTOR a preliminary written notice of its intent to extend the term of the subcontract at least sixty (60) days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of the subcontract. Failure to provide the preliminary notice at least sixty (60) days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a bilateral written subcontract modification issued by CONTRACTOR. Such extensions may be made from time to time or in one modification. The period of performance of tasks ordered and delivery dates for any deliverable items shall be specified in each task order.
- (d) The maximum cumulative dollar value of all task orders that may be issued pursuant to this "subcontract" is the ceiling price set forth below. A price ceiling will also be established for each task order and cannot be exceeded, except by mutual written agreement of the parties. The ceiling price for all work called for under this "subcontract" is **Ten Million U.S. Dollars (\$10,000,000.00)**. SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price for this "subcontract".

Dated February 23, 2020

- (e) CONTRACTOR may issue one or more task orders to SUBCONTRACTOR for work or services required by CONTRACTOR. When and if ordered by CONTRACTOR and accepted by SUBCONTRACTOR, SUBCONTRACTOR shall perform the work or furnish the services specified in a task order. Each task order issued shall: (1) be deemed to be an individual subcontract priced upon the basis specified in the task order; (2) contain a price ceiling that cannot be exceeded without mutual written agreement of the parties; and (3) be subject to the terms and conditions of this "subcontract". In the event of conflict between a task order and this "subcontract", this "subcontract" shall control. SUBCONTRACTOR shall complete any task order issued during the effective period of this "subcontract" and not completed within that period within the time specified in the task order. This "subcontract" shall govern the rights and obligations of the parties with respect to that task order to the same extent as if the task order was completed during the effective period of this "subcontract".
- (f) When applicable, SUBCONTRACTOR shall be required to submit certified cost or pricing data to CONTRACTOR prior to the issuance of a task order.

SC-5 CONTRACTOR-FURNISHED GOVERNMENT-OWNED MATERIALS AND EQUIPMENT (Nov 2017)

- (a) CONTRACTOR will furnish to SUBCONTRACTOR, at CONTRACTOR'S designated location or Jobsite storage area, the items listed below to be incorporated into or used in performance of the Work under this subcontract. Such items will be furnished, without cost to SUBCONTRACTOR, provided that SUBCONTRACTOR shall, at its expense, accept delivery thereof, load, unload, transport to points of use, and care for such items until final disposition thereof. At time of acceptance of any such item from CONTRACTOR, SUBCONTRACTOR shall sign a receipt therefor. Signing of such receipt without reservation therein shall preclude any subsequent claim by SUBCONTRACTOR that any such items were received from CONTRACTOR in a damaged condition and with shortages.
- (b) SUBCONTRACTOR shall comply with the requirements of FAR Subpart 45.5 *Support Government Property Administration* and the Government Property clauses incorporated herein in the administration of Government property.
- (c) Materials and/or equipment to be furnished by CONTRACTOR:
- N/A
- (d) If SUBCONTRACTOR is required to lift or move any CONTRACTOR-furnished government-owned materials or equipment, CONTRACTOR will supply the manufacturer's lifting and rigging instructions to SUBCONTRACTOR. Based on the provided instructions, SUBCONTRACTOR shall prepare a lifting and rigging plan for CONTRACTOR'S approval. SUBCONTRACTOR and its lower tier subcontractors shall not perform the lift/move without CONTRACTOR's written approval of SUBCONTRACTOR'S proposed lifting and rigging plan. Upon obtaining CONTRACTOR'S written approval of the plan, SUBCONTRACTOR shall perform the lift/move in strict compliance with the approved plan.

SC-6 CONTRACTOR-FURNISHED AND SUBCONTRACTOR-ACQUIRED ITEMS (Jan 2010)

(a) Utilities

The utilities listed below will be furnished by CONTRACTOR without cost to SUBCONTRACTOR, provided that all such utilities will be furnished at outlets existing on the Jobsite and SUBCONTRACTOR shall, at its expense, extend such utilities from said outlets to points of use and at completion of all the Work remove all materials and equipment used for such extensions:

- (1) Construction water, and
- (3) Electric Power

(b) Facilities

The facilities listed below will be furnished by CONTRACTOR. Such facilities may be used by SUBCONTRACTOR without charge, provided that any such use will be subject to written approval of CONTRACTOR.

- (1) Storage and working area

Dated February 23, 2020

SC-9 SERVICE CONTRACT LABOR STANDARDS DETERMINATION (Jun 2017)

SUBCONTRACTOR shall pay, and ensure its lower-tier subcontractors pay, all service employees employed in the performance of this subcontract in accordance with the requirements set forth in FAR clause 52.222-41, Service Contract Labor Standards (SCLS), as amended. A copy of SCLS Wage Determination No. **WD 15-5535 (Rev. 10) dated December 23, 2019**, which is applicable to this subcontract, is included and made part of this subcontract as Appendix B-1. (https://beta.sam.gov/wage-determination/2015-5535/10?keywords=2015-5535&sort=-relevance&index=&is_active=true&page=1)

SUBCONTRACTOR is required to post the Department of Labor Wage and Hour Division (WH) Publication 1313 Employee Rights on Government Contracts, currently available at <http://www.dol.gov/whd/regs/compliance/posters/govc.pdf>, with the applicable wage determination, in a prominent and accessible location at the worksite where both may be seen by all SUBCONTRACTOR employees performing work on the subcontract.

SC-10 INSURANCE REQUIREMENTS (Jun 2017) (Revised July 2019)

(a) SUBCONTRACTOR shall, at its expense, maintain in effect at all times, during the performance of the Work, insurance coverage with limits not less than those set forth below with insurers with an A.M. Best rating of not less than A-VII and under forms of policies satisfactory to CONTRACTOR.

- (1) Workers' Compensation with limits and coverage as required by any applicable State and Federal law or regulation.
- (2) Employer's Liability of not less than \$1,000,000 each accident.

The above policy shall include an Insurer's Waiver of Subrogation in favor of CONTRACTOR, the GOVERNMENT, each of their members, subsidiaries and affiliates, and the officers, directors and employees of each such entity.

- (3) Commercial General Liability Insurance

(i) SUBCONTRACTOR shall carry Commercial General Liability Insurance covering all operations by or on behalf of SUBCONTRACTOR providing insurance for bodily injury liability and property damage liability for the limits of liability indicated below and including coverage for:

- (A) Premises and Operations;
- (B) Independent Contractors
- (C) Products and Completed Operations for at least (24 months following final acceptance of the Project as a whole;
- (D) Contractual Liability applying to the indemnity agreement in the General Condition titled "INDEMNITY;"
- (E) Broad Form Property Damage (including Completed Operations);
- (F) Explosion, Collapse and Underground Hazards; and
- (G) Personal and Advertising Injury Liability.

(ii) The limits of liability for bodily injury, property damage and personal injury shall not be less than:

- \$2,000,000 Combined single limit for Bodily Injury and Property Damage each occurrence;
- \$2,000,000 Personal Injury Limit each occurrence;
- \$4,000,000 Products-Completed Operations Annual Aggregate Limit; and
- \$4,000,000 General Annual Aggregate Limit (other than Products-Completed Operations).

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- (iii) Coverage (a)(3) shall apply to the indemnity agreement in the General Condition titled "INDEMNITY".
 - (iv) To the maximum extent permitted by applicable law but no further, GOVERNMENT and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing shall each be named as an Additional Insured under the Commercial General Liability Insurance policy, including any Excess or Umbrella Liability Insurance(s) but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. Such insurance shall: (1) include an Insurer's waiver of subrogation in favor of each Additional Insured; (2) be primary and non-contributory as regards any similar insurance coverage maintained for or by the Additional Insureds whether primary, excess, contingent, or on any other basis; (3) contain a cross-liability clause, also known as separation of interest / severability of interests / separation of insureds condition; and (4) be on an occurrence policy form, not a claims made form. The insurance limits provided by SUBCONTRACTOR'S insurance (primary and excess) to the Additional Insureds must be exhausted before any contribution from such Additional Insureds' own insurance, but not other insurance applicable to a loss which may be subject to contribution.
- (4) Automobile Liability (Owned, hired and non-owned) with combined single limits of liability for bodily injury or property damage of not less than \$2,000,000 for any one occurrence. SUBCONTRACTOR'S Automobile Liability Insurance shall include coverage for Automobile Contractual Liability.
 - (5) In the event SUBCONTRACTOR maintains insurance covering loss or damage to equipment, tools or any other property of SUBCONTRACTOR such insurance shall include an Insurer's waiver of subrogation in favor of GOVERNMENT and CONTRACTOR.
 - (6) Pollution Liability Insurance in an amount not less than \$5,000,000 per occurrence/annual aggregate. Such insurance shall provide bodily injury and property damage and clean-up costs coverage for both sudden and gradual occurrences arising from the Work performed under this subcontract. If SUBCONTRACTOR activities involve professional services, coverage shall include pollution losses resulting from any deficient professional services. If Completed Operations is limited in the policy, such Completed Operation Coverage shall be for a period of not less than five (5) years. If such insurance is written on a claim-made form, such insurance shall include minimally a six (6) year extended discovery period. Insurance shall name the **University of Washington**, GOVERNMENT, and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. In addition, SUBCONTRACTOR'S insurer shall waive its right of subrogation against the Additional Insureds.
- (b) The required limits of coverage specified in (a)(1) through (a)(4) may be satisfied by a combination of a primary policy and an excess or umbrella policy. Coverage shall be provided on a follow form basis, include a Priority of coverage endorsement applying immediately before any other SUBCONTRACTOR Insurance coverage, whether primary, excess, contingent or any other basis and as excess over the primary policies of Employer's Liability, Commercial General Liability and Automobile Liability as required above. Such insurance shall include the same Additional Insured and Insurer's Waiver of Subrogation provisions required by the primary policies and shall be primary and non-contributory with any similar insurance coverage maintained by the Additional Insureds.

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(c) Should any of the Work involve:

- (1) construction or renovation of a building or structure. SUBCONTRACTOR shall carry Builders Risk Insurance, written on an "All Risk" basis with a limit equal to the total installed cost of the SUBCONTRACTOR'S Work. "Total installed cost" shall include the value of material and equipment provided by CONTRACTOR and GOVERNMENT while such property is in the care, custody, and control of SUBCONTRACTOR. This insurance will cover all material and equipment installed or to be installed in permanent buildings and facilities and will include coverage for material in transit and in offsite storage. To the maximum extent permitted by applicable law but no further, GOVERNMENT and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing shall each be named as an Additional Insured, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. In addition, SUBCONTRACTOR'S insurer shall waive its right of subrogation against the Additional Insureds. Should any loss or damage to the Work occur, deductibles under this policy shall be for SUBCONTRACTOR'S account.
- (2) marine operations. SUBCONTRACTOR shall provide or have provided coverage for liabilities arising out of such marine operations, including contractual liability under its Commercial General Liability Insurance or Marine Hull and Machinery Insurance and Protection and Indemnity Insurance. In the event such marine operations involve any SUBCONTRACTOR owned, hired, chartered, or operated vessels, barges, tugs or other marine equipment, SUBCONTRACTOR agrees to provide or have provided Marine Hull and Machinery Insurance and Protection and Indemnity Insurance and/or Charterer's Liability Insurance. The combined limit of the Protection and Indemnity Insurance and/or Charterer's Liability Insurance shall be at least \$5,000,000 per occurrence or the market value of the vessel, whichever is greater. The Protection and Indemnity and/or Charterer's liability and the Hull and Machinery coverage's shall include coverage for contractual liability, wreck removal, sudden and accidental pollution, tower's liability if applicable; special operations, and full collision coverage and shall be endorsed:
 - (i) To the maximum extent permitted by applicable law but no further, to provide full coverage to CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT, without limiting coverage to liability "as owner of the vessel" and to delete any "as owner" clause or other language that would limit coverage to liability of an insured "as owner of the vessel;" and
 - (ii) To waive any limit to full coverage for the Additional Insureds provided by any applicable liability statute.

All marine insurances provided by SUBCONTRACTOR shall include an Insurer's waiver of subrogation in favor of the Additional Insureds.

- (3) aircraft (fixed wing or helicopter) owned, operated or chartered by SUBCONTRACTOR, liability arising out of such aircraft shall be insured for a combined single limit not less than \$10,000,000 each occurrence and such limit shall apply to Bodily Injury (including passengers) and Property Damage Liability. To the maximum extent permitted by applicable law but no further, such insurance shall name CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. The insurance shall also include an Insurer's waiver of subrogation in favor of the Additional Insureds, state that it is primary insurance as regards the Additional Insureds and contain a cross-liability or severability of interest clause. If the aircraft hull is insured such insurance shall provide for an Insurer's waiver of subrogation rights in favor of CONTRACTOR and GOVERNMENT and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing. In the event SUBCONTRACTOR charters aircraft, the foregoing insurance and evidence of insurance may be furnished by the owner of the chartered aircraft, provided the above requirements are met.

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- (4) inspection, handling or removal of asbestos, SUBCONTRACTOR shall also carry Asbestos Liability Insurance in an amount not less than \$5,000,000 per occurrence/annual aggregate. The policy shall be written on an "Occurrence Basis" with no sunset clause. To the maximum extent permitted by applicable law but no further, such insurance shall name CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT.
- (5) transporting hazardous substances, SUBCONTRACTOR shall also carry Business Automobile Insurance covering liability arising out of the transportation of hazardous materials in an amount not less than \$2,000,000 per occurrence. Such policy shall include Motor Carrier Endorsement MCS-90. NEITHER CONTRACTOR NOR GOVERNMENT IS TO BE NAMED AN ADDITIONAL INSURED FOR THIS POLICY.
- (6) treatment, storage or disposal of hazardous wastes, SUBCONTRACTOR shall furnish an insurance certificate from the designated disposal facility establishing that the facility operator maintains current Environmental Liability Insurance in the amount of not less than \$5,000,000 per occurrence/annual aggregate. Coverage shall also include non-owned disposal site (NODS) coverage for losses at the Jobsite.
- (7) hauling of property worth in excess of \$300,000, SUBCONTRACTOR shall, unless provided by CONTRACTOR, also carry "All Risk" Transit Insurance, or "All Risk" Motor Truck Cargo Insurance, or such similar form of insurance that will insure against physical loss or damage to the property being transported, moved or handled by SUBCONTRACTOR pursuant to the terms of this subcontract. Such insurance shall provide a limit of not less than the replacement cost of the highest value being moved, and to the maximum extent permitted by applicable law but no further, shall insure the interest of CONTRACTOR and GOVERNMENT and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as their respective interests may appear, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT, and shall include an insurer's Waiver of Subrogation in favor of each such party.

(d) Submission of Insurance Certificates and Endorsements

SUBCONTRACTOR shall deliver to CONTRACTOR no later than ten (10) calendar days after subcontract award, but in any event prior to commencing the Work or entering the Jobsite, (1) certificates of insurance providing clear evidence that the coverages and at least the minimum limits of insurance are in full force and effect; and (2) copies of endorsements or analogous insurance policy documents certified by SUBCONTRACTOR's insurer that meet all applicable Additional Insured and Waiver of Subrogation requirements prescribed by this clause. SUBCONTRACTOR shall deliver to CONTRACTOR thirty (30) calendar days advance written notice prior to cancellation, termination or material alteration of said policies of insurance. Certificates shall identify on their face the project name and the applicable subcontract number. Delivery of certificates, endorsements and any notices of policy change shall be made to the Subcontract Administrator identified in clause SC-2 AUTHORITY OF PERSONNEL.

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(e) Non-Waiver and Other Conditions

- (1) CONTRACTOR'S acceptance of any evidence of insurance, including any certificate of insurance, shall not: (i) constitute acceptance of the adequacy of SUBCONTRACTOR'S insurance coverage, (ii) imply that any insurance coverage provided by SUBCONTRACTOR complies with the requirements of this subcontract, (iii) be deemed as a modification of any of SUBCONTRACTOR'S requirements in the subcontract, or (iv) waive CONTRACTOR'S or the GOVERNMENT'S rights to enforce any of SUBCONTRACTOR'S requirements in this subcontract, including the requirements concerning insurance coverage amounts, insurance terms and conditions and qualifications of insurance companies.
- (2) The requirements contained herein as to types and limits, as well as CONTRACTOR'S approval of insurance coverage to be maintained by SUBCONTRACTOR, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by SUBCONTRACTOR under this subcontract.
- (3) Neither CONTRACTOR nor GOVERNMENT is maintaining any insurance on behalf of SUBCONTRACTOR covering against loss or damage to the Work or to any other property of SUBCONTRACTOR.

SC-13E MEASUREMENT FOR PAYMENT (Nov 2018)

- (a) Labor effort expended in performance of this subcontract shall be reimbursed using the Fixed Hourly Rates listed in Exhibit C. If during performance of the subcontract, SUBCONTRACTOR determines that a category of labor not already listed in Exhibit C is necessary to achieve the subcontract objectives, SUBCONTRACTOR shall notify CONTRACTOR. Upon submission of necessary documentation by SUBCONTRACTOR, the parties may negotiate the Fixed Hourly Rate for the additional category for inclusion in Exhibit C by a modification to this subcontract.
- (b) In accordance with the clause entitled "FAR 52.232-7, Payments under Time-and-Materials and Labor-Hour Contracts", SUBCONTRACTOR may submit monthly billings for the direct labor performed and/or other direct charges incurred. A breakdown, satisfactory to CONTRACTOR, shall be included on or with each invoice, and contain the following minimum information:
 - (1) Subcontract number and period of performance.
 - (2) Direct Labor charges shall show labor category, hourly rate, and name of individual who performed the work. All Direct Labor charges shall be supported by copies of signed or electronic timesheets, or a summary sheet if a CONTRACTOR/GOVERNMENT approved time keeping system is used.
 - (3) Other Direct charges for lower-tier subcontracts shall be itemized, and include the name of the subcontractor, name of individual who performed the work, and applicable hourly rate. All labor charges shall be supported by copies of signed or electronic timesheets, or a summary sheet if a CONTRACTOR/GOVERNMENT approved time keeping system is used.
 - (4) Travel charges shall be itemized and supported by receipts, as required by SC-115 Travel Costs and Reimbursement. **Note:** Itineraries provided by sites such as Orbitz, Expedia, etc. shall only be deemed acceptable receipts for reimbursement if payment authorization is shown thereon.
 - (5) Materials charges shall be itemized and include a description of material(s), cost, and handling charges, if allowed.
 - (6) Charges for Subcontractor Acquired Property (SAP) shall be itemized, show manufacturer, item description, serial number, model number, date property was acquired, acquisition cost and be supported by copies of receipts for each item purchased.
 - (7) New Mexico Gross Receipts Tax (NMGRT) charges for reimbursement of NMGRT paid to lower-tier subcontractors shall be itemized, show amount of tax paid to each subcontractor, and NMGRT rate.
- (c) SUBCONTRACTOR shall maintain all records necessary for determining the amount of services or quantities of work to be paid under this subcontract and CONTRACTOR, at its sole discretion, may witness and verify such records. Measurements and computations shall be made by such methods as CONTRACTOR may consider appropriate and copies of notes, computations and other records made by SUBCONTRACTOR for the purpose of determining amounts or quantities shall be furnished to CONTRACTOR upon request.

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- (d) Each invoice or voucher submitted for payment shall bear the following certification signed by an official of SUBCONTRACTOR having authority to make such certification:

“The undersigned certifies that the information set forth herein and in supporting documentation is true and correct and may be used as a basis for payment by CONTRACTOR for the amounts requested in this invoice.”

SC-14 NUCLEAR HAZARDS INDEMNITY AND PRICE ANDERSON ACT (Jan 2010)

- (a) 48 CFR 952.250-70 Nuclear Hazards Indemnity Agreement As Modified By DOE Acquisition Letter 2005- 15 (Jun 2009)
- (1) *Authority.* This clause is incorporated into this contract pursuant to the authority contained in subsection 170d. of the Atomic Energy Act of 1954, as amended (hereinafter called the Act.)
- (2) *Definitions.* The definitions set out in the Act shall apply to this clause.
- (3) *Financial protection.* Except as hereafter permitted or required in writing by DOE, the contractor will not be required to provide or maintain, and will not provide or maintain at Government expense, any form of financial protection to cover public liability, as described in paragraph (4)(ii) below. DOE may, however, at any time require in writing that the contractor provide and maintain financial protection of such a type and in such amount as DOE shall determine to be appropriate to cover such public liability, provided that the costs of such financial protection are reimbursed to the contractor by DOE.
- (4)
- (i) *Indemnification.* To the extent that the contractor and other persons indemnified are not compensated by any financial protection permitted or required by DOE, DOE will indemnify the contractor and other persons indemnified against (i) claims for public liability as described in subparagraph (4)(ii) of this clause; and (ii) such legal costs of the contractor and other persons indemnified as are approved by DOE, provided that DOE's liability, including such legal costs, shall not exceed the amount set forth in section 170d. of the Act, as that amount may be increased in accordance with section 170t., in the aggregate for each nuclear incident or precautionary evacuation occurring within the United States or \$500 million in the aggregate for each nuclear incident occurring outside the United States, irrespective of the number of persons indemnified in connection with this contract.
- (ii) The public liability referred to in subparagraph (4)(i) of this clause is public liability as defined in the Act which (i) arises out of or in connection with the activities under this contract, including transportation; and (ii) arises out of or results from a nuclear incident or precautionary evacuation, as those terms are defined in the Act.
- (5)
- (i) *Waiver of Defenses.* In the event of a nuclear incident, as defined in the Act, arising out of nuclear waste activities, as defined in the Act, the contractor, on behalf of itself and other persons indemnified, agrees to waive any issue or defense as to charitable or governmental immunity.
- (ii) In the event of an extraordinary nuclear occurrence which:
- (A) Arises out of, results from, or occurs in the course of the construction, possession, or operation of a production or utilization facility; or
- (B) Arises out of, results from, or occurs in the course of transportation of source material, by-product material, or special nuclear material to or from a production or utilization facility; or

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- (C) Arises out of or results from the possession, operation, or use by the contractor or a subcontractor of a device utilizing special nuclear material or by-product material, during the course of the contract activity; or
 - (D) Arises out of, results from, or occurs in the course of nuclear waste activities, the contractor, on behalf of itself and other persons indemnified, agrees to waive:
 - (1) Any issue or defense as to the conduct of the claimant (including the conduct of persons through whom the claimant derives its cause of action) or fault of persons indemnified, including, but not limited to:
 - i Negligence;
 - ii Contributory negligence;
 - iii Assumption of risk; or
 - iv Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God;
 - (2) Any issue or defense as to charitable or governmental immunity; and
 - (3) Any issue or defense based on any statute of limitations, if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or change and the cause thereof. The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waiver shall be judicially enforceable in accordance with its terms by the claimant against the person indemnified.
 - (E) The term *extraordinary nuclear occurrence* means an event which DOE has determined to be an extraordinary nuclear occurrence as defined in the Act. A determination of whether or not there has been an extraordinary nuclear occurrence will be made in accordance with the procedures in 10 CFR part 840.
 - (F) For the purposes of that determination, “offsite” as that term is used in 10 CFR part 840 means away from “the contract location” which phrase means any DOE facility, installation, or site at which contractual activity under this contract is being carried on, and any contractor-owned or controlled facility, installation, or site at which the contractor is engaged in the performance of contractual activity under this contract.
- (iii) The waivers set forth above:
- (A) Shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action;
 - (B) Shall be judicially enforceable in accordance with its terms by the claimant against the person indemnified;
 - (C) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;

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- (D) Shall not apply to injury or damage to a claimant or to a claimant's property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;
 - (E) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place, if benefits therefor are either payable or required to be provided under any workmen's compensation or occupational disease law;
 - (F) Shall not apply to any claim resulting from a nuclear incident occurring outside the United States;
 - (G) Shall be effective only with respect to those obligations set forth in this clause and in insurance policies, contracts or other proof of financial protection; and
 - (H) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (A) the limit of liability provisions under subsection 170e. of the Act, and (B) the terms of this agreement and the terms of insurance policies, contracts, or other proof of financial protection.
- (6) *Notification and litigation of claims.* The contractor shall give immediate written notice to DOE of any known action or claim filed or made against the contractor or other person indemnified for public liability as defined in paragraph (4)(ii). Except as otherwise directed by DOE, the contractor shall furnish promptly to DOE, copies of all pertinent papers received by the contractor or filed with respect to such actions or claims. DOE shall have the right to, and may collaborate with, the contractor and any other person indemnified in the settlement or defense of any action or claim and shall have the right to (1) require the prior approval of DOE for the payment of any claim that DOE may be required to indemnify hereunder; and (2) appear through the Attorney General on behalf of the contractor or other person indemnified in any action brought upon any claim that DOE may be required to indemnify hereunder, take charge of such action, and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by DOE, the contractor or other person indemnified shall furnish all reasonable assistance in effecting a settlement or asserting a defense.
- (7) *Continuity of DOE obligations.* The obligations of DOE under this clause shall not be affected by any failure on the part of the contractor to fulfill its obligation under this contract and shall be unaffected by the death, disability, or termination of existence of the contractor, or by the completion, termination or expiration of this contract.
- (8) *Effect of other clauses.* The provisions of this clause shall not be limited in any way by, and shall be interpreted without reference to, any other clause of this contract, including the clause entitled Contract Disputes, provided, however, that this clause shall be subject to the clauses entitled Covenant Against Contingent Fees, and Accounts, records, and inspection, and any provisions that are later added to this contract as required by applicable Federal law, including statutes, executive orders and regulations, to be included in Nuclear Hazards Indemnity Agreements.
- (9) *Civil penalties.* The contractor and its subcontractors and suppliers who are indemnified under the provisions of this clause are subject to civil penalties, pursuant to section 234A of the Act, for violations of applicable DOE nuclear-safety related rules, regulations, or orders. If the contractor is a not-for-profit contractor, as defined by section 234Ad.(2), the total amount of civil penalties paid shall not exceed the total amount of fees paid within any 1-year period (as determined by the Secretary) under this contract.
- (10) *Criminal penalties.* Any individual director, officer, or employee of the contractor or of its subcontractors and suppliers who are indemnified under the provisions of this clause are subject to criminal penalties, pursuant to section 223(c) of the Act, for knowing and willful violation of the Atomic Energy Act of 1954, as amended, and applicable DOE nuclear safety-related rules, regulations or orders which violation results in, or, if undetected, would have resulted in a nuclear incident.

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- (11) *Inclusion in subcontracts.* The contractor shall insert this clause in any subcontract which may involve the risk of public liability, as that term is defined in the Act and further described in paragraph (4)(ii) above. However, this clause shall not be included in subcontracts in which the subcontractor is subject to Nuclear Regulatory Commission (NRC) financial protection requirements under section 170b. of the Act or NRC agreements of indemnification under section 170c. or k. of the Act for the activities under the subcontract.
- (12) *Effective Date.* This contract was awarded on or after August 8, 2005 and at contract award contained the clause at DEAR 952.250-70 (JUNE 1996) or prior version. That clause has been deleted and replaced with this clause. The Price-Anderson Amendments Act of 2005, described by this clause, control the indemnity for any nuclear incident that occurred on or after August 8, 2005. The Contractor's liability for civil penalties for violations of the Atomic Energy Act of 1954 under this contract is described by paragraph (i) of this clause.
- (b) The U.S. Department of Energy (DOE) will indemnify SUBCONTRACTOR against (1) claims for public liability, and (2) legal costs arising from any nuclear incidence, in accordance with the provisions of 48 CFR 952.250-70 as modified by DOE Acquisition Letter 2005-15.
- (c) The Department of Energy has promulgated Procedural Rules for DOE Nuclear Activities (10 CFR 820), Quality Assurance Requirements (10 CFR 830 Subpart A), Occupational Radiation Protection rules (10 CFR 835), Chronic Beryllium Disease Prevention Program Rules (10 CFR 850), and Worker Safety and Health Program (10 CFR 851) in implementation of the Price Anderson Amendment Act (PAAA) of 1988, Public Law 100-408, August 20, 1988, as amended. These rules govern the conduct of persons involved in DOE nuclear activities, and in particular, are designed to achieve compliance with DOE safety issues. SUBCONTRACTOR shall comply and is responsible for the compliance of its lower-tier subcontractors with the referenced DOE safety related rules and regulations. Violation of the applicable rules and regulations will provide a basis for the assessment of civil and criminal penalties.
- (d) SUBCONTRACTOR shall indemnify CONTRACTOR for any civil penalties levied against CONTRACTOR, pursuant to Section 234A of the Atomic Energy Act of 1954 as amended, for any violations of applicable DOE safety related rules, regulations, or orders committed by SUBCONTRACTOR or its lower-tier subcontractors and suppliers.

SC-17 POSSIBILITY OF CONTAMINATION OF SUBCONTRACTOR-OWNED MATERIALS AND EQUIPMENT (Jun 2009)

- (a) SUBCONTRACTOR'S equipment may become contaminated during the course of this Work. All SUBCONTRACTOR equipment must be fully decontaminated prior to removal from the Work Area. SUBCONTRACTOR shall provide a decontamination and contaminated material control procedure(s) for CONTRACTOR'S review and acceptance. SUBCONTRACTOR shall obtain CONTRACTOR'S authorization to remove any equipment from the Site.
- (b) Prior to SUBCONTRACTOR equipment arriving at the Jobsite, SUBCONTRACTOR shall inform CONTRACTOR of the specific radioactive contaminants that could be left over from previous work. CONTRACTOR will survey SUBCONTRACTOR'S equipment upon arrival at the Jobsite to establish a radiation contamination profile as a baseline for the non-CONTRACTOR radioactive contaminants. The equipment shall meet CONTRACTOR'S health physics standards for radioactivity before it will be permitted to enter the Jobsite. Any radioactive contaminants that are present must be in the form of surface contamination and shall not exceed the levels prescribed. Any preliminary decontamination to remove non-CONTRACTOR radioactive contaminants that may be required shall be performed by the SUBCONTRACTOR and will be performed at SUBCONTRACTOR'S expense. SUBCONTRACTOR will be solely responsible for the disposal of all wastes generated as a result of preliminary decontamination to remove non-CONTRACTOR radioactive contaminants. Neither CONTRACTOR nor the Government shall be designated as generator of such waste.

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- (c) The equipment shall also be free of non-radioactive hazardous contaminants upon arrival at the Jobsite. Verification shall be supplied by SUBCONTRACTOR that the equipment does not contain hazardous contaminants upon arrival, including residual hazardous contaminants that might be hidden inside equipment. In the event that the equipment is found to be contaminated with non-CONTRACTOR non-radioactive hazardous contaminants upon arrival, SUBCONTRACTOR will not be permitted to commence Work until the equipment is free of significant (non-trace) non-CONTRACTOR contamination, as defined by CONTRACTOR. Any preliminary decontamination to remove non-CONTRACTOR hazardous contaminants that may be required shall be performed by the SUBCONTRACTOR and will be performed at SUBCONTRACTOR'S expense. SUBCONTRACTOR will be solely responsible for the disposal of all wastes generated as a result of preliminary decontamination to remove non-CONTRACTOR non-radioactive hazardous contaminants. Neither CONTRACTOR nor the Government shall be designated as the generator of non-CONTRACTOR non-radioactive or hazardous waste.
- (d) Upon completion of the Work, CONTRACTOR will survey and inspect SUBCONTRACTOR'S equipment before it is removed from the Jobsite to establish a post-processing radiation contamination profile. If the equipment contamination profile exceeds the CONTRACTOR'S required exit decontamination limits, SUBCONTRACTOR shall carry out the necessary radioactive decontamination at the Jobsite in accordance with the SUBCONTRACTOR'S approved procedures.
- (e) SUBCONTRACTOR shall take all reasonable measures to mitigate the potential for contamination of its major equipment (major equipment excludes tools and equipment accessories) during performance of the Work. If CONTRACTOR determines that required exit decontamination limits for any item of major equipment is unattainable, despite SUBCONTRACTOR'S best efforts, SUBCONTRACTOR will be compensated for the appraised value of the major equipment considering age, condition, and value of similar equipment, unless contamination of said equipment is deemed by the CONTRACTOR to be the result of carelessness or negligence on the part of the SUBCONTRACTOR. If an agreed upon value cannot be negotiated, an independent appraiser may be used to determine value.
- (f) SUBCONTRACTOR shall provide to the STR, in advance of use, a list of tools, items of equipment and accessories (e.g. hand drills, transfer pumps, hoses, etc.) to be utilized in performance of that work that, because of the nature or configuration of the tool, equipment, or accessory, may be reasonably expected not to be capable of being decontaminated through reasonable efforts. Unless otherwise provided for in this Subcontract, SUBCONTRACTOR shall be responsible for the cost of all such tools, equipment, and accessories, and will not receive compensation pursuant to the paragraph above for tools, equipment, and accessories that are identified or should have been identified, pursuant to this paragraph.
- (g) In accordance with the general clause entitled "Indemnity", SUBCONTRACTOR shall indemnify CONTRACTOR and GOVERNMENT for any liability, including criminal liability, associated with its removing contaminated items in violation of this clause.

SC-19 PHYSICAL SECURITY (Jun 2009)

In performance of the Work under this subcontract, SUBCONTRACTOR shall maintain:

- (1) Control of material and equipment packaging, transportation, and delivery to the Jobsite.
- (2) Accountability procedures for storage, requisition and issue of material and equipment.
- (3) Personnel security to include, but not limited to, compliance with Project work rules (access, badging, prohibited activities, and items, etc.).
- (4) Communications security
- (5) Prompt reporting of incidents of loss, theft or vandalism to CONTRACTOR, subsequently detailed and provided in writing.

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SC-24 TECHNICAL DATA RIGHTS (Jun 2009)

CONTRACTOR and GOVERNMENT shall have, and SUBCONTRACTOR hereby grants CONTRACTOR and GOVERNMENT, a permanent, assignable, non-exclusive, royalty-free license to use any concept, product, process (patentable or otherwise), copyrighted material (including without limitation documents, specifications, calculations, maps, sketches, notes, reports, data, models, samples, drawings, designs, and electronic software) and confidential information owned by SUBCONTRACTOR upon commencement of the Work under this subcontract and used by SUBCONTRACTOR or furnished or supplied to CONTRACTOR or GOVERNMENT by SUBCONTRACTOR in the course of performance under this subcontract.

SC-101 COST ACCOUNTING STANDARDS LIABILITY (Nov 2018)

SUBCONTRACTOR is subject to the requirements contained in FAR 52.230-2 Cost Accounting Standards and FAR 52.230-6 Administration of Cost Accounting Standards.

Reference is made to the Cost Accounting Standards (CAS) clause(s) of the subcontract. Notwithstanding the provisions of those clause(s), or of any other provision of the subcontract, the SUBCONTRACTOR shall be liable to the Government for any increased costs, or interest thereon, resulting from any failure of the SUBCONTRACTOR, with respect to activities carried on at the site of the work, or of a lower-tier subcontractor, to comply with applicable cost accounting standards or to follow any practices disclosed pursuant to the requirements of such CAS clause(s).

SC-104 LABORATORY ANALYSES (Jun 2009)

When chemical, radiological or physical analyses of hazardous materials are required for their disposal, treatment, or recycling, and such analyses are not listed below as CONTRACTOR provided, SUBCONTRACTOR shall cause such analyses to be performed by an appropriately qualified laboratory. SUBCONTRACTOR shall identify the analyses to be performed and submit the name, qualifications, and procedures of the proposed laboratory(ies) to CONTRACTOR for review and approval prior to performing any analyses. Such analyses shall be at SUBCONTRACTOR'S expense. The following laboratory analyses will be provided by CONTRACTOR:

SC-105 LIMITATION OF FUNDS (Aug 2014)

- (a) The amount of funds presently available for payment by CONTRACTOR and allotted to this subcontract is **Eight Million Eight Hundred Forty Four Thousand Five Hundred Forty Eight US Dollars and Eleven Cents (\$8,844,548.11)**. SUBCONTRACTOR shall perform or have performed Work up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted.
- (b) CONTRACTOR will allot additional funds incrementally to the subcontract up to the full subcontract ceiling, provided funds are made available by GOVERNMENT. Directed Change Orders issued under the Changes clause shall not be considered an authorization to exceed the allotted amount.
- (c) SUBCONTRACTOR shall notify CONTRACTOR in writing whenever it has reason to believe that the amount to be invoiced under this subcontract in the next thirty (30) days, when added to all previously invoiced amounts, will exceed 80% of the total funds so far allotted. Upon notification, CONTRACTOR will allot additional funds or may suspend or terminate the subcontract in accordance with its terms.
- (d) SUBCONTRACTOR is not authorized to continue performance or otherwise incur costs in excess of the allotted funds, unless one of the following exceptions applies: (1) if required to protect and maintain the Work in accordance with General Condition GC-44 SUSPENSION; or (2) protect and preserve the property related to this subcontract in accordance with GC-47(x) TERMINATION FOR CONVENIENCE.

Dated February 23, 2020

SC-109 ON-SITE HANDLING AND DISPOSAL OF POTENTIALLY HAZARDOUS WASTE (Jun 2009)

If the Work under this subcontract includes any intrusive site drilling, boring, coring or sampling, investigation- derived waste (IDW) and equipment decontamination waste (EDW) may be produced as a result of these efforts. These wastes could include solids or liquids drawn from site wells for sampling purposes. All IDW and EDW shall be treated by SUBCONTRACTOR as if it were hazardous waste regulated under the federal Resource and Conservation Recovery Act of 1976, 42 U.S.C. 6901-6992 (RCRA) as amended, or any more stringent applicable regulations, unless and until SUBCONTRACTOR has been able to confirm, to the satisfaction of CONTRACTOR and the appropriate regulatory agencies, that the wastes are not regulated as hazardous. SUBCONTRACTOR shall complete a Waste Characterization Strategy Form (WCSF) with the appropriate level of detail for IDW and EDW generated by SUBCONTRACTOR. The WCSF shall be submitted to CONTRACTOR for review and approval. SUBCONTRACTOR shall temporarily store IDW and EDW in accordance with the WCSF. If contamination is suspected, IDW and EDW shall be stored within the contaminant exclusion zone pending waste determination, unless otherwise directed by CONTRACTOR.

SC-110 OFF-SITE TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIAL (Jun 2009)

- (a) SUBCONTRACTOR shall be responsible for the proper containerization, labeling, manifesting, storage and transport of hazardous waste. SUBCONTRACTOR shall also be responsible for ensuring that all waste profile work and land ban disposal notifications required at recycling, treatment, storage and/or disposal facilities have been properly completed in a timely manner.
- (b) Before SUBCONTRACTOR moves, removes, or transports any hazardous substance (as defined by CERCLA) or subcontracts for such services, SUBCONTRACTOR shall, pursuant to the General Conditions titled "ASSIGNMENTS" and "SUBCONTRACTS", provide CONTRACTOR the following information as to itself and any lower-tier subcontractor(s) involved in such activities:
- (1) Verification of its license to haul such materials;
 - (2) Verification of its EPA Identification Number;
 - (3) Copy of its HMTA/DOT and state transportation compliance program;
 - (4) Copy of its EPA/State EPA manifest handling procedure;
 - (5) Certification that there is no administration action or license revocation proceeding pending against it; and
 - (6) Copies of its land ban/pretreatment procedures, if applicable.
- (c) Before SUBCONTRACTOR arranges for the transport of any hazardous substance to a Treatment, Disposal, or Storage (TDS) facility, it shall ensure that all hazardous substances which are to be shipped will receive secure permanent disposal. In furtherance of that obligation SUBCONTRACTOR shall also provide CONTRACTOR the following:
- (1) Certification that the facility is licensed to receive the specific wastes to be transported there, including, if applicable, a current RCRA permit;
 - (2) Written commitment from the facility verifying that it can and will accept the materials proposed for disposal at the facility;
 - (3) Notice of any restrictions of the disposal facility which may cause rejection of transported materials;
 - (4) Sampling and characterization of materials required prior to delivery of materials to the facility;
 - (5) Restrictions on delivery schedules;
 - (6) Full disclosure and certification concerning any prior, existing, imminent, or pending enforcement or corrective action programs or listing on any applicable EPA or State list of violating facilities; and
 - (7) List of permit violations within last four years.

SC-115 TRAVEL COSTS AND REIMBURSEMENT (Nov 2018) [DEVIATION]

- (a) Costs for transportation, lodging, meals, and incidental expenses incurred by SUBCONTRACTOR personnel for travel relating to the performance of, and chargeable to this subcontract shall be reimbursed by CONTRACTOR, subject to the provisions and limitations of Federal Acquisition Regulation 31.205-46 *Travel costs*, as specified below.

Dated February 23, 2020

- (b) Limitations applicable to reimbursement of costs for transportation, lodging, meals, and incidental expenses:
- (1) An individual working for SUBCONTRACTOR or a lower-tier subcontractor working on this subcontract will not be eligible for reimbursement of transportation, lodging, meals or incidental expenses, if the individual's Regular Work Location lies within a 100 mile radius of the assigned work location, as defined in the statement of work / scope of work for this subcontract. An individual's Regular Work Location is defined as (1) the location where such individual regularly performs his or her duties for SUBCONTRACTOR or a lower-tier subcontractor, or (2) the individual's home or regular place of business, if such individual is only employed by SUBCONTRACTOR or a lower-tier subcontractor to work on this subcontract, and paid on a daily when-actually-employed basis.
 - (2) Federal Government holidays and weekends or other scheduled LANL non-workdays are considered non-workdays under this subcontract. Individuals will be considered to be in a per diem status on non-workdays except when:
 - (i) they return to their residence;
 - (ii) they are in a vacation leave status or leave without pay status at the end of the workday just before the non-workday;
 - (iii) they are in a vacation leave status or leave without pay status at the beginning of the workday following the non-workday and the period of leave on the workday is more than one-half of the prescribed working hours for that day; or
 - (iv) LANL shuts down operations for the annual winter closure in December.
 - (3) Transportation expenses:
 - (i) Costs for transportation based on mileage rates may not exceed the standard mileage reimbursement rate for a privately owned vehicle established by the U.S. General Services Administration found at www.gsa.gov/mileage.
 - (ii) Receipts supporting all reimbursements for transportation costs of \$75 or more, other than transportation based on mileage rates, shall be submitted to support invoices that include such costs.
 - (iii) Unless otherwise authorized by CONTRACTOR, SUBCONTRACTOR personnel who must travel to a work location away from their Regular Work Location shall only be entitled to reimbursement for the cost of transportation from their Regular Work Location to the assigned work location at the beginning of their assignment and from the assigned work location to their Regular Work Location at the completion of their assignment.
 - (4) Lodging expenses:
 - (i) Reimbursement for lodging expenses shall be based on the maximum lodging rates in effect at the time, as set forth in the Federal Travel Regulation (FTR), prescribed by the General Services Administration (GSA) for the location in which the work is performed. Domestic lodging rates may be found at www.gsa.gov/perdiem. Lodging rates shall be on a fixed basis equal to the referenced lodging rates, subject to adjustment as and in accordance with changes in the published GSA rates.
 - (A) If reimbursable lodging is not available at or near the assigned work location, CONTRACTOR may authorize a higher maximum reimbursement rate upon written request by SUBCONTRACTOR prior to securing lodging. A copy of CONTRACTOR'S written authorization, if given, shall be included with each invoice.

Dated February 23, 2020

- (ii) Receipts for lodging expenses shall be submitted to support invoices that include such costs.
 - (iii) Lodging will not be reimbursed to individuals who obtain lodging from friends or relatives with or without charge, unless: (1) the host actually incurs additional costs in accommodating the individual; (2) the additional costs are substantiated by the individual; and (3) the additional costs are determined to be reasonable by CONTRACTOR.
- (5) Meals and incidental expenses (M&IE):
- (i) Reimbursement for M&IE shall in no case exceed on a daily basis the maximum per diem rates in effect at the time, as set forth in the Federal Travel Regulation (FTR), prescribed by the General Services Administration for the location in which the work is performed. Domestic M&IE rates may be found at www.gsa.gov/perdiem. Receipts are not required for reimbursement of M&IE.
 - (ii) M&IE shall not be reimbursed for workdays in which less than half of the prescribed daily working hours have been worked.
 - (iii) M&IE shall not be reimbursed for more than three successive LANL non-workdays, unless otherwise approved in writing by the CONTRACTOR.
- (c) Additional limitations applicable to an individual working for SUBCONTRACTOR or a lower-tier subcontractor on assignment away from their Regular Work Location for a period expected to exceed thirty (30) consecutive calendar days:
- (1) Lodging and M&IE shall be billed separately.
 - (2) CONTRACTOR will not reimburse any costs associated with per diem (except for en-route travel) unless the individual working for SUBCONTRACTOR or a lower-tier subcontractor maintains a residence at or near his/her Regular Work Location.
 - (3) An individual working for SUBCONTRACTOR or a lower-tier subcontractor, on assignment at the same location for three months or more, shall be eligible for reimbursement of lowest cost, economy air fare, plus charges for up to two checked bags, as well as other reasonable, allowable, and allocable expenses, for one round trip to their residence, at or near their Regular Work Location, every four weeks thereafter. No trips will be authorized if less than thirty (30) days remain on the assignment. Only transportation costs that have actually been incurred shall be reimbursed.
- (d) Foreign travel is defined as travel from the United States to a foreign country and return, and travel between foreign countries. All foreign travel is subject to the prior approval of CONTRACTOR and DOE/NNSA. Foreign travel requests shall be submitted to CONTRACTOR at least sixty (60) days prior to the planned departure date. Travel must occur on U.S.-Flag air carriers.
- (e) By submitting an invoice for reimbursement of costs for transportation, lodging, meals, and incidental expenses, SUBCONTRACTOR certifies that all conditions of applicability specified herein for reimbursement of such costs have been satisfied.
- (f) SUBCONTRACTOR shall include the terms and conditions of this clause in all lower-tier subcontracts issued in performance of this subcontract.

SC-117 ACCRUAL REPORTING REQUIREMENTS (Apr 2016) [DEVIATION]

SUBCONTRACTOR shall provide to the Subcontract Administrator on a monthly basis, no later than the close of business on the tenth (10th) day of the each month. SUBCONTRACTOR'S best estimate of cumulative charges that will be incurred against the subcontract, from the end of the period covered by SUBCONTRACTOR'S last invoice through the end of the current month, using content and format that is appropriate to the Work and approved by the Subcontract Administrator.

SC-999 NO CONSEQUENTIAL OR INDIRECT DAMAGES (JULY 2019)

IN NO EVENT SHALL SUBCONTRACTOR OR ANY OF ITS REPRESENTATIVES BE LIABLE UNDER THIS AGREEMENT TO CONTRACTOR, FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE, OR ENHANCED DAMAGES, LOST PROFITS, OR REVENUES OR DIMINUTION IN VALUE, ARISING OUT OF OR RELATING TO AND/OR IN CONNECTION WITH THIS AGREEMENT REGARDLESS OF (A) WHETHER SUCH DAMAGES WERE FORESEEABLE, (B) WHETHER OR NOT SUBCONTRACTOR WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND (C) THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT, OR OTHERWISE) UPON WHICH THE CLAIM IS BASED.

Dated February 23, 2020

**EXHIBIT B
APPENDIX B-1**

LOS ALAMOS NATIONAL LABORATORY

SERVICE CONTRACT LABOR STANDARDS WAGE DETERMINATION

In accordance with FAR clause 52.222-41 titled "SERVICE CONTRACT LABOR STANDARDS" the attached Service Contract Labor Standards Wage Determination **WD 15-5535 (Rev. 10)** dated **December 23, 2019** is incorporated into this subcontract.

Dated 02/23/2020

EXHIBIT "C"
FORM A-1
SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS

1.0 NOT-TO-EXCEED AMOUNTS

- 1.1** This subcontract is priced on a Time and Materials basis. CONTRACTOR makes no commitments or guarantees as to the total amount or value of the Work to be performed. Payment under the subcontract shall be made based on the actual amount of Work satisfactorily performed in accordance with the subcontract terms. The Ceiling Price for all Work called for under this subcontract is specified on the Subcontract Form of Agreement.
- 1.2** SUBCONTRACTOR waives its right, if any, to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price or any maximum amount stated above except as authorized by a written change issued by the CONTRACTOR and received by SUBCONTRACTOR.

2.0 LABOR CATEGORIES AND QUALIFICATIONS The following categories of labor and associated qualifications will be needed to perform the Work.

Labor Category	Required Qualifications
Senior Project Manager	***
Project Manager	***
Engineering Manager	***
Building Manager/Site Superintendent	***
Senior Mechanic	***
Radiation Protection Manager/Transition Manager	***
Health and Safety Representative	***
Waste Manager	***
Lead RCT	***
RCT	***
Lead Decon Tech	***
Custodian/Laborer/Decon Tech	***
Program Manager	***
Project Coordinator	***
CHP	***
Technical Services Manager	***
Project Controls Specialist	***
Rad Engineer	***
RSO	***
Shipper	***
Administrative	***
Contract Administrator / Procurement Specialist	***

INDICATES CERTAIN INFORMATION IN THIS DOCUMENT WHICH HAS BEEN OMITTED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Dated 02/23/2020

3.0 FIXED HOURLY UNIT RATES

- 3.1** SUBCONTRACTOR shall be remunerated for performance of the Work by its employees on an hourly unit rate basis in accordance with the rates set forth in Table 3.1 below. The hourly rates constitute full payment for all costs in accomplishing the Work and include, but are not limited to, all payroll costs, overhead, profit and any other costs of whatever nature incurred by the SUBCONTRACTOR in the performance of the Work, except as specified in Section 4.0 below.

Table 3.1
Labor Classification Hourly Rates

Labor Category	Fully Loaded On-Site Hourly Rate	Fully Loaded Overtime Hourly Rate
Senior Project Manager	\$[***]	\$[***]
Project Manager	\$[***]	\$[***]
Engineering Manager	\$[***]	\$[***]
Building Manager/Site Superintendent	\$[***]	\$[***]
Senior Mechanic	\$[***]	\$[***]
Radiation Protection Manager/Transition Manager	\$[***]	\$[***]
Health and Safety Representative	\$[***]	\$[***]
Waste Manager	\$[***]	\$[***]
Lead RCT	\$[***]	\$[***]
RCT	\$[***]	\$[***]
Lead Decon Tech	\$[***]	\$[***]
Custodian/Laborer/Decon Tech	\$[***]	\$[***]
Program Manager	\$[***]	\$[***]
Project Coordinator	\$[***]	\$[***]
CHP	\$[***]	\$[***]
Technical Services Manager	\$[***]	\$[***]
Project Controls Specialist	\$[***]	\$[***]
Rad Engineer	\$[***]	\$[***]
RSO	\$[***]	\$[***]
Shipper	\$[***]	\$[***]
Contract Administrator/Procurement Specialist	\$[***]*	\$[***]*
Administrative	\$[***]*	\$[***]*

*Actuals for these two labor categories through February 22, 2020 allowed for invoicing. After February 22, 2020, Contract Administrator and Administrative will not be direct billed to the Task Order.

- 3.2** Labor effort expended in performance of this subcontract shall be paid using the Fixed Hourly Unit Rates listed above in accordance with the terms of FAR 52.232-7, Payments under Time-And-Materials and Labor-Hour Contracts, and other applicable subcontract terms. The rates for the first twelve month period of the subcontract term shall be as stated above. Fixed Hourly Rates for each subsequent twelve month period shall be established by multiplying the Fixed Hourly Rate for the preceding period by the percent change for 12 months ending in the 12th, 24th, 36th, and 48th month of the subcontract term by industry and occupational group "Professional, scientific, and technical services" as published in the U.S. Department of Labor Employment Cost Index, Table 5, *COMPENSATION (NOT SEASONALLY ADJUSTED): Employment Cost Index for total compensation, for private industry workers, by occupational group and industry*. The table is available at <https://www.bls.gov/news.release/eci.t05.htm>

[***] INDICATES CERTAIN INFORMATION IN THIS DOCUMENT WHICH HAS BEEN OMITTED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

Dated 02/23/2020

3.3 The following definitions shall apply.

3.3.1 The "Fully Loaded On-Site Hourly Rate" and "Fully Loaded Off-Site Hourly Rate" is calculated for an eight (8) hour day, forty (40) hour week (i.e., 5/40 schedule), or nine (9) hour day, eighty (80) hours per two weeks (i.e., 9/80 schedule).

3.3.2 "Fully Loaded Overtime Hourly Rate", if applicable, is for hours in excess of an eight (8) hour day, forty (40) hour week (i.e., 5/40 schedule), or nine (9) hour day, eighty (80) hours per two weeks (i.e., 9/80 schedule).

3.4 Specific assignments and classification of SUBCONTRACTOR'S workers for payment purposes shall be as approved by CONTRACTOR.

4.0 REIMBURSABLE TRAVEL AND MATERIALS CHARGES

4.1 Subject to the limitations and conditions set forth in the subcontract, SUBCONTRACTOR will be reimbursed for travel charges incurred in the performance of the Work. Supporting documentation, such as third party invoices, receipts, or other data as required by CONTRACTOR to support the validity of costs incurred under this section, shall be submitted with each invoice.

a. SUBCONTRACTOR shall refer to Exhibit B Special Conditions SC-115 Travel Costs and reimbursement (Nov 2018) for additional requirements related to the incurrence and reimbursement of costs for transportation, lodging, and meals and incidental expenses (M&IE).

b. SUBCONTRACTOR must provide receipts for:

(1) Any lodging expense

(2) Any other expense costing over \$75. If it is impracticable to furnish receipts in any instance as required by this subtitle, the failure to do so must be fully explained on the travel voucher. Mere inconvenience in the matter of taking receipts will not be considered;

4.2 Subject to the limitations and conditions set forth in the subcontract, SUBCONTRACTOR will be reimbursed for Materials charges incurred in the performance of the Work. "Materials" is defined in FAR 52.232-7 Payments under Time-and-Materials and Labor- Hour Contracts.

4.3 SUBCONTRACTOR shall be remunerated for use of equipment as authorized in advance by CONTRACTOR in accordance with subsequently issued task order statements of work specifically requiring said equipment at the rates set forth in Table 3.2 below. The weekly or monthly rates constitute full payment for all costs in accomplishing the Work and include, but are not limited to, all overhead, profit and any other costs of whatever nature incurred by the SUBCONTRACTOR in the performance of the Work. Rates in Table 3.2 are firm and shall not be subject to adjustment for the duration of the subcontract.

EXHIBIT "D"**SCOPE OF WORK AND TECHNICAL SPECIFICATIONS****1.0 Scope of Work**

SUBCONTRACTOR shall furnish qualified personnel, equipment, materials and facilities to perform all services necessary the work generally described below and required by or reasonably inferable from the Subcontract Documents, including this Exhibit "D" (the "work"). SUBCONTRACTOR shall not be relieved of performing the details of any work manifestly or customarily performed to carry out the intent of this subcontract. All work performed as if fully and correctly set forth and described in the subcontract. Los Alamos National Laboratory (LANL) will designate an on-site person in charge (PIC) who is responsible for coordinating and directing activities described below, and is solely responsible for directing in writing subcontract changes, including additions, deletions, rescheduling, and acceleration or deceleration, place of performance, means and methods, to all or part of the Statement of Work (SOW).

1.1 Project Organization

SUBCONTRACTOR will perform the work with dedicated personnel. The above notwithstanding, it is understood and agreed, that additional staff may be assigned to Task Order scopes of work, subject to written pre-approval of the PIC. A current organizational chart, that identifies key positions, shall be maintained by SUBCONTRACTOR at all times and provided to CONTRACTOR. Additional staff may be added as authorized by the PIC, for short-term work or increases in level of effort for the project.

Period of Performance: June 04, 2019 through June 03, 2020

2.1 Work Included**2.1.1 University of Washington (UW) Harborview Research & Training (R&T) Facility Surveys, Remediation, Decommissioning, Decontamination, and Final Status Survey**

1. Furnish all personnel, supervision, materials, supplies, equipment, tools, instrumentation, and other incidental items and services necessary to complete on-site assessment of Facility
2. Keep record of all building systems and equipment removed from the facility during remediation
3. Remediation of general areas within the Harborview R&T not specifically called out
4. Final status survey after remediation and support Washington Department of Health for confirmatory sampling of areas not listed in the other SOW items.

2.1.1.1 Curtain Wall - both interior Curtain Wall labs/structural Concrete and Exterior Curtain Wall Interstitial Spaces

1. Characterize interior spaces and identify extent of contamination spread.
2. Remediate interior spaces by general cleaning and removing drywall, insulation, ceiling tiles, cold rooms, and other items as necessary.

3. Access exterior curtain wall interstitial spaces as agreed to by LANL and UW to characterize the interstitial spaces.
4. Remediation interstitial spaces, if required. (TBD)

2.1.1.2 Rm 220, including side rooms and hallway

1. Characterize;
2. Remove equipment freezers, cardboard baler, and trash compactor;
3. Remove all ventilation ducting, ceiling and pipe insulation, light fixtures, drywall and insulation, and louvers;
4. General cleaning and remediation using various methods, including EAI System;
5. Final status survey after remediation and support Washington Department of Health for confirmatory sampling.

2.1.2 Disposition of Harborview Low-Level Radioactive Waste and Construction waste

1. Packaging and containers, transportation, and disposal of impacted materials from Phase 3 activities, as well as construction waste.
2. Packaging and containers, transportation, and disposal of impacted materials from Phase 4 activities, as well as construction waste.

2.1.3 Database Setup and Use Project

1. The “Relativity” database platform is being used for this project. Relativity is web-based platform for the review and management of electronically stored information and paper-based data.

Perma-Fix Environmental Services, Inc. (PESI) proposes to hire two (2) part-time employees (data entry clerks) working forty (40) hours per week.

The scope of work completed to date includes the entering of existing data into the database [including the Chase Environmental Group, Inc. (Chase) data set (the hard drive content) validation]. The scope of work going forward is to: (1) enter data generated during the performance of the remediation project, (2) upload draft documents that are out for review, and (3) upload final documents that are used for work execution (e.g., work packages); and (3) upload plans and reports associated with Final Status Surveys (FSS). A summary of the database content is as follows:

- a) “Baseline” building condition information (For example, engineering and architectural information);
- b) Radiological characterization/survey data generated by INIS, DOE (if any), Chase and PESI;
- c) Data and/or reports documenting remediation results and remediation efforts;

- d) Routine air monitoring and routine survey data/results;
 - e) Characterization and remediation plans and procedures used to generate reported characterization/survey data and plan remediation work;
 - f) Final Status Survey plans and reports;
 - g) Work execution documentation including Work Instructions (WIPs), Job Hazards Analyses (JHA), and Radiation Work Permits (RWPs);
 - h) Engineering proposals;
 - i) Building information (i.e. drawings and plans);
 - j) Stakeholder meeting presentations (e.g., “slide decks”), minutes and referenced or incorporated reports or data presented at the meetings or included in the reports.
2. Data will be organized and labeled in such a way to make it easily retrievable by project stakeholders
 3. Characterization and survey data with supporting documentation to be uploaded on a weekly basis

2.1.4 General/Fume Exhaust

1. Characterization, engineering analysis, remediation, and final status survey of both the general and fume exhaust systems

2.1.4.1 EAI GE System

1. Technology Demonstration;
2. If Tech Demo successful, clean elevated spots identified in the O2 tank farm and as otherwise directed.

2.1.4.2 Remediation of GE System

1. Remedial action where determined by category and subsystem:
 - a) Category A: Less than MDC
 - Will perform an internal contamination survey on GE-3 and GE-4 with a specific focus on fan blades. If the category of these fans change to C or D based on the internal surveys, this will be reported to the G5 and a proposed remediation path developed consistent with these guiding principles;
 - If there is removable contamination, SUB will make a good faith effort to remediate; otherwise, no further action is required on other subsystems.
 - b) Category B: Greater than MDC, but less than 10% of DCGL (below action level)
 - Will perform an internal contamination survey on GE-1 and GE-2 with a specific focus on fan blades. If the category of these fans change to C or D based on the internal surveys, this will be reported to the G5 and a proposed remediation path developed consistent with these guiding principles;

- If there is removable contamination, SUB will make a good faith effort to remediate; otherwise, no further action is required on other subsystems.
- c) Category C: Greater than 10% of DCGL (above action level), but less than DCGL (less than release limits)
- This includes only 2 areas: GE-2 fan discharge duct and the crosstie plenum;
 - SUB has good access to the two above areas and will plan to clean/decontamination;
 - If there is removable contamination, SUB will make a good faith effort to remediate.
- d) Category D: Greater than DCGL (above regulatory release limit)
- This includes the ducts on the second floor, the Southeast Riser, and the East Plenum;
 - Sub will remove and replace the ducts on the second floor;
 - We have good access to the Southeast Riser and the East Plenum and we will clean/decontaminate;
 - If there is removable contamination, Sub will make a good faith effort to remediate.
- e) As a general principle representing good housekeeping and As Low as Reasonably Achievable (ALARA) principles, we agreed that if there is removable contamination, SUB will make a good faith effort to remediate.
- f) As we go through the system and remediate, we will pay close attention to the areas and places where people will likely touch—for example, air registers, fire dampers, and instrumentation as well as bends in ducting where contamination may get concentrated. SUB will also ensure that there is a good statistical sampling of these areas during Final Status Surveys (FSS).

2.1.4.3 Final Status Survey of GE System

1. Final status survey after remediation and support Washington Department of Health for confirmatory sampling.

2.1.4.4 Remediation of FE System

1. TBD

2.1.4.5 Final Status Survey of FE

1. Final status survey after remediation and support Washington Department of Health for confirmatory sampling.

2.1.5 Harborview R&T Freight Elevator

1. Perma-Fix Characterization Summary and Engineering Assessment of Freight Elevator (CEA-HRT-INIS-01, dated September 09, 2019);
2. Remediation of Freight Elevator as documented on October 16, 2019;
3. Final status survey after remediation and support Washington Department of Health for confirmatory sampling.

2.1.6 Exhaust Ventilation Systems (EF-2, EF-3, and EF-8)

1. Remediation and final status survey and support Washington Department of Health for confirmatory sampling of Exhaust Ventilations Systems as documented on November 7, 2019.

2.1.7 Biological Safety Cabinets

1. Fumigation and Disposal of Biological Safety Cabinets at Harborview R&T Building as originally documented on November 7, 2019

2.1.8 O2 Farm Scope

Temporary O2 Farm

1. Survey area for temporary O2 tank trailer and delivery system;
2. Assist Harborview/UW as needed to place temporary O2 system;
3. Remediation to acceptable levels any area found to be Cs contaminated;
4. Provide all survey/sample data to LANL, UW for review;
5. Full time guard to secure the temporary O2 farm.

Existing O2 Tank Farm

1. Survey and characterize the extent of condition of the existing O2 tank farm area;
2. Plan for and remediate areas found contaminated to acceptable levels using typical means and methods;
 - 2.1 If EAI GE System demonstration successful, clean elevated spots identified in the O2 Farm
3. Remove and replace any materials/equipment as necessary (portable fan, etc...) with like equipment;
4. Provide all initial and final survey data to LANL and UW for review; and,
5. Final status survey after remediation and support Washington Department of Health during confirmatory sampling.

2.1.11 Outside Area (structures, equipment, asphalt, concrete, and soil as need)

1. Survey and remediate surfaces or remove and replace asphalt and concrete surfaces as needed;
2. Provide soil sampling and remove as needed;
3. Final status survey after remediation and support Washington Department of Health for confirmatory sampling

3.0 Applicable Policies and Procedures

In performing tasks under this Subcontract at a University of Washington facility, SUBCONTRACTOR shall comply with the applicable provisions of the University of Washington Safety Requirements Attached hereto as Appendix A.

Additionally, for each task described, SUBCONTRACTOR shall provide a site-specific safety plan describing in sufficient detail how it will perform work in accordance with Appendix A. Site Specific Safety Plan shall be reviewed and approved by the LANL PIC prior to commencement of the task.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies minimum requirements for safety on the University of Washington (Owner) worksite including:

1. Subcontractor responsibility (regarding safety)
2. Subcontractor safety program and plan submittals
3. Subcontractor safety requirements
4. Subcontractor safety reporting
5. "Fire safety" requirements
6. Chemical hazard communication
7. Chemicals of interest reporting

B. Owner's forms referenced in this Section include:

1. Chemicals of Interest – Contractor Declaration and Reporting Form

1.2 SUBCONTRACTOR RESPONSIBILITY

A. The Subcontractor is solely and completely responsible for compliance with all applicable laws, codes and regulations regarding safety (whether noted in this Section or not) and for creating and maintaining a safe working environment, including safety of all persons and property on the jobsite (whether the requirements of this Section address a particular situation or not).

B. The Subcontractor shall maintain the jobsite and perform the Work in a manner which meets or exceeds statutory and regulatory requirements for the provision of a safe place to work and which minimizes safety risks to personnel of the Subcontractor, Subcontractors, Owner, general public or other parties. This obligation shall apply continuously and not be limited to normal working hours.

1. The Subcontractor shall ensure that all Subcontractor and Subcontractor personnel are provided sufficient training, and shall take such actions as are necessary to maintain a safe environment on the construction site. Such training and actions shall include, but not be limited to, ensuring that such employees are familiar with governing work safety requirements and the requirements for compliance with applicable regulations.
2. The Subcontractor shall monitor the jobsite to ensure that employees do not create unsafe conditions for others, and to comply with the provisions of the Site Specific Safety Plan.
3. The Subcontractor shall establish and communicate clear expectations to its employees and Subcontractors of any tier (and their employees) of their obligation to notify the Subcontractor and any at risk party of any potential health or safety hazard affecting themselves or others.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

4. The Subcontractor shall conduct on-site safety meetings weekly, or other frequency as appropriate, that shall be mandatory for all employees.
- C. The Subcontractor shall designate a full-time on-site competent individual to be the “Safety and Health Officer” who is qualified and authorized to supervise and enforce compliance with the Subcontractor’s Site Specific Safety Plan during the performance of the Work. The Subcontractor is responsible to ensure that all necessary monitoring equipment, protective clothing, and other supplies and equipment are available to implement the Plan.
 1. The Subcontractor shall require each Subcontractor to provide a fulltime on-site safety manager (competent individual) for the duration of work at the Project site. If the man- load is below fifty (50) field workers, the Subcontractor may designate its Superintendent as the safety manager. If the man-load is fifty (50) or above field workers on-site, the Subcontractor shall provide and designate a dedicated competent individual as safety manager whose sole responsibility is Project safety including, but not limited to: review pre-task plans, critical lift plans, rigging and installation means and methods, fall protection, trenching excavations, electrical safety, Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Act of 1973 (WISHA) regulations compliance, and second tier Subcontractor safety monitoring and compliance.
- D. Safety Violations: In the event of WISHA violations by the Subcontractor or any of its suppliers or Subcontractors of any tier for unsafe practices involving imminent danger to personnel of the Owner, Contractor, Subcontractors, or others, the Subcontractor shall immediately correct the hazardous situation which caused the violation prior to any work continuing in the affected area. If such violations exist and corrective actions have not been taken by the Subcontractor, the Owner may order the Subcontractor to stop work (to be followed up in writing the same day), until satisfactory corrective action has been taken per Article 3.04 of the General Conditions.

1.3 SUBCONTRACTOR SAFETY REQUIREMENTS

- A. Safety Training: Subcontractor shall provide work site orientation for all employees (including Subcontractor employees) to become familiar with the Site Specific Safety Plan prior to commencing work. Subcontractor shall, on a weekly basis, perform safety training on hazards specific to the phase of work for all employees. These meetings shall be mandatory for all work employees.
 1. Subjects should include site specific safety issues and procedures and discussion of corrections resulting from any violation in safety procedures. A log of subjects covered and a copy of the attendance records of each meeting shall be submitted to the Owner’s Representative on the day the meeting occurs.
- B. Respiratory Equipment: Any personnel performing work requiring the use of respiratory protective equipment shall be fully trained in the use of such equipment. Subcontractor must have a respiratory protection program and ensure that all workers wearing respirators have medical clearance and fit testing, as appropriate, for the type of respirators used.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

- C. Personal Protective Equipment: Subcontractor shall ensure all construction personnel are equipped with and utilize personal protective equipment in accordance with Labor and Industries standards. As a minimum requirement, all personnel working on the work site shall be required to use approved hardhats, safety glasses, appropriate gloves, and substantially constructed work boots. In addition, high-visibility safety apparel shall be worn in accordance with the American National Standards Institute and the International Safety Equipment Association (ANSI/ISEA) standard 107-2004.
- D. First Aid: The Subcontractor shall maintain at the Subcontractor's field office, or other well known place at the Project site, all materials (e.g., a first aid kit) necessary for giving first aid to the injured, and shall establish, publish, and make known to all employees procedures for ensuring immediate removal to a hospital or a doctor's care, persons (including personnel) who may have been injured on the work site. Work site personnel shall not work on the work site before the Subcontractor has established, and made known, procedures for removal of injured persons to a hospital or a doctor's care. If the Subcontractor and/or any Subsubcontractors work crew consist of five or more employees, the Subcontractor shall ensure that at least one of such employees has a valid and effective first aid card.
- E. Safety Walkthrough: In addition to WISHA requirements, the Subcontractor shall conduct a safety walkthrough of the Project with the Owner's Representative a minimum of once a month during the course of work. If a safety manager is required for any Subcontractor, the safety manager shall also attend the safety walkthrough. The Subcontractor shall:
 - 1. Document and maintain a written record of the hazards and unsafe practices noted during the walk-through and provide copies to the Owner as requested;
 - 2. Ensure that corrective action is promptly taken to eliminate the items recorded; and
 - 3. Maintain copies of all inspections performed by other competent individuals on the work site during the course of work.
- F. Job Hazards Analysis: The Subcontractor shall plan daily work, considering procedures with the potential for personnel injury and implement appropriate practices to avoid injuries with focus on engineering controls, personal protective equipment needs, and mitigation for exposure to cuts and lacerations. At each work site progress meeting, the Subcontractor shall present its plan for addressing hazards likely to be encountered in the next week.
 - 1. The Subcontractor shall develop and implement a program requiring task planning at the foreman level, including at the Subcontractor's foreman level.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

1.4 SUBCONTRACTOR SAFETY REPORTING

- A. Reporting Injuries and Incidents: Subcontractor shall immediately notify the Owner's Representative of any injury or incident to persons, including personnel, on the work site. Subcontractor shall conduct an immediate investigation with an emphasis on preventative actions and lessons learned. The Subcontractor and its Subcontractor shall document the investigation and submit a hard copy of the report on OSHA Form 301 "Injury and Illness Report," or equivalent, to the Owner within 24 hours of the incident. The Subcontractor shall report on a monthly basis the total number of hours worked on-site by the Subcontractor's employees and Subcontractors, and the total number of recordable incidents and lost time accidents. Subcontractor shall submit copies of the Project First Aid Log to the Owner's Representative on a monthly basis.
- B. Reporting Potentially Serious Hazards: Subcontractor shall immediately notify the Owner's Representative of any potentially serious hazard to persons, including personnel, on the work site. Subcontractor and its Subcontractor shall conduct an immediate investigation and submit a report to the Owner's Representative within 24 hours of becoming aware of the potentially serious hazard. The report shall describe the potentially serious hazard, the results of the Subcontractor's investigation, and any steps the Subcontractor has taken to prevent an injury or incident from occurring based on the potentially serious hazard.
- C. Emergency Procedures:
 - 1. For emergencies requiring an ambulance, fire department, or police assistance, the Subcontractor shall call emergency services (fire and police at 911).
 - 2. Should the Subcontractor find it necessary to call for non-emergency police assistance or protection in the exercise of the Subcontractor's responsibilities on the Seattle Campus, the Subcontractor shall call the University Police Department at 206-543- 9331.
 - 3. If an emergency incident occurs within the UW Medical Center (UWMC), the Subcontractor shall also contact UWMC staff by calling from internal UWMC phones.
 - 4. The Subcontractor is responsible for obtaining copies of and complying with all Harborview Medical Center emergency response protocols.

1.5 CONSTRUCTION FIRE SAFETY REQUIREMENTS

- A. Fire Safety During Construction and Demolition: The Subcontractor shall conform to Chapter 1, "Fire Safety During Construction and Demolition," of the International Fire Code, as locally amended, and any additional provisions as outlined herein for precautions against fire, flammable and combustible liquids, flammable gases, explosive materials, fire protection, fire reporting, fire fighting access, means of egress, standpipes, fire sprinklers, and roofing operations.
 - 1. The Subcontractor shall provide adequate separation between Owner-occupied buildings and work site trailers and sheds.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

B. Hot Work Procedures:

1. Subcontractor shall establish a system for documentation and control of "hot work" activities which include the use of portable gas, grinding, or arc welding equipment and conduct operations in a manner that is fire-safe for the work area and adjacent areas. Hot work permits are to be posted at the jobsite in an accessible and conspicuous location. Maintain the premise clear of rubbish, debris, or other materials constituting a potential fire hazard. The local fire code is incorporated herein by reference; adhere to all applicable provisions as determined by the local fire department. Subcontractor and Subcontractors shall obtain from the local Fire Department engineering inspection section a permit for all hot work activities prior to performing this Work.
 - a. Whenever practical, the Subcontractor shall perform cutting and welding operations off-site.
2. Maintain copies of all hot work related permits for Owner's review upon request, including, but not limited to:
 - a. Cutting and welding;
 - b. Roofing / hot-tar kettle; and
 - c. Storage of flammable materials (e.g., propane, butane) and/or compressed gases.
3. Prior to conducting hot work activities, the Subcontractor shall ensure all of the following fire safety precautions have been taken:
 - a. Cutting and/or welding equipment must be thoroughly inspected and found to be in good repair, free of damage or defects.
 - b. A multi-purpose dry chemical, portable fire extinguisher must be located so that it is immediately available to the area of work and is fully charged and ready for use.
 - c. At least one fire alarm pull station or means of contacting the fire department (i.e., site telephone) must be immediately available and accessible to person(s) conducting the cutting/welding operation.
 - d. Floor areas under and at least 35 feet around the cutting/welding operation must be swept clean of combustible and flammable materials.
 - e. All work site equipment fueling activities and fuel storage must be located at least 35 feet away from cutting/welding operations.
 - f. Fire resistant shields (e.g., fire retardant plywood, flameproof tarpaulin, metal, etc.), must cover combustible floors.
 - g. Combustible materials and finished surfaces, equipment, electrical cables, and personnel must be provided with protection to prevent damage or injury from molten metal, falling sparks, and welding arcs.
 - h. Spark / slag catchers (e.g., fire retardant plywood, flameproof tarpaulin, metal, etc.) must be suspended below any elevated cutting/welding operation.
 - i. All floor and wall openings must be covered to prevent sparks/slag from traveling to other unprotected area.
 - j. Containers in or on which cutting/welding will take place must be purged of flammable vapors.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

C. Fire Systems Shutdowns, Impairments, and Fire Watch

1. When it is necessary to shut down existing fire alarm systems or suppression systems for switch-over purposes, or any other reason that leaves the building unprotected, the Subcontractor shall provide a continuous Owner-approved "fire watch" in accordance AHJs and the following (unless the Subcontractor provides an Owner-approved temporary equivalent system or the Subcontractor is specifically excepted by the Owner):
 - a. Person(s) assigned to a fire watch must be trained in the use of the portable fire extinguisher.
 - b. Fire watch personnel must have an immediate means of providing notification to the fire department (e.g., cellular phone, land-line phone, two-way radio to a continuously staffed position) and the University Police.
 - c. Continuous rounds to cover all areas of the building where the fire protection system is out-of-service are required every 15 minutes.
 - (1) Exception for Building Code type "B occupancy" buildings: During the hours a B occupancy building is occupied, building occupants performing their duties, including work site personnel, may act as a fire watch in lieu of a designated fire watch, when approved in writing by Owner.
 - (a) A fire watch is required at all times in unoccupied areas.
 - (b) Other building code occupancy types may be allowed this exception when approved in writing by the Owner.
 - d. A log of rounds shall be maintained to include the name of the person performing the fire watch, the hours worked (including start and stop times), and comprehensive notes.
 2. Fourteen (14) calendar days written notification shall be provided to the Owner's Representative requesting approval for fire protection system shutdown or functional impairment; receipt of written approval from the Owner's Representative is required before any system shutdown or functional impairment.
 - a. In occupied buildings, include a plan indicating a method to notify all occupants.
 - b. Notify the local fire department. In Seattle, the number to report out-of-service systems and equipment is 206-233-7219.
 3. The Subcontractor shall work in cooperation with the Owner to identify fire alarm initiating devices in and adjacent to the Project site that may activate from work site activities (i.e., work that creates dust, smoke, steam, heat, etc.) and develop a plan to temporarily cover, remove, or disable through programming these devices to eliminate the potential for false alarms.
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APPENDIX A- University of Washington SAFETY REQUIREMENTS

- a. The Owner may authorize in writing some devices to be disabled for the duration of the Work or for a particular activity without requiring a continuous "fire watch" for one shift or several days depending on circumstance.
 - b. ONLY OWNER PERSONEL SHALL DEACTIVE OR DISABLE EXISTING FIRE DETECTION AND SUPPRESSION SYSTEMS, unless the Subcontractor is specifically authorized in writing by the Owner to do so.
 - c. If the fire alarm system at HMC has been deactivated at the request of the Subcontractor and the Subcontractor leaves the work site without informing the Owner of the need to reactivate the fire alarm system, a charge of \$500 shall be assessed for each event. The Contract Sum will be amended for such amount by Change Order.
- D. Fire Alarm/Suppression Systems False Activation or Discharge: Most existing Owner buildings have active fire detection and suppression systems. If proper procedures as outlined in the Contract Documents and this Section 1.6C are not followed to ensure the unnecessary activation or deactivation of these systems, the Owner may at its sole discretion impose an emergency response charge of \$350 per occurrence to the Subcontractor and require a fire watch at the Subcontractor's cost. The Contract Sum will be amended for such amount by Change Order.
- E. Fire Extinguishers Required for Work site: Provide multipurpose dry chemical portable fire extinguishers for the Work in accordance with the International Fire Code Chapter 14, as locally amended, and as required by WISHA and other applicable regulations. Existing building fire extinguishers or new fire extinguishers specified by the Contract Documents for the Project do not alleviate Subcontractor's responsibility to provide temporary fire extinguishers for the Work.
- F. Existing Fire Separations: Existing fire separations, including floor-to-floor separations, shall not be impaired by work site activities.
- G. Occupant Egress in Existing Buildings: The Subcontractor shall not block active exits, exit hallways, exit corridors and the exit access to a public way.
1. Exits are to remain free of work site materials, equipment, and rubbish at all times, unless approved by Owner.
 2. For HMC, Work which blocks or restricts exit corridors shall only occur at night with prior approval of the Owner. If approved, work that blocks or restricts exit corridors must be cleared by 6:00 a.m. each day.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

- H. Emergency Access: Outdoor storage and staging operations and work site fencing shall not impede egress, restrict or narrow fire fighting access (including roads or lanes), or present a fire exposure to existing buildings.
 - 1. Access to emergency services including, but not limited to, fire hydrants, fire department connections, fire command centers, fire alarm panels, valves and similar equipment and systems for emergency vehicles and emergency response personnel must be kept free and unobstructed at all times, unless specifically approved by the Owner.
 - 2. Temporary obstruction of emergency access may be allowed for special cases (e.g., crane installations and hoisting) on a short-term basis. A written plan must be submitted to the Owner for approval at least two weeks prior to the scheduled date of obstruction.

1.6 CHEMICAL HAZARD COMMUNICATION

- A. General: The Owner and the Subcontractor are responsible under the Washington Administrative Code 296-800-170 through 296-800-18020 (Employer Chemical Hazard Communication) to provide a safe and healthy environment for their employees.
- B. Responsibilities:
 - 1. The Owner maintains a centralized collection of all Material Safety Data Sheets (MSDS) for Owner materials. These MSDS are available to the Subcontractor if an unknown chemical is discovered in the work area; a worker is concerned about exposure; and the Subcontractor suspects the material originates with the Owner.
 - a. The Subcontractor shall coordinate with the Owner's Representative to receive this information.
 - 2. The Subcontractor shall establish a Chemical Hazard Communication Program (WAC 296-155-180) which includes multiemployer workplaces (WAC 296-800- 17007), and provide hazard communication information and training to its employees and the employees of the Subcontractor's Subcontractors (of any tier).
 - a. The information shall include: signage demarcating regulated areas and entrances; signage indicating the location of the Subcontractor's binder containing all MSDS used for Work; and prominently posted lists identifying all hazardous chemicals present in the workplace.
 - b. In addition to MSDS training which is regulated by the Employer Chemical Hazard Communication standard, training shall include those MSDS that are available for any Owner's chemical product present at the jobsite.
 - 3. The Subcontractor shall provide the Owner chemical hazard information (MSDS) for all chemical products the Subcontractor and the Subcontractor's Subcontractor's (of any tier) bring onto the jobsite for Owner's information prior to application including, but not limited to, all paints, glues, mastics, epoxies and cleaning products.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

- a. At the jobsite, the Subcontractor shall establish and maintain a binder(s) of all hazardous chemicals MSDS used for Work and indicate where utilized.
 - (1) The MSDS shall be bound in a slant-D, 3-ring, view binder with clear vinyl overlay inserts on the front cover and spine. The binder shall have heavy duty nylon reinforced hinges.
 - (2) The binder shall have a cover slip sheet and a spine sheet typed with “MSDS used for Work,” University Project name, University Project number, University Facility number, A/E name, and Subcontractor name.
 - (3) The MSDS shall be organized by specification division and section with tabbed dividers between the sections or, when presented in a logical format by Subcontractor and approved by Owner, between categories.

1.7 CHEMICALS OF INTEREST REPORTING

- A. Prior to work being performed by the Subcontractor and/or the Subcontractor’s Subcontractors (of any tier), the Subcontractor shall submit to Owner a completed “Contractor Declaration and Reporting Form for Department of Homeland Security – Chemicals of Interest” for chemicals listed in 6 CFR (Code of Federal Regulations) Appendix A to Part 27 that will be used on the jobsite. Individual declarations shall be provided by the Subcontractor and the Subcontractor’s Subcontractors (see Appendix A of the Specifications for a copy of the form).

END OF SECTION

Time-and-Materials Task Order No. TBD

SUBCONTRACTOR: Perma-Fix Environmental Services, Inc.
Address: 1093 Commerce Park Drive, Ste. 300 Oak Ridge, TN 37830
Contact: Tracey Spencer, Contract Administration Manager
Telephone: (865) 690-0501 ext. 2081 - office
E-mail: tspencer@perma-fix.com

CONTRACTOR: Triad National Security, LLC
Address: P.O. Box 1663, MS E540 Los Alamos, NM 87544
 Gena Richardson
Subcontract Administrator:
Telephone: (505) 665-0504
E-mail: grichardson@lanl.gov

1. Task Order issued pursuant to Subcontract No. **573512** between CONTRACTOR and SUBCONTRACTOR. The terms and conditions of the referenced subcontract and any modifications thereto in effect on the date of this Task Order incorporated herein by reference. The FAR and DEAR clauses contained in Appendix SFA-1 shall apply to this task order based on the ceiling price of this task order.
2. Effective Date: **TBD**
3. Period of Performance: **TBD** through **TBD**
4. SUBCONTRACTOR shall perform the work or provide the services described below:

TBD
5. The work or services called for in the preceding paragraph shall be performed and required deliveries shall be made in accordance with the following schedule:

TBD
6. The Ceiling Price for all work called for under this Task Order is **\$ TBD**
 - (a) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Direct Labor charges is **\$ TBD**
 - (b) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Other Direct charges is **\$ TBD**
 - (c) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Travel charges is **\$ TBD**
 - (d) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of charges for Materials is **\$ TBD**
7. SUBCONTRACTOR waives its right, if any, to monies to which it might otherwise have been entitled for any amount expended in excess of any maximum amount (Not-to-Exceed) stated in the preceding section, except as authorized by CONTRACTOR in writing prior to the time that such cost is incurred.
8. SUBCONTRACTOR'S labor categories, level of effort for each category and the fixed hourly rates upon which the Not-to-Exceed amount for reimbursement of Direct Labor charges is based are listed below. Reimbursement for Direct Labor shall be at the fixed hourly rates listed below for the actual effort performed by each category.

Labor Category	Level of Effort	Hourly Rate
TBD	TBD	TBD

9. Limitation of Funds:

In accordance with Exhibit B Special Condition 105, *Limitation of Funds*, the amount of funds presently available for payment by CONTRACTOR and allotted to this task order is \$ **TBD**. It is estimated that such funds will cover performance through **TBD**. SUBCONTRACTOR shall perform or have performed Work or Services up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted to this task order. If additional funds are allotted to this task order, CONTRACTOR shall modify this task order to reflect such additional funding.

For SUBCONTRACTOR:

For CONTRACTOR:

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

“REGISTER OF WAGE DETERMINATIONS UNDER
THE SERVICE CONTRACT ACT

By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR
EMPLOYMENT STANDARDS ADMINISTRATION
WAGE AND HOUR DIVISION
WASHINGTON D.C. 20210

Daniel W. Simms
Director

Division of
Wage Determinations

Wage Determination No.: 2015-5535
Revision No.: 10
Date Of Last Revision: 12/23/2019

Note: Under Executive Order (EO) 13658 an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1 2015. If this contract is covered by the EO the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination if it is higher) for all hours spent performing on the contract in calendar year 2020. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

State: Washington

Area: Washington Counties of King Snohomish

****Fringe Benefits Required Follow the Occupational Listing****

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		17.74
01012 - Accounting Clerk II		19.91
01013 - Accounting Clerk III		22.29
01020 - Administrative Assistant		30.78
01035 - Court Reporter		20.91
01041 - Customer Service Representative I		15.42
01042 - Customer Service Representative II		17.34
01043 - Customer Service Representative III		18.92
01051 - Data Entry Operator I		17.39
01052 - Data Entry Operator II		18.99
01060 - Dispatcher Motor Vehicle		24.63
01070 - Document Preparation Clerk		16.46
01090 - Duplicating Machine Operator		16.46
01111 - General Clerk I		15.61
01112 - General Clerk II		17.03
01113 - General Clerk III		19.12
01120 - Housing Referral Assistant		21.81
01141 - Messenger Courier		17.35
01191 - Order Clerk I		19.94
01192 - Order Clerk II		21.76
01261 - Personnel Assistant (Employment) I		17.56
01262 - Personnel Assistant (Employment) II		19.65
01263 - Personnel Assistant (Employment) III		21.90
01270 - Production Control Clerk		23.26
01290 - Rental Clerk		16.18
01300 - Scheduler Maintenance		17.49

01311 - Secretary I	17.49
01312 - Secretary II	19.57
01313 - Secretary III	21.81
01320 - Service Order Dispatcher	21.17
01410 - Supply Technician	30.78
01420 - Survey Worker	19.38
01460 - Switchboard Operator/Receptionist	16.62
01531 - Travel Clerk I	17.95
01532 - Travel Clerk II	19.31
01533 - Travel Clerk III	20.68
01611 - Word Processor I	20.58
01612 - Word Processor II	23.10
01613 - Word Processor III	25.84
05000 -Automotive Service Occupations	
05005 - Automobile Body Repairer Fiberglass	27.31
05010 - Automotive Electrician	22.91
05040 - Automotive Glass Installer	21.95
05070 - Automotive Worker	21.95
05110 - Mobile Equipment Servicer	19.93
05130 - Motor Equipment Metal Mechanic	23.71
05160 - Motor Equipment Metal Worker	21.95
05190 - Motor Vehicle Mechanic	23.71
05220 - Motor Vehicle Mechanic Helper	19.20
05250 - Motor Vehicle Upholstery Worker	20.77
05280 - Motor Vehicle Wrecker	21.95
05310 - Painter Automotive	22.91
05340 - Radiator Repair Specialist	21.95
05370 - Tire Repairer	16.61
05400 - Transmission Repair Specialist	23.71
07000 -Food Preparation And Service Occupations	
07010 - Baker	15.44
07041 - Cook I	16.59
07042 - Cook II	18.59
07070 - Dishwasher	13.08
07130 - Food Service Worker	14.26
07210 - Meat Cutter	21.24
07260 - Waiter/Waitress	14.15
09000 -Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	22.11
09040 - Furniture Handler	17.88
09080 - Furniture Refinisher	22.11
09090 - Furniture Refinisher Helper	19.16
09110 - Furniture Repairer Minor	20.52
09130 - Upholsterer	23.24
11000 -General Services And Support Occupations	
11030 - Cleaner Vehicles	14.61
11060 - Elevator Operator	14.61
11090 - Gardener	21.68
11122 - Housekeeping Aide	16.09
11150 - Janitor	16.09
11210 - Laborer Grounds Maintenance	17.75
11240 - Maid or Houseman	13.64
11260 - Pruner	16.42
11270 - Tractor Operator	20.38
11330 - Trail Maintenance Worker	17.75
11360 - Window Cleaner	17.39
12000 -Health Occupations	
12010 - Ambulance Driver	30.49
12011 - Breath Alcohol Technician	25.18
12012 - Certified Occupational Therapist Assistant	30.71
12015 - Certified Physical Therapist Assistant	29.39
12020 - Dental Assistant	21.62
12025 - Dental Hygienist	45.72
12030 - EKG Technician	32.30
12035 - Electroneurodiagnostic Technologist	32.30

12040 - Emergency Medical Technician	30.49
12071 - Licensed Practical Nurse I	22.49
12072 - Licensed Practical Nurse II	25.18
12073 - Licensed Practical Nurse III	28.06
12100 - Medical Assistant	21.42
12130 - Medical Laboratory Technician	25.41
12160 - Medical Record Clerk	19.93
12190 - Medical Record Technician	22.29
12195 - Medical Transcriptionist	21.12
12210 - Nuclear Medicine Technologist	46.33
12221 - Nursing Assistant I	12.74
12222 - Nursing Assistant II	14.32
12223 - Nursing Assistant III	15.63
12224 - Nursing Assistant IV	17.55
12235 - Optical Dispenser	26.47
12236 - Optical Technician	18.94
12250 - Pharmacy Technician	21.29
12280 - Phlebotomist	18.51
12305 - Radiologic Technologist	34.89
12311 - Registered Nurse I	29.46
12312 - Registered Nurse II	36.05
12313 - Registered Nurse II Specialist	36.05
12314 - Registered Nurse III	43.61
12315 - Registered Nurse III Anesthetist	43.61
12316 - Registered Nurse IV	52.28
12317 - Scheduler (Drug and Alcohol Testing)	31.18
12320 - Substance Abuse Treatment Counselor	21.33
13000 -Information And Arts Occupations	
13011 - Exhibits Specialist I	21.79
13012 - Exhibits Specialist II	26.22
13013 - Exhibits Specialist III	32.07
13041 - Illustrator I	23.97
13042 - Illustrator II	27.87
13043 - Illustrator III	34.10
13047 - Librarian	36.93
13050 - Library Aide/Clerk	15.87
13054 - Library Information Technology Systems	33.35
Administrator	
13058 - Library Technician	22.93
13061 - Media Specialist I	24.05
13062 - Media Specialist II	26.92
13063 - Media Specialist III	30.01
13071 - Photographer I	20.35
13072 - Photographer II	22.76
13073 - Photographer III	28.20
13074 - Photographer IV	34.50
13075 - Photographer V	41.74
13090 - Technical Order Library Clerk	19.94
13110 - Video Teleconference Technician	23.54
14000 -Information Technology Occupations	
14041 - Computer Operator I	18.22
14042 - Computer Operator II	20.39
14043 - Computer Operator III	22.73
14044 - Computer Operator IV	25.25
14045 - Computer Operator V	27.97
14071 - Computer Programmer I	(see 1)
14072 - Computer Programmer II	(see 1)
14073 - Computer Programmer III	(see 1)
14074 - Computer Programmer IV	(see 1)
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	18.22
14160 - Personal Computer Support Technician	25.25
14170 - System Support Specialist	36.53

15000	-Instructional Occupations	
15010	- Aircrew Training Devices Instructor (Non-Rated)	34.20
15020	- Aircrew Training Devices Instructor (Rated)	41.38
15030	- Air Crew Training Devices Instructor (Pilot)	49.60
15050	- Computer Based Training Specialist / Instructor	34.20
15060	- Educational Technologist	33.45
15070	- Flight Instructor (Pilot)	49.60
15080	- Graphic Artist	30.22
15085	- Maintenance Test Pilot Fixed Jet/Prop	47.62
15086	- Maintenance Test Pilot Rotary Wing	47.62
15088	- Non-Maintenance Test/Co-Pilot	47.62
15090	- Technical Instructor	30.17
15095	- Technical Instructor/Course Developer	36.90
15110	- Test Proctor	24.36
15120	- Tutor	24.36
16000	- Laundry Dry-Cleaning Pressing And Related Occupations	
16010	- Assembler	15.19
16030	- Counter Attendant	15.19
16040	- Dry Cleaner	19.14
16070	- Finisher Flatwork Machine	15.19
16090	- Presser Hand	15.19
16110	- Presser Machine Drycleaning	15.19
16130	- Presser Machine Shirts	15.19
16160	- Presser Machine Wearing Apparel Laundry	15.19
16190	- Sewing Machine Operator	20.48
16220	- Tailor	21.80
16250	- Washer Machine	16.49
19000	- Machine Tool Operation And Repair Occupations	
19010	- Machine-Tool Operator (Tool Room)	29.81
19040	- Tool And Die Maker	33.77
21000	- Materials Handling And Packing Occupations	
21020	- Forklift Operator	22.16
21030	- Material Coordinator	23.26
21040	- Material Expediter	23.26
21050	- Material Handling Laborer	16.28
21071	- Order Filler	16.52
21080	- Production Line Worker (Food Processing)	22.16
21110	- Shipping Packer	18.20
21130	- Shipping/Receiving Clerk	18.20
21140	- Store Worker I	17.42
21150	- Stock Clerk	22.00
21210	- Tools And Parts Attendant	22.16
21410	- Warehouse Specialist	22.16
23000	- Mechanics And Maintenance And Repair Occupations	
23010	- Aerospace Structural Welder	33.50
23019	- Aircraft Logs and Records Technician	28.42
23021	- Aircraft Mechanic I	32.44
23022	- Aircraft Mechanic II	33.50
23023	- Aircraft Mechanic III	34.47
23040	- Aircraft Mechanic Helper	25.19
23050	- Aircraft Painter	31.35
23060	- Aircraft Servicer	28.42
23070	- Aircraft Survival Flight Equipment Technician	31.35
23080	- Aircraft Worker	30.04
23091	- Aircrew Life Support Equipment (ALSE) Mechanic I	30.04
23092	- Aircrew Life Support Equipment (ALSE) Mechanic II	32.44
23110	- Appliance Mechanic	24.65
23120	- Bicycle Repairer	22.09
23125	- Cable Splicer	42.17
23130	- Carpenter Maintenance	29.50
23140	- Carpet Layer	24.79
23160	- Electrician Maintenance	34.40
23181	- Electronics Technician Maintenance I	33.11

23182 - Electronics Technician Maintenance II	34.57
23183 - Electronics Technician Maintenance III	35.77
23260 - Fabric Worker	25.82
23290 - Fire Alarm System Mechanic	26.78
23310 - Fire Extinguisher Repairer	25.48
23311 - Fuel Distribution System Mechanic	35.00
23312 - Fuel Distribution System Operator	29.02
23370 - General Maintenance Worker	24.19
23380 - Ground Support Equipment Mechanic	32.44
23381 - Ground Support Equipment Servicer	28.42
23382 - Ground Support Equipment Worker	30.04
23391 - Gunsmith I	25.48
23392 - Gunsmith II	28.56
23393 - Gunsmith III	30.85
23410 - Heating Ventilation And Air-Conditioning Mechanic	32.24
23411 - Heating Ventilation And Air Contidioning Mechanic (Research Facility)	33.29
23430 - Heavy Equipment Mechanic	30.06
23440 - Heavy Equipment Operator	35.56
23460 - Instrument Mechanic	30.14
23465 - Laboratory/Shelter Mechanic	29.81
23470 - Laborer	16.28
23510 - Locksmith	28.47
23530 - Machinery Maintenance Mechanic	29.74
23550 - Machinist Maintenance	25.60
23580 - Maintenance Trades Helper	20.79
23591 - Metrology Technician I	30.14
23592 - Metrology Technician II	31.12
23593 - Metrology Technician III	32.03
23640 - Millwright	36.91
23710 - Office Appliance Repairer	28.49
23760 - Painter Maintenance	25.88
23790 - Pipefitter Maintenance	34.77
23810 - Plumber Maintenance	33.60
23820 - Pneudraulic Systems Mechanic	30.85
23850 - Rigger	31.90
23870 - Scale Mechanic	28.56
23890 - Sheet-Metal Worker Maintenance	30.22
23910 - Small Engine Mechanic	24.79
23931 - Telecommunications Mechanic I	30.29
23932 - Telecommunications Mechanic II	31.27
23950 - Telephone Lineman	28.00
23960 - Welder Combination Maintenance	26.78
23965 - Well Driller	34.15
23970 - Woodcraft Worker	30.85
23980 - Woodworker	25.48
24000 - Personal Needs Occupations	
24550 - Case Manager	19.53
24570 - Child Care Attendant	14.50
24580 - Child Care Center Clerk	18.09
24610 - Chore Aide	13.99
24620 - Family Readiness And Support Services Coordinator	19.53
24630 - Homemaker	19.55
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	35.11
25040 - Sewage Plant Operator	34.14
25070 - Stationary Engineer	35.11
25190 - Ventilation Equipment Tender	27.26
25210 - Water Treatment Plant Operator	34.14
27000 - Protective Service Occupations	
27004 - Alarm Monitor	30.85
27007 - Baggage Inspector	17.37
27008 - Corrections Officer	29.54

27010	- Court Security Officer		34.79
27030	- Detection Dog Handler		22.54
27040	- Detention Officer		29.54
27070	- Firefighter		40.04
27101	- Guard I		17.37
27102	- Guard II		22.54
27131	- Police Officer I		38.25
27132	- Police Officer II		42.50
28000	- Recreation Occupations		
28041	- Carnival Equipment Operator		16.45
28042	- Carnival Equipment Repairer		17.50
28043	- Carnival Worker		13.26
28210	- Gate Attendant/Gate Tender		18.93
28310	- Lifeguard		13.97
28350	- Park Attendant (Aide)		21.19
28510	- Recreation Aide/Health Facility Attendant		15.45
28515	- Recreation Specialist		26.24
28630	- Sports Official		16.86
28690	- Swimming Pool Operator		22.29
29000	- Stevedoring/Longshoremen Occupational Services		
29010	- Blocker And Bracer		34.71
29020	- Hatch Tender		34.71
29030	- Line Handler		34.71
29041	- Stevedore I		32.85
29042	- Stevedore II		36.23
30000	- Technical Occupations		
30010	- Air Traffic Control Specialist Center (HFO)	(see 2)	42.26
30011	- Air Traffic Control Specialist Station (HFO)	(see 2)	29.14
30012	- Air Traffic Control Specialist Terminal (HFO)	(see 2)	32.09
30021	- Archeological Technician I		22.27
30022	- Archeological Technician II		24.91
30023	- Archeological Technician III		30.86
30030	- Cartographic Technician		30.86
30040	- Civil Engineering Technician		32.97
30051	- Cryogenic Technician I		27.31
30052	- Cryogenic Technician II		30.17
30061	- Drafter/CAD Operator I		22.27
30062	- Drafter/CAD Operator II		24.91
30063	- Drafter/CAD Operator III		27.78
30064	- Drafter/CAD Operator IV		34.17
30081	- Engineering Technician I		20.07
30082	- Engineering Technician II		22.53
30083	- Engineering Technician III		25.20
30084	- Engineering Technician IV		31.22
30085	- Engineering Technician V		38.19
30086	- Engineering Technician VI		46.21
30090	- Environmental Technician		28.91
30095	- Evidence Control Specialist		24.66
30210	- Laboratory Technician		27.78
30221	- Latent Fingerprint Technician I		30.60
30222	- Latent Fingerprint Technician II		33.80
30240	- Mathematical Technician		30.86
30361	- Paralegal/Legal Assistant I		22.87
30362	- Paralegal/Legal Assistant II		28.34
30363	- Paralegal/Legal Assistant III		33.72
30364	- Paralegal/Legal Assistant IV		41.93
30375	- Petroleum Supply Specialist		30.17
30390	- Photo-Optics Technician		30.86
30395	- Radiation Control Technician		30.17
30461	- Technical Writer I		28.43
30462	- Technical Writer II		34.77
30463	- Technical Writer III		42.06
30491	- Unexploded Ordnance (UXO) Technician I		26.86
30492	- Unexploded Ordnance (UXO) Technician II		32.49
30493	- Unexploded Ordnance (UXO) Technician III		38.95

30494 - Unexploded (UXO) Safety Escort	26.86
30495 - Unexploded (UXO) Sweep Personnel	26.86
30501 - Weather Forecaster I	34.17
30502 - Weather Forecaster II	41.57
30620 - Weather Observer Combined Upper Air Or Surface Programs	(see 2) 23.99
30621 - Weather Observer Senior	(see 2) 27.77
31000 - Transportation/Mobile Equipment Operation Occupations	
31010 - Airplane Pilot	32.49
31020 - Bus Aide	22.23
31030 - Bus Driver	28.82
31043 - Driver Courier	18.04
31260 - Parking and Lot Attendant	13.65
31290 - Shuttle Bus Driver	19.19
31310 - Taxi Driver	15.61
31361 - Truckdriver Light	19.19
31362 - Truckdriver Medium	21.42
31363 - Truckdriver Heavy	23.90
31364 - Truckdriver Tractor-Trailer	23.90
99000 - Miscellaneous Occupations	
99020 - Cabin Safety Specialist	15.84
99030 - Cashier	13.60
99050 - Desk Clerk	14.01
99095 - Embalmer	28.38
99130 - Flight Follower	26.86
99251 - Laboratory Animal Caretaker I	14.63
99252 - Laboratory Animal Caretaker II	15.56
99260 - Marketing Analyst	37.45
99310 - Mortician	28.38
99410 - Pest Controller	22.62
99510 - Photofinishing Worker	20.74
99710 - Recycling Laborer	25.80
99711 - Recycling Specialist	29.62
99730 - Refuse Collector	23.87
99810 - Sales Clerk	14.90
99820 - School Crossing Guard	18.89
99830 - Survey Party Chief	34.33
99831 - Surveying Aide	19.69
99832 - Surveying Technician	26.99
99840 - Vending Machine Attendant	18.44
99841 - Vending Machine Repairer	21.16
99842 - Vending Machine Repairer Helpe r	18.44

Note: Executive Order (EO) 13706 Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1 2017. If this contract is covered by the EO the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness injury or other health-related needs including preventive care; to assist a family member (or person who is like family to the employee) who is ill injured or has other health-related needs including preventive care; or for reasons resulting from or to assist a family member (or person who is like family to the employee) who is the victim of domestic violence sexual assault or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$4.54 per hour up to 40 hours per week or \$181.60 per week or \$786.93 per month

HEALTH & WELFARE EO 13706: \$4.22 per hour up to 40 hours per week or \$168.80 per week or \$731.47 per month*

*This rate is to be used only when compensating employees for performance on an SCA- covered contract also covered by EO 13706 Establishing Paid Sick Leave for Federal Contractors. A contractor may not receive credit toward its SCA obligations for any paid sick leave provided pursuant to EO 13706.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor 3 weeks after 5 years and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor wherever employed and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day Martin Luther King Jr.'s Birthday Washington's Birthday Memorial Day Independence Day Labor Day Columbus Day Veterans' Day Thanksgiving Day and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b) this wage determination does not apply to any employee who individually qualifies as a bona fide executive administrative or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals (29 C.F.R. 541. 400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally because job titles vary widely and change quickly in the computer industry job titles are not determinative of the application of the computer professional exemption. Therefore the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

- (1) The application of systems analysis techniques and procedures including consulting with users to determine hardware software or system functional specifications;
- (2) The design development documentation analysis creation testing or modification of computer systems or programs including prototypes based on and related to user or system design specifications;
- (3) The design documentation testing creation or modification of computer programs related to machine operating systems; or
- (4) A combination of the aforementioned duties the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**** HAZARDOUS PAY DIFFERENTIAL ****

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance explosives and incendiary materials. This includes work such as screening blending dying mixing and pressing of sensitive ordnance explosives and pyrotechnic compositions such as lead azide black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization modification renovation demolition and maintenance operations on sensitive ordnance explosives and incendiary materials. All operations involving re-grading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with or in close proximity to ordnance (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands face or arms of the employee engaged in the operation irritation of the skin minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving unloading storage and hauling of ordnance explosive and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance explosives and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract by the employer by the state or local law etc.) the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition where uniform cleaning and maintenance is made the responsibility of the employee all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount or the furnishing of contrary affirmative proof as to the actual cost) reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However in those instances where the uniforms furnished are made of "wash and wear" materials may be routinely washed and dried with other personal garments and do not require any special treatment such as dry cleaning daily washing or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract by the contractor by law or by the nature of the work there is no requirement that employees be reimbursed for uniform maintenance costs.

**** SERVICE CONTRACT ACT DIRECTORY OF OCCUPATIONS ****

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations" Fifth Edition (Revision 1) dated September 2015 unless otherwise indicated.

**** REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE Standard Form 1444 (SF-1444) ****

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e. the work to be performed is not performed by any classification listed in the wage determination) be classified by the contractor so as to provide a reasonable relationship (i.e. appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination (See 29 CFR 4.6(b)(2)(i)). Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees (See 29 CFR 4.6(b)(2)(ii)). The Wage and Hour Division shall make a final determination of conformed classification wage rate and/or fringe benefits which shall be paid to all employees performing in the classification from the first day of work on which contract work is performed by them in the classification. Failure to pay such unlisted employees the compensation agreed upon by the interested parties and/or fully determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract. (See 29 CFR 4.6(b)(2)(v)). When multiple wage determinations are included in a contract a separate SF-1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award the contractor prepares a written report listing in order the proposed classification title(s) a Federal grade equivalency (FGE) for each proposed classification(s) job description(s) and rationale for proposed wage rate(s) including information regarding the agreement or disagreement of the authorized representative of the employees involved or where there is no authorized representative the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action together with the agency's recommendations and pertinent information including the position of the contractor and the employees to the U.S. Department of Labor Wage and Hour Division for review (See 29 CFR 4.6(b)(2)(ii)).
- 4) Within 30 days of receipt the Wage and Hour Division approves modifies or disapproves the action via transmittal to the agency contracting officer or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour Division's decision to the contractor.
- 6) Each affected employee shall be furnished by the contractor with a written copy of such determination or it shall be posted as a part of the wage determination (See 29 CFR 4.6(b)(2)(iii)).

Information required by the Regulations must be submitted on SF-1444 or bond paper.

When preparing a conformance request the "Service Contract Act Directory of Occupations" should be used to compare job definitions to ensure that duties requested are not performed by a classification already listed in the wage determination. Remember it is not the job title but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split combine or subdivide classifications listed in the wage determination (See 29 CFR 4.152(c)(1))."

Modification Number 04

SUBCONTRACTOR: Perma-Fix Environmental Services, Inc.
Address: 1093 Commerce Park Drive, Ste. 300,
Oak Ridge, TN 37830
Contact: Tracey Spencer, Contract Administration Manager
Telephone: (865) 690-0501 ext. 2081 - office
E-mail: tspencer@perma-fix.com

CONTRACTOR: Triad National Security, LLC
Address: P.O. Box 1663, MS E540
Los Alamos, NM 87544
Subcontract Administrator: Joleen Montoya
Telephone: 505-695-4359
E-mail: montoyaj@lanl.gov

SUBCONTRACTOR [X] is [] is not required to sign this modification.

The subcontract between CONTRACTOR and SUBCONTRACTOR modified as described herein. Except as modified, all other terms and conditions remain unchanged and in full force and effect. This modification is effective on the date of signature by the last party to sign.

MODIFICATION: This modification will correct the number sequence of modification no. 4, dated 8/11/2020 to read modification no. 3 and the following changes listed below:

1. Subcontract Form of Agreement (dated February 23, 2020), Article 6 Ceiling Price is replaced in its entirety with the below:

CEILING PRICE:

This subcontract is priced on a Time-and-Materials basis. The Ceiling Price for all work called for under this subcontract is **Thirty-Eight Million Five Hundred Thousand Dollars (\$38,500,000.00)**. Payments will be made to SUBCONTRACTOR in accordance with the prices set forth in Exhibit "C" and with the payment provisions of this subcontract. The SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price.

2. Exhibit "B" Special Conditions (dated July 22, 2019), SC-105 Limitation of Funds is replaced in its entirety with the below:

SC-105 LIMITATION OF FUNDS (Aug 2014)

- (a) The amount of funds presently available for payment by CONTRACTOR and allotted to this subcontract is **Thirty-Eight Million Five Hundred Thousand Dollars (\$38,500,000.00)**. SUBCONTRACTOR shall perform or have performed Work up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted.
- (b) CONTRACTOR will allot additional funds incrementally to the subcontract up to the full subcontract ceiling, provided funds are made available by GOVERNMENT. Directed Change Orders issued under the Changes clause shall not be considered an authorization to exceed the allotted amount.
- (c) SUBCONTRACTOR shall notify CONTRACTOR in writing whenever it has reason to believe that the amount to be invoiced under this subcontract in the next thirty (30) days, when added to all previously invoiced amounts, will exceed 80% of the total funds allotted. Upon notification, CONTRACTOR will allot additional funds or may suspend or terminate the subcontract in accordance with its terms.

- (c) SUBCONTRACTOR is not authorized to continue performance or otherwise incur costs in excess of the allotted funds, unless one of the following exceptions applies: (1) if required to protect and maintain the Work in accordance with General Condition GC-44 SUSPENSION; or (2) protect and preserve the property related to this subcontract in accordance with GC- 47(x) TERMINATION FOR CONVENIENCE.
3. Exhibit "B" Special Conditions (dated July 22, 2019), SC-3A Commencement, Progress, and Completion of Work is replaced in its entirety with SC-3C Commencement, Progress, and Completion of the Work as shown below:

SC-3C COMMENCEMENT, PROGRESS AND COMPLETION OF THE WORK [Task Order Agreement] (Jun 2009)

- (a) Notwithstanding anything contained in the subcontract documents to the contrary, this "subcontract" does not procure or specify a firm quantity of services from SUBCONTRACTOR. It is a blanket agreement for the work or services specified in Exhibit D, Scope of Work, and provides the terms and conditions that will be applicable to any bilateral written task orders (i.e., orders for the performance of tasks during the period of performance) issued hereunder.

Base Year Period of Performance: June 04, 2019 through March 31, 2021.

- (b) SUBCONTRACTOR'S authority to perform work under this "subcontract" is contingent upon the issuance of one or more task orders. When a task order is issued, SUBCONTRACTOR shall furnish sufficient personnel, equipment, and facilities and shall work such hours to assure prosecution of the work to completion in accordance with the schedule contained in any task order.
- (c) The initial term of this "subcontract" during which task orders may be issued hereunder is **twelve (12) months** beginning on the effective date of this "subcontract". The term of this "subcontract" may be extended for up to **twenty four (24) months** beyond the initial term by giving written notice to the SUBCONTRACTOR by the date specified as the expiration date of the subcontract. CONTRACTOR will attempt to give the SUBCONTRACTOR a preliminary written notice of its intent to extend the term of the subcontract at least sixty (60) days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of the subcontract. Failure to provide the preliminary notice at least sixty (60) days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a bilateral written subcontract modification issued by CONTRACTOR. Such extensions may be made from time to time or in one modification. The period of performance of tasks ordered and delivery dates for any deliverable items shall be specified in each task order.
- (d) The maximum cumulative dollar value of all task orders that may be issued pursuant to this "subcontract" is the ceiling price set forth below. A price ceiling will also be established for each task order and cannot be exceeded, except by mutual written agreement of the parties. The ceiling price for all work called for under this "subcontract" is **Thirty-Eight Million Five Hundred Thousand Dollars (\$38,500,000.00)**. SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price for this "subcontract".

- (e) CONTRACTOR may issue one or more task orders to SUBCONTRACTOR for work or services required by CONTRACTOR. When and if ordered by CONTRACTOR and accepted by SUBCONTRACTOR, SUBCONTRACTOR shall perform the work or furnish the services specified in a task order. Each task order issued shall: (1) be deemed to be an individual subcontract priced upon the basis specified in the task order; (2) contain a price ceiling that cannot be exceeded without mutual written agreement of the parties; and (3) be subject to the terms and conditions of this "subcontract". In the event of conflict between a task order and this "subcontract", this "subcontract" shall control. SUBCONTRACTOR shall complete any task order issued during the effective period of this "subcontract" and not completed within that period within the time specified in the task order. This "subcontract" shall govern the rights and obligations of the parties with respect to that task order to the same extent as if the task order was completed during the effective period of this "subcontract".
- (f) When applicable, SUBCONTRACTOR shall be required to submit certified cost or pricing data to CONTRACTOR prior to the issuance of a task order.

Subcontract ceiling before modification:	\$	25,000,000.00
Dollar amount of this modification:	\$	13,500,000.00
Subcontract ceiling as modified:	\$	38,500,000.00

The undersigned personally assert authorization to execute this modification on behalf of the parties.

For SUBCONTRACTOR:

For CONTRACTOR:

By:

Tracey Testerman Spencer

By:

Digitally signed by JOLEEN
JOLEEN MONTOYA (Affiliate) MONTOYA (Affiliate)
 Date: 2020.11.12 15:08:23 -07'00'

Name: Tracey Testerman Spencer

Name: Joleen Montoya

Title: Contract Administration Manager

Title: Procurement Specialist

Date: November 12, 2020

Date: _____

**Time-and-Material
Master Task Ordering Agreement (MTOA)
Subcontract Form of Agreement ***

Subcontractor:	PermaFix Environmental Services	Subcontract No.:	554628
Address:	1093 Commerce Park Drive, Ste. 300 Oak Ridge, TN 37830		
Contact:	Jessica Cerrese		
Telephone:	(865) 342-7649		
E-mail:	jcarrese@perma-fix.com		
D-U-N-S No.:	79-211-7681	NAICS Code:	562910

This subcontract, effective on the date of signature by the last party to sign, is hereby made and entered into by and between Triad National Security, LLC (CONTRACTOR), and the above named SUBCONTRACTOR who hereby agree that all Work specified below, which is a portion of the goods and services to be provided by CONTRACTOR for the United States Department of Energy National Nuclear Security Administration (OWNER), shall be performed by the SUBCONTRACTOR in accordance with all the provisions of this subcontract.

1. **SUBCONTRACT DOCUMENTS:** This subcontract consists of the following documents:
 - Subcontract Form of Agreement [Dated **8/21/19**]
 - T&M Appendix SFA-1, FAR & DEAR Clauses Incorporated By Reference (Rev. 9.0, 11/1/18), is incorporated by reference as if fully set forth and may be found at <http://www.lanl.gov/business/vendors/terms-conditions.php>
 - T&M Exhibit "A" General Conditions [Dated **7/22/19**], is incorporated by reference as if fully set forth.
 - Exhibit "B" Special Conditions [Dated **7/22/19**]
 - Exhibit "C" Form A-1 Schedule of Rates and Not-To-Exceed Amounts [Dated **8/20/19**]
 - Exhibit "D" Scope of Work and Technical Specifications [Dated **8/21/19**]
 - Appendix A- University of Washington Safety Requirements date **6/20/19**
 - Appendix B- Sample Task Order

2. **WORK TO BE PERFORMED (Work):** In accordance with the subcontract documents, SUBCONTRACTOR shall furnish all administrative, technical and professional services, and perform all operations, including the furnishing and supervision of all technical personnel and labor, and the furnishing of any equipment, material, tools, supplies and transportation necessary and required to satisfactorily:

Provide building management, maintenance, radiation control and decontamination support services at the University of Washington Harborview Campus in accordance with Exhibit D, Scope of Work dated 8/20/19 and as amended.

Travel time by SUBCONTRACTOR personnel to and from the work assignment location is not considered Work under this subcontract and SUBCONTRACTOR will not be paid for such time unless otherwise specified in this subcontract or approved in writing by CONTRACTOR.

***CERTAIN INFORMATION IN THIS DOCUMENT HAS BEEN EXCLUDED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.**

3. ORDERING:

- a. Any goods/services to be furnished under this subcontract that are not explicitly set forth in Exhibit "D" (Scope of Work and Technical Specifications) shall be ordered through the issuance of a written task order by the Contract Administrator in a form substantially similar to the one set forth in Appendix B – Task Order Template. Such task orders may be issued anytime during the term of this subcontract.
- b. SUBCONTRACTOR shall accept or reject an individual task order within 24 hours of the issuance of the task order. If SUBCONTRACTOR fails to reject the task order via written notice to the Contract Administrator within the allotted time, SUBCONTRACTOR shall be deemed to have accepted the task order.
- c. Each task order shall include a written scope of work, which includes any applicable specifications, terms and conditions for completing the work. All work performed by SUBCONTRACTOR shall be on a time-and-material basis, subject to the schedule of rates set forth in Exhibit "C" Form A-1 Schedule of Rates to this subcontract. In the event of conflict between a task order's terms and conditions and this subcontract, the terms of the Task Order shall control.
- d. Any labor categories, rates, materials, supplies or services (including subcontractors to be retained by SUBCONTRACTOR) required for SUBCONTRACTOR to complete task order work that is not set forth in Exhibit "C" shall be set forth in writing, incorporated and made a part of the task order terms and conditions. Any additional labor categories not already identified in Exhibit "C", but required for performance of existing or anticipated tasks shall be requested in advance of mobilization of personnel and the Exhibit "C" shall be updated in advance of task order performance. Any additional equipment or services not already identified and priced in Exhibit "C" and required for performance of task orders shall be requested in advance of deployment and shall be added to the Exhibit "C" and Task Orders and priced as required in advance of task order performance.

5. PERIOD OF PERFORMANCE:**a. Initial Term**

The initial term of this subcontract, during which CONTRACTOR may issue releases and SUBCONTRACTOR will deliver the goods/services specified on the releases issued hereunder, is one (1) year(s) beginning on the effective date of this subcontract.

b. Option to Extend

- (1) CONTRACTOR may extend the term of this subcontract by giving written notice to the SUBCONTRACTOR by the date specified as the expiration date of the subcontract. CONTRACTOR shall attempt to give the SUBCONTRACTOR a preliminary written notice of its intent to extend the term of the subcontract at least 60 days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of the subcontract. Failure to provide the preliminary notice at least 60 days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a unilateral written subcontract modification issued by CONTRACTOR.

- (2) The term of this subcontract may be extended pursuant to this clause for up to twelve(12) months beyond the initial term. Such extension may be made from time to time or in one modification. However, the total duration of this subcontract, including the exercise of options under this clause, shall not exceed twenty four (24) months

6. CEILING PRICE:

This subcontract is priced on a Time-and-Materials basis. The Ceiling Price for all work called for under this subcontract is **One Million Dollars (\$ 1,000,000.00)**. Payments will be made to SUBCONTRACTOR in accordance with the prices set forth in Exhibit "C" and with the payment provisions of this subcontract. The SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price.

This subcontract embodies the entire agreement between CONTRACTOR and SUBCONTRACTOR and supersedes all other writings. The parties shall not be bound by or be liable for any statement, representation, promise, inducement or understanding not set forth herein.

For the CONTRACTOR:

For the SUBCONTRACTOR:

By: _____

By: _____ Digitally signed

Name: **Charles** Digitally signed by
Charles E. Gibson

Name: **Jessica** by Jessica
Carrese

Title: **E. Gibson** Date: 2019.09.03
13:12:31 -06'00'

Title: Date: 2019.09.03
13:43:15 -04'00'

Date: _____

Date: _____

Appendix SFA-1
FAR & DEAR Clauses Incorporated By Reference

- (a) The Federal Acquisition Regulation (FAR) and the Department of Energy Acquisition Regulation (DEAR) clauses which are incorporated by reference herein shall have the same force and effect as if printed in full text.
- (b) Full text of the referenced clauses may be accessed electronically by copying and pasting the appropriate URL address in your web browser:
- | | |
|-------------------|---|
| FAR clauses: | https://www.acquisition.gov/browse/far/52 |
| DEAR 952 clauses: | https://www.ecfr.gov/cgi-bin/text-idx?SID=838834e575ead9ec27ea415e492b42ee&mc=true&tpl=/ecfrbrowse/Title48/48cfr952_main_02.tpl |
| DEAR 970 clauses: | https://www.ecfr.gov/cgi-bin/text-idx?SID=838834e575ead9ec27ea415e492b42ee&mc=true&tpl=/ecfrbrowse/Title48/48cfr970_main_02.tpl |
- (c) The following alterations shall apply to FAR and DEAR clauses wherever necessary to make the context of the unmodified FAR and DEAR clauses applicable to this subcontract.
- (1) The term “Contractor” shall mean “SUBCONTRACTOR;”
 - (2) The term “Contract” shall mean this subcontract; and
 - (3) The term “DOE”, “Government,” “Contracting Officer” and equivalent phrases shall mean CONTRACTOR and/or CONTRACTOR’S representative, except the terms “Government” and “Contracting Officer” do not change:
 - (i) In the phrases “Government Property,” “Government-Furnished Property,” and “Government-Owned Property;”
 - (ii) In any patent clauses incorporated herein;
 - (iii) When a right, act, authorization or obligation can be granted or performed only by the Government or the prime contract Contracting Officer or his duly authorized representative;
 - (iv) When title to property is to be transferred directly to the Government;
 - (v) When access to proprietary financial information or other proprietary data is required except for authorized audit rights; and
 - (vi) Where specifically modified herein.
 - (4) For authorized audit rights, the term “Contracting Officer or an authorized representative of the Contracting Officer” shall also include “CONTRACTOR, or an authorized representative of CONTRACTOR.”
- (d) Each of the individual FAR/DEAR clauses listed below is incorporated by reference into this subcontract when the condition(s) for applicability is/are met.

THE FOLLOWING CLAUSES APPLY TO THIS SUBCONTRACT REGARDLESS OF THE AMOUNT OF THE SUBCONTRACT PRICE, UNLESS OTHERWISE NOTED:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-18	Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements or Statements - Representation - (Jan 2017)	Solicitation Provision that applies in all solicitations, except in solicitations for a personal services subcontract with an individual if the services are to be performed entirely by the individual.
FAR 52.203-19	Prohibition on Requiring Certain Internal Confidentiality Agreements or Statements (Jan 2017)	Applies in all solicitations and resultant subcontracts, other than personal services subcontracts with individuals.
FAR 52.215-22	Limitations on Pass-Through Charges — Identification of Subcontract Effort (Oct 2009)	Applies if subcontractor intends to subcontract to a lower-tier subcontractor more than 70 percent of the total cost of work to be performed under its subcontract.
FAR 52.216-7	Allowable Cost and Payment (Jun 2013)	Applies only to the portion of the T&M subcontract that provides for reimbursement of materials (as defined in FAR 52.232-7) at actual cost. This clause does not apply to labor- hour subcontracts.
FAR 52.216-29	Time-and-Materials / Labor-Hour Proposal Requirements – Non-Commercial Item Acquisition With Adequate Price Competition (Feb 2007)	Solicitation provision that applies if T&M or Labor-Hour type of contract for noncommercial items is contemplated and the price is based on adequate price competition.
FAR 52.216-30	Time-and-Materials / Labor-Hour Proposal Requirements – Non-Commercial Item Acquisition Without Adequate Price Competition (Feb 2007)	Solicitation provision that applies if T&M or Labor-Hour type of contract for noncommercial items is contemplated and the price is not expected to be based on adequate price competition.
FAR 52.216-31	Time-and-Materials / Labor-Hour Proposal Requirements – Commercial Item Acquisition (Feb 2007)	Solicitation provision that applies if T&M or Labor-Hour type of contract for commercial items is contemplated.
FAR 52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation (May 2014)	Applies to subcontracts that may require or involve the employment of laborers and mechanics. If applicable, only paragraphs (a) through (d) apply to subcontracts. Furthermore, if applicable, SUBCONTRACTOR shall flow down paragraphs (a) through (d) to all its lower-tier subcontracts that may require or involve the employment of laborers and mechanics.
FAR 52.222-50	Combating Trafficking In Persons (Mar 2015)	Applies in all subcontracts and in all contracts with agents (as defined in FAR 52.222-50). The requirements in paragraph (h) of this clause apply only to any portion of a subcontract that— (A) Is for supplies, other than commercially available off-the- shelf items, acquired outside the United States, or services to be performed outside the United States; and (B) Has an estimated value that exceeds \$500,000.
FAR 52.222-62	Paid Sick Leave Under Executive Order 13706 (Jan 2017)	Applies in subcontracts for commercial items, as that term is defined in FAR subpart 2.101.
FAR 52.223-3	Hazardous Material Identification and Material Safety Data (Jan 1997) Alternate I (Jul 1995)	Applies only if subcontract involves delivery of hazardous materials as defined in FAR subpart 23.301. If applicable, the term “Government” as used in this clause means “CONTRACTOR and the Government.
FAR 52.223-5	Pollution Prevention And Right-To-Know Information (May 2011) Alternate I (May 2011)	Applies in solicitations and subcontracts that provide for performance, in whole or in part, at LANL.
FAR 52.223-10	Waste Reduction Program (May 2011)	Applies only when work will be performed on site at LANL.
FAR 52.225-13	Restrictions on Certain Foreign Purchases (Jun 2008)	
FAR 52.227-3	Patent Indemnity (Apr 1984)	Applies in subcontracts that may result in the delivery of commercial items, as that term is defined in 48 CFR subpart 2.1.
FAR 52.227-23	Rights to Proposal Data (Technical) (Jun 1987)	Applies if subcontract is based on consideration of a technical proposal.
FAR 52.228-5	Insurance—Work on a Government Installation (Jan 1997)	Applies in subcontracts that require work on a Government installation.

THE FOLLOWING CLAUSES APPLY TO THIS SUBCONTRACT REGARDLESS OF THE AMOUNT OF THE SUBCONTRACT PRICE, UNLESS OTHERWISE NOTED:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.232-7	Payments Under Time-and-Materials and Labor-Hour Contracts (Aug 2012)	Paragraph (a) (7) is changed to require withholding at 10% and a not-to-exceed amount of \$100,000.
FAR 52.232-39	Unenforceability of Unauthorized Obligations (Jun 2013)	
FAR 52.242-1	Notice of Intent to Disallow Costs (Apr 1984)	
FAR 52.244-6	Subcontracts for Commercial Items (Jan 2017)	
FAR 52.245-1	Government Property (Jan 2017)	Applies to all time-and-material solicitations and subcontracts, and labor-hour solicitations when property is expected to be furnished for the labor-hour subcontract. Applies when FAR 52.245-1 is applicable.
FAR 52.245-9	Use and Charges (Apr 2012)	
FAR 52.246-6	Inspection - Time-and-Materials and Labor-Hour (May 2001)	
FAR 52.247-63	Preference for U.S.-Flag Air Carriers (Jun 2003)	Applies if performance of subcontract may involve international air transportation.
FAR 52.247-64	Preference for Privately Owned U.S.- Flag Commercial Vessels (Feb 2006)	Applies in all subcontracts, except those described in paragraph (e)(4) of FAR 52.247-64.
FAR 52.249-6	Termination (Cost-Reimbursement) (May 2004) Alternate IV (Sep 1996)	Paragraphs (e), (j) and (n) are deleted, and the period for submitting the subcontractor's termination settlement proposal in paragraph (f) is reduced to 6 months.
FAR 52.249-14	Excusable Delays (Apr 1984)	
DEAR 952.203-70	Whistleblower Protection For Contractor Employees (Dec 2000)	Applies to subcontracts involving work performed on behalf of DOE directly related to activities at DOE-owned or leased sites.
DEAR 952.204-71	Sensitive Foreign Nations Controls (Apr 1994)	Applies if SUBCONTRACTOR may make unclassified information about nuclear technology available to certain sensitive foreign nations. When applicable, contact CONTRACTOR to get a list of Sensitive Foreign Nations.
DEAR 952.208-70	Printing (Apr 1984)	
DEAR 952.250-70	Nuclear Hazards Indemnity Agreement (Aug 2016)	Applies only if performance of subcontract may involve the risk of public liability, as that term is defined in the Atomic Energy Act of 1954, as amended, with the additional conditions described in DEAR 952.250-70(d)(2).
DEAR 970.5223-1	Integration Of Environment, Safety, And Health Into Work Planning And Execution (Dec 2000)	Applies to subcontracts involving complex or hazardous work at LANL.
DEAR 970.5225-1	Compliance with Export Control Laws and Regulations (Nov 2015)	
DEAR 970.5229-1	State and Local Taxes (Dec 2000)	
DEAR 970.5232-3	Accounts, Records, and Inspection (Dec 2010)	Paragraph (b) is deleted.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$2,500:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-41	Service Contract Labor Standards (May 2014)	Unless exempted, applies if the principal purpose of the subcontract is to furnish services in the United States through the use of service employees. See FAR subparts 22.1003-3 and 22.1003-4 for exemptions to SCA.
FAR 52.222-42	Statement of Equivalent Rates for Federal Hires (May 2014)	Applies if FAR 52.222-41 is applicable.
FAR 52.222-43	Fair Labor Standards Act and Service Contract Labor Standards—Price Adjustment (Multiple Year and Option Contracts) (Aug 2018)	Applies if FAR 52.222-41 is applicable, and subcontract is a multiple year or has options to renew.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$2,500:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-44	Fair Labor Standards Act and Service Contract Labor Standards— Price Adjustment (May 2014)	Applies if FAR 52.222-41 is applicable, and subcontract is not a multiple year or does not have options to renew.
FAR 52.222-51	Exemption from Application of the Service Contract Labor Standards to Contracts for Maintenance, Calibration, or Repair of Certain Equipment— Requirements (May 2014)	Applies if SUBCONTRACTOR has made the certification specified in FAR 52.222-48(a).
FAR 52.222-53	Exemption from Application of the Service Contract Labor Standards to Contracts for Certain Services— Requirements (May 2014)	Applies if SUBCONTRACTOR has made the certification specified in FAR 52.222-52(a).
FAR 52.222-55	Minimum Wages Under Executive Order 13658 (Dec 2015)	Applies in all subcontracts, regardless of dollar value, that are subject to the Service Contract Labor Standards statute or the Wage Rate Requirements (Construction) statute, and are to be performed in whole or in part in the United States.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$3,500:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-54	Employment Eligibility Verification (Oct 2015)	Applies in each subcontract that— (1) Is for— (i) Commercial or noncommercial services (except for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item, but for minor modifications), performed by the COTS provider, and are normally provided for that COTS item); or (ii) Construction; (2) Has a value of more than \$3,500; and (3) Includes work performed in the United States.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$10,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-3	Convict Labor (Jun 2003)	Applies if subcontract will be performed in the United States, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, or the U.S. Virgin Islands.
FAR 52.222-21	Prohibition of Segregated Facilities (Apr 2015)	Applies if FAR 52.222-26, Equal Opportunity, is applicable.
FAR 52.222-24	Preaward On-Site Equal Opportunity Compliance Evaluation (Feb 1999)	Solicitation provision that applies in solicitations, other than those for construction, when a subcontract is contemplated that will include the clause at 52.222-26, Equal Opportunity, and the amount of the subcontract is expected to be \$10 million or more.
FAR 52.222-26	Equal Opportunity (Sep 2016)	Applies unless one of the exemptions listed in FAR Subpart 22.807(b) is applicable.
FAR 52.222-40	Notification of Employee Rights Under the National Labor Relations Act (Dec 2010)	Applies in subcontracts that will be performed wholly or partially in the United States, unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 3 of Executive Order 13496 of January 30, 2009.
FAR 52.223-18	Encouraging Contractor Policies to Ban Text Messaging While Driving (Aug 2011)	
FAR 52.225-1	Buy American Act – Supplies (May 2014)	Applies if the acquisition is for supplies for use within the United States; and none of the exceptions to the Buy American Act apply (e.g., nonavailability, public interest, or information technology that is a commercial item).
FAR 52.232-23	Assignment of Claims (May 2014) Alternate I (Apr 1984)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$15,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-36	Equal Opportunity for Workers with Disabilities (Jul 2014)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE IS \$25,000 OR MORE:

Clause Number	Title and Date	Additional Conditions of Applicability
DEAR 970.5223-3	Agreement Regarding Workplace Substance Abuse Programs At DOE Sites (Dec 2000)	Solicitation provision that applies if performance of subcontract involves: (i) access to or handling of classified information or special nuclear materials; (ii) high risk of danger to life, the environment, public health and safety, or national security; or (iii) transportation of hazardous materials to or from a DOE site.
DEAR 970.5223-4	Workplace Substance Abuse Programs at DOE Sites (Dec 2000)	Applies if performance of subcontract involves: (i) access to or handling of classified information or special nuclear materials; (ii) high risk of danger to life, the environment, public health and safety, or national security; or (iii) transportation of hazardous materials to or from a DOE site.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$100,000:

Clause Number	Title and Date	Additional Conditions of Applicability
DEAR 970.5227-5	Notice and Assistance Regarding Patent and Copyright Infringement (Dec 2000)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE IS \$150,000 OR MORE:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.222-35	Equal Opportunity for Veterans (Oct 2015)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.
FAR 52.222-37	Employment Reports on Veterans (Feb 2016)	Applies unless exempted by the rules, regulations, or orders of the Secretary of Labor.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$150,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-7	Anti-Kickback Procedures (May 2014)	Paragraph (c) (1) is deleted.
FAR 52.203-12	Limitation On Payments To Influence Certain Federal Transactions (Oct 2010)	

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$250,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-3	Gratuities (Apr 1984)	
FAR 52.203-5	Covenant Against Contingent Fees (May 2014)	Applies only if subcontract is for non-commercial items.
FAR 52.203-6	Restrictions on Subcontractor Sales to the Government (Sep 2006)	Alternate I (Oct 1995) is also applicable if subcontract is for commercial items.
FAR 52.203-8	Cancellation, Rescission, And Recovery Of Funds For Illegal Or Improper Activity (May 2014)	Applies only if subcontract is for non-commercial items.
FAR 52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity (May 2014)	Applies only if subcontract is for non-commercial items. If applicable, in paragraph (d) the term "Government" means "Government or CONTRACTOR."

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$250,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.203-17	Contractor Employee Whistleblower Rights and Requirement to Inform Employees of Whistleblower Rights (Apr 2014)	
FAR 52.215-2	Audit and Records –Negotiation (Oct 2010)	Applies in solicitations and subcontracts that exceed the simplified acquisition threshold, and— (1) That are cost-reimbursement, incentive, time-and- materials, labor-hour, or price-redeterminable type or any combination of these; (2) For which certified cost or pricing data are required; or (3) That require subcontractor to furnish reports as discussed in paragraph (e) of this clause.
FAR 52.219-8	Utilization of Small Business Concerns (Nov 2016)	Applies if subcontract offers further subcontracting opportunities and is to be performed within the United States and its outlying areas. If applicable and the subcontract exceeds \$700,000 (\$1,500,000 for construction of any public facility), SUBCONTRACTOR shall include FAR 52.219-8 in its lower tier subcontracts (except subcontracts to small business concerns) that offer further subcontracting possibilities.
FAR 52.222-17	Nondisplacement of Qualified Workers (May 2014)	Applies in in solicitations and subcontracts for (1) service contracts, as defined at FAR 22.001, (2) that succeed subcontracts for performance of the same or similar work at the same location and (3) that are not exempted by FAR 22.1203-2 or waived in accordance with FAR 22.1203-3.
FAR 52.227-1 FAR 52.232-17	Authorization and Consent.(Dec 2007) Alternate I (Apr 1984) Interest (May 2014)	Applies unless one of the exemptions listed in FAR Subpart 32.611(a) is applicable.
DEAR 952.209-72	Organizational Conflicts of Interest (Aug 2009) with Alternate I	Applies if subcontract is for advisory and assistance services, as defined in FAR Subpart 2.101. The activities and programs listed in FAR Subpart 37.202 are excluded or exempted from the definition of advisory or assistance services.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$500,000:

Clause Number	Title and Date	Additional Conditions of Applicability
DEAR 952.226-74	Displaced Employee Hiring Preference (Jun 1997)	Applies if subcontract is <u>not</u> for commercial items, as that term is defined in 48 CFR Subpart 2.1.
DEAR 970.5226-2	Workforce Restructuring Under Section 3161 of the National Defense Authorization Act for Fiscal Year 1993 (Dec 2000)	Applies if subcontract is <u>not</u> for commercial items, as that term is defined in 48 CFR Subpart 2.1.

THE FOLLOWING CLAUSE APPLIES ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$700,000, THE SUBCONTRACTOR IS A LARGE BUSINESS, AND FAR 52.219-8 IS APPLICABLE:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.219-9	Small Business Subcontracting Plan (Jan 2017), Alternate II (Nov 2016)	Applies in subcontracts to other than small business concerns that offer subcontracting possibilities, and are expected to exceed \$700,000. Subcontracting plans are not required when the subcontractor provides a commercial item subject to the clause at 52.244-6, Subcontracts for Commercial Items.

THE FOLLOWING CLAUSES APPLY ONLY TO A NEGOTIATED SUBCONTRACT IF THE SUBCONTRACT PRICE EXCEEDS \$2,000,000:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.230-2	Cost Accounting Standards (Oct 2015), excluding paragraph (b)	Applies unless the subcontract is: (1) exempted from CAS (see 48 CFR 9903.201-1 (FAR Appendix)), or (2) subject to modified CAS coverage (see 48 CFR 9903.201-2 (FAR Appendix)) or (3) awarded to a foreign concern. When applicable, paragraph (b) is deleted and SUBCONTRACTOR shall include the substance of this clause, without paragraph (b), in all other subcontracts of any tier.
FAR 52.230-3	Disclosure And Consistency Of Cost Accounting Practices (Oct 2015), excluding paragraph (b)	Applies only to a negotiated subcontract that exceeds \$2,000,000 but is less than \$50 million, and the offeror certifies it is eligible for and elects to use modified CAS coverage. When applicable, paragraph (b) is excluded, and SUBCONTRACTOR shall include this clause in all other subcontracts of any tier, except those exempted by FAR 52.230-3 (d).
FAR 52.230-4	Disclosure and Consistency of Cost Accounting Practices - Foreign Concerns (Oct 2015)	Applies only to a negotiated subcontract with a foreign concern, unless the subcontract is otherwise exempt from CAS (see 48 CFR 9903.201-1 (FAR Appendix)).
FAR 52.230-6	Administration of Cost Accounting Standards (Jun 2010)	Applies if FAR 52.230-2, 52.230-3, 52.230-4 or 52.230-5 is applicable.
DEAR 970.5232-5	Liability With Respect To Cost Accounting Standards (Dec 2000)	Applies if any Cost Accounting Standards clauses are included (i.e., FAR 52.230-2, 52.230-3, 52.230-6).

THE FOLLOWING CLAUSES APPLY ONLY IF THE SUBCONTRACT PRICE EXCEEDS \$2,000,000 AND THE SUBCONTRACTOR IS REQUIRED TO SUBMIT COST OR PRICING DATA, OR WHERE PREAWARD OR POSTAWARD COST DETERMINATIONS WILL BE SUBJECT TO FAR PART 31, CONTRACT COST PRINCIPLES AND PROCEDURES:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.215-10	Price Reduction for Defective Certified Cost or Pricing Data (Aug 2011)	Applies unless one of the exceptions in FAR 15.403-1(b) is applicable.
FAR 52.215-11	Price Reduction for Defective Certified Cost or Pricing Data – Modifications (Aug 2011)	Applies if modification exceeds \$2,000,000, none of the exceptions in FAR 15.403-1(b) are applicable to modification, and FAR 52.215-10 was not applicable to subcontract.
FAR 52.215-12	Subcontractor Certified Cost or Pricing Data (Oct 2010)	Applies if FAR 52.215-10 is applicable.
FAR 52.215-13	Subcontractor Certified Cost or Pricing Data – Modifications (Oct 2010)	Applies if FAR 52.215-11 is applicable.
FAR 52.215-15	Pension Adjustments and Asset Reversions (Oct 2010)	
FAR 52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions (July 2005)	Applies in solicitations and subcontracts for which it is anticipated that certified cost or pricing data will be required <u>or</u> for which any preaward or postaward cost determinations will be subject to FAR part 31.
FAR 52.215-19	Notification of Ownership Changes (Oct 1997)	Applies in solicitations and subcontracts for which it is contemplated that certified cost or pricing data will be required <u>or</u> for which any preaward or postaward cost determinations will be subject to FAR part 31.

THE FOLLOWING CLAUSES APPLY ONLY IF THE SCOPE OF WORK REQUIRES THE DESIGN / REDESIGN, DEVELOPMENT, OR OPERATION OF A SYSTEM OF RECORDS ON INDIVIDUALS THAT IS SUBJECT TO THE PRIVACY ACT OF 1974:

Clause Number	Title and Date	Additional Conditions of Applicability
FAR 52.224-1	Privacy Act Notification (Apr 1984)	Applies if subcontract scope of work requires redesign, development or operation of a system of records on individuals that is subject to the Privacy Act of 1974.
FAR 52.224-2	Privacy Act (Apr 1984)	

THE FOLLOWING CLAUSES APPLY AS STATED IN THE CONDITIONS OF APPLICABILITY:

Clause Number	Title and Date	Conditions of Applicability
FAR 52.203-13	Contractor Code of Business Ethics and Conduct (Oct 2015)	Applies only in subcontracts that have a value in excess of \$5.5 million and a performance period of more than 120 days.
FAR 52.203-15	Whistleblower Protections Under the American Recovery and Reinvestment Act of 2009 (Jun 2010)	Applies only in subcontracts for commercial items as defined in FAR subpart 2.101 that are funded under the Act.
FAR 52.204-21	Basic Safeguarding of Covered Contractor Information Systems (Jun 2016)	Applies only in subcontracts for commercial items (other than commercially available off-the-shelf items), in which the subcontractor may have Federal contract information residing in or transiting through its information system.
FAR 52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (Oct 2015)	Applies in solicitations and subcontracts, other than a subcontract for commercially available off-the-shelf (COTS) items, where the subcontract value exceeds \$35,000.
FAR 52.211-15	Defense Priority And Allocation Requirements (Apr 2008)	Applies in subcontracts in support of an approved program issued in accordance with the provisions of the Defense Priorities and Allocations System (DPAS) regulation (15 CFR part 700).
FAR 52.222-1	Notice To The Government Of Labor Disputes (Feb 1997)	Applies if a potential labor dispute may delay the timely performance of the CONTRACTOR'S Prime Contract with DOE/NNSA.
FAR 52.223-7	Notice of Radioactive Materials (Jan 1997)	Applies if items containing either radioactive material (requiring specific licensing under the regulations issued pursuant to the Atomic Energy Act of 1954, as amended) or other radioactive material (not requiring specific licensing in which the specific activity is greater than 0.002 microcuries per gram or the activity per item equals or exceeds 0.01 microcuries) are to be delivered or serviced under this subcontract. If applicable, SUBCONTRACTOR shall notify CONTRACTOR, in writing, 30 days prior to delivery of, or prior to completion of any servicing required by this subcontract.
FAR 52.224-3	Privacy Training.(Jan 2017)	Applies when subcontractor employees will– (1) Have access to a system of records; (2) Create, collect, use, process, store, maintain, disseminate, disclose, dispose, or otherwise handle personally identifiable information; or (3) Design, develop, maintain, or operate a system of records.
FAR 52.227-14	Rights in Data - General (May 2014) as modified by DEAR 927.409(a), including Alternate V (Dec 2007)	Applies in subcontracts in which technical data or computer software is expected to be produced and in subcontracts for supplies that contain a requirement for production or delivery of data.
FAR 52.227-16	Additional Data Requirements (Jun 1987)	Applies if subcontract involves experimental, developmental, research or demonstration work.
FAR 52.229-10	State of New Mexico Gross Receipts and Compensating Tax (Apr 2003)	Applies if: (1) The subcontractor will be performing a cost- reimbursement contract; (2) The subcontract directs or authorizes the subcontractor to acquire tangible personal property as a direct cost under a contract and title to such property passes directly to and vests in the United States upon delivery of the property by the vendor; and (3) The subcontract will be for services to be performed in whole or in part within the State of New Mexico.
FAR 52.232-40	Providing Accelerated Payments to Small Business Subcontractors. (Dec 2013)	Applies only to subcontracts with Small Business Concerns.
DEAR 952.211-71	Priorities And Allocations (Atomic Energy) (Apr 2008)	Applies in subcontracts issued in accordance with the provisions of the Defense Priorities and Allocations System (DPAS) regulation (15 CFR part 700) that are placed in support of authorized DOE atomic energy programs.

THE FOLLOWING CLAUSES APPLY AS STATED IN THE CONDITIONS OF APPLICABILITY:

<u>Clause Number</u>	<u>Title and Date</u>	<u>Conditions of Applicability</u>
DEAR 952.227-11	Patent Rights – Retention by the Contractor (Short Form) (Mar 1995)	Applies if subcontract is for experimental, developmental, demonstration or research work to be performed by a small business firm or domestic nonprofit organization as defined at FAR Subpart 27.301. Subcontracts which are subject to exceptional circumstances in accordance with 35 U.S.C. 202 and subparagraph (b)(5) of DEAR 970.5227-12 are exempt from the requirements of this clause.
DEAR 952.227-13	Patent Rights – Acquisition by the Government (Sept 1997)	Applies if subcontract is for experimental, developmental, research or demonstration work, and subcontractor is <u>not</u> a domestic small business or nonprofit organization, as defined at FAR Subpart 27.301.
DEAR 970.5204-3	Access To And Ownership Of Records (Oct 2014)	Applies in all subcontracts that contain DEAR 970.5223-1, Integration of Environment, Safety, and Health Into Work Planning and Execution.
DEAR 970.5208-1	Printing (Dec 2000)	Applies when printing is required, as “printing” is defined in Title I, Definitions, of the U.S. Government Printing and Binding Regulations (http://jcp.senate.gov/jcpregs.pdf)
DEAR 970.5227-7	Royalty Information (Dec 2000)	Solicitation provision applicable if the amount of royalties reported during negotiation is >\$250.
DEAR 970.5227-8	Refund Of Royalties (Aug 2002)	Applies if the amount of royalties reported during negotiation of the subcontract exceeds \$250. If applicable, SUBCONTRACTOR shall insert the substance of this clause in all lower tier subcontracts under this subcontract in which the amount of royalties reported during negotiation of the subcontract exceeds \$250.
DEAR 970.5227-12	Patent Rights Management and Operating Contracts, For-Profit Contractor, Advance Class Waiver (Dec 2000)	Applies if subcontract covers or is likely to cover subject matter that is classified for reasons of security.

EXHIBIT "A"
GENERAL CONDITIONS

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GC-1 DEFINITIONS (Nov 2018)

“CONTRACTOR” means Triad National Security, LLC (Triad), a limited liability company, which manages and operates Los Alamos National Laboratory (LANL) pursuant to Contract No. 89233218CNA000001 between the U.S. Department of Energy (DOE) / National Nuclear Security Administration (NNSA) and Triad. CONTRACTOR also means Subcontract Administrator, the individual authorized to act on behalf of Triad.

“Beneficial Occupancy” or “Use and Possession Prior to Completion”, if used in this subcontract or task order, means the procedure where CONTRACTOR occupies or makes use of any part of the Work, in accordance with General Condition GC-29 USE OF COMPLETED PORTIONS OF WORK.

“Days” means calendar days unless otherwise provided.

“FAR” means the Federal Acquisition Regulations at 48 CFR Chapter 1.

“Final Acceptance” means CONTRACTOR’S acceptance of all of the Work as a whole following SUBCONTRACTOR completion and successful inspection and testing. It is conclusive except for latent defects, gross mistakes or fraud.

“Final Completion”, if used in this subcontract or task order, means the point when all of the Work reasonably inferable from Subcontract Documents has been completed, as determined by CONTRACTOR. This includes the final cleanup of the premises, completion of all final inspection punch list items, and submission of all remaining contractual documents.

“GOVERNMENT” means the United States of America and includes the DOE / NNSA

“Jobsite” means a site at which the Work shall be performed under this subcontract.

“Laboratory” or “LANL” means the geographical location of Los Alamos National Laboratory, a federally funded research and development center owned by the DOE / NNSA.

“Subcontract” means this agreement, including all attachments, appendices, sections, exhibits, schedules, and revisions hereto, as issued from time to time.

“Subcontract Documents” denotes this Subcontract and those appendices and exhibits referenced thereon.

“SUBCONTRACTOR” means the company, corporation, partnership, individual, or other entity to which this Subcontract is issued, its authorized representatives, successors, and permitted assigns

“Substantial Completion”, if used in this subcontract or task order, means the point when the Work or a designated portion of the Work is sufficiently complete, in accordance with the Subcontract Documents, so that CONTRACTOR may use or occupy the Work or designated portion thereof for its intended purpose, as determined by CONTRACTOR. Additional requirements for achieving Substantial Completion are provided in Exhibit D, Scope of Work and Technical Specifications.

“Work”, “Goods” or “Services” means all the stated or implied activities to be performed by SUBCONTRACTOR as required by the Subcontract Documents, including the furnishing and supervision of all technical personnel and labor, and the supply of equipment, materials, and supplies necessary to perform this Subcontract.

GC-2A AUTHORIZED REPRESENTATIVES, COMMUNICATIONS AND NOTICES (Jan 2010)

Unless otherwise specified, all notices and communications in accordance with or related to this subcontract shall be between authorized representatives designated in writing by the parties and shall comply with security requirements set forth in Exhibit G “Security Requirements”. Notices shall be in writing and may be served either personally on the authorized representative of the receiving party, by electronic scanned document attached to an email, by facsimile, by courier or express delivery, or by certified mail to the address shown on the face of this subcontract or as directed by notice.

GC-3 INDEPENDENT CONTRACTOR (Jun 2009)

SUBCONTRACTOR represents that it is fully experienced, properly qualified, registered, licensed, equipped, organized, and financed to perform the Work under this subcontract. SUBCONTRACTOR shall act as an independent contractor and not as the agent of CONTRACTOR or GOVERNMENT in performing this subcontract, maintaining complete control over its employees and all of its suppliers and subcontractors of any tier. Nothing contained in this subcontract or any lower-tier purchase order or subcontract awarded by SUBCONTRACTOR shall create any contractual relationship between any lower-tier supplier or subcontractor and either CONTRACTOR or GOVERNMENT. SUBCONTRACTOR shall perform the Work hereunder in accordance with its own methods subject to compliance with the subcontract.

GC-4 SUBCONTRACT INTERPRETATION (Jun 2009)

All questions concerning interpretation or clarification of this subcontract by SUBCONTRACTOR shall be immediately submitted in writing to CONTRACTOR for resolution. Subject to the provisions of the General Condition titled "CHANGES," all determinations, instructions, and clarifications of CONTRACTOR shall be final and conclusive unless SUBCONTRACTOR believes such determinations, instructions or clarifications are fraudulent or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence, in which case SUBCONTRACTOR shall proceed under the terms of the Disputes clause.

At all times SUBCONTRACTOR shall proceed with the Work in accordance with the determinations, instructions, and clarifications of CONTRACTOR. SUBCONTRACTOR shall be solely responsible for requesting instructions or interpretations and shall be solely liable for any costs and expenses arising from its failure to do so.

GC-5 NOTICE TO PROCEED (Jul 2011)

SUBCONTRACTOR shall not commence work on site at LANL prior to receipt of a notice to proceed issued by the Subcontract Administrator. A notice to proceed shall not be issued prior to:

- (1) receipt by CONTRACTOR of a fully executed subcontract with the original signatures of both parties;
- (2) receipt by CONTRACTOR of certificates of insurance and endorsements evidencing that required coverage and limits of insurance are in full force and effect, when such certificates and endorsements are required herein;
- (3) approval by CONTRACTOR of SUBCONTRACTOR'S ES&H Plan submitted in accordance with the requirements of Exhibit F, when such ES&H Plan is required herein;
- (4) approval by CONTRACTOR of any plans submitted by SUBCONTRACTOR in accordance with the requirements of Exhibit G, when such plan(s) is/are required herein;
- (5) receipt by CONTRACTOR of executed payment and performance bonds, when such payment and performance bonds are required herein; and
- (6) receipt by CONTRACTOR of written confirmation that SUBCONTRACTOR has included or will include (i.e. flow down) in subcontracts with its lower-tier suppliers and subcontractors all environment, safety, health, security, and quality assurance requirements contained in Exhibits F, G and H necessary to fulfill this subcontract as it relates to their portion of the Work; and
- (7) compliance by SUBCONTRACTOR with any other applicable requirements specified in the subcontract.

CONTRACTOR reserves the right to issue a limited notice to proceed (LNTP) where CONTRACTOR determines circumstances require specific pre-performance activities necessary to support the subcontract. However this LNTP does not constitute a formal Notice to Proceed as set forth in this clause.

GC-6 ORDER OF PRECEDENCE (Jun 2009)

In resolving conflicts, discrepancies, errors or omissions between Subcontract Documents, the following order of precedence from highest to lowest shall be used, with the acknowledgement that a particular subcontract may not be comprised of all the documents listed below.

- (1) Subcontract Form of Agreement
- (2) Appendix SFA-1 titled "FAR & DEAR Clauses Incorporated By Reference"
- (3) Exhibit "A" – General Conditions
- (4) Exhibit "B" – Special Conditions
- (5) Exhibit "F" – Environmental, Safety and Health Requirements
- (6) Exhibit "G" – Security Requirements
- (7) Exhibit "H" – Quality Assurance Requirements
- (8) Exhibit "C" – Schedule of Quantities and Prices
- (9) Exhibit "D" – Scope of Work
- (10) Exhibit "D" – Technical Specifications
- (11) Exhibit "E" – Drawings
- (12) All other subcontract documents

NOTE: If this subcontract is funded in whole or part under the American Recovery and Reinvestment Act of 2009, Exhibit A1, ADDITIONAL GENERAL CONDITIONS RELATING TO WORK FUNDED UNDER AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (May 2009) shall take precedence over all documents listed herein except for the Subcontract Form of Agreement.

GC-7 STANDARDS AND CODES (Jun 2009)

Wherever references are made in this subcontract to standards or codes in accordance with which the Work under this subcontract is to be performed, the edition or revision of the standards or codes current on the effective date of this subcontract shall apply unless otherwise expressly stated. In case of conflict between any referenced standards and codes and any Subcontract Documents, the General Condition titled "SUBCONTRACT INTERPRETATION" shall apply.

GC-8 LAWS AND REGULATIONS (Nov 2018)

- (a) SUBCONTRACTOR shall comply with the requirements of applicable federal, state, and local laws and regulations (including DOE regulations), unless relief has been granted in writing by the appropriate regulatory agency. SUBCONTRACTOR shall also comply with DOE Directives, NNSA Policy Letters, and Laboratory policies and procedures, or parts thereof, which are identified in the subcontract. Copies of any such directives, letters, policies and procedures will be provided to the SUBCONTRACTOR upon request.
- (b) If SUBCONTRACTOR discovers any discrepancy or inconsistency between this subcontract and any law, ordinance, statute, rule, regulation, order or decree, SUBCONTRACTOR shall immediately notify CONTRACTOR in writing.
- (c) Regardless of the performer of the work, SUBCONTRACTOR is responsible for compliance with the requirements of this clause. SUBCONTRACTOR agrees to insert the substance of this clause, including this paragraph (c), in its subcontracts at any tier.

GC-9 PERMITS (Jun 2009)

Except as otherwise specified, SUBCONTRACTOR shall procure and pay for all permits, licenses, certifications and other applicable governing authority requirements and inspections, other than inspections performed by CONTRACTOR or GOVERNMENT or permits which by law or regulation must be acquired by CONTRACTOR or GOVERNMENT. SUBCONTRACTOR shall furnish any documentation, bonds, securities, deposits or assistance required to permit performance of the Work.

GC-10 TAXES (Jun 2009)

- (a) SUBCONTRACTOR shall pay all taxes, levies, duties and assessments of every nature due in connection with the Work under this subcontract, and shall make any and all payroll deductions and withholdings required by law. SUBCONTRACTOR agrees to indemnify and hold harmless CONTRACTOR and GOVERNMENT from any liability on account of any and all such taxes, levies, duties, assessments and deductions.
- (b) SUBCONTRACTOR shall with the approval of CONTRACTOR apply for and obtain for the benefit of the project any available exemption, deduction or exclusion under applicable laws for which SUBCONTRACTOR, CONTRACTOR or GOVERNMENT qualify.

GC-11 NEW MEXICO GROSS RECEIPTS TAX (Jun 2009)

SUBCONTRACTOR is required to pay such New Mexico Gross Receipts Tax (NMGR) as may be required by law. CONTRACTOR will issue a New Mexico Nontaxable Transaction Certificate (NTTC) to all Subcontractors who provide goods or services to CONTRACTOR, on the condition that SUBCONTRACTOR only uses the NTTC as permitted by New Mexico law. In no event will the payment of NMGR by SUBCONTRACTOR or its immediate and lower-tier subcontractors be considered an allowable cost under this subcontract if SUBCONTRACTOR or its immediate and lower-tier subcontractors are eligible for applicable deductions or exemptions from NMGR under New Mexico law.

GC-12 FINES AND PENALTIES (Jun 2009)

If a state or federal agency takes an enforcement action with associated fines and penalties against CONTRACTOR and/or Government for regulatory and/or permit noncompliance that resulted from a failure of SUBCONTRACTOR to perform in accordance with this Subcontract (e.g., failure to meet regulatory reporting milestones, making false statements in reports, etc.), SUBCONTRACTOR shall reimburse CONTRACTOR and/or the Government for the amount of any resultant fine and/or the cost of additional Work required as a result of the enforcement action. CONTRACTOR may withhold such amounts from any payments due SUBCONTRACTOR.

GC-13 CONTRACTOR'S RIGHT TO OFFSET (Jan 2010)

CONTRACTOR may collect any amount determined by the Subcontract Administrator to be owed to CONTRACTOR by offsetting the amount against any payment due to the SUBCONTRACTOR under any subcontract it has with CONTRACTOR issued pursuant to CONTRACTOR'S contract with GOVERNMENT for management and operation of Los Alamos National Laboratory. Any challenge to the amount of an offset under this clause shall be resolved under the Disputes clause of this subcontract.

GC-14 LABOR, PERSONNEL AND WORK RULES (Jun 2009)

- (a) SUBCONTRACTOR shall employ only competent and skilled personnel to perform the Work and shall remove from the Jobsite any SUBCONTRACTOR personnel determined to be unfit or to be acting in violation of any provision of this subcontract. SUBCONTRACTOR is responsible for maintaining labor relations in such manner that there is harmony among workers and shall comply with and enforce project and Jobsite procedures, regulations, work rules and work hours established by CONTRACTOR and GOVERNMENT.
- (b) CONTRACTOR may, at its sole discretion, temporarily or permanently bar from the Work, and any other location within the Los Alamos National Laboratory (LANL), any employee of SUBCONTRACTOR or any of its lower-tier subcontractors by written notice to SUBCONTRACTOR. In the event an employee is excluded from the Jobsite, SUBCONTRACTOR shall, promptly replace such individual with another who is fully competent and skilled to perform the Work. SUBCONTRACTOR shall not be entitled to compensation for any costs resulting from the removal of such employee.

- (c) SUBCONTRACTOR shall, to the extent permissible under applicable law, comply with the provisions of all labor agreement(s) which apply to the Work performed under this subcontract. If required by the terms of any such labor agreement(s), SUBCONTRACTOR shall, immediately after subcontract award, agree to comply with and be bound by the terms of such labor agreement(s).
- (d) If SUBCONTRACTOR has knowledge that any actual or potential labor dispute is delaying or threatens to delay the timely performance of this subcontract, SUBCONTRACTOR shall immediately give notice, including all relevant information, to CONTRACTOR.
- (e) SUBCONTRACTOR shall include the substance of this clause in all lower-tier subcontracts which require work to be performed at LANL.

GC-15 COMMERCIAL ACTIVITIES (Jun 2009)

Neither SUBCONTRACTOR nor its employees shall establish any commercial activity or issue concessions or permits of any kind to third parties for establishing commercial activities on the Jobsite or any other lands owned or controlled by CONTRACTOR or GOVERNMENT.

GC-16 NONDISCLOSURE, PUBLICITY AND ADVERTISING (Jan 2010)

SUBCONTRACTOR'S disclosure to a third party of any information, material, data, charts, graphs, or records obtained, developed or maintained under this subcontract is prohibited, except as approved in writing in advance by CONTRACTOR. Furthermore, SUBCONTRACTOR shall not make any announcement, release any photographs, or release any information concerning this subcontract, or the Laboratory, or any part thereof to any member of the public, press, business entity, or any other third party unless prior written consent is obtained from CONTRACTOR. All SUBCONTRACTOR requests for review and approval shall be addressed to CONTRACTOR. Additionally, SUBCONTRACTOR will ensure that its employees, subcontractors and/or affiliates who work on this subcontract understand this non-disclosure requirement and provide written acknowledgement of the same if requested by CONTRACTOR'S Subcontract Administrator. SUBCONTRACTOR agrees to include a similar requirement in all lower-tier subcontracts. All requests for authorization to release information by lower-tier subcontractors shall be subject approval of CONTRACTOR'S Subcontract Administrator.

GC-17 ENVIRONMENTAL, SAFETY AND HEALTH REQUIREMENTS (Jun 2009)

- (a) SUBCONTRACTOR shall be solely responsible for conducting operations under this subcontract to avoid risk of harm to the health and safety of persons and property and for inspecting and monitoring all its equipment, materials and work practices to ensure compliance with its obligations under this subcontract.
- (b) Throughout performance of the Work, SUBCONTRACTOR shall conduct all operations in such a way as to minimize impact upon the natural environment and prevent any spread or release of contaminated or hazardous substances.
- (c) SUBCONTRACTOR shall be solely responsible for complying with Exhibit F titled "ENVIRONMENTAL, SAFETY, AND HEALTH REQUIREMENTS", if made a part of this subcontract.

GC-25 OVERSIGHT OF WORK BY SUBCONTRACTOR (Jun 2009)

At all times during performance of this Subcontract and until the Work is completed and accepted, SUBCONTRACTOR shall directly oversee the Work, and when Work is performed on site at LANL, assign and have on site a competent individual, who is satisfactory to CONTRACTOR, who has authority to act for SUBCONTRACTOR.

GC-30 CONTRACTOR'S COMPLIANCE WITH DOE DIRECTIVES (Jun 2009)

When requested by CONTRACTOR, SUBCONTRACTOR shall provide such information, assistance and support as necessary to ensure CONTRACTOR'S compliance with any DOE directives that may be applicable to the scope of the work. If SUBCONTRACTOR believes that such request for information, assistance or support is not provided for elsewhere in the subcontract and constitutes a change under the General Condition titled "Changes", SUBCONTRACTOR shall proceed in accordance with the "Changes" clause.

GC-31A INSPECTION AND TESTING (Jun 2009)

- (a) All equipment and material furnished and work performed shall be properly inspected by SUBCONTRACTOR at its expense and shall at all times be subject to quality surveillance and quality audit by CONTRACTOR, GOVERNMENT or their authorized representatives who, upon reasonable notice, shall be afforded full and free access to the shops, factories or other places of business of SUBCONTRACTOR and its suppliers and subcontractors of any tier for such quality surveillance or audit. If any equipment, material or work is determined by CONTRACTOR or GOVERNMENT to be defective or not in conformance with this subcontract the provisions of the General Condition titled "WARRANTY" shall apply.
- (b) Unless otherwise provided in the subcontract, testing of equipment, materials or work shall be performed by SUBCONTRACTOR at its expense and in accordance with subcontract requirements. Should tests in addition to those required by this subcontract be desired by CONTRACTOR, SUBCONTRACTOR will be given reasonable notice to permit such testing. Such additional tests will be at CONTRACTOR'S expense.
- (c) SUBCONTRACTOR shall furnish samples as requested and shall provide reasonable assistance and cooperation necessary to permit tests to be performed on materials or work in place including reasonable stoppage of work during testing.

GC-35A CHANGES (Jun 2009)

- (a) CONTRACTOR may at any time, without notice to the sureties if any, unilaterally direct in writing subcontract changes, including additions, deletions, rescheduling and acceleration or deceleration, place of performance, to all or any part of the Work, and SUBCONTRACTOR agrees to perform such work as changed.
- (b) If any change under this clause, whether or not changed by any such order, or an act or omission of CONTRACTOR or GOVERNMENT, directly or indirectly causes an increase or decrease in the cost of or in the time required to perform any part of the Work an equitable adjustment shall be made to pricing or time of performance, or both. SUBCONTRACTOR shall, within thirty (30) calendar days of such change or act or omission, notify CONTRACTOR and submit detailed information substantiating its impact. SUBCONTRACTOR waives its rights, if any, to an equitable adjustment if it fails to comply with the requirements of this subclause. Upon agreement as to the impact of the change or act or omission, the subcontract shall be modified accordingly.
- (c) SUBCONTRACTOR shall proceed diligently with performance of the Work, pending final resolution of any request for adjustment, dispute, claim, appeal, or action arising under the subcontract, and comply with any decision of CONTRACTOR.

GC-36 DISPUTES (Jan 2010)(a) Definitions. For purposes of this clause:

“Board” means the Civilian Board of Contract Appeals or such successor Board as may be established by law.

“Arbitration decision” means a decision of the Board in an arbitration pursuant to this clause.

“Claim” means a written demand or written assertion by either contracting party seeking as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of a subcontract term, or other relief arising under, or relating to, this subcontract. A voucher, invoice, or other request for payment or equitable adjustment under the terms of the subcontract that is not in dispute when submitted is not a claim. The SUBCONTRACTOR may convert such submission into a claim if it is disputed either as to liability or amount, or is not acted upon in a reasonable time, by demanding a decision by the Subcontract Administrator.

“Counterclaim” means a claim asserted in a pleading filed with the Board in an arbitration proceeding pursuant to this clause which arises from the same occurrence or transaction that is the subject matter of the opposing party’s claim. Counterclaims do not need to be submitted to the Subcontract Administrator for decision.

(b) Nature of the Subcontract. This subcontract is not a Government contract and, therefore, is not subject to the Contract Disputes Act of 1978 (41 U.S.C. §§601-613). SUBCONTRACTOR acknowledges that GOVERNMENT is not a party to the subcontract, and, for purposes of the subcontract CONTRACTOR is not an agent of GOVERNMENT. Consequently, the provision for arbitration by the Board, as provided for in this clause, does not create or imply the existence of privity of contract between SUBCONTRACTOR and GOVERNMENT.(c) Scope of Clause. The rights and procedures set forth in this clause are the exclusive rights and procedures for resolution of all claims and disputes arising under, or relating to, this subcontract, and no action based upon any claim or dispute arising under, or relating to, this subcontract shall be brought in any court except as provided in this clause. The parties shall be bound by any arbitration decision rendered pursuant to this clause, which shall be vacated, modified, or corrected only as provided in the Federal Arbitration Act (9 U.S.C. §§1-16). An arbitration decision may only be enforced in any court of competent jurisdiction in the State of New Mexico.(d) Filing a Claim/Subcontract Administrator’s Decision.

- (1) Unless otherwise provided in this subcontract, SUBCONTRACTOR must file any claim against CONTRACTOR within sixty (60) Days after SUBCONTRACTOR knew or should have known the facts giving rise to the claim. Failure to file a claim within the period prescribed by this paragraph shall constitute a waiver of SUBCONTRACTOR’S right, if any, to an equitable adjustment under the subcontract.
- (2) SUBCONTRACTOR shall submit any claim in writing to the Subcontract Administrator who shall issue a decision on the matter within sixty (60) Days of receipt of the claim. If the Subcontract Administrator fails to issue a decision within sixty (60) Days, SUBCONTRACTOR may request mediation or demand for arbitration as provided in paragraphs (e) and (f) of this clause.
- (3) CONTRACTOR may, at any time prior to final payment under the subcontract or expiration of any warranty period, whichever is later, file a claim against SUBCONTRACTOR by issuing a written decision by the Subcontract Administrator asserting such a claim.
- (4) The decision of the Subcontract Administrator shall be final and conclusive unless SUBCONTRACTOR requests mediation or demands arbitration in accordance with the terms of this clause.

(e) Request for Mediation.

- (1) If the decision of the Subcontract Administrator is not satisfactory to SUBCONTRACTOR, or the Subcontract Administrator has failed to timely issue a decision in accordance with subparagraph (d) 2) of this provision, and SUBCONTRACTOR desires to pursue further action, SUBCONTRACTOR may request that the matter be scheduled for mediation. The request for mediation must be made within forty-five (45) Days after receipt of the Subcontract Administrator's decision.
- (2) If the Subcontract Administrator believes that mediation of the dispute is likely to lead to a satisfactory resolution, he or she will so inform SUBCONTRACTOR and the matter will be scheduled for mediation. The parties will agree on the format of the mediation and will jointly select the mediator. The cost of the mediator and related expenses shall be divided evenly between the parties.
- (3) If the Subcontract Administrator decides that mediation is not likely to lead to a satisfactory resolution of the claim, or that a mediation undertaken pursuant to this clause has been unsuccessful, he or she will so inform SUBCONTRACTOR in writing.

(f) Demand for Arbitration. If the decision of the Subcontract Administrator is not satisfactory to SUBCONTRACTOR, or if SUBCONTRACTOR'S request for mediation has been denied, or a mediation undertaken pursuant to paragraph (e) of this clause has been unsuccessful, or the Subcontract Administrator has failed to timely issue a decision in accordance with subparagraph(d) 2) of this clause, and SUBCONTRACTOR desires to pursue further action, SUBCONTRACTOR must submit to the Board a written demand for arbitration of the claim within forty-five (45) Days after receipt of the Subcontract Administrator's decision, or within forty-five (45) Days after the Subcontract Administrator notifies SUBCONTRACTOR that its request for mediation has been denied or that the mediation undertaken pursuant to paragraph (e) has been unsuccessful, whichever is later.

(g) Arbitration Procedures/Costs. The Board shall arbitrate the claim and any counterclaims in accordance with the Rules of the Board. All claims for \$100,000 or less shall be arbitrated under the Board's Small Claims (Expedited) Procedure. All other claims, regardless of dollar amount, shall be arbitrated under the Board's Accelerated Procedure. Both parties shall be afforded an opportunity to be heard and to present evidence in accordance with the Rules of the Board. Unless the Board orders otherwise, each party shall pay its own costs of prosecuting or defending an arbitration before the Board.

(h) Review of Arbitration Decision. An arbitration decision shall be final and conclusive unless a party files a timely action to vacate, modify, or correct the decision pursuant to the Federal Arbitration Act.

(i) Subcontractor Performance Pending Claim Resolution. SUBCONTRACTOR shall proceed diligently with performance of the subcontract and shall comply with any decision of the Subcontract Administrator pending final resolution of any claim or dispute arising under, or relating to, the subcontract.

(j) Choice of Law. The subcontract shall be governed by federal law as provided in this paragraph. Irrespective of the place of award, execution, or performance, the subcontract shall be construed and interpreted, and its validity determined, according to the federal common law of government contracts as enunciated and applied to prime government contracts by the federal boards of contract appeals and federal courts having appellate jurisdiction over their decisions rendered pursuant to the Contract Disputes Act of 1978. The Federal Arbitration Act, other federal statutes, and federal rules shall govern as applicable. To the extent that federal common law of government contracts is not dispositive, the laws of the State of New Mexico shall apply.

(k) Interest. Interest on amounts adjudicated due and unpaid by a party shall be paid from the date the complaining party files a demand for arbitration with the Board. Interest on claims shall be paid at the rate established by the Secretary of the Treasury of the United States pursuant to Public Law 92-41 (85 Stat. 97).

GC-37 BANKRUPTCY (Jun 2009)

In the event SUBCONTRACTOR enters into proceedings relating to bankruptcy, whether voluntary or involuntary, SUBCONTRACTOR agrees to furnish CONTRACTOR written notification of the bankruptcy within five (5) days of the proceedings.

GC-38 RECORDS AND AUDIT (Jun 2009)

- (a) SUBCONTRACTOR shall maintain records and accounts in connection with the performance of this subcontract which will accurately document incurred costs, both direct and indirect, of whatever nature for a period of three (3) years from final payment unless otherwise specified by applicable law. CONTRACTOR, GOVERNMENT or their representatives shall have the right to examine and copy, at all reasonable times and with advance notification, such records and accounts for the purpose of verifying payments or requests for payment when costs are the basis of such payment and to evaluate the reasonableness of proposed subcontract price adjustments and claims.
- (b) If CONTRACTOR or GOVERNMENT establishes uniform codes of accounts for the project, SUBCONTRACTOR shall use such codes in identifying its records and accounts.
- (c) For subcontracts in excess of \$100,000.00, FAR clause 52.215-2, Audit and Records – Negotiation (JUN 1999) shall also apply, when included in Appendix SFA-1, FAR and DEAR Clauses Incorporated By Reference.

GC-39A WARRANTY (Jun 2009)

- (a) SUBCONTRACTOR warrants that it will perform the services under this subcontract with the degree of high professional skill, sound practices and good judgment normally exercised by recognized professional firms providing services of a similar nature. In addition to all other rights and remedies which CONTRACTOR or GOVERNMENT may have, SUBCONTRACTOR shall, at its expense, re-perform the services to correct any deficiencies which result from SUBCONTRACTOR'S failure to perform in accordance with the above standards.
- (b) All equipment and materials, if any, furnished under this subcontract shall be new, of clear title and of the most suitable grade of their respective kinds for their intended uses unless otherwise specified. All workmanship shall be first class and performed in accordance with sound industry practices acceptable to CONTRACTOR.
- (c) SUBCONTRACTOR warrants all equipment, materials and services it furnishes or performs under this subcontract against all defects for a period from Work commencement to a date twelve(12) months after acceptance of the project as a whole by GOVERNMENT or SUBCONTRACTOR'S most favored customer warranty term, whichever is longer.
- (d) In the event CONTRACTOR or GOVERNMENT discover defects in design, equipment, materials or workmanship at any time before the expiration of the specified warranty period, SUBCONTRACTOR shall, upon written notice from CONTRACTOR or GOVERNMENT and at SUBCONTRACTOR'S sole expense, cure any such defect by re-performing defective services and/or workmanship and repairing or replacing defective equipment and/or materials. All costs incidental to such corrective action including, but not limited to, review, access, removal, retesting and re-inspection shall be borne by SUBCONTRACTOR. If SUBCONTRACTOR fails to take corrective action within a reasonable time, CONTRACTOR or GOVERNMENT may perform the corrective measures by other reasonable means and SUBCONTRACTOR agrees to pay CONTRACTOR all actual costs, including labor burden, reasonably incurred by CONTRACTOR in performing or in having performed corrective actions. SUBCONTRACTOR further warrants any and all corrective measures for a period of twelve (12) months following their acceptance by CONTRACTOR or GOVERNMENT.

GC-41 INDEMNITY (Jun 2009-REVISED JULY 2019)

- (a) To the maximum extent permitted by applicable law, but no further, and subject to the requirements in **SC-999 No Consequential or Indirect Damages**, SUBCONTRACTOR hereby releases and shall indemnify, defend and hold harmless CONTRACTOR, GOVERNMENT and their subsidiaries and affiliates and the officers, agents, employees, successors and assigns and authorized representatives of all the foregoing from and against any and all suits, actions, legal or administrative proceedings, claims, demands, damages, liabilities, interest, attorney's fees, costs, expenses, and losses of whatsoever kind or nature in connection with or incidental to the performance of this subcontract, in any manner directly or indirectly caused, occasioned, or contributed to in whole or in part by the negligence or willful misconduct of SUBCONTRACTOR, its lower-tier suppliers, subcontractors or of anyone acting under its direction or control or on its behalf. SUBCONTRACTOR'S aforesaid indemnity obligations shall apply to the fullest extent permitted by law, but in no event shall they apply to liability to the extent caused by the negligence or willful misconduct of CONTRACTOR, the GOVERNMENT.
- (b) The foregoing shall include, but is not limited to, indemnity for:
- (1) Property damage and injury to or death of any person, including employees of CONTRACTOR, GOVERNMENT or SUBCONTRACTOR.
 - (2) The breach by SUBCONTRACTOR of any representation, warranty, covenant, or performance obligation of this subcontract.
- (c) SUBCONTRACTOR specifically waives any immunity provided against this indemnity by an industrial insurance or workers' compensation statute.

GC-42 PATENT AND INTELLECTUAL PROPERTY INDEMNITY (Jun 2009)

- (a) SUBCONTRACTOR hereby indemnifies and shall defend and hold harmless GOVERNMENT, CONTRACTOR, and their representatives from and against any and all claims, actions, losses, damages, and expenses, including attorney's fees, arising from any claim, whether rightful or otherwise, that any concept, product, design, equipment, material, process, copyrighted material or confidential information, or any part thereof, furnished by SUBCONTRACTOR under this subcontract constitutes an infringement of any patent or copyrighted material or a theft of trade secrets.
- (b) If use of any part of such concept, product, design, equipment, material, process, copyrighted material or confidential information is limited or prohibited, SUBCONTRACTOR shall, at its sole expense, procure the necessary licenses to use the infringing or a modified but non-infringing concept, product, design, equipment, material, process, copyrighted material or confidential information or, with CONTRACTOR'S prior written approval, replace it with substantially equal but non-infringing concepts, products, designs, equipment, materials, processes, copyrighted material or confidential information; provided, however,
- (1) That any such substituted or modified concepts, products, designs, equipment, material, processes, copyrighted material or confidential information shall meet all the requirements and be subject to all the provisions of this subcontract; and
 - (2) That such replacement or modification shall not modify or relieve SUBCONTRACTOR of its obligations under this subcontract.
- (c) The foregoing obligation shall not apply to any concept, product, design, equipment, material, process, copyrighted material or confidential information the detailed design of which (excluding rating and/or performance specifications) has been furnished in writing by CONTRACTOR or GOVERNMENT to SUBCONTRACTOR.

GC-43 ASSIGNMENTS (Jun 2009)

- (a) Any assignment of this subcontract or rights hereunder, in whole or part, without the prior written consent of CONTRACTOR shall be void, except that upon ten (10) calendar days written notice to CONTRACTOR, SUBCONTRACTOR may assign, with CONTRACTOR'S approval, claims for monies due or to become due hereunder to a bank, trust company, or other financial institution including any federal lending agency. Any such assignment may cover all amounts payable under this subcontract and not already paid, and shall not be made to more than one party, except that any such assignment may be made to one party, as agent or trustee of two or more parties participating in SUBCONTRACTOR'S financing. Payments to an assignee of any monies due, or to become due hereunder, shall be subject to setoff or recoupment for any present or future claim or claims which CONTRACTOR may have against SUBCONTRACTOR arising under this and other subcontracts. Upon such assignment, SUBCONTRACTOR shall provide CONTRACTOR with two copies of any such assignment and shall indicate on each invoice to whom payment is to be made.
- (b) This subcontract may be assigned by CONTRACTOR, in whole or in part, to GOVERNMENT or to others upon written notice to SUBCONTRACTOR.
- (c) No assignment will be approved which would relieve SUBCONTRACTOR or its sureties, if any, of their responsibilities under this subcontract.

GC-44 SUSPENSION (Jun 2009)

- (a) CONTRACTOR may by written notice to SUBCONTRACTOR suspend the Work under this subcontract in whole or in part at any time. Upon receipt of such notice, SUBCONTRACTOR shall discontinue work to the extent specified in the notice; continue to protect and maintain the Work; and take any other steps to minimize costs associated with such suspension.
- (b) Upon receipt of notice to resume suspended work, SUBCONTRACTOR shall immediately resume performance under this subcontract to the extent required in the notice.
- (c) If SUBCONTRACTOR intends to assert a claim for equitable adjustment under this clause it must, pursuant to the General Condition titled "CHANGES" and within ten (10) calendar days after receipt of notice to resume work, submit a written notification of claim and within twenty (20) calendar days thereafter a written proposal setting forth the impact of such suspension. Any such claim for equitable adjustment must exclude profit.

GC-45 EXPORT COMPLIANCE (Jun 2009)

- (a) SUBCONTRACTOR agrees that U.S. export control laws and regulations may govern aspects of the performance of this subcontract. SUBCONTRACTOR also acknowledges that all applicable export rules and regulations of the origin countries shall apply to the exports of commodities, software and technology (technical data and assistance) under this subcontract. Additionally, SUBCONTRACTOR acknowledges that other rules and regulations may restrict the use of certain parties under this subcontract. Such laws, rules and regulations are generally described below. SUBCONTRACTOR shall be responsible for any delay resulting from SUBCONTRACTOR'S failure to comply fully and timely with any such laws, rules or regulations described herein.

(1) Restricted Parties Lists

The U.S. Government, foreign governments and international organizations publish Restricted Parties Lists (“Lists”) that identify parties (such as known or suspected terrorists, money launderers and drug traffickers) restricted from certain or all types of transactions. SUBCONTRACTOR shall review all applicable Lists prior to initiating transactions with any third party for the performance of all or any portion of the Work to ensure such third party is not identified on any applicable Lists. SUBCONTRACTOR shall not enter into any transactions with any third party identified on any applicable Lists.

(2) U.S. Export Control Requirements

- (i) SUBCONTRACTOR will comply with all U.S. export control laws and regulations, including the provisions of the Export Administration Act of 1979 and the U.S. Export Administration Regulations (15 C.F.R. 730-774) promulgated thereunder, the U.S. Department of Energy’s export regulations (10 C.F.R. Part 810), the Arms Export Control Act, the International Traffic in Arms Regulations, and the sanctions and laws administered by the U.S. Treasury Department, Office of Foreign Assets Control (OFAC). SUBCONTRACTOR acknowledges that these statutes and regulations impose restrictions on the import and export to foreign countries and foreign nationals of certain categories of items and data and that licenses from the U.S. Department of Energy, U.S. Department of Commerce, U.S. State Department and/or OFAC may be required before such items or data can be disclosed, and that such licenses may impose further restrictions on use of and further disclosure of such data. SUBCONTRACTOR further acknowledges that the information which CONTRACTOR may disclose to SUBCONTRACTOR pursuant to the subcontract may be subject to these statutes and regulations.
- (ii) All work produced by SUBCONTRACTOR that is deemed to be export controlled shall be clearly marked with a legend on each page which states “Restricted access and distribution pursuant to U.S. export control laws.”

(3) Licensing Requirements

- (i) General: The United States of America and each country have export regulations that control commodities, software and technology for various reasons, such as national security, foreign policy, anti-terrorism, and to avoid the proliferation of weapons and potential weapons, e.g. certain nuclear, chemical or biological agents. Numerous countries have export regulations that specifically address dual-use items, meaning commercial items with the potential to be applied to military and/or weapon proliferation uses. SUBCONTRACTOR shall ensure that all necessary export licenses are timely obtained, or license exceptions confirmed in writing to CONTRACTOR, prior to the export of any commodity, software or technology. SUBCONTRACTOR shall provide to CONTRACTOR a copy of any export license obtained upon receipt by SUBCONTRACTOR, and in any event prior to the export occurring.
- (ii) United States of America (USA) Export Licensing Requirements: SUBCONTRACTOR is solely responsible for obtaining any required USA export licenses for all commodities, software, and technology being supplied in the performance of the Work, except for any commodity, software or technology supplied by CONTRACTOR. A copy of the export license, or SUBCONTRACTOR’S rationale as to why a license is not required, shall be provided to CONTRACTOR in writing upon receipt of the export license or SUBCONTRACTOR’S determination that a license is not required, and in any event prior to the export occurring.

- (b) In the event work under this subcontract is performed off shore, unless otherwise expressly provided for or otherwise approved in writing by CONTRACTOR:
- (1) SUBCONTRACTOR shall use the specifications and technical data only for purposes of this subcontract;
 - (2) SUBCONTRACTOR shall not disclosure the specifications and/or technical data to any other person, except a lower-tier subcontractor within the same country where SUBCONTRACTOR is performing the work under this subcontract;
 - (3) Nothing in this subcontract shall permit SUBCONTRACTOR or any other non U.S. person to acquire any rights in the specifications and/or technical data;
 - (4) SUBCONTRACTOR, and any lower-tier subcontractor, shall destroy or return to CONTRACTOR all of the specifications and technical data upon completion of its subcontract; and
 - (5) SUBCONTRACTOR shall deliver the deliverables under this subcontract directly to and only to CONTRACTOR.
- (c) SUBCONTRACTOR hereby agrees to indemnify, defend and hold CONTRACTOR, GOVERNMENT, each of their respective affiliates and the respective directors, officers, employees and representatives of each harmless from and against any and all claims, legal or regulatory actions, final judgments, reasonable attorneys' fees, civil fines and any other losses which any of them may incur as a result of SUBCONTRACTOR'S failure to comply with its obligations under this clause.
- (d) The substance of this clause shall be included in all subcontracts at every tier.

GC-46 SUBCONTRACTS (Jul 2011)

- (a) SUBCONTRACTOR shall not subcontract with any third party for the performance of all or any portion of the Work without the advance written approval of CONTRACTOR. Purchase orders and subcontracts of any tier must include provisions to secure all rights and remedies of CONTRACTOR and GOVERNMENT provided under this subcontract, and must impose upon the lower-tier supplier and subcontractor all of the duties and obligations required to fulfill this subcontract as it relates to their portion of the Work. SUBCONTRACTOR shall provide written confirmation prior to commencement of work on site at LANL that SUBCONTRACTOR has included or will include (i.e. flow down) in subcontracts with its lower-tier suppliers and subcontractors all environment, safety, health, security and quality assurance requirements contained in Exhibits F, G and H necessary to fulfill this subcontract as it relates to their portion of the Work. Additionally, when requested by CONTRACTOR, SUBCONTRACTOR shall provide written confirmation that SUBCONTRACTOR has included (i.e. flowed down) in subcontracts with its lower-tier suppliers and subcontractors all other duties and obligations required to fulfill this Subcontract as it relates to their portion of the Work.
- (b) Copies of all purchase orders and subcontracts are to be provided to CONTRACTOR upon request. Pricing may be deleted unless the compensation to be paid there under is reimbursable under this subcontract.
- (c) No subcontract will be approved which would relieve SUBCONTRACTOR or its sureties, if any, of their responsibilities under this subcontract.

GC-48B TERMINATION (Jun 2009)

FAR clause 52.249-6 titled "TERMINATION (COST-REIMBURSEMENT) (May 2004)" applies to this subcontract, as specified in Appendix SFA-1.

GC-49A FINAL INSPECTION AND ACCEPTANCE (Jun 2009)

When SUBCONTRACTOR considers the Work under this subcontract, or any CONTRACTOR specified segment thereof, complete and ready for acceptance, SUBCONTRACTOR shall notify CONTRACTOR in writing. CONTRACTOR will conduct such reviews, inspections and tests as needed to satisfy CONTRACTOR that each segment, or upon completion, the Work conforms to subcontract requirements. CONTRACTOR will notify SUBCONTRACTOR of any nonconformance and SUBCONTRACTOR shall take corrective action and the acceptance procedure shall be repeated as required by CONTRACTOR until each segment or, upon completion, the Work is accepted. If the Work is accepted in segments such acceptance is provisional pending Final Acceptance of the Work as a whole. CONTRACTOR'S written Notice of Final Acceptance of the Work shall be conclusive except for latent defects, fraud, or CONTRACTOR'S and GOVERNMENT'S rights under the General Condition titled "WARRANTY".

GC-50 NON-WAIVER (Jan 2010)

- (a) Failure by CONTRACTOR to insist upon strict performance of any terms or conditions of this subcontract shall not operate as, nor be deemed to be, a waiver or release of SUBCONTRACTOR'S obligations under this subcontract. The following illustrative examples include but are not limited to:
- (1) Failure or delay to exercise any rights or remedies provided herein or by law;
 - (2) The acceptance of or payment for any goods or services hereunder;
 - (3) Failure to properly notify SUBCONTRACTOR in the event of breach of any obligation;
 - (4) The review or failure by CONTRACTOR to review SUBCONTRACTOR submissions;
 - (5) The inspection and test by CONTRACTOR or the failure to inspect and test the Work; and
 - (6) The termination either in whole or in part of Work under this subcontract.
- (b) CONTRACTOR or GOVERNMENT reserves the right to insist upon strict performance hereof and to exercise any of its rights or remedies as to any prior or subsequent default hereunder.

GC-51A REPRESENTATIONS AND CERTIFICATIONS (Mar 2012) (Does not apply in subcontracts below \$2,500)

All Representations and Certifications provided by SUBCONTRACTOR are incorporated by reference and made part of this subcontract.

GC-52 SUBCONTRACT CLOSE-OUT CERTIFICATION AND RELEASE REQUIREMENTS (Jun 2009)

To administratively close out this subcontract, SUBCONTRACTOR shall submit, in addition to other requirements of this subcontract, the following documentation:

- (1) Property Status

Include a certification that states the following:

“All Government and CONTRACTOR-furnished property, material, special tooling, and special test equipment furnished, acquired, or generated and accountable to this subcontract has been consumed, delivered or otherwise disposed of by transfer, plant clearance or other authorized means as instructed by CONTRACTOR.”

- (2) Release and Certificate of Final Payment

SUBCONTRACTOR and each assignee, if any, under an assignment entered into under this subcontract and in effect at the time of final payment under this subcontract, shall execute and deliver, at the time of, and as a condition precedent to, final payment under this subcontract, a release in the format and content provided by CONTRACTOR, discharging CONTRACTOR, GOVERNMENT, and their respective officers, agents, and employees, of and from all liabilities, obligations and claims arising out of or under this subcontract.

GC-55 SEVERABILITY (Jun 2009)

The provisions of this subcontract are severable. If any provision shall be determined to be illegal or unenforceable, such determination shall have no effect on any other provision hereof, and the remainder of the subcontract shall continue in full force and effect so that the purpose and intent of this subcontract shall still be met and satisfied.

GC-56 SURVIVAL (Jun 2009)

All terms, conditions and provisions of this subcontract, which by their nature are independent of the period of performance, shall survive the cancellation, termination, expiration, default or abandonment of this subcontract.

GC-57 RELEASE AGAINST CLAIMS (Jun 2009)

SUBCONTRACTOR shall promptly pay all claims of persons or firms furnishing labor, equipment or materials used in performing the Work hereunder. CONTRACTOR reserves the right to require SUBCONTRACTOR to submit satisfactory evidence of payment and releases of all such claims. CONTRACTOR may withhold any payment until SUBCONTRACTOR has furnished such evidence of payment and release and shall indemnify and defend CONTRACTOR and GOVERNMENT against any liability or loss from any such claim.

GC-58 ACCOUNTS, RECORDS AND INSPECTION (Jan 2010)

- (a) *Accounts.* The SUBCONTRACTOR shall maintain a separate and distinct set of accounts, records, documents, and other evidence showing and supporting: all allowable costs incurred; collections accruing to the SUBCONTRACTOR in connection with the work under this subcontract, other applicable credits, negotiated fixed amounts, and fee accruals under this subcontract; and the receipt, use, and disposition of all Government property coming into the possession of the SUBCONTRACTOR under this subcontract. The system of accounts employed by the SUBCONTRACTOR shall be satisfactory to CONTRACTOR and NNSA and in accordance with generally accepted accounting principles consistently applied.
- (b) *Inspection and audit of accounts and records.* All books of account and records relating to this subcontract shall be subject to inspection and audit by CONTRACTOR, NNSA or their designees, at all reasonable times, before and during the period of retention provided for in paragraph (d) of this clause, and the SUBCONTRACTOR shall afford CONTRACTOR and NNSA proper facilities for such inspection and audit.
- (c) *Audit of Lower Tier Subcontractors' records.* The SUBCONTRACTOR also agrees, with respect to any lower tier subcontracts (including fixed-price or unit-price subcontracts or purchase orders) where, under the terms of the lower tier subcontract, costs incurred are a factor in determining the amount payable to the subcontractor of any tier, to either conduct an audit of the lower tier subcontractor's costs or arrange for such an audit to be performed by the cognizant government audit agency through the Subcontract Administrator.
- (d) *Disposition of records.* Except as agreed upon by CONTRACTOR/NNSA and the SUBCONTRACTOR, all financial and cost reports, books of account and supporting documents, system files, data bases, and other data evidencing costs allowable, collections accruing to the SUBCONTRACTOR in connection with the work under this subcontract, other applicable credits, and fee accruals under this subcontract, shall be the property of the Government, and shall be delivered to CONTRACTOR or otherwise disposed of by the SUBCONTRACTOR either as the Subcontract Administrator may from time to time direct during the progress of the work or, in any event, as the Subcontract Administrator shall direct upon completion or termination of this subcontract and final audit of accounts hereunder. Except as otherwise provided in this subcontract, all other records in the possession of the SUBCONTRACTOR relating to this subcontract shall be preserved by the SUBCONTRACTOR for a period of three years after final payment under this subcontract or otherwise disposed of in such manner as may be agreed upon by CONTRACTOR and SUBCONTRACTOR.

- (e) *Reports.* The SUBCONTRACTOR shall furnish such progress reports and schedules, financial and cost reports, and other reports concerning the work under this subcontract as the Subcontract Administrator may from time to time require.
- (f) *Inspections.* CONTRACTOR and NNSA shall have the right to inspect the work and activities of the SUBCONTRACTOR under this subcontract at such time and in such manner as they shall deem appropriate.
- (g) *Lower Tier Subcontracts.* The SUBCONTRACTOR further agrees to require the inclusion of provisions similar to those in paragraphs (a) through (g) and paragraph (h) of this clause in all subcontracts (including fixed-price or unit-price subcontracts or purchase orders) of any tier entered into hereunder where, under the terms of such subcontract, costs incurred are a factor in determining the amount payable to the lower tier subcontractor.
- (h) *Comptroller General.*
- (1) The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the contractor's directly pertinent records involving transactions related to this contract or a subcontract hereunder.
 - (2) This paragraph may not be construed to require the contractor or subcontractor to create or maintain any record that the contractor or subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.
 - (3) Nothing in this contract shall be deemed to preclude an audit by the Government Accountability Office of any transaction under this contract.

GC-59 CERTIFICATION REGARDING FORMER UC OR CONTRACTOR EMPLOYEES (Feb 2015)

- (a) Effective June 1, 2006, individuals who retire under CONTRACTOR'S Defined Benefit Pension Plan (i.e., TCP-1), who wish to begin a retirement benefit, are required to have a true and complete severance from CONTRACTOR with no prior prearrangement for reemployment with CONTRACTOR or any of CONTRACTOR'S affiliated companies or subcontractors to do similar work. This can be documented by completing a form at the time of termination stating that no prearrangement for reemployment existed prior to the termination, and by demonstrating a true and complete severance from CONTRACTOR, before working for any of CONTRACTOR'S affiliated companies or subcontractors, for at least:
- one hundred eighty (180) days, if under the age of sixty (60) at the time of termination; or
 - ninety (90) days, if age sixty (60) or above at the time of termination.
- (b) Effective June 1, 2006, individuals who retire under CONTRACTOR'S 401(k) Retirement Plan (i.e., TCP-2), before attaining age sixty (60), are required to have a true and complete severance from CONTRACTOR with no prior prearrangement for reemployment with CONTRACTOR or any of CONTRACTOR'S affiliated companies or subcontractors to do similar work. This can be documented by completing a form at the time of termination stating that no prearrangement for reemployment existed prior to the termination and by demonstrating a true and complete severance from CONTRACTOR, before working for any of CONTRACTOR'S affiliated companies or subcontractors, for at least one hundred eighty (180) days. Individuals who retire under CONTRACTOR'S 401(k) Retirement Plan after age sixty (60) do not have any restrictions on reemployment.

- (c) An individual who retired under the University of California Retirement Plan (UCRP) or the Public Employees Retirement System (PERS) may be immediately reemployed by any of CONTRACTOR'S affiliated companies or subcontractors, unless that individual also retired under one of CONTRACTOR'S retirement plans in which case such individual must also comply with paragraph (a) or (b) above.
- (d) Any former employee of CONTRACTOR or of the University of California (UC) who was terminated for cause or who resigned in lieu of termination for cause is prohibited from returning to work at Los Alamos National Laboratory (LANL). SUBCONTRACTOR and its lower tier subcontractors may not employ any former employee of CONTRACTOR or of UC, who was terminated for cause or who resigned in lieu of termination for cause, for any on-site work at LANL or for any work under this subcontract in which such former employee may have any direct or indirect substantive contact with a current CONTRACTOR employee, unless approved by CONTRACTOR in writing prior to commencement of work by SUBCONTRACTOR.
- (e) In order to assure compliance with paragraphs (a) through (d), SUBCONTRACTOR shall, with respect to its employees who are assigned to work under this subcontract and those of its lower tier subcontractors' employees who are assigned to work under this subcontract, certify that all individuals who are assigned to work under this subcontract are in compliance with the requirement of paragraphs (a) through (d) of this clause. Such certification must be provided in writing to CONTRACTOR before the start of work under this subcontract. In making this certification SUBCONTRACTOR and its lower tier subcontractors may rely on information provided by applicants for employment or current employees, so long as SUBCONTRACTOR and its lower tier subcontractors have exercised due diligence and have, at a minimum, obtained the following information from each applicant or employee:
- (1) whether the employee was a former UC or CONTRACTOR employee, and if so:
 - (i) the date of separation;
 - (ii) age at separation; and
 - (iii) reason for separation.
 - (2) whether the employee is a member of CONTRACTOR'S Defined Benefit Pension Plan (i.e., TCP-1) or CONTRACTOR'S 401(k) Plan (i.e., TCP-2); and
 - (3) confirmation that, if the employee retired under one of CONTRACTOR'S retirement plans, to the extent described above, the employee had no prior prearrangement for reemployment by SUBCONTRACTOR or one of its lower tier subcontractors prior to separation.
- (f) CONTRACTOR may exclude SUBCONTRACTOR from future subcontracts for a reasonable, specified period, if CONTRACTOR determines that SUBCONTRACTOR breached any of the requirements contained in paragraphs (a) through (d) of this clause.
- (g) SUBCONTRACTOR shall ensure that the substance of this clause is included in all lower-tier subcontracts awarded pursuant to this subcontract.

GC-60 SUBCONTRACTS WITH CONTRACTOR'S TEAM MEMBERS AND TEAM MEMBER AFFILIATES (Nov 2018)

- (a) As used in this provision:
- (1) Team Members means any of the following entities: Battelle Memorial Institute, The Texas A&M University System, and The Regents of the University of California.

- (2) Team Member Affiliate means any person or entity which is a wholly owned, majority owned, or otherwise an affiliate of any Team Member. The term 'affiliate' is defined at FAR 2.101.
- (b) Because of restrictions in the contract between NNSA and CONTRACTOR concerning the payment of fee or profit when subcontracting with any Team Member or any Team Member Affiliate, as well as Organizational Conflict of Interest concerns, neither SUBCONTRACTOR nor any tier of its lower tier subcontractors or suppliers shall enter into a subcontract with any Team Member or any Team Member Affiliate to provide goods or services under this subcontract without the advance written approval of the Subcontract Administrator. In the event that written approval is granted to enter into a subcontract with a Team Member or a Team Member Affiliate, no fee or profit shall be paid to such Team Member or Team Member Affiliate under the proposed subcontract. In the event it is later determined that a Team Member or a Team Member Affiliate has been paid a fee or profit, SUBCONTRACTOR shall reimburse CONTRACTOR the amount of this fee or profit.
- (c) SUBCONTRACTOR shall include the substance of this provision in all lower tier subcontracts and purchase orders.

GC-77 GREEN / SUSTAINABLE PRODUCTS (Feb 2015)

Whenever possible, SUBCONTRACTOR shall offer green/sustainable products and/or repair/spare parts, which meet the (1) minimum content levels for sustainable products or (2) Environmental Program certification or (3) product attributes, listed at the *Sustainable Facilities Tool* website found at <http://www.sftool.gov/greenprocurement>. Minimum content levels, environmental program certifications and product attributes, if any, are listed under the column titled "Procurement Info" for each product.

When green/sustainable products and/or repair/spare parts are purchased under this subcontract, when requested by CONTRACTOR, SUBCONTRACTOR shall provide quarterly reports to CONTRACTOR describing green/sustainable products procured by CONTRACTOR in the preceding quarter. Reports shall (at a minimum) include the following information:

1. Total dollar value of CONTRACTOR purchases for the preceding quarter, separated into each product category shown at the Sustainable Facilities Tool website.
2. Total dollar value of CONTRACTOR green/sustainable product purchases for the preceding quarter, separated into each product category shown at the *Sustainable Facilities Tool* website.

GC-80B INVOICING AND PAYMENT (Nov 2018)

- (a) SUBCONTRACTOR shall prepare and submit invoices pursuant to the Special Condition titled "MEASUREMENT FOR PAYMENT." CONTRACTOR may reject all or part of an invoice because the measurement for payment provisions have not been met, noting the deficiencies for SUBCONTRACTOR correction and compliance with the subcontract requirements.

CONTRACTOR may require SUBCONTRACTOR to withhold amounts from its billings until a reserve is set aside in an amount that the Subcontract Administrator considers necessary to protect CONTRACTOR'S interests. The Subcontract Administrator may require a withhold of up to 5 percent (5%) of the amounts due to SUBCONTRACTOR, but the total amount shall not exceed \$50,000. The amounts withheld shall be retained until the Subcontract Administrator no longer deems such action necessary to protect CONTRACTOR'S interests.

Within thirty (30) calendar days after receipt of an invoice, CONTRACTOR will pay SUBCONTRACTOR the approved invoice amount, less any withholds.

CONTRACTOR may, as a condition precedent to any payment, require SUBCONTRACTOR to submit for itself, its subcontractors, immediate and remote, and all material suppliers, vendors, laborers and other parties acting through or under it, complete waivers and releases of all claims against CONTRACTOR or GOVERNMENT arising under or by virtue of this subcontract. Upon request, SUBCONTRACTOR shall in addition furnish acceptable evidence that all such claims have been satisfied.

Failure to specify the subcontract number or to submit supporting documentation may be cause for invoice rejection or delay in payment.

- (b) Any amounts otherwise payable under this subcontract may be withheld, in whole or in part, if:
- (1) Any claims are filed against SUBCONTRACTOR by CONTRACTOR, GOVERNMENT or third parties (for which CONTRACTOR or GOVERNMENT is or may become liable);
 - (2) SUBCONTRACTOR is in default of any subcontract condition;
 - (3) Adjustments are due from previous overpayment or audit result; or
 - (4) Offsets in favor of CONTRACTOR in other transactions are asserted.

CONTRACTOR will pay SUBCONTRACTOR such withheld payments when all issues are resolved to CONTRACTOR'S satisfaction.

If claims filed against SUBCONTRACTOR connected with performance under this subcontract, for which CONTRACTOR may be held liable if unpaid (e.g., unpaid withholding and back taxes), are not promptly discharged by SUBCONTRACTOR after receipt of written notice from CONTRACTOR to do so, CONTRACTOR may discharge such claims and deduct all costs in connection with such removal from withheld payments or other monies due, or which may become due, to SUBCONTRACTOR. If the amount of such withheld payment or other monies due SUBCONTRACTOR under this subcontract is insufficient to meet such costs, or if any claim against SUBCONTRACTOR is discharged by CONTRACTOR after final payment is made, SUBCONTRACTOR and its surety or sureties, if any, shall promptly pay CONTRACTOR all costs incurred thereby regardless of when such claim arose.

- (c) Upon final acceptance of the Work by CONTRACTOR, SUBCONTRACTOR shall submit to CONTRACTOR a completed final release of claims acceptable to CONTRACTOR and a final correct invoice. Within thirty (30) calendar days after receipt of the final release of claims and final correct invoice, CONTRACTOR shall pay SUBCONTRACTOR the amount then remaining due.
- (d) SUBCONTRACTOR shall submit all invoices, in form and format directed by CONTRACTOR, electronically to invoices@lanl.gov or through the U.S. Postal Service to:

Triad National Security, LLC
Los Alamos National Laboratory
Accounting Department, MS P240
P.O. Box 1663
Los Alamos, NM 87545-1663

GC-82 ON-SITE USE OF RADIOACTIVE MATERIAL (Aug 2014)

No radioactive material may be used or stored at the work site unless approved in advance in writing by the Subcontract Administrator.

GC-84 ASSESSMENT OF SUBCONTRACTOR'S PERFORMANCE (Aug 2014)

CONTRACTOR shall periodically assess SUBCONTRACTOR'S performance to document how well SUBCONTRACTOR performed to the various standards/requirements described in this subcontract. That information will be used by CONTRACTOR in the future to determine whether SUBCONTRACTOR will be invited to submit proposals/bids for future solicitations for similar work.

GC-85 LOWER-TIER SUBCONTRACTORS (Aug 2014)

- (a) SUBCONTRACTOR shall submit to CONTRACTOR the list of all lower-tier (at all tiers) subcontractors and their function, together with a point of contact address and telephone number for each such subcontractor. Whenever, for any reason, SUBCONTRACTOR needs to substitute for, add to, or remove one or more of the aforementioned lower-tier subcontractors from Work under this Subcontract, SUBCONTRACTOR shall do so only with the prior approval of CONTRACTOR.
- (b) CONTRACTOR may not approve any proposed additional/substitute lower-tier subcontractor if CONTRACTOR has actual knowledge of the proposed additional/substitute lower-tier subcontractor's poor environmental compliance or safety performance under existing subcontracts with CONTRACTOR or any work performed for others even if the proposed lower-tier subcontractor has otherwise met all other ES&H qualification requirements in Exhibit F of this subcontract.
- (c) SUBCONTRACTOR'S request for CONTRACTOR approval of additional/substitute lower-tier subcontractor(s) must include the following information for each proposed additional/substitute lower-tier subcontractor:
- A brief explanation of the need to alter the list of lower-tier subcontractors
 - Name, address, contact, and phone number of proposed lower-tier subcontractor
 - Summary list of tasks to be performed under this Subcontract by the proposed lower-tier subcontractor
 - ESH qualification data for the proposed lower-tier subcontractor if required under Exhibit F of this subcontract.

GC-86 PROGRESS REPORTS (Aug 2014)

When requested by CONTRACTOR, SUBCONTRACTOR shall provide to CONTRACTOR, on a monthly basis, a concise summary report, in form and format and at a time directed by CONTRACTOR, describing the Work accomplished during the reporting period, Work forecasted to be completed during the next reporting period and a summary of problem areas, if any.

When requested by CONTRACTOR, CONTRACTOR and SUBCONTRACTOR shall meet weekly to review the status of the Work.

GC-88 MINIMUM WAGES UNDER EXECUTIVE ORDER 13658 (Mar 2015)

This clause implements Executive Order 13658, Establishing a Minimum Wage for Contractors, dated February 12, 2014, and OMB Policy Memorandum M-14-09, dated June 12, 2014.

- (a) Each service employee, laborer, or mechanic employed in the United States (the 50 States and the District of Columbia) in the performance of this contract by SUBCONTRACTOR or any lower-tier subcontractor, regardless of any contractual relationship which may be alleged to exist between SUBCONTRACTOR and each service employee, laborer, or mechanic, shall be paid not less than the applicable minimum wage under Executive Order 13658. The minimum wage required to be paid to each service employee, laborer, or mechanic performing work on this subcontract between January 1, 2015, and December 31, 2015, shall be \$10.10 per hour.
- (b) SUBCONTRACTOR shall adjust the minimum wage paid under this subcontract each time that Secretary of Labor's annual determination of the applicable minimum wage under section 2(a)(ii) of Executive Order 13658 results in a higher minimum wage. Adjustments to the Executive Order minimum wage under section 2(a)(ii) of Executive Order 13658 will be effective for all service employees, laborers, or mechanics subject to the Executive Order beginning January 1 of the following year. The Secretary of Labor will publish annual determinations in the Federal Register no later than 90 days before such new wage is to take effect. The Secretary will also publish the applicable minimum wage on www.wdol.gov (or any successor website). The applicable published minimum wage is incorporated by reference into this subcontract.
- (c) CONTRACTOR will adjust the subcontract price or subcontract unit price under this clause only for the increase in labor costs resulting from the annual inflation increases in the Executive Order 13658 minimum wage beginning on January 1, 2016. CONTRACTOR shall consider documentation as to the specific costs and workers impacted in determining the amount of the adjustment.
- (d) CONTRACTOR will not adjust the subcontract price under this clause for any costs other than those identified in paragraph (c) of this clause, and will not provide price adjustments under this clause that result in duplicate price adjustments with the respective clause of this subcontract implementing the Service Contract Labor Standards statute (formerly known as the Service Contract Act) or the Wage Rate Requirements (Construction) statute (formerly known as the Davis Bacon Act).
- (e) SUBCONTRACTOR shall include the substance of this clause, including this paragraph (e) in all subcontracts.

EXHIBIT "B"
SPECIAL CONDITIONS

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SC-2 AUTHORITY OF PERSONNEL (Nov 2018)

- (a) CONTRACTOR designates the below named individual as the Subcontract Administrator to administer the subcontract and act as CONTRACTOR'S authorized representative.

Charles Gibson
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop P215
 Los Alamos, NM 87545-1663
 Phone: (505) 665-4177
 Email: cegibson@lanl.gov

Additionally, all correspondence shall be issued and received by the designated Subcontract Administrator. The Subcontract Administrator is the only individual authorized to direct SUBCONTRACTOR to deviate from the express, written terms of the subcontract.

- (b) CONTRACTOR designates the below named individuals as the Person(s) In Charge (hereafter PIC), who are the points of contact for all of the technical aspects of the subcontract and are responsible for oversight of SUBCONTRACTOR's technical performance under this subcontract. The PIC is also responsible for monitoring and facilitating SUBCONTRACTOR compliance with various subcontract requirements, such as submission of technical deliverables and evidence of completion of training requirements.

Carolyn Zerkle

Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C938
 Los Alamos, NM 87545-1663
 Phone: (505) 665-3728
 Cell: (505) 412-8866
 Email: czerkle@lanl.gov

Mary Hockaday

Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C938
 Los Alamos, NM 87545-1663
 Phone: (505) 665-3728
 Cell: (505) 699-8102
 Email: mhockaday@lanl.gov

Evelyn Mullen

Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop A135
 Los Alamos, NM 87545-1663
 Phone: (505) 665-7576
 Cell: (505) 699-0984
 Email: emullen@lanl.gov

The PIC may utilize qualified technical personnel and administrative assistants to assist him/her in the performance of the PIC's duties. However, the designated PIC is ultimately responsible for Technical Oversight of the Work (i.e., the process by which a subcontract technical representative monitors and surveils a subcontractor's performance and compliance with subcontract terms and conditions). Should SUBCONTRACTOR and the PIC disagree over the technical aspects of the subcontract such matters will be immediately referred to CONTRACTOR'S Subcontract Administrator for resolution. The PIC does not possess any authority, express or implied, to direct SUBCONTRACTOR to deviate from the terms and conditions of the subcontract.

- (c) The Subcontract Administrator's Property Representative (SAPR) is:

ASM-PM Disposition Office
 Triad National Security, LLC
 Los Alamos National Laboratory
 P.O. Box 1663, Mail Stop C308
 Los Alamos, NM 87545
 Phone: (505) 665-8079
 Fax: (505) 667-3195
 Email: disposition@lanl.gov

The ASM-PM Disposition Office is designated to monitor the government property provided, acquired, or used in the performance of this subcontract. Any questions concerning said government property should be addressed to the Subcontract Administrator with a copy to the SAPR. The SAPR is also authorized to take any action necessary to ensure compliance with Federal Property Management Regulations, DOE Property Management Regulations, the LANL Property Management Manual and the terms of this subcontract regarding the appropriate use, loss, replacement, transfer, return, or other disposition of government-furnished property or subcontractor-acquired property. Notwithstanding the foregoing, the SAPR does not possess authority to change any of the requirements under this subcontract.

- (d) The Acquisition Services Management Division Manager, or the Manager's designee, may change the Subcontract Administrator, STR or SAPR at any time upon written notice to the SUBCONTRACTOR.

SC-3A COMMENCEMENT, PROGRESS AND COMPLETION OF THE WORK (Aug 2014)

- (a) SUBCONTRACTOR shall furnish sufficient personnel, equipment and facilities, and shall work such hours as necessary, to assure prosecution of the Work to completion in accordance with the following Subcontract Milestone dates:
- N/A
- (b) When the Subcontract Schedule is deemed critical by CONTRACTOR, SUBCONTRACTOR shall provide to CONTRACTOR, whenever requested, for CONTRACTOR'S approval, an original and subsequently updated Subcontract Schedule showing all activities and sequence of operations needed for the orderly performance and completion of the Work in accordance with the Subcontract Milestones set forth above. SUBCONTRACTOR shall adhere to the approved Subcontract Schedule, submitting periodic progress reports and/or proposed schedule changes in form and manner directed by CONTRACTOR.

SC-5 CONTRACTOR-FURNISHED GOVERNMENT-OWNED MATERIALS AND EQUIPMENT (Nov 2017)

- (a) CONTRACTOR will furnish to SUBCONTRACTOR, at CONTRACTOR'S designated location or Jobsite storage area, the items listed below to be incorporated into or used in performance of the Work under this subcontract. Such items will be furnished, without cost to SUBCONTRACTOR, provided that SUBCONTRACTOR shall, at its expense, accept delivery thereof, load, unload, transport to points of use, and care for such items until final disposition thereof. At time of acceptance of any such item from CONTRACTOR, SUBCONTRACTOR shall sign a receipt therefor. Signing of such receipt without reservation therein shall preclude any subsequent claim by SUBCONTRACTOR that any such items were received from CONTRACTOR in a damaged condition and with shortages.
- (b) SUBCONTRACTOR shall comply with the requirements of FAR Subpart 45.5 *Support Government Property Administration* and the Government Property clauses incorporated herein in the administration of Government property.
- (c) Materials and/or equipment to be furnished by CONTRACTOR:
- N/A
- (d) If SUBCONTRACTOR is required to lift or move any CONTRACTOR-furnished government-owned materials or equipment, CONTRACTOR will supply the manufacturer's lifting and rigging instructions to SUBCONTRACTOR. Based on the provided instructions, SUBCONTRACTOR shall prepare a lifting and rigging plan for CONTRACTOR'S approval. SUBCONTRACTOR and its lower tier subcontractors shall not perform the lift/move without CONTRACTOR's written approval of SUBCONTRACTOR'S proposed lifting and rigging plan. Upon obtaining CONTRACTOR'S written approval of the plan, SUBCONTRACTOR shall perform the lift/move in strict compliance with the approved plan.

SC-6 CONTRACTOR-FURNISHED AND SUBCONTRACTOR-ACQUIRED ITEMS (Jan 2010)

(a) Utilities

The utilities listed below will be furnished by CONTRACTOR without cost to SUBCONTRACTOR, provided that all such utilities will be furnished at outlets existing on the Jobsite and SUBCONTRACTOR shall, at its expense, extend such utilities from said outlets to points of use and at completion of all the Work remove all materials and equipment used for such extensions:

- (1) Construction water,
- (2) Potable water, and
- (3) Electric Power

(b) Facilities

The facilities listed below will be furnished by CONTRACTOR. Such facilities may be used by SUBCONTRACTOR without charge, provided that any such use will be subject to written approval of CONTRACTOR.

- (1) Storage and working area
- (2) Parking area

(c) Permits

The General Condition titled "PERMITS" notwithstanding, CONTRACTOR will, without cost to SUBCONTRACTOR, furnish the permits listed below; however, SUBCONTRACTOR shall, as necessary, provide CONTRACTOR and GOVERNMENT with assistance in obtaining such permits. SUBCONTRACTOR shall, in accordance with said General Condition titled "PERMITS," provide all other permits.

- (1) N/A

(d) Materials and Equipment

The following materials and/or equipment will be furnished SUBCONTRACTOR, at CONTRACTOR'S designated Jobsite warehouse or storage area, or SUBCONTRACTOR'S offsite location, to be incorporated into or used in performance of the Work under this subcontract. Such items will be furnished without cost provided SUBCONTRACTOR shall, at its expense, accept delivery, load, unload, transport to points of use, care for such items until final disposition and upon completion of the Work return all surplus to CONTRACTOR'S designated Jobsite warehouse or storage area. SUBCONTRACTOR shall comply with the requirements of FAR Subpart 45.5 and the Government Property clauses incorporated herein in the administration of Government property.

<i>Item</i>	<i>Quantity</i>	<i>Property No.</i>	<i>Property Description</i>
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(e) Services

The services listed below will be furnished by CONTRACTOR without cost to SUBCONTRACTOR, provided that any such use will be subject to written approval of CONTRACTOR.

- (1) N/A

(f) Subcontractor-Acquired Items

SUBCONTRACTOR is authorized to acquire the following items and charge the cost of those items to the subcontract. The acquired items shall be administered in accordance with FAR 52.245-1 Government Property and FAR 52.245-9 Use and Charges.

<i>Item</i>	<i>Quantity</i>	<i>Property Description</i>
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SC-9 SERVICE CONTRACT LABOR STANDARDS DETERMINATION (Jun 2017)

SUBCONTRACTOR shall pay, and ensure its lower-tier subcontractors pay, all service employees employed in the performance of this subcontract in accordance with the requirements set forth in FAR clause 52.222- 41, Service Contract Labor Standards (SCLS), as amended. A copy of SCLS Wage Determination No. **2015- 5535**, Revision No. 7, dated 12/26/18, which is applicable to this subcontract, is included and made part of this subcontract as Appendix B-1.

SUBCONTRACTOR is required to post the Department of Labor Wage and Hour Division (WH) Publication 1313 Employee Rights on Government Contracts, currently available at <http://www.dol.gov/whd/regs/compliance/posters/govc.pdf>, with the applicable wage determination, in a prominent and accessible location at the worksite where both may be seen by all SUBCONTRACTOR employees performing work on the subcontract.

SC-10 INSURANCE REQUIREMENTS (Jun 2017) (Revised July 2019)

(a) SUBCONTRACTOR shall, at its expense, maintain in effect at all times, during the performance of the Work, insurance coverage with limits not less than those set forth below with insurers with an A.M. Best rating of not less than A-VII and under forms of policies satisfactory to CONTRACTOR.

- (1) Workers' Compensation with limits and coverage as required by any applicable State and Federal law or regulation.
- (2) Employer's Liability of not less than \$1,000,000 each accident.

The above policy shall include an Insurer's Waiver of Subrogation in favor of CONTRACTOR, the GOVERNMENT, each of their members, subsidiaries and affiliates, and the officers, directors and employees of each such entity.

(3) Commercial General Liability Insurance

(i) SUBCONTRACTOR shall carry Commercial General Liability Insurance covering all operations by or on behalf of SUBCONTRACTOR providing insurance for bodily injury liability and property damage liability for the limits of liability indicated below and including coverage for:

- (A) Premises and Operations;
- (B) Independent Contractors
- (C) Products and Completed Operations for at least (24 months following final acceptance of the Project as a whole;
- (D) Contractual Liability applying to the indemnity agreement in the General Condition titled "INDEMNITY;"
- (E) Broad Form Property Damage (including Completed Operations);
- (F) Explosion, Collapse and Underground Hazards; and
- (G) Personal and Advertising Injury Liability.

(ii) The limits of liability for bodily injury, property damage and personal injury shall not be less than:

- | | |
|-------------|--|
| \$2,000,000 | Combined single limit for Bodily Injury and Property Damage each occurrence; |
| \$2,000,000 | Personal Injury Limit each occurrence; |
| \$4,000,000 | Products-Completed Operations Annual Aggregate Limit; and |
| \$4,000,000 | General Annual Aggregate Limit (other than Products-Completed Operations). |

- (iii) Coverage (a)(3) shall apply to the indemnity agreement in the General Condition titled "INDEMNITY".
- (iv) To the maximum extent permitted by applicable law but no further, the GOVERNMENT, and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing shall each be named as an Additional Insured under the Commercial General Liability Insurance policy, including any Excess or Umbrella Liability Insurance(s) but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. Such insurance shall: (1) include an Insurer's waiver of subrogation in favor of each Additional Insured; (2) be primary and non-contributory as regards any similar insurance coverage maintained for or by the Additional Insureds whether primary, excess, contingent, or on any other basis; (3) contain a cross-liability clause, also known as separation of interest / severability of interests / separation of insureds condition; and (4) be on an occurrence policy form, not a claims made form. The insurance limits provided by SUBCONTRACTOR'S insurance (primary and excess) to the Additional Insureds must be exhausted before any contribution from such Additional Insureds' own insurance, but not other insurance applicable to a loss which may be subject to contribution.
- (4) Automobile Liability (Owned, hired and non-owned) with combined single limits of liability for bodily injury or property damage of not less than \$2,000,000 for any one occurrence. SUBCONTRACTOR'S Automobile Liability Insurance shall include coverage for Automobile Contractual Liability.
- (5) In the event SUBCONTRACTOR maintains insurance covering loss or damage to equipment, tools or any other property of SUBCONTRACTOR such insurance shall include an Insurer's waiver of subrogation in favor of GOVERNMENT and CONTRACTOR.
- (6) Pollution Liability Insurance in an amount not less than \$5,000,000 per occurrence/annual aggregate. Such insurance shall provide bodily injury and property damage and clean-up costs coverage for both sudden and gradual occurrences arising from the Work performed under this subcontract. If SUBCONTRACTOR activities involve professional services, coverage shall include pollution losses resulting from any deficient professional services. If Completed Operations is limited in the policy, such Completed Operation Coverage shall be for a period of not less than five (5) years. If such insurance is written on a claim-made form, such insurance shall include minimally a six (6) year extended discovery period. Insurance shall name **the University of Washington**, GOVERNMENT and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. In addition, SUBCONTRACTOR'S insurer shall waive its right of subrogation against the Additional Insureds.
- (b) The required limits of coverage specified in (a)(1) through (a)(4) may be satisfied by a combination of a primary policy and an excess or umbrella policy. Coverage shall be provided on a follow form basis, include a Priority of coverage endorsement applying immediately before any other SUBCONTRACTOR Insurance coverage, whether primary, excess, contingent or any other basis and as excess over the primary policies of Employer's Liability, Commercial General Liability and Automobile Liability as required above. Such insurance shall include the same Additional Insured and Insurer's Waiver of Subrogation provisions required by the primary policies and shall be primary and non-contributory with any similar insurance coverage maintained by the Additional Insureds.

(c) Should any of the Work involve:

- (1) construction or renovation of a building or structure, SUBCONTRACTOR shall carry Builders Risk Insurance, written on an "All Risk" basis with a limit equal to the total installed cost of the SUBCONTRACTOR'S Work. "Total installed cost" shall include the value of material and equipment provided by CONTRACTOR and GOVERNMENT while such property is in the care, custody, and control of SUBCONTRACTOR. This insurance will cover all material and equipment installed or to be installed in permanent buildings and facilities and will include coverage for material in transit and in offsite storage. To the maximum extent permitted by applicable law but no further, GOVERNMENT and CONTRACTOR, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing shall each be named as an Additional Insured, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. In addition, SUBCONTRACTOR'S insurer shall waive its right of subrogation against the Additional Insureds. Should any loss or damage to the Work occur, deductibles under this policy shall be for SUBCONTRACTOR'S account.
- (2) marine operations, SUBCONTRACTOR shall provide or have provided coverage for liabilities arising out of such marine operations, including contractual liability under its Commercial General Liability Insurance or Marine Hull and Machinery Insurance and Protection and Indemnity Insurance. In the event such marine operations involve any SUBCONTRACTOR owned, hired, chartered, or operated vessels, barges, tugs or other marine equipment, SUBCONTRACTOR agrees to provide or have provided Marine Hull and Machinery Insurance and Protection and Indemnity Insurance and/or Charterer's Liability Insurance. The combined limit of the Protection and Indemnity Insurance and/or Charterer's Liability Insurance shall be at least \$5,000,000 per occurrence or the market value of the vessel, whichever is greater. The Protection and Indemnity and/or Charterer's liability and the Hull and Machinery coverage's shall include coverage for contractual liability, wreck removal, sudden and accidental pollution, tower's liability if applicable; special operations, and full collision coverage and shall be endorsed:
 - (i) To the maximum extent permitted by applicable law but no further, to provide full coverage to CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT, without limiting coverage to liability "as owner of the vessel" and to delete any "as owner" clause or other language that would limit coverage to liability of an insured "as owner of the vessel;" and
 - (ii) To waive any limit to full coverage for the Additional Insureds provided by any applicable liability statute.

All marine insurances provided by SUBCONTRACTOR shall include an Insurer's waiver of subrogation in favor of the Additional Insureds.

- (3) aircraft (fixed wing or helicopter) owned, operated or chartered by SUBCONTRACTOR, liability arising out of such aircraft shall be insured for a combined single limit not less than \$10,000,000 each occurrence and such limit shall apply to Bodily Injury (including passengers) and Property Damage Liability. To the maximum extent permitted by applicable law but no further, such insurance shall name CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT. The insurance shall also include an Insurer's waiver of subrogation in favor of the Additional Insureds, state that it is primary insurance as regards the Additional Insureds and contain a cross-liability or severability of interest clause. If the aircraft hull is insured such insurance shall provide for an Insurer's waiver of subrogation rights in favor of CONTRACTOR and GOVERNMENT and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing. In the event SUBCONTRACTOR charters aircraft, the foregoing insurance and evidence of insurance may be furnished by the owner of the chartered aircraft, provided the above requirements are met.
- (4) inspection, handling or removal of asbestos, SUBCONTRACTOR shall also carry Asbestos Liability Insurance in an amount not less than \$5,000,000 per occurrence/annual aggregate. The policy shall be written on an "Occurrence Basis" with no sunset clause. To the maximum extent permitted by applicable law but no further, such insurance shall name CONTRACTOR and GOVERNMENT, and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as Additional Insureds, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT.
- (5) transporting hazardous substances, SUBCONTRACTOR shall also carry Business Automobile Insurance covering liability arising out of the transportation of hazardous materials in an amount not less than \$2,000,000 per occurrence. Such policy shall include Motor Carrier Endorsement MCS-90. NEITHER CONTRACTOR NOR GOVERNMENT IS TO BE NAMED AN ADDITIONAL INSURED FOR THIS POLICY.
- (6) treatment, storage or disposal of hazardous wastes, SUBCONTRACTOR shall furnish an insurance certificate from the designated disposal facility establishing that the facility operator maintains current Environmental Liability Insurance in the amount of not less than \$5,000,000 per occurrence/annual aggregate. Coverage shall also include non-owned disposal site (NODS) coverage for losses at the Jobsite.
- (7) hauling of property worth in excess of \$300,000, SUBCONTRACTOR shall, unless provided by CONTRACTOR, also carry "All Risk" Transit Insurance, or "All Risk" Motor Truck Cargo Insurance, or such similar form of insurance that will insure against physical loss or damage to the property being transported, moved or handled by SUBCONTRACTOR pursuant to the terms of this subcontract. Such insurance shall provide a limit of not less than the replacement cost of the highest value being moved, and to the maximum extent permitted by applicable law but no further, shall insure the interest of CONTRACTOR and GOVERNMENT and their members, subsidiaries and affiliates, and the officers, directors, and employees of the foregoing each as their respective interests may appear, but only with respect to liability caused by or arising out of the acts or omissions of SUBCONTRACTOR or its officers, employees or agents in the performance of ongoing operations for CONTRACTOR and GOVERNMENT, and shall include an insurer's Waiver of Subrogation in favor of each such party.

(d) Submission of Insurance Certificates and Endorsements

SUBCONTRACTOR shall deliver to CONTRACTOR no later than ten (10) calendar days after subcontract award, but in any event prior to commencing the Work or entering the Jobsite, (1) certificates of insurance providing clear evidence that the coverages and at least the minimum limits of insurance are in full force and effect; and (2) copies of endorsements or analogous insurance policy documents certified by SUBCONTRACTOR's insurer that meet all applicable Additional Insured and Waiver of Subrogation requirements prescribed by this clause. SUBCONTRACTOR shall deliver to CONTRACTOR thirty (30) calendar days advance written notice prior to cancellation, termination or material alteration of said policies of insurance. Certificates shall identify on their face the project name and the applicable subcontract number. Delivery of certificates, endorsements and any notices of policy change shall be made to the Subcontract Administrator identified in clause SC- 2 AUTHORITY OF PERSONNEL.

(e) Non-Waiver and Other Conditions

- (1) CONTRACTOR'S acceptance of any evidence of insurance, including any certificate of insurance, shall not: (i) constitute acceptance of the adequacy of SUBCONTRACTOR'S insurance coverage, (ii) imply that any insurance coverage provided by SUBCONTRACTOR complies with the requirements of this subcontract, (iii) be deemed as a modification of any of SUBCONTRACTOR'S requirements in the subcontract, or (iv) waive CONTRACTOR'S or the GOVERNMENT's rights to enforce any of SUBCONTRACTOR'S requirements in this subcontract, including the requirements concerning insurance coverage amounts, insurance terms and conditions and qualifications of insurance companies.
- (2) The requirements contained herein as to types and limits, as well as CONTRACTOR'S approval of insurance coverage to be maintained by SUBCONTRACTOR, are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by SUBCONTRACTOR under this subcontract.
- (3) Neither CONTRACTOR nor GOVERNMENT is maintaining any insurance on behalf of SUBCONTRACTOR covering against loss or damage to the Work or to any other property of SUBCONTRACTOR.

SC-13E MEASUREMENT FOR PAYMENT (Nov 2018)

- (a) Labor effort expended in performance of this subcontract shall be reimbursed using the Fixed Hourly Rates listed in Exhibit C. If during performance of the subcontract, SUBCONTRACTOR determines that a category of labor not already listed in Exhibit C is necessary to achieve the subcontract objectives, SUBCONTRACTOR shall notify CONTRACTOR. Upon submission of necessary documentation by SUBCONTRACTOR, the parties may negotiate the Fixed Hourly Rate for the additional category for inclusion in Exhibit C by a modification to this subcontract.
- (b) In accordance with the clause entitled "FAR 52.232-7, Payments under Time-and-Materials and Labor- Hour Contracts", SUBCONTRACTOR may submit monthly billings for the direct labor performed and/or other direct charges incurred. A breakdown, satisfactory to CONTRACTOR, shall be included on or with each invoice, and contain the following minimum information:
 - (1) Subcontract number and period of performance.
 - (2) Direct Labor charges shall show labor category, hourly rate, and name of individual who performed the work. All Direct Labor charges shall be supported by copies of signed or electronic timesheets, or a summary sheet if a CONTRACTOR/GOVERNMENT approved time keeping system is used.
 - (3) Other Direct charges for lower-tier subcontracts shall be itemized, and include the name of the subcontractor, name of individual who performed the work, and applicable hourly rate. All labor charges shall be supported by copies of signed or electronic timesheets, or a summary sheet if a CONTRACTOR/GOVERNMENT approved time keeping system is used.
 - (4) Travel charges shall be itemized and supported by receipts, as required by SC-115 Travel Costs and Reimbursement. **Note:** Itineraries provided by sites such as Orbitz, Expedia, etc. shall only be deemed acceptable receipts for reimbursement if payment authorization is shown thereon.

- (5) Materials charges shall be itemized and include a description of material(s), cost, and handling charges, if allowed.
 - (6) Charges for Subcontractor Acquired Property (SAP) shall be itemized, show manufacturer, item description, serial number, model number, date property was acquired, acquisition cost and be supported by copies of receipts for each item purchased.
 - (7) New Mexico Gross Receipts Tax (NMGRT) charges for reimbursement of NMGRT paid to lower-tier subcontractors shall be itemized, show amount of tax paid to each subcontractor, and NMGRT rate.
- (c) SUBCONTRACTOR shall maintain all records necessary for determining the amount of services or quantities of work to be paid under this subcontract and CONTRACTOR, at its sole discretion, may witness and verify such records. Measurements and computations shall be made by such methods as CONTRACTOR may consider appropriate and copies of notes, computations and other records made by SUBCONTRACTOR for the purpose of determining amounts or quantities shall be furnished to CONTRACTOR upon request.
- (d) Each invoice or voucher submitted for payment shall bear the following certification signed by an official of SUBCONTRACTOR having authority to make such certification:

“The undersigned certifies that the information set forth herein and in supporting documentation is true and correct and may be used as a basis for payment by CONTRACTOR for the amounts requested in this invoice.”

SC-14 NUCLEAR HAZARDS INDEMNITY AND PRICE ANDERSON ACT (Jan 2010)

- (a) 48 CFR 952.250-70 Nuclear Hazards Indemnity Agreement As Modified By DOE Acquisition Letter 2005-15 (Jun 2009)
- (1) *Authority.* This clause is incorporated into this contract pursuant to the authority contained in subsection 170d. of the Atomic Energy Act of 1954, as amended (hereinafter called the Act.)
 - (2) *Definitions.* The definitions set out in the Act shall apply to this clause.
 - (3) *Financial protection.* Except as hereafter permitted or required in writing by DOE, the contractor will not be required to provide or maintain, and will not provide or maintain at Government expense, any form of financial protection to cover public liability, as described in paragraph (4)(ii) below. DOE may, however, at any time require in writing that the contractor provide and maintain financial protection of such a type and in such amount as DOE shall determine to be appropriate to cover such public liability, provided that the costs of such financial protection are reimbursed to the contractor by DOE.
 - (4)
 - (i) *Indemnification.* To the extent that the contractor and other persons indemnified are not compensated by any financial protection permitted or required by DOE, DOE will indemnify the contractor and other persons indemnified against (i) claims for public liability as described in subparagraph (4)(ii) of this clause; and (ii) such legal costs of the contractor and other persons indemnified as are approved by DOE, provided that DOE's liability, including such legal costs, shall not exceed the amount set forth in section 170d. of the Act, as that amount may be increased in accordance with section 170t., in the aggregate for each nuclear incident or precautionary evacuation occurring within the United States or \$500 million in the aggregate for each nuclear incident occurring outside the United States, irrespective of the number of persons indemnified in connection with this contract.

- (ii) The public liability referred to in subparagraph (4)(i) of this clause is public liability as defined in the Act which (i) arises out of or in connection with the activities under this contract, including transportation; and (ii) arises out of or results from a nuclear incident or precautionary evacuation, as those terms are defined in the Act.

(5)

- (i) *Waiver of Defenses.* In the event of a nuclear incident, as defined in the Act, arising out of nuclear waste activities, as defined in the Act, the contractor, on behalf of itself and other persons indemnified, agrees to waive any issue or defense as to charitable or governmental immunity.
- (ii) In the event of an extraordinary nuclear occurrence which:
 - (A) Arises out of, results from, or occurs in the course of the construction, possession, or operation of a production or utilization facility; or
 - (B) Arises out of, results from, or occurs in the course of transportation of source material, by-product material, or special nuclear material to or from a production or utilization facility; or
 - (C) Arises out of or results from the possession, operation, or use by the contractor or a subcontractor of a device utilizing special nuclear material or by-product material, during the course of the contract activity; or
 - (D) Arises out of, results from, or occurs in the course of nuclear waste activities, the contractor, on behalf of itself and other persons indemnified, agrees to waive:
 - (1) Any issue or defense as to the conduct of the claimant (including the conduct of persons through whom the claimant derives its cause of action) or fault of persons indemnified, including, but not limited to:
 - i Negligence;
 - ii Contributory negligence;
 - iii Assumption of risk; or
 - iv Unforeseeable intervening causes, whether involving the conduct of a third person or an act of God;
 - (2) Any issue or defense as to charitable or governmental immunity; and
 - (3) Any issue or defense based on any statute of limitations, if suit is instituted within 3 years from the date on which the claimant first knew, or reasonably could have known, of his injury or change and the cause thereof. The waiver of any such issue or defense shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action. The waiver shall be judicially enforceable in accordance with its terms by the claimant against the person indemnified.
 - (E) The term *extraordinary nuclear occurrence* means an event which DOE has determined to be an extraordinary nuclear occurrence as defined in the Act. A determination of whether or not there has been an extraordinary nuclear occurrence will be made in accordance with the procedures in 10 CFR part 840.

- (F) For the purposes of that determination, “offsite” as that term is used in 10 CFR part 840 means away from “the contract location” which phrase means any DOE facility, installation, or site at which contractual activity under this contract is being carried on, and any contractor-owned or controlled facility, installation, or site at which the contractor is engaged in the performance of contractual activity under this contract.
- (iii) The waivers set forth above:
- (A) Shall be effective regardless of whether such issue or defense may otherwise be deemed jurisdictional or relating to an element in the cause of action;
 - (B) Shall be judicially enforceable in accordance with its terms by the claimant against the person indemnified;
 - (C) Shall not preclude a defense based upon a failure to take reasonable steps to mitigate damages;
 - (D) Shall not apply to injury or damage to a claimant or to a claimant’s property which is intentionally sustained by the claimant or which results from a nuclear incident intentionally and wrongfully caused by the claimant;
 - (E) Shall not apply to injury to a claimant who is employed at the site of and in connection with the activity where the extraordinary nuclear occurrence takes place, if benefits therefor are either payable or required to be provided under any workmen’s compensation or occupational disease law;
 - (F) Shall not apply to any claim resulting from a nuclear incident occurring outside the United States;
 - (G) Shall be effective only with respect to those obligations set forth in this clause and in insurance policies, contracts or other proof of financial protection; and
 - (H) Shall not apply to, or prejudice the prosecution or defense of, any claim or portion of claim which is not within the protection afforded under (A) the limit of liability provisions under subsection 170e. of the Act, and (B) the terms of this agreement and the terms of insurance policies, contracts, or other proof of financial protection.
- (6) *Notification and litigation of claims.* The contractor shall give immediate written notice to DOE of any known action or claim filed or made against the contractor or other person indemnified for public liability as defined in paragraph (4)(ii). Except as otherwise directed by DOE, the contractor shall furnish promptly to DOE, copies of all pertinent papers received by the contractor or filed with respect to such actions or claims. DOE shall have the right to, and may collaborate with, the contractor and any other person indemnified in the settlement or defense of any action or claim and shall have the right to (1) require the prior approval of DOE for the payment of any claim that DOE may be required to indemnify hereunder; and (2) appear through the Attorney General on behalf of the contractor or other person indemnified in any action brought upon any claim that DOE may be required to indemnify hereunder, take charge of such action, and settle or defend any such action. If the settlement or defense of any such action or claim is undertaken by DOE, the contractor or other person indemnified shall furnish all reasonable assistance in effecting a settlement or asserting a defense.

- (7) *Continuity of DOE obligations.* The obligations of DOE under this clause shall not be affected by any failure on the part of the contractor to fulfill its obligation under this contract and shall be unaffected by the death, disability, or termination of existence of the contractor, or by the completion, termination or expiration of this contract.
- (8) *Effect of other clauses.* The provisions of this clause shall not be limited in any way by, and shall be interpreted without reference to, any other clause of this contract, including the clause entitled Contract Disputes, provided, however, that this clause shall be subject to the clauses entitled Covenant Against Contingent Fees, and Accounts, records, and inspection, and any provisions that are later added to this contract as required by applicable Federal law, including statutes, executive orders and regulations, to be included in Nuclear Hazards Indemnity Agreements.
- (9) *Civil penalties.* The contractor and its subcontractors and suppliers who are indemnified under the provisions of this clause are subject to civil penalties, pursuant to section 234A of the Act, for violations of applicable DOE nuclear-safety related rules, regulations, or orders. If the contractor is a not-for-profit contractor, as defined by section 234Ad.(2), the total amount of civil penalties paid shall not exceed the total amount of fees paid within any 1- year period (as determined by the Secretary) under this contract.
- (10) *Criminal penalties.* Any individual director, officer, or employee of the contractor or of its subcontractors and suppliers who are indemnified under the provisions of this clause are subject to criminal penalties, pursuant to section 223(c) of the Act, for knowing and willful violation of the Atomic Energy Act of 1954, as amended, and applicable DOE nuclear safety-related rules, regulations or orders which violation results in, or, if undetected, would have resulted in a nuclear incident.
- (11) *Inclusion in subcontracts.* The contractor shall insert this clause in any subcontract which may involve the risk of public liability, as that term is defined in the Act and further described in paragraph (4)(ii) above. However, this clause shall not be included in subcontracts in which the subcontractor is subject to Nuclear Regulatory Commission (NRC) financial protection requirements under section 170b. of the Act or NRC agreements of indemnification under section 170c. or k. of the Act for the activities under the subcontract.
- (12) *Effective Date.* This contract was awarded on or after August 8, 2005 and at contract award contained the clause at DEAR 952.250-70 (JUNE 1996) or prior version. That clause has been deleted and replaced with this clause. The Price-Anderson Amendments Act of 2005, described by this clause, control the indemnity for any nuclear incident that occurred on or after August 8, 2005. The Contractor's liability for civil penalties for violations of the Atomic Energy Act of 1954 under this contract is described by paragraph (i) of this clause.
- (b) The U.S. Department of Energy (DOE) will indemnify SUBCONTRACTOR against (1) claims for public liability, and (2) legal costs arising from any nuclear incidence, in accordance with the provisions of 48 CFR 952.250-70 as modified by DOE Acquisition Letter 2005-15.
- (c) The Department of Energy has promulgated Procedural Rules for DOE Nuclear Activities (10 CFR 820), Quality Assurance Requirements (10 CFR 830 Subpart A), Occupational Radiation Protection rules (10 CFR 835), Chronic Beryllium Disease Prevention Program Rules (10 CFR 850), and Worker Safety and Health Program (10 CFR 851) in implementation of the Price Anderson Amendment Act (PAAA) of 1988, Public Law 100-408, August 20, 1988, as amended. These rules govern the conduct of persons involved in DOE nuclear activities, and in particular, are designed to achieve compliance with DOE safety issues. SUBCONTRACTOR shall comply and is responsible for the compliance of its lower-tier subcontractors with the referenced DOE safety related rules and regulations. Violation of the applicable rules and regulations will provide a basis for the assessment of civil and criminal penalties.

- (d) SUBCONTRACTOR shall indemnify CONTRACTOR for any civil penalties levied against CONTRACTOR, pursuant to Section 234A of the Atomic Energy Act of 1954 as amended, for any violations of applicable DOE safety related rules, regulations, or orders committed by SUBCONTRACTOR or its lower-tier subcontractors and suppliers.

SC-17 POSSIBILITY OF CONTAMINATION OF SUBCONTRACTOR-OWNED MATERIALS AND EQUIPMENT (Jun 2009)

- (a) SUBCONTRACTOR'S equipment may become contaminated during the course of this Work. All SUBCONTRACTOR equipment must be fully decontaminated prior to removal from the Work Area. SUBCONTRACTOR shall provide a decontamination and contaminated material control procedure(s) for CONTRACTOR'S review and acceptance. SUBCONTRACTOR shall obtain CONTRACTOR'S authorization to remove any equipment from the Site.
- (b) Prior to SUBCONTRACTOR equipment arriving at the Jobsite, SUBCONTRACTOR shall inform CONTRACTOR of the specific radioactive contaminants that could be left over from previous work. CONTRACTOR will survey SUBCONTRACTOR'S equipment upon arrival at the Jobsite to establish a radiation contamination profile as a baseline for the non-CONTRACTOR radioactive contaminants. The equipment shall meet CONTRACTOR'S health physics standards for radioactivity before it will be permitted to enter the Jobsite. Any radioactive contaminants that are present must be in the form of surface contamination and shall not exceed the levels prescribed. Any preliminary decontamination to remove non-CONTRACTOR radioactive contaminants that may be required shall be performed by the SUBCONTRACTOR and will be performed at SUBCONTRACTOR'S expense. SUBCONTRACTOR will be solely responsible for the disposal of all wastes generated as a result of preliminary decontamination to remove non-CONTRACTOR radioactive contaminants. Neither CONTRACTOR nor the Government shall be designated as generator of such waste.
- (c) The equipment shall also be free of non-radioactive hazardous contaminants upon arrival at the Jobsite. Verification shall be supplied by SUBCONTRACTOR that the equipment does not contain hazardous contaminants upon arrival, including residual hazardous contaminants that might be hidden inside equipment. In the event that the equipment is found to be contaminated with non- CONTRACTOR non-radioactive hazardous contaminants upon arrival, SUBCONTRACTOR will not be permitted to commence Work until the equipment is free of significant (non-trace) non- CONTRACTOR contamination, as defined by CONTRACTOR. Any preliminary decontamination to remove non-CONTRACTOR hazardous contaminants that may be required shall be performed by the SUBCONTRACTOR and will be performed at SUBCONTRACTOR'S expense. SUBCONTRACTOR will be solely responsible for the disposal of all wastes generated as a result of preliminary decontamination to remove non-CONTRACTOR non-radioactive hazardous contaminants. Neither CONTRACTOR nor the Government shall be designated as the generator of non-CONTRACTOR non-radioactive or hazardous waste.
- (d) Upon completion of the Work, CONTRACTOR will survey and inspect SUBCONTRACTOR'S equipment before it is removed from the Jobsite to establish a post-processing radiation contamination profile. If the equipment contamination profile exceeds the CONTRACTOR'S required exit decontamination limits, SUBCONTRACTOR shall carry out the necessary radioactive decontamination at the Jobsite in accordance with the SUBCONTRACTOR'S approved procedures.
- (e) SUBCONTRACTOR shall take all reasonable measures to mitigate the potential for contamination of its major equipment (major equipment excludes tools and equipment accessories) during performance of the Work. If CONTRACTOR determines that required exit decontamination limits for any item of major equipment is unattainable, despite SUBCONTRACTOR'S best efforts, SUBCONTRACTOR will be compensated for the appraised value of the major equipment considering age, condition, and value of similar equipment, unless contamination of said equipment is deemed by the CONTRACTOR to be the result of carelessness or negligence on the part of the SUBCONTRACTOR. If an agreed upon value cannot be negotiated, an independent appraiser may be used to determine value.

- (f) SUBCONTRACTOR shall provide to the STR, in advance of use, a list of tools, items of equipment and accessories (e.g. hand drills, transfer pumps, hoses, etc.) to be utilized in performance of that work that, because of the nature or configuration of the tool, equipment, or accessory, may be reasonably expected not to be capable of being decontaminated through reasonable efforts. Unless otherwise provided for in this Subcontract, SUBCONTRACTOR shall be responsible for the cost of all such tools, equipment, and accessories, and will not receive compensation pursuant to the paragraph above for tools, equipment, and accessories that are identified or should have been identified, pursuant to this paragraph.
- (g) In accordance with the general clause entitled "Indemnity", SUBCONTRACTOR shall indemnify CONTRACTOR and GOVERNMENT for any liability, including criminal liability, associated with its removing contaminated items in violation of this clause.

SC-19 PHYSICAL SECURITY (Jun 2009)

In performance of the Work under this subcontract, SUBCONTRACTOR shall maintain:

- (1) Control of material and equipment packaging, transportation, and delivery to the Jobsite.
- (2) Accountability procedures for storage, requisition and issue of material and equipment.
- (3) Personnel security to include, but not limited to, compliance with Project work rules (access, badging, prohibited activities, and items, etc.).
- (4) Communications security
- (5) Prompt reporting of incidents of loss, theft or vandalism to CONTRACTOR, subsequently detailed and provided in writing.

SC-21 SUBCONTRACTOR SUBMITTAL REQUIREMENTS (Jun 2009)

Where submittals are required by this Subcontract, SUBCONTRACTOR shall provide such submittals in accordance with Exhibit I "Subcontract Submittal Requirements" attached hereto and incorporated herein.

SC-24 TECHNICAL DATA RIGHTS (Jun 2009)

CONTRACTOR and GOVERNMENT shall have, and SUBCONTRACTOR hereby grants CONTRACTOR and GOVERNMENT, a permanent, assignable, non-exclusive, royalty-free license to use any concept, product, process (patentable or otherwise), copyrighted material (including without limitation documents, specifications, calculations, maps, sketches, notes, reports, data, models, samples, drawings, designs, and electronic software) and confidential information owned by SUBCONTRACTOR upon commencement of the Work under this subcontract and used by SUBCONTRACTOR or furnished or supplied to CONTRACTOR or GOVERNMENT by SUBCONTRACTOR in the course of performance under this subcontract.

SC-101 COST ACCOUNTING STANDARDS LIABILITY (Nov 2018)

SUBCONTRACTOR is subject to the requirements contained in FAR 52.230-2 Cost Accounting Standards and FAR 52.230-6 Administration of Cost Accounting Standards.

Reference is made to the Cost Accounting Standards (CAS) clause(s) of the subcontract. Notwithstanding the provisions of those clause(s), or of any other provision of the subcontract, the SUBCONTRACTOR shall be liable to the Government for any increased costs, or interest thereon, resulting from any failure of the SUBCONTRACTOR, with respect to activities carried on at the site of the work, or of a lower-tier subcontractor, to comply with applicable cost accounting standards or to follow any practices disclosed pursuant to the requirements of such CAS clause(s).

SC-104 LABORATORY ANALYSES (Jun 2009)

When chemical, radiological or physical analyses of hazardous materials are required for their disposal, treatment, or recycling, and such analyses are not listed below as CONTRACTOR provided, SUBCONTRACTOR shall cause such analyses to be performed by an appropriately qualified laboratory. SUBCONTRACTOR shall identify the analyses to be performed and submit the name, qualifications, and procedures of the proposed laboratory(ies) to CONTRACTOR for review and approval prior to performing any analyses. Such analyses shall be at SUBCONTRACTOR'S expense. The following laboratory analyses will be provided by CONTRACTOR:

SC-105 LIMITATION OF FUNDS (Aug 2014)

- (a) The amount of funds presently available for payment by CONTRACTOR and allotted to this subcontract is **TBD** (\$). SUBCONTRACTOR shall perform or have performed Work up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted.
- (b) CONTRACTOR will allot additional funds incrementally to the subcontract up to the full subcontract ceiling, provided funds are made available by GOVERNMENT. Directed Change Orders issued under the Changes clause shall not be considered an authorization to exceed the allotted amount.
- (c) SUBCONTRACTOR shall notify CONTRACTOR in writing whenever it has reason to believe that the amount to be invoiced under this subcontract in the next 30 days, when added to all previously invoiced amounts, will exceed 80% of the total funds so far allotted. Upon notification, CONTRACTOR will allot additional funds or may suspend or terminate the subcontract in accordance with its terms.
- (d) SUBCONTRACTOR is not authorized to continue performance or otherwise incur costs in excess of the allotted funds, unless one of the following exceptions applies: (1) if required to protect and maintain the Work in accordance with General Condition GC-44 SUSPENSION; or (2) protect and preserve the property related to this subcontract in accordance with GC-47(x) TERMINATION FOR CONVENIENCE.

SC-109 ON-SITE HANDLING AND DISPOSAL OF POTENTIALLY HAZARDOUS WASTE (Jun 2009)

If the Work under this subcontract includes any intrusive site drilling, boring, coring or sampling, investigation-derived waste (IDW) and equipment decontamination waste (EDW) may be produced as a result of these efforts. These wastes could include solids or liquids drawn from site wells for sampling purposes. All IDW and EDW shall be treated by SUBCONTRACTOR as if it were hazardous waste regulated under the federal Resource and Conservation Recovery Act of 1976, 42 U.S.C. 6901-6992 (RCRA) as amended, or any more stringent applicable regulations, unless and until SUBCONTRACTOR has been able to confirm, to the satisfaction of CONTRACTOR and the appropriate regulatory agencies, that the wastes are not regulated as hazardous. SUBCONTRACTOR shall complete a Waste Characterization Strategy Form (WCSF) with the appropriate level of detail for IDW and EDW generated by SUBCONTRACTOR. The WCSF shall be submitted to CONTRACTOR for review and approval. SUBCONTRACTOR shall temporarily store IDW and EDW in accordance with the WCSF. If contamination is suspected, IDW and EDW shall be stored within the contaminant exclusion zone pending waste determination, unless otherwise directed by CONTRACTOR.

SC-110 OFF-SITE TRANSPORTATION AND DISPOSAL OF HAZARDOUS MATERIAL (Jun 2009)

- (a) SUBCONTRACTOR shall be responsible for the proper containerization, labeling, manifesting, storage and transport of hazardous waste. SUBCONTRACTOR shall also be responsible for ensuring that all waste profile work and land ban disposal notifications required at recycling, treatment, storage and/or disposal facilities have been properly completed in a timely manner.

- (b) Before SUBCONTRACTOR moves, removes, or transports any hazardous substance (as defined by CERCLA) or subcontracts for such services, SUBCONTRACTOR shall, pursuant to the General Conditions titled "ASSIGNMENTS" and "SUBCONTRACTS", provide CONTRACTOR the following information as to itself and any lower-tier subcontractor(s) involved in such activities:
- (1) Verification of its license to haul such materials;
 - (2) Verification of its EPA Identification Number;
 - (3) Copy of its HMTA/DOT and state transportation compliance program;
 - (4) Copy of its EPA/State EPA manifest handling procedure;
 - (5) Certification that there is no administration action or license revocation proceeding pending against it; and
 - (6) Copies of its land ban/pretreatment procedures, if applicable.
- (c) Before SUBCONTRACTOR arranges for the transport of any hazardous substance to a Treatment, Disposal, or Storage (TDS) facility, it shall ensure that all hazardous substances which are to be shipped will receive secure permanent disposal. In furtherance of that obligation SUBCONTRACTOR shall also provide CONTRACTOR the following:
- (1) Certification that the facility is licensed to receive the specific wastes to be transported there, including, if applicable, a current RCRA permit;
 - (2) Written commitment from the facility verifying that it can and will accept the materials proposed for disposal at the facility;
 - (3) Notice of any restrictions of the disposal facility which may cause rejection of transported materials;
 - (4) Sampling and characterization of materials required prior to delivery of materials to the facility;
 - (5) Restrictions on delivery schedules;
 - (6) Full disclosure and certification concerning any prior, existing, imminent, or pending enforcement or corrective action programs or listing on any applicable EPA or State list of violating facilities; and
 - (7) List of permit violations within last four years.

SC-115 TRAVEL COSTS AND REIMBURSEMENT (Nov 2018)

- (a) Costs for transportation, lodging, meals, and incidental expenses incurred by SUBCONTRACTOR personnel for travel relating to the performance of, and chargeable to this subcontract shall be reimbursed by CONTRACTOR, subject to the provisions and limitations of Federal Acquisition Regulation 31.205-46 *Travel costs*, and those specified below.
- (b) Limitations applicable to reimbursement of costs for transportation, lodging, meals, and incidental expenses:
- (1) An individual working for SUBCONTRACTOR or a lower-tier subcontractor working on this subcontract will not be eligible for reimbursement of transportation, lodging, meals or incidental expenses, if the individual's Regular Work Location lies within a 100 mile radius of the assigned work location, as defined in the statement of work / scope of work for this subcontract. An individual's Regular Work Location is defined as (1) the location where such individual regularly performs his or her duties for SUBCONTRACTOR or a lower-tier subcontractor, or (2) the individual's home or regular place of business, if such individual is only employed by SUBCONTRACTOR or a lower-tier subcontractor to work on this subcontract, and paid on a daily when-actually-employed basis.
 - (2) Federal Government holidays and weekends or other scheduled LANL non-workdays are considered non-workdays under this subcontract. Individuals will be considered to be in a per diem status on non-workdays except when:
 - (i) they return to their residence;

- (ii) they are in a vacation leave status or leave without pay status at the end of the workday just before the non-workday;
 - (iii) they are in a vacation leave status or leave without pay status at the beginning of the workday following the non-workday and the period of leave on the workday is more than one-half of the prescribed working hours for that day; or
 - (iv) LANL shuts down operations for the annual winter closure in December.
- (3) Transportation expenses:
- (i) Costs for transportation based on mileage rates may not exceed the standard mileage reimbursement rate for a privately owned vehicle established by the U.S. General Services Administration found at www.gsa.gov/mileage.
 - (ii) Receipts supporting all reimbursements for transportation costs of \$75 or more, other than transportation based on mileage rates, shall be submitted to support invoices that include such costs.
 - (iii) Unless otherwise authorized by CONTRACTOR, SUBCONTRACTOR personnel who must travel to a work location away from their Regular Work Location shall only be entitled to reimbursement for the cost of transportation from their Regular Work Location to the assigned work location at the beginning of their assignment and from the assigned work location to their Regular Work Location at the completion of their assignment.
- (4) Lodging expenses:
- (i) Reimbursement for lodging expenses shall not exceed actual lodging costs and shall in no case exceed on a daily basis the maximum lodging rates in effect at the time, as set forth in the Federal Travel Regulation (FTR), prescribed by the General Services Administration for the location in which the work is performed. Domestic lodging rates may be found at www.gsa.gov/perdiem.
 - (A) If lodging is not available at or near the assigned work location, CONTRACTOR may authorize a higher maximum reimbursement rate upon written request by SUBCONTRACTOR prior to securing lodging. A copy of CONTRACTOR'S written authorization, if given, shall be included with each invoice.
 - (ii) Receipts for lodging expenses shall be submitted to support invoices that include such costs.
 - (iii) Lodging will not be reimbursed to individuals who obtain lodging from friends or relatives with or without charge, unless: (1) the host actually incurs additional costs in accommodating the individual; (2) the additional costs are substantiated by the individual; and (3) the additional costs are determined to be reasonable by CONTRACTOR.
- (5) Meals and incidental expenses (M&IE):
- (i) Reimbursement for M&IE shall in no case exceed on a daily basis the maximum per diem rates in effect at the time, as set forth in the Federal Travel Regulation (FTR), prescribed by the General Services Administration for the location in which the work is performed. Domestic M&IE rates may be found at www.gsa.gov/perdiem.

- (ii) M&IE shall not be reimbursed for workdays in which less than half of the prescribed daily working hours have been worked.
 - (iii) M&IE shall not be reimbursed for more than three successive LANL non-workdays, unless otherwise approved in writing by the CONTRACTOR.
- (c) Additional limitations applicable to an individual working for SUBCONTRACTOR or a lower-tier subcontractor on assignment away from their Regular Work Location for a period expected to exceed thirty (30) consecutive calendar days:
- (1) Reimbursement of costs for local transportation (i.e., mid-size rental car or mileage reimbursement) will be limited to the first thirty (30) days of the work assignment.
 - (2) For the first 60 days and the last 30 days of the assignment, CONTRACTOR will reimburse costs associated with lodging at the lesser of actual cost or 100% of the FTR rate at the assignment location. The intervening days will be reimbursed at the lesser of actual cost or 55% of the FTR rate.
 - (3) For the first 30 days and the last 30 days of the assignment, CONTRACTOR will reimburse costs associated with meals and incidental expenses (M&IE) at 100% of the FTR rate at the assignment location. The intervening days will be reimbursed at 55% of the FTR rate.
 - (4) Lodging and M&IE shall be billed separately.
 - (5) Reimbursement for lodging and M&IE shall be limited to a maximum of twelve (12) months total.
 - (6) CONTRACTOR will not reimburse any costs associated with per diem (except for en-route travel) unless the individual working for SUBCONTRACTOR or a lower-tier subcontractor maintains a residence at or near his/her Regular Work Location.
 - (7) An individual working for SUBCONTRACTOR or a lower-tier subcontractor, on assignment at the same location for three months or more, shall be eligible for reimbursement of lowest cost, economy air fare, plus charges for up to two checked bags, as well as other reasonable expenses, for one round trip to their residence, at or near their Regular Work Location, every four weeks thereafter. No trips will be authorized if less than 30 days remain on the assignment. Only transportation costs that have actually been incurred shall be reimbursed.
- (d) Foreign travel is defined as travel from the United States to a foreign country and return, and travel between foreign countries. All foreign travel is subject to the prior approval of CONTRACTOR and DOE/NNSA. Foreign travel requests shall be submitted to CONTRACTOR at least 60 days prior to the planned departure date. Travel must occur on U.S.-Flag air carriers.
- (e) By submitting an invoice for reimbursement of costs for transportation, lodging, meals, and incidental expenses, SUBCONTRACTOR certifies that all conditions of applicability specified herein for reimbursement of such costs have been satisfied.
- (f) SUBCONTRACTOR shall include the terms and conditions of this clause in all lower-tier subcontracts issued in performance of this subcontract.

SC-117 ACCRUAL REPORTING REQUIREMENTS (Apr 2016)

SUBCONTRACTOR shall provide to the Subcontract Technical Representative (STR) on a monthly basis, no later than the close of business on the fifteenth (15th) day of the each month, SUBCONTRACTOR'S best estimate of cumulative charges that will be incurred against the subcontract, from the end of the period covered by SUBCONTRACTOR'S last invoice through the end of the current month, using content and format that is appropriate to the Work and approved by the STR.

SC-143 OPTION TO EXTEND TERM OF SUBCONTRACT (Jan 2010)

CONTRACTOR may extend the term of this subcontract by giving written notice to SUBCONTRACTOR by the date specified as the expiration date of this subcontract. CONTRACTOR shall attempt to give SUBCONTRACTOR a preliminary written notice of its intent to extend the term of this subcontract at least 60 days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of this subcontract. Failure to provide the preliminary notice at least 60 days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a unilateral written modification issued by CONTRACTOR.

The term of this subcontract may be extended pursuant to this clause for up to twelve (12) months beyond the initial term. Such extension may be made from time to time or in one modification. However, the total duration of this subcontract, including the exercise of options under this clause, shall not exceed thirty-six (36) months.

SC-999 NO CONSEQUENTIAL OR INDIRECT DAMAGES (JULY 2019)

IN NO EVENT SHALL SUBCONTRACTOR OR ANY OF ITS REPRESENTATIVES BE LIABLE UNDER THIS AGREEMENT TO CONTRACTOR, FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE OR ENHANCED DAMAGES, LOST PROFITS OR REVENUES OR DIMINUTION IN VALUE, ARISING OUT OF, OR RELATING TO, AND/OR IN CONNECTION WITH THIS AGREEMENT, REGARDLESS OF (A) WHETHER SUCH DAMAGES WERE FORESEEABLE, (B) WHETHER OR NOT SUBCONTRACTOR WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND (C) THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT OR OTHERWISE) UPON WHICH THE CLAIM IS BASED.

**EXHIBIT B
APPENDIX B-1**

LOS ALAMOS NATIONAL LABORATORY

SERVICE CONTRACT LABOR STANDARDS WAGE DETERMINATION

In accordance with FAR clause 52.222-41 titled "SERVICE CONTRACT LABOR STANDARDS" the attached Service Contract Labor Standards Wage Determination **WD 15-5535 (Rev. -9)** dated **07/16/2019** is incorporated into this subcontract.

“REGISTER OF WAGE DETERMINATIONS UNDER
THE SERVICE CONTRACT ACT
By direction of the Secretary of Labor

| U.S. DEPARTMENT OF LABOR
| EMPLOYMENT STANDARDS ADMINISTRATION
| WAGE AND HOUR DIVISION
| WASHINGTON D.C. 20210

Daniel W. Simms
Director

Division of
Wage Determinations

| Wage Determination No.: 2015-5535
| Revision No.: 9
| Date Of Last Revision: 07/16/2019

Note: Under Executive Order (EO) 13658 an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1 2015. If this contract is covered by the EO the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination if it is higher) for all hours spent performing on the contract in calendar year 2019. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

State: Washington

Area: Washington Counties of King Snohomish

Fringe Benefits Required Follow the Occupational Listing

OCCUPATION CODE - TITLE	FOOTNOTE	RATE
01000 - Administrative Support And Clerical Occupations		
01011 - Accounting Clerk I		17.74
01012 - Accounting Clerk II		19.91
01013 - Accounting Clerk III		22.29
01020 - Administrative Assistant		30.78
01035 - Court Reporter		20.91
01041 - Customer Service Representative I		15.42
01042 - Customer Service Representative II		17.34
01043 - Customer Service Representative III		18.92
01051 - Data Entry Operator I		17.39
01052 - Data Entry Operator II		18.99
01060 - Dispatcher Motor Vehicle		24.63
01070 - Document Preparation Clerk		16.46
01090 - Duplicating Machine Operator		16.46
01111 - General Clerk I		15.61
01112 - General Clerk II		17.03
01113 - General Clerk III		19.12
01120 - Housing Referral Assistant		21.81
01141 - Messenger Courier		17.35
01191 - Order Clerk I		19.94
01192 - Order Clerk II		21.76
01261 - Personnel Assistant (Employment) I		17.56
01262 - Personnel Assistant (Employment) II		19.65
01263 - Personnel Assistant (Employment) III		21.90
01270 - Production Control Clerk		23.26
01290 - Rental Clerk		16.18
01300 - Scheduler Maintenance		17.49

01311 - Secretary I	17.49
01312 - Secretary II	19.57
01313 - Secretary III	21.81
01320 - Service Order Dispatcher	21.17
01410 - Supply Technician	30.78
01420 - Survey Worker	19.38
01460 - Switchboard Operator/Receptionist	16.62
01531 - Travel Clerk I	17.95
01532 - Travel Clerk II	19.31
01533 - Travel Clerk III	20.68
01611 - Word Processor I	20.58
01612 - Word Processor II	23.10
01613 - Word Processor III	25.84
05000 - Automotive Service Occupations	
05005 - Automobile Body Repairer Fiberglass	27.31
05010 - Automotive Electrician	22.91
05040 - Automotive Glass Installer	21.95
05070 - Automotive Worker	21.95
05110 - Mobile Equipment Servicer	19.93
05130 - Motor Equipment Metal Mechanic	23.71
05160 - Motor Equipment Metal Worker	21.95
05190 - Motor Vehicle Mechanic	23.71
05220 - Motor Vehicle Mechanic Helper	19.20
05250 - Motor Vehicle Upholstery Worker	20.77
05280 - Motor Vehicle Wrecker	21.95
05310 - Painter Automotive	22.91
05340 - Radiator Repair Specialist	21.95
05370 - Tire Repairer	16.61
05400 - Transmission Repair Specialist	23.71
07000 - Food Preparation And Service Occupations	
07010 - Baker	15.44
07041 - Cook I	16.59
07042 - Cook II	18.59
07070 - Dishwasher	13.08
07130 - Food Service Worker	14.26
07210 - Meat Cutter	21.24
07260 - Waiter/Waitress	14.15
09000 - Furniture Maintenance And Repair Occupations	
09010 - Electrostatic Spray Painter	22.11
09040 - Furniture Handler	17.88
09080 - Furniture Refinisher	22.11
09090 - Furniture Refinisher Helper	19.16
09110 - Furniture Repairer Minor	20.52
09130 - Upholsterer	23.24
11000 - General Services And Support Occupations	
11030 - Cleaner Vehicles	14.61
11060 - Elevator Operator	14.61
11090 - Gardener	21.68
11122 - Housekeeping Aide	16.09
11150 - Janitor	16.09
11210 - Laborer Grounds Maintenance	17.75
11240 - Maid or Houseman	13.64
11260 - Pruner	16.42
11270 - Tractor Operator	20.38
11330 - Trail Maintenance Worker	17.75
11360 - Window Cleaner	17.39
12000 - Health Occupations	
12010 - Ambulance Driver	30.49
12011 - Breath Alcohol Technician	25.18
12012 - Certified Occupational Therapist Assistant	30.71
12015 - Certified Physical Therapist Assistant	29.39
12020 - Dental Assistant	21.62
12025 - Dental Hygienist	45.72
12030 - EKG Technician	32.30
12035 - Electroneurodiagnostic Technologist	32.30

12040 - Emergency Medical Technician	30.49
12071 - Licensed Practical Nurse I	22.49
12072 - Licensed Practical Nurse II	25.18
12073 - Licensed Practical Nurse III	28.06
12100 - Medical Assistant	21.42
12130 - Medical Laboratory Technician	25.41
12160 - Medical Record Clerk	19.93
12190 - Medical Record Technician	22.29
12195 - Medical Transcriptionist	21.12
12210 - Nuclear Medicine Technologist	46.33
12221 - Nursing Assistant I	12.74
12222 - Nursing Assistant II	14.32
12223 - Nursing Assistant III	15.63
12224 - Nursing Assistant IV	17.55
12235 - Optical Dispenser	26.47
12236 - Optical Technician	18.94
12250 - Pharmacy Technician	21.29
12280 - Phlebotomist	18.51
12305 - Radiologic Technologist	34.89
12311 - Registered Nurse I	29.46
12312 - Registered Nurse II	36.05
12313 - Registered Nurse II Specialist	36.05
12314 - Registered Nurse III	43.61
12315 - Registered Nurse III Anesthetist	43.61
12316 - Registered Nurse IV	52.28
12317 - Scheduler (Drug and Alcohol Testing)	31.18
12320 - Substance Abuse Treatment Counselor	21.33
13000 - Information And Arts Occupations	
13011 - Exhibits Specialist I	21.79
13012 - Exhibits Specialist II	26.22
13013 - Exhibits Specialist III	32.07
13041 - Illustrator I	23.97
13042 - Illustrator II	27.87
13043 - Illustrator III	34.10
13047 - Librarian	36.93
13050 - Library Aide/Clerk	15.87
13054 - Library Information Technology Systems Administrator	33.35
13058 - Library Technician	22.93
13061 - Media Specialist I	24.05
13062 - Media Specialist II	26.92
13063 - Media Specialist III	30.01
13071 - Photographer I	20.35
13072 - Photographer II	22.76
13073 - Photographer III	28.20
13074 - Photographer IV	34.50
13075 - Photographer V	41.74
13090 - Technical Order Library Clerk	19.94
13110 - Video Teleconference Technician	23.54
14000 - Information Technology Occupations	
14041 - Computer Operator I	18.22
14042 - Computer Operator II	20.39
14043 - Computer Operator III	22.73
14044 - Computer Operator IV	25.25
14045 - Computer Operator V	27.97
14071 - Computer Programmer I	(see 1)
14072 - Computer Programmer II	(see 1)
14073 - Computer Programmer III	(see 1)
14074 - Computer Programmer IV	(see 1)
14101 - Computer Systems Analyst I	(see 1)
14102 - Computer Systems Analyst II	(see 1)
14103 - Computer Systems Analyst III	(see 1)
14150 - Peripheral Equipment Operator	18.22
14160 - Personal Computer Support Technician	25.25
14170 - System Support Specialist	36.53

15000 - Instructional Occupations	
15010 - Aircrew Training Devices Instructor (Non-Rated)	34.20
15020 - Aircrew Training Devices Instructor (Rated)	41.38
15030 - Air Crew Training Devices Instructor (Pilot)	49.60
15050 - Computer Based Training Specialist / Instructor	34.20
15060 - Educational Technologist	33.45
15070 - Flight Instructor (Pilot)	49.60
15080 - Graphic Artist	30.22
15085 - Maintenance Test Pilot Fixed Jet/Prop	47.62
15086 - Maintenance Test Pilot Rotary Wing	47.62
15088 - Non-Maintenance Test/Co-Pilot	47.62
15090 - Technical Instructor	30.17
15095 - Technical Instructor/Course Developer	36.90
15110 - Test Proctor	24.36
15120 - Tutor	24.36
16000 - Laundry Dry-Cleaning Pressing And Related Occupations	
16010 - Assembler	15.19
16030 - Counter Attendant	15.19
16040 - Dry Cleaner	19.14
16070 - Finisher Flatwork Machine	15.19
16090 - Presser Hand	15.19
16110 - Presser Machine Drycleaning	15.19
16130 - Presser Machine Shirts	15.19
16160 - Presser Machine Wearing Apparel Laundry	15.19
16190 - Sewing Machine Operator	20.48
16220 - Tailor	21.80
16250 - Washer Machine	16.49
19000 - Machine Tool Operation And Repair Occupations	
19010 - Machine-Tool Operator (Tool Room)	29.81
19040 - Tool And Die Maker	33.77
21000 - Materials Handling And Packing Occupations	
21020 - Forklift Operator	22.16
21030 - Material Coordinator	23.26
21040 - Material Expediter	23.26
21050 - Material Handling Laborer	16.28
21071 - Order Filler	16.52
21080 - Production Line Worker (Food Processing)	22.16
21110 - Shipping Packer	18.20
21130 - Shipping/Receiving Clerk	18.20
21140 - Store Worker I	17.42
21150 - Stock Clerk	22.00
21210 - Tools And Parts Attendant	22.16
21410 - Warehouse Specialist	22.16
23000 - Mechanics And Maintenance And Repair Occupations	
23010 - Aerospace Structural Welder	33.50
23019 - Aircraft Logs and Records Technician	28.42
23021 - Aircraft Mechanic I	32.44
23022 - Aircraft Mechanic II	33.50
23023 - Aircraft Mechanic III	34.47
23040 - Aircraft Mechanic Helper	25.19
23050 - Aircraft Painter	31.35
23060 - Aircraft Servicer	28.42
23070 - Aircraft Survival Flight Equipment Technician	31.35
23080 - Aircraft Worker	30.04
23091 - Aircrew Life Support Equipment (ALSE) Mechanic I	30.04
23092 - Aircrew Life Support Equipment (ALSE) Mechanic II	32.44
23110 - Appliance Mechanic	24.65
23120 - Bicycle Repairer	22.09
23125 - Cable Splicer	42.17
23130 - Carpenter Maintenance	29.50
23140 - Carpet Layer	24.79
23160 - Electrician Maintenance	34.40
23181 - Electronics Technician Maintenance I	33.11

23182 - Electronics Technician Maintenance II	34.57
23183 - Electronics Technician Maintenance III	35.77
23260 - Fabric Worker	25.82
23290 - Fire Alarm System Mechanic	26.78
23310 - Fire Extinguisher Repairer	25.48
23311 - Fuel Distribution System Mechanic	35.00
23312 - Fuel Distribution System Operator	29.02
23370 - General Maintenance Worker	24.19
23380 - Ground Support Equipment Mechanic	32.44
23381 - Ground Support Equipment Servicer	28.42
23382 - Ground Support Equipment Worker	30.04
23391 - Gunsmith I	25.48
23392 - Gunsmith II	28.56
23393 - Gunsmith III	30.85
23410 - Heating Ventilation And Air-Conditioning Mechanic	32.24
23411 - Heating Ventilation And Air Contidioning Mechanic (Research Facility)	33.29
23430 - Heavy Equipment Mechanic	30.06
23440 - Heavy Equipment Operator	35.56
23460 - Instrument Mechanic	30.14
23465 - Laboratory/Shelter Mechanic	29.81
23470 - Laborer	16.28
23510 - Locksmith	28.47
23530 - Machinery Maintenance Mechanic	29.74
23550 - Machinist Maintenance	25.60
23580 - Maintenance Trades Helper	20.79
23591 - Metrology Technician I	30.14
23592 - Metrology Technician II	31.12
23593 - Metrology Technician III	32.03
23640 - Millwright	36.91
23710 - Office Appliance Repairer	28.49
23760 - Painter Maintenance	25.88
23790 - Pipefitter Maintenance	34.77
23810 - Plumber Maintenance	33.60
23820 - Pneudraulic Systems Mechanic	30.85
23850 - Rigger	31.90
23870 - Scale Mechanic	28.56
23890 - Sheet-Metal Worker Maintenance	30.22
23910 - Small Engine Mechanic	24.79
23931 - Telecommunications Mechanic I	30.29
23932 - Telecommunications Mechanic II	31.27
23950 - Telephone Lineman	28.00
23960 - Welder Combination Maintenance	26.78
23965 - Well Driller	34.15
23970 - Woodcraft Worker	30.85
23980 - Woodworker	25.48
24000 - Personal Needs Occupations	
24550 - Case Manager	19.53
24570 - Child Care Attendant	14.50
24580 - Child Care Center Clerk	18.09
24610 - Chore Aide	13.99
24620 - Family Readiness And Support Services Coordinator	19.53
24630 - Homemaker	19.55
25000 - Plant And System Operations Occupations	
25010 - Boiler Tender	35.11
25040 - Sewage Plant Operator	34.14
25070 - Stationary Engineer	35.11
25190 - Ventilation Equipment Tender	27.26
25210 - Water Treatment Plant Operator	34.14
27000 - Protective Service Occupations	
27004 - Alarm Monitor	30.85
27007 - Baggage Inspector	17.37
27008 - Corrections Officer	29.54

27010 - Court Security Officer		34.79
27030 - Detection Dog Handler		22.54
27040 - Detention Officer		29.54
27070 - Firefighter		40.04
27101 - Guard I		17.37
27102 - Guard II		22.54
27131 - Police Officer I		38.25
27132 - Police Officer II		42.50
28000 - Recreation Occupations		
28041 - Carnival Equipment Operator		16.45
28042 - Carnival Equipment Repairer		17.50
28043 - Carnival Worker		13.26
28210 - Gate Attendant/Gate Tender		18.93
28310 - Lifeguard		13.97
28350 - Park Attendant (Aide)		21.19
28510 - Recreation Aide/Health Facility Attendant		15.45
28515 - Recreation Specialist		26.24
28630 - Sports Official		16.86
28690 - Swimming Pool Operator		22.29
29000 - Stevedoring/Longshoremen Occupational Services		
29010 - Blocker And Bracer		34.71
29020 - Hatch Tender		34.71
29030 - Line Handler		34.71
29041 - Stevedore I		32.85
29042 - Stevedore II		36.23
30000 - Technical Occupations		
30010 - Air Traffic Control Specialist Center (HFO)	(see 2)	42.26
30011 - Air Traffic Control Specialist Station (HFO)	(see 2)	29.14
30012 - Air Traffic Control Specialist Terminal (HFO)	(see 2)	32.09
30021 - Archeological Technician I		22.27
30022 - Archeological Technician II		24.91
30023 - Archeological Technician III		30.86
30030 - Cartographic Technician		30.86
30040 - Civil Engineering Technician		32.97
30051 - Cryogenic Technician I		27.31
30052 - Cryogenic Technician II		30.17
30061 - Drafter/CAD Operator I		22.27
30062 - Drafter/CAD Operator II		24.91
30063 - Drafter/CAD Operator III		27.78
30064 - Drafter/CAD Operator IV		34.17
30081 - Engineering Technician I		20.07
30082 - Engineering Technician II		22.53
30083 - Engineering Technician III		25.20
30084 - Engineering Technician IV		31.22
30085 - Engineering Technician V		38.19
30086 - Engineering Technician VI		46.21
30090 - Environmental Technician		28.91
30095 - Evidence Control Specialist		24.66
30210 - Laboratory Technician		27.78
30221 - Latent Fingerprint Technician I		30.60
30222 - Latent Fingerprint Technician II		33.80
30240 - Mathematical Technician		30.86
30361 - Paralegal/Legal Assistant I		22.87
30362 - Paralegal/Legal Assistant II		28.34
30363 - Paralegal/Legal Assistant III		33.72
30364 - Paralegal/Legal Assistant IV		41.93
30375 - Petroleum Supply Specialist		30.17
30390 - Photo-Optics Technician		30.86
30395 - Radiation Control Technician		30.17
30461 - Technical Writer I		28.43
30462 - Technical Writer II		34.77
30463 - Technical Writer III		42.06
30491 - Unexploded Ordnance (UXO) Technician I		26.86
30492 - Unexploded Ordnance (UXO) Technician II		32.49
30493 - Unexploded Ordnance (UXO) Technician III		38.95

30494 - Unexploded (UXO) Safety Escort	26.86
30495 - Unexploded (UXO) Sweep Personnel	26.86
30501 - Weather Forecaster I	34.17
30502 - Weather Forecaster II	41.57
30620 - Weather Observer Combined Upper Air Or Surface Programs	(see 2) 23.99
30621 - Weather Observer Senior	(see 2) 27.77
31000 - Transportation/Mobile Equipment Operation Occupations	
31010 - Airplane Pilot	32.49
31020 - Bus Aide	22.23
31030 - Bus Driver	28.82
31043 - Driver Courier	18.04
31260 - Parking and Lot Attendant	13.65
31290 - Shuttle Bus Driver	19.19
31310 - Taxi Driver	15.61
31361 - Truckdriver Light	19.19
31362 - Truckdriver Medium	21.42
31363 - Truckdriver Heavy	23.90
31364 - Truckdriver Tractor-Trailer	23.90
99000 - Miscellaneous Occupations	
99020 - Cabin Safety Specialist	15.84
99030 - Cashier	13.60
99050 - Desk Clerk	14.01
99095 - Embalmer	28.38
99130 - Flight Follower	26.86
99251 - Laboratory Animal Caretaker I	14.63
99252 - Laboratory Animal Caretaker II	15.56
99260 - Marketing Analyst	37.45
99310 - Mortician	28.38
99410 - Pest Controller	22.62
99510 - Photofinishing Worker	20.74
99710 - Recycling Laborer	25.80
99711 - Recycling Specialist	29.62
99730 - Refuse Collector	23.87
99810 - Sales Clerk	14.90
99820 - School Crossing Guard	18.89
99830 - Survey Party Chief	34.33
99831 - Surveying Aide	19.69
99832 - Surveying Technician	26.99
99840 - Vending Machine Attendant	18.44
99841 - Vending Machine Repairer	21.16
99842 - Vending Machine Repairer Helper	18.44

Note: Executive Order (EO) 13706 Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Service Contract Act for which the contract is awarded (and any solicitation was issued) on or after January 1 2017. If this contract is covered by the EO the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness injury or other health-related needs including preventive care; to assist a family member (or person who is like family to the employee) who is ill injured or has other health-related needs including preventive care; or for reasons resulting from or to assist a family member (or person who is like family to the employee) who is the victim of domestic violence sexual assault or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: \$4.54 per hour up to 40 hours per week or \$181.60 per week or \$786.93 per month

HEALTH & WELFARE EO 13706: \$4.22 per hour up to 40 hours per week or \$168.80 per week or \$731.47 per month*

*This rate is to be used only when compensating employees for performance on an SCA- covered contract also covered by EO 13706 Establishing Paid Sick Leave for Federal Contractors. A contractor may not receive credit toward its SCA obligations for any paid sick leave provided pursuant to EO 13706.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor 3 weeks after 5 years and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor wherever employed and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of ten paid holidays per year: New Year's Day Martin Luther King Jr.'s Birthday Washington's Birthday Memorial Day Independence Day Labor Day Columbus Day Veterans' Day Thanksgiving Day and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE NUMBERED FOOTNOTES IN PARENTHESES RECEIVE THE FOLLOWING:

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b) this wage determination does not apply to any employee who individually qualifies as a bona fide executive administrative or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals (29 C.F.R. 541. 400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally because job titles vary widely and change quickly in the computer industry job titles are not determinative of the application of the computer professional exemption. Therefore the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

- (1) The application of systems analysis techniques and procedures including consulting with users to determine hardware software or system functional specifications;
- (2) The design development documentation analysis creation testing or modification of computer systems or programs including prototypes based on and related to user or system design specifications;
- (3) The design documentation testing creation or modification of computer programs related to machine operating systems; or
- (4) A combination of the aforementioned duties the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**** HAZARDOUS PAY DIFFERENTIAL ****

An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance explosives and incendiary materials. This includes work such as screening blending dying mixing and pressing of sensitive ordnance explosives and pyrotechnic compositions such as lead azide black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization modification renovation demolition and maintenance operations on sensitive ordnance explosives and incendiary materials. All operations involving re-grading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with or in close proximity to ordnance (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands face or arms of the employee engaged in the operation irritation of the skin minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving unloading storage and hauling of ordnance explosive and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance explosives and incendiary material differential pay.

**** UNIFORM ALLOWANCE ****

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract by the employer by the state or local law etc.) the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition where uniform cleaning and maintenance is made the responsibility of the employee all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount or the furnishing of contrary affirmative proof as to the actual cost) reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However in those instances where the uniforms furnished are made of "wash and wear" materials may be routinely washed and dried with other personal garments and do not require any special treatment such as dry cleaning daily washing or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract by the contractor by law or by the nature of the work there is no requirement that employees be reimbursed for uniform maintenance costs.

**** SERVICE CONTRACT ACT DIRECTORY OF OCCUPATIONS ****

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations" Fifth Edition (Revision 1) dated September 2015 unless otherwise indicated.

**** REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE Standard Form 1444 (SF-1444) ****

Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e. the work to be performed is not performed by any classification listed in the wage determination) be classified by the contractor so as to provide a reasonable relationship (i.e. appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination (See 29 CFR 4.6(b)(2)(i)). Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees (See 29 CFR 4.6(b)(2)(ii)). The Wage and Hour Division shall make a final determination of conformed classification wage rate and/or fringe benefits which shall be paid to all employees performing in the classification from the first day of work on which contract work is performed by them in the classification. Failure to pay such unlisted employees the compensation agreed upon by the interested parties and/or fully determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract. (See 29 CFR 4.6(b)(2)(v)). When multiple wage determinations are included in a contract a separate SF-1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).
- 2) After contract award the contractor prepares a written report listing in order the proposed classification title(s) a Federal grade equivalency (FGE) for each proposed classification(s) job description(s) and rationale for proposed wage rate(s) including information regarding the agreement or disagreement of the authorized representative of the employees involved or where there is no authorized representative the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action together with the agency's recommendations and pertinent information including the position of the contractor and the employees to the U.S. Department of Labor Wage and Hour Division for review (See 29 CFR 4.6(b)(2)(ii)).
- 4) Within 30 days of receipt the Wage and Hour Division approves modifies or disapproves the action via transmittal to the agency contracting officer or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour Division's decision to the contractor.
- 6) Each affected employee shall be furnished by the contractor with a written copy of such determination or it shall be posted as a part of the wage determination (See 29 CFR 4.6(b)(2)(iii)).

Information required by the Regulations must be submitted on SF-1444 or bond paper.

When preparing a conformance request the "Service Contract Act Directory of Occupations" should be used to compare job definitions to ensure that duties requested are not performed by a classification already listed in the wage determination. Remember it is not the job title but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split combine or subdivide classifications listed in the wage determination (See 29 CFR 4.152(c)(1))."

EXHIBIT "C"
FORM A-1
SCHEDULE OF RATES AND NOT-TO-EXCEED AMOUNTS

1.0 NOT-TO-EXCEED AMOUNTS

- 1.1** This subcontract is priced on a Time and Materials basis. CONTRACTOR makes no commitments or guarantees as to the total amount or value of the Work to be performed. Payment under the subcontract shall be made on the basis of the actual amount of Work satisfactorily performed in accordance with the subcontract terms. The Ceiling Price for all Work called for under this subcontract is specified on the Subcontract Form of Agreement.
- 1.2** SUBCONTRACTOR waives its right, if any, to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price or any maximum amount stated above except as authorized by a written change issued by the CONTRACTOR and received by SUBCONTRACTOR.

2.0 LABOR CATEGORIES AND QUALIFICATIONS The following categories of labor and associated qualifications will be needed to perform the Work.

Labor Category	Required Qualifications
Project Manager	[***]
Engineering Manager	[***]
Building Manager/Site Superintendent	[***]
Senior Mechanic	[***]
Radiation Protection Manager/Transition Manager	[***]
Health and Safety Representative	[***]
Waste Manager	[***]
Lead RCT	[***]
RCT	[***]
Lead Decon Tech	[***]
Custodian/Laborer/Decon Tech	[***]
Program Manager	[***]
Project Coordinator	[***]
CHP	[***]
Technical Services Manager	[***]
Contract Administrator / Procurement Specialist	[***]
Project Controls Specialist	[***]
Rad Engineer	[***]
RSO	[***]

[*] INDICATES CERTAIN INFORMATION IN THIS DOCUMENT WHICH HAS BEEN OMITTED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.**

Administrative	[***]
Shipper	[***]

3.0 FIXED HOURLY UNIT RATES

3.1 SUBCONTRACTOR shall be remunerated for performance of the Work by its employees on an hourly unit rate basis in accordance with the rates set forth in Table 3.1 below. The hourly rates constitute full payment for all costs in accomplishing the Work and include, but are not limited to, all payroll costs, overhead, profit and any other costs of whatever nature incurred by the SUBCONTRACTOR in the performance of the Work, except as specified in Section 4.0 below.

**Table 3.1
Labor Classification Hourly Rates**

Labor Category	Fully Loaded On-Site Hourly Rate	Fully Loaded Overtime Hourly Rate
Project Manager	[\$***]	[\$***]
Engineering Manager	[\$***]	[\$***]
Building Manager/Site Superintendent	[\$***]	[\$***]
Senior Mechanic	[\$***]	[\$***]
Radiation Protection Manager/Transition Manager	[\$***]	[\$***]
Health and Safety Representative	[\$***]	[\$***]
Waste Manager	[\$***]	[\$***]
Lead RCT	[\$***]	[\$***]
RCT	[\$***]	[\$***]
Lead Decon Tech	[\$***]	[\$***]
Custodian/Laborer/Decon Tech	[\$***]	[\$***]
Program Manager	[\$***]	[\$***]
Project Coordinator	[\$***]	[\$***]
CHP	[\$***]	[\$***]
Technical Services Manager	[\$***]	[\$***]
Contract Administrator / Procurement Specialist	[\$***]	[\$***]
Project Controls Specialist	[\$***]	[\$***]
Rad Engineer	[\$***]	[\$***]
RSO	[\$***]	[\$***]
Administrative	[\$***]	[\$***]
Shipper	[\$***]	[\$***]

3.2 Labor effort expended in performance of this subcontract shall be paid using the Fixed Hourly Unit Rates listed above in accordance with the terms of FAR 52.232-7, Payments Under Time-And-Materials and Labor-Hour Contracts, and other applicable subcontract terms. The rates for the first twelve month period of the subcontract term shall be as stated above. Fixed Hourly Rates for each subsequent twelve month period shall be established by multiplying the Fixed Hourly Rate for the preceding period by the percent change for 12 months ending in the 12th, 24th, 36th, and 48th month of the subcontract term by industry and occupational group “Professional, scientific, and technical services” as published in the U.S. Department of Labor Employment Cost Index, Table 5, *COMPENSATION (NOT SEASONALLY ADJUSTED): Employment Cost Index for total compensation, for private industry workers, by occupational group and industry*. The table is available at <http://stats.bls.gov/news.release/eci.t05.htm>.

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3.3 The following definitions shall apply.

3.3.1 The "Fully Loaded On-Site Hourly Rate" and "Fully Loaded Off-Site Hourly Rate" is calculated for an eight (8) hour day, forty (40) hour week (i.e., 5/40 schedule), or nine (9) hour day, eighty (80) hours per two weeks (i.e., 9/80 schedule).

3.3.2 "Fully Loaded Overtime Hourly Rate", if applicable, is for hours in excess of an eight (8) hour day, forty (40) hour week (i.e., 5/40 schedule), or nine (9) hour day, eighty (80) hours per two weeks (i.e., 9/80 schedule).

3.4 Specific assignments and classification of SUBCONTRACTOR'S workers for payment purposes shall be as approved by CONTRACTOR.**4.0 REIMBURSABLE TRAVEL AND MATERIALS CHARGES**

4.1 Subject to the limitations and conditions set forth in the subcontract, SUBCONTRACTOR will be reimbursed for travel charges incurred in the performance of the Work. Supporting documentation such as third party invoices, receipts, or other data as required by CONTRACTOR to support the validity of costs incurred under this section shall be submitted with each invoice.

a. SUBCONTRACTOR shall refer to Exhibit B Special Conditions SC-115 Travel Costs and reimbursement (Nov 2018) for additional requirements related to the incurrence and reimbursement of costs for transportation, lodging and meals and incidental expenses (M&IE).

b. SUBCONTRACTOR must provide (as applicable):

(a) Evidence of your necessary travel authorizations including any necessary special authorizations;

(b) Receipts for:

(1) Any lodging expense;

(2) Any other expense costing over \$75. If it is impracticable to furnish receipts in any instance as required by this subtitle, the failure to do so must be fully explained on the travel voucher. Mere inconvenience in the matter of taking receipts will not be considered;

c. The maximum allowable Per Diem Rates for Seattle, WA for the respective FY2019 and FY2020 fiscal years can be found using the following links:
FY2019:

[https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup/?
action=perdiems_report&fiscal_year=2019&city=Seattle&state=WA&zip=](https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup/?action=perdiems_report&fiscal_year=2019&city=Seattle&state=WA&zip=)
FY2020:

[https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup/?
action=perdiems_report&fiscal_year=2020&city=Seattle&state=WA&zip=](https://www.gsa.gov/travel/plan-book/per-diem-rates/per-diem-rates-lookup/?action=perdiems_report&fiscal_year=2020&city=Seattle&state=WA&zip=)

4.2 Subject to the limitations and conditions set forth in the subcontract, SUBCONTRACTOR will be reimbursed for Materials charges incurred in the performance of the Work. "Materials" is defined in FAR 52.232-7 Payments under Time-and-Materials and Labor- Hour Contracts.

4.3 SUBCONTRACTOR shall be remunerated for use of equipment as authorized in advance by CONTRACTOR in accordance with subsequently issued task order statements of work specifically requiring said equipment at the rates set forth in Table 3.2 below. The weekly or monthly rates constitute full payment for all costs in accomplishing the Work and include, but are not limited to, all overhead, profit and any other costs of whatever nature incurred by the SUBCONTRACTOR in the performance of the Work. Rates in Table 3.2 are firm and shall not be subject to adjustment for the duration of the subcontract.

EQUIPMENT DESCRIPTION	WEEKLY RATE	MONTHLY RATE
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]
[***]	\$[***]	\$[***]

[***] INDICATES CERTAIN INFORMATION IN THIS DOCUMENT WHICH HAS BEEN OMITTED FROM THIS PUBLIC FILING BECAUSE IT IS NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE COMPANY IF PUBLICLY DISCLOSED.

8/21/19

EXHIBIT "D"
SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

1.0 Scope of Work

SUBCONTRACTOR shall furnish qualified personnel, equipment, materials and facilities to perform all services necessary for the work generally described below and required by or reasonably inferable from the Subcontract Documents, including this Exhibit "D" (the "work"). SUBCONTRACTOR shall not be relieved of performing the details of any work manifestly or customarily performed to carry out the intent of this subcontract. All work shall be performed as if fully and correctly set forth and described in the subcontract. The Los Alamos National Laboratory (LANL) will designate an on-site person in charge (PIC) who is responsible for coordinating and directing activities described below, and is solely responsible for directing in writing subcontract changes, including additions, deletions, rescheduling and acceleration or deceleration, place of performance, means and methods, to all or part of the SOW.

1.1 Project Organization

SUBCONTRACTOR will perform the work with dedicated personnel. The above notwithstanding, it is understood and agreed that the Project Manager, Radiation Safety Officer, ES&H Manager, Site Superintendent and the Project Coordinator performing the work may also perform work on the ongoing and associated work under contract to International Isotopes Inc. related to the remediation and decontamination of areas, equipment, structures and systems at the University of Washington Harborview Research & Training Building. It is also understood and agreed that additional staff may be assigned to both scopes of work, subject to the written pre-approval of the PIC. These key positions are being shared to ensure quality and safety standards are met without staffing the LANL contract with another full time employee. A current organization chart that identifies key positions shared by each of the subject scopes of work shall be maintained by SUBCONTRACTOR at all times. The organization chart current as of the effective date of this subcontract is enclosed as Attachment D.1. Additional Key positions to be provided by SUBCONTRACTOR include:

- Full-time Building Manager (1)
- Senior Mechanic (1)
- Custodian (2)
- Radiological Engineer (1)
- Lead Radiation Control Technician (1)

Additional staff may be added as authorized by the PIC, for any short term work or increases in level of effort for the project.

1.2 Work Included**1.2.1 University of Washington (UW) Harborview Research & Training (R&T) Building Manager; Routine Building Maintenance, Operations and Janitorial Services; Non-Routine Building Maintenance and Operations to include movement of equipment to locations outside of the R&T Building.**

1. Anticipated period of performance: Work is to commence immediately and will continue through the term of this subcontract. This work will be performed in coordination with the day-to-day collaboration with the University of Washington (UW) building owner representative, Michael Young or his designee (a record of such designation shall be provided by the PIC), along with consulting support from Harborview Medical Center (HMC). A SUBCONTRACTOR representative shall attend all scheduling, planning, safety and coordination meetings with the UW building owner representative and the PIC or the PIC's designated representative necessary to plan and carry out the performance of work. Work is generally expected to consist of the following general categories:

a. Routine Building Maintenance. Building maintenance, operations and repair activities as prescribed by the UW Total Maintenance System (TMS) building maintenance work and repair order system; elevator, electrical, HVAC and chiller system "on-call" staff to respond to alarms and support system maintenance and repair activities, as needed; and general custodial/janitorial services.. This includes any preventative maintenance work normally performed by UW staff on systems or equipment and regular and off hours monitoring of alarms/sensors within the building.

Examples of routine building maintenance activities include but are not limited to:

- Trash removal and general housekeeping,
- Transfer trash to HMC staff for offsite disposal
- Twice-daily walk through of all public areas of the building, including areas used for research and training.
- Daily walk through of all non-public areas of the building systems (e.g., any unfinished areas, mechanical rooms, penthouse, basements, etc.)
- Responding to and addressing building system alarms
- All TMS work and repair orders

b. Non-routine Building Maintenance and Operations. This work includes building maintenance, building operations and building repair activities that are not listed above or prescribed by the UW TMS system; and miscellaneous activities involving the maintenance, repair, handling/moving or management of building contents, including UW personal property. All such work furnished by SUBCONTRACTOR shall be ordered through issuance of a task order by the Contract Administrator, pursuant to the ordering requirements of Section 3 (ORDERING) of this subcontract. This subcontract addresses work normally performed by UW staff and excludes any maintenance, repair or other work on systems or equipment when such work is explicitly covered by a contract between UW, Harborview Medical Center (HMC), or Harborview Research & Training (R&T) and a third party contractor, unless such work has been delegated to SUBCONTRACTOR through the issuance of a task order.

Examples of non-routine building maintenance and operations activities may include, but are not limited to:

- Building, equipment, property or system modifications, repairs, replacement or restoration
- Moving or removing building content; including securing or packaging items and materials for moving, removing and/or off-site transport, and arranging for transportation of items or materials

Subcontractor shall provide PIC daily written reports relative to activities within section 1.2.1. Such reports at a minimum shall identify routine and non-routine activities performed and any outstanding issues identified either by the UW building owner representative or as a result of required building walk throughs.

1.2.2 University of Washington, Maleng Medical Facility Filter Replacement Project to include Rooftop Filters and Operating Room HEPA Filters.

High Level Scope information - There are 6 banks of supply and exhaust fans with filters that need to be replaced including operating room filters. UW-Maleng staff has said that typically this is a 2 day filter swap out with experienced workers and without any surveying. Conservatively, this could be a 4-5 day task. Based on the contamination levels, this work would likely require Tyvek suits, more for dust/dirt protection. The procedures used in the past to perform this work will be provided prior to work being performed, but information available at this time indicates this is a typical supply unit. The supply and exhaust fans can be isolated one at time. The UW Maleng staff will secure units, complete lock out tag out operations, work acceptance, and restoration of unit to operation after work acceptance. This work will also include bagging the used filters and disposing of the filters properly. We have been told that in the past, these filters have been taken off the roof one-by one as the filters are replaced. Documents and drawings for this work will be provided prior to execution of work.

1. Until completion of the filter replacement and DOH approval on-call corrective maintenance on the supply and exhaust units may be necessary to support Maleng operations. Work scope will include as requested corrective maintenance on equipment located inside the HVAC supply and exhaust plenums.
2. Staff required – 4 staff to swap out 95% efficiency fan supply filters located on the roof of the University of Washington Maleng Medical Facility. 2-4 personnel to survey the used filters and bag them as appropriate. Additional staff may be required to survey and clean portions of the filter housing that might have contamination before new filters are inserted.
3. Staff required – HVAC corrective maintenance mechanics and technicians to perform as requested corrective maintenance on the Maleng HVAC supply and exhaust systems.

The specifications and requirements for SUBCONTRACTOR conducting this work will be established through the issuance of a task order.

1.2.3 Harborview Hall – (King County) – Potential Sampling, Survey and Decontamination Work external to the R&T Building.

1. High level scope information – Areas adjacent to the R&T Building may require sampling, surveying and/or decontamination related work. Specifically, the building next door to the UW R&T Building is a King County 7 story aging facility. The Salvation Army uses the first floor of the facility as a homeless shelter. Floors 2-7 are unoccupied, but messy. The basement contains utilities that connect to the R&T Building and also the Maleng Medical Facility. Preliminary results have shown some potential low level Cesium 137 contamination in an underground tunnel that connects between the basements of the R&T facility and Harborview Hall, and low level contamination has been found in spots of a stairwell in Harborview Hall above the tunnel. Discussions between the University of Washington, DOE, and King County Washington on the path forward for this facility. Work would be prioritized in this facility, with focus on the occupied floors first.
2. Staff Required – To be determined at issuance of specific task order.
3. The specifications and requirements for SUBCONTRACTOR conducting this work will be established through the issuance of a task order.

1.2.4 Miscellaneous Project Support.

1. SUBCONTRACTOR shall provide miscellaneous project support to CONTRACTOR related to the response, recovery and restoration activities related to the UW Harborview Research & Training Building contamination incident (Incident) on an as directed basis pursuant to the ordering provisions, which are set forth in Section 3 of this subcontract. Examples of such work that may be performed include, but are not limited to:

- Characterization, maintenance, remediation, repair and restoration of surfaces, equipment, etc. at buildings other than the UW Harborview Research & Training Building
- Miscellaneous activities supporting CONTRACTOR's management and conduct of incident response, remediation and restoration activities.

2. The specifications and requirements for SUBCONTRACTOR conducting this work will be established through the issuance of a task order.

2.0 Applicable Policies and Procedures

In performing tasks under this Subcontract at a University of Washington facility, SUBCONTRACTOR shall comply with the applicable provisions of the University of Washington Safety Requirements Attached hereto as Appendix A. Additionally, for each task described, SUBCONTRACTOR shall provide a site specific safety plan describing in sufficient detail how it will perform work in accordance with Appendix A. Such Site Specific Safety Plan shall be reviewed and approved by the PIC prior to commencement of the task.

APPENDIX A- University of Washington SAFETY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies minimum requirements for safety on the University of Washington (Owner) worksite including:
 - 1. Subcontractor responsibility (regarding safety)
 - 2. Subcontractor safety program and plan submittals
 - 3. Subcontractor safety requirements
 - 4. Subcontractor safety reporting
 - 5. "Fire safety" requirements
 - 6. Chemical hazard communication
 - 7. Chemicals of interest reporting
- B. Owner's forms referenced in this Section include:
 - 1. Chemicals of Interest – Contractor Declaration and Reporting Form

1.2 SUBCONTRACTOR RESPONSIBILITY

- A. The Subcontractor is solely and completely responsible for compliance with all applicable laws, codes and regulations regarding safety (whether noted in this Section or not) and for creating and maintaining a safe working environment, including safety of all persons and property on the jobsite (whether the requirements of this Section address a particular situation or not).
- B. The Subcontractor shall maintain the jobsite and perform the Work in a manner which meets or exceeds statutory and regulatory requirements for the provision of a safe place to work and which minimizes safety risks to personnel of the Subcontractor, Subcontractors, Owner, general public or other parties. This obligation shall apply continuously and not be limited to normal working hours.
 - 1. The Subcontractor shall ensure that all Subcontractor and Subcontractor personnel are provided sufficient training, and shall take such actions as are necessary to maintain a safe environment on the construction site. Such training and actions shall include, but not be limited to, ensuring that such employees are familiar with governing work safety requirements and the requirements for compliance with applicable regulations.
 - 2. The Subcontractor shall monitor the jobsite to ensure that employees do not create unsafe conditions for others, and to comply with the provisions of the Site Specific Safety Plan.
 - 3. The Subcontractor shall establish and communicate clear expectations to its employees and Subcontractors of any tier (and their employees) of their obligation to notify the Subcontractor and any at risk party of any potential health or safety hazard affecting themselves or others.

June 20, 2019

APPENDIX A- University of Washington SAFETY REQUIREMENTS

4. The Subcontractor shall conduct on-site safety meetings weekly, or other frequency as appropriate, that shall be mandatory for all employees.
- C. The Subcontractor shall designate a full-time on-site competent individual to be the "Safety and Health Officer" who is qualified and authorized to supervise and enforce compliance with the Subcontractor's Site Specific Safety Plan during the performance of the Work. The Subcontractor is responsible to ensure that all necessary monitoring equipment, protective clothing, and other supplies and equipment are available to implement the Plan.
 1. The Subcontractor shall require each Subcontractor to provide a fulltime on-site safety manager (competent individual) for the duration of work at the Project site. If the man- load is below fifty (50) field workers, the Subcontractor may designate its Superintendent as the safety manager. If the man-load is fifty (50) or above field workers on-site, the Subcontractor shall provide and designate a dedicated competent individual as safety manager whose sole responsibility is Project safety including, but not limited to: review pre-task plans, critical lift plans, rigging and installation means and methods, fall protection, trenching excavations, electrical safety, Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Act of 1973 (WISHA) regulations compliance, and second tier Subcontractor safety monitoring and compliance.
- D. Safety Violations: In the event of WISHA violations by the Subcontractor or any of its suppliers or Subcontractors of any tier for unsafe practices involving imminent danger to personnel of the Owner, Contractor, Subcontractors, or others, the Subcontractor shall immediately correct the hazardous situation which caused the violation prior to any work continuing in the affected area. If such violations exist and corrective actions have not been taken by the Subcontractor, the Owner may order the Subcontractor to stop work (to be followed up in writing the same day), until satisfactory corrective action has been taken per Article 3.04 of the General Conditions.

1.3 SUBCONTRACTOR SAFETY REQUIREMENTS

- A. Safety Training: Subcontractor shall provide work site orientation for all employees (including Subcontractor employees) to become familiar with the Site Specific Safety Plan prior to commencing work. Subcontractor shall, on a weekly basis, perform safety training on hazards specific to the phase of work for all employees. These meetings shall be mandatory for all work employees.
 1. Subjects should include site specific safety issues and procedures and discussion of corrections resulting from any violation in safety procedures. A log of subjects covered and a copy of the attendance records of each meeting shall be submitted to the Owner's Representative on the day the meeting occurs.
- B. Respiratory Equipment: Any personnel performing work requiring the use of respiratory protective equipment shall be fully trained in the use of such equipment. Subcontractor must have a respiratory protection program and ensure that all workers wearing respirators have medical clearance and fit testing, as appropriate, for the type of respirators used.

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- C. Personal Protective Equipment: Subcontractor shall ensure all construction personnel are equipped with and utilize personal protective equipment in accordance with Labor and Industries standards. As a minimum requirement, all personnel working on the work site shall be required to use approved hardhats, safety glasses, appropriate gloves, and substantially constructed work boots. In addition, high-visibility safety apparel shall be worn in accordance with the American National Standards Institute and the International Safety Equipment Association (ANSI/ISEA) standard 107-2004.
- D. First Aid: The Subcontractor shall maintain at the Subcontractor's field office, or other well known place at the Project site, all materials (e.g., a first aid kit) necessary for giving first aid to the injured, and shall establish, publish, and make known to all employees procedures for ensuring immediate removal to a hospital or a doctor's care, persons (including personnel) who may have been injured on the work site. Work site personnel shall not work on the work site before the Subcontractor has established, and made known, procedures for removal of injured persons to a hospital or a doctor's care. If the Subcontractor and/or any Subsubcontractors work crew consist of five or more employees, the Subcontractor shall ensure that at least one of such employees has a valid and effective first aid card.
- E. Safety Walkthrough: In addition to WISHA requirements, the Subcontractor shall conduct a safety walkthrough of the Project with the Owner's Representative a minimum of once a month during the course of work. If a safety manager is required for any Subcontractor, the safety manager shall also attend the safety walkthrough. The Subcontractor shall:
 - 1. Document and maintain a written record of the hazards and unsafe practices noted during the walk-through and provide copies to the Owner as requested;
 - 2. Ensure that corrective action is promptly taken to eliminate the items recorded; and
 - 3. Maintain copies of all inspections performed by other competent individuals on the work site during the course of work.
- F. Job Hazards Analysis: The Subcontractor shall plan daily work, considering procedures with the potential for personnel injury and implement appropriate practices to avoid injuries with focus on engineering controls, personal protective equipment needs, and mitigation for exposure to cuts and lacerations. At each work site progress meeting, the Subcontractor shall present its plan for addressing hazards likely to be encountered in the next week.
 - 1. The Subcontractor shall develop and implement a program requiring task planning at the foreman level, including at the Subcontractor's foreman level.

1.4 SUBCONTRACTOR SAFETY REPORTING

- A. Reporting Injuries and Incidents: Subcontractor shall immediately notify the Owner's Representative of any injury or incident to persons, including personnel, on the work site. Subcontractor shall conduct an immediate investigation with an emphasis on preventative actions and lessons learned. The Subcontractor and its Subcontractor shall document the investigation and submit a hard copy of the report on OSHA Form 301 "Injury and Illness Report," or equivalent, to the Owner within 24 hours of the incident. The Subcontractor shall report on a monthly basis the total number of hours worked on-site by the Subcontractor's employees and Subcontractors, and the total number of recordable incidents and lost time accidents. Subcontractor shall submit copies of the Project First Aid Log to the Owner's Representative on a monthly basis.

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- B. Reporting Potentially Serious Hazards: Subcontractor shall immediately notify the Owner's Representative of any potentially serious hazard to persons, including personnel, on the work site. Subcontractor and its Subcontractor shall conduct an immediate investigation and submit a report to the Owner's Representative within 24 hours of becoming aware of the potentially serious hazard. The report shall describe the potentially serious hazard, the results of the Subcontractor's investigation, and any steps the Subcontractor has taken to prevent an injury or incident from occurring based on the potentially serious hazard.
- C. Emergency Procedures:
 - 1. For emergencies requiring an ambulance, fire department, or police assistance, the Subcontractor shall call emergency services (fire and police at 911).
 - 2. Should the Subcontractor find it necessary to call for non-emergency police assistance or protection in the exercise of the Subcontractor's responsibilities on the Seattle Campus, the Subcontractor shall call the University Police Department at 206-543- 9331.
 - 3. If an emergency incident occurs within the UW Medical Center (UWMC), the Subcontractor shall also contact UWMC staff by calling from internal UWMC phones.
 - 4. The Subcontractor is responsible for obtaining copies of and complying with all Harborview Medical Center emergency response protocols.

1.5 CONSTRUCTION FIRE SAFETY REQUIREMENTS

- A. Fire Safety During Construction and Demolition: The Subcontractor shall conform to Chapter 1, "Fire Safety During Construction and Demolition," of the International Fire Code, as locally amended, and any additional provisions as outlined herein for precautions against fire, flammable and combustible liquids, flammable gases, explosive materials, fire protection, fire reporting, fire fighting access, means of egress, standpipes, fire sprinklers, and roofing operations.
 - 1. The Subcontractor shall provide adequate separation between Owner-occupied buildings and work site trailers and sheds.
- B. Hot Work Procedures:
 - 1. Subcontractor shall establish a system for documentation and control of "hot work" activities which include the use of portable gas, grinding, or arc welding equipment and conduct operations in a manner that is fire-safe for the work area and adjacent areas. Hot work permits are to be posted at the jobsite in an accessible and conspicuous location. Maintain the premise clear of rubbish, debris, or other materials constituting a potential fire hazard. The local fire code is incorporated herein by reference; adhere to all applicable provisions as determined by the local fire department. Subcontractor and Subcontractors shall obtain from the local Fire Department engineering inspection section a permit for all hot work activities prior to performing this Work.
 - a. Whenever practical, the Subcontractor shall perform cutting and welding operations off-site.

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2. Maintain copies of all hot work related permits for Owner's review upon request, including, but not limited to:
 - a. Cutting and welding;
 - b. Roofing / hot-tar kettle; and
 - c. Storage of flammable materials (e.g., propane, butane) and/or compressed gases.
3. Prior to conducting hot work activities, the Subcontractor shall ensure all of the following fire safety precautions have been taken:
 - a. Cutting and/or welding equipment must be thoroughly inspected and found to be in good repair, free of damage or defects.
 - b. A multi-purpose dry chemical, portable fire extinguisher must be located so that it is immediately available to the area of work and is fully charged and ready for use.
 - c. At least one fire alarm pull station or means of contacting the fire department (i.e., site telephone) must be immediately available and accessible to person(s) conducting the cutting/welding operation.
 - d. Floor areas under and at least 35 feet around the cutting/welding operation must be swept clean of combustible and flammable materials.
 - e. All work site equipment fueling activities and fuel storage must be located at least 35 feet away from cutting/welding operations.
 - f. Fire resistant shields (e.g., fire retardant plywood, flameproof tarpaulin, metal, etc.), must cover combustible floors.
 - g. Combustible materials and finished surfaces, equipment, electrical cables, and personnel must be provided with protection to prevent damage or injury from molten metal, falling sparks, and welding arcs.
 - h. Spark / slag catchers (e.g., fire retardant plywood, flameproof tarpaulin, metal, etc.) must be suspended below any elevated cutting/welding operation.
 - i. All floor and wall openings must be covered to prevent sparks/slag from traveling to other unprotected area.
 - j. Containers in or on which cutting/welding will take place must be purged of flammable vapors.

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C. Fire Systems Shutdowns, Impairments, and Fire Watch

1. When it is necessary to shut down existing fire alarm systems or suppression systems for switch-over purposes, or any other reason that leaves the building unprotected, the Subcontractor shall provide a continuous Owner-approved "fire watch" in accordance AHJs and the following (unless the Subcontractor provides an Owner-approved temporary equivalent system or the Subcontractor is specifically excepted by the Owner):
 - a. Person(s) assigned to a fire watch must be trained in the use of the portable fire extinguisher.
 - b. Fire watch personnel must have an immediate means of providing notification to the fire department (e.g., cellular phone, land-line phone, two-way radio to a continuously staffed position) and the University Police.
 - c. Continuous rounds to cover all areas of the building where the fire protection system is out-of-service are required every 15 minutes.
 - (1) Exception for Building Code type "B occupancy" buildings: During the hours a B occupancy building is occupied, building occupants performing their duties, including work site personnel, may act as a fire watch in lieu of a designated fire watch, when approved in writing by Owner.
 - (a) A fire watch is required at all times in unoccupied areas.
 - (b) Other building code occupancy types may be allowed this exception when approved in writing by the Owner.
 - d. A log of rounds shall be maintained to include the name of the person performing the fire watch, the hours worked (including start and stop times), and comprehensive notes.
2. Fourteen (14) calendar days written notification shall be provided to the Owner's Representative requesting approval for fire protection system shutdown or functional impairment; receipt of written approval from the Owner's Representative is required before any system shutdown or functional impairment.
 - a. In occupied buildings, include a plan indicating a method to notify all occupants.
 - b. Notify the local fire department. In Seattle, the number to report out-of-service systems and equipment is 206-233-7219.

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3. The Subcontractor shall work in cooperation with the Owner to identify fire alarm initiating devices in and adjacent to the Project site that may activate from work site activities (i.e., work that creates dust, smoke, steam, heat, etc.) and develop a plan to temporarily cover, remove, or disable through programming these devices to eliminate the potential for false alarms.
 - a. The Owner may authorize in writing some devices to be disabled for the duration of the Work or for a particular activity without requiring a continuous "fire watch" for one shift or several days depending on circumstance.
 - b. ONLY OWNER PERSONEL SHALL DEACTIVE OR DISABLE EXISTING FIRE DETECTION AND SUPPRESSION SYSTEMS, unless the Subcontractor is specifically authorized in writing by the Owner to do so.
 - c. If the fire alarm system at HMC has been deactivated at the request of the Subcontractor and the Subcontractor leaves the work site without informing the Owner of the need to reactivate the fire alarm system, a charge of \$500 shall be assessed for each event. The Contract Sum will be amended for such amount by Change Order.
 - D. Fire Alarm/Suppression Systems False Activation or Discharge: Most existing Owner buildings have active fire detection and suppression systems. If proper procedures as outlined in the Contract Documents and this Section 1.6C are not followed to ensure the unnecessary activation or deactivation of these systems, the Owner may at its sole discretion impose an emergency response charge of \$350 per occurrence to the Subcontractor and require a fire watch at the Subcontractor's cost. The Contract Sum will be amended for such amount by Change Order.
 - E. Fire Extinguishers Required for Work site: Provide multipurpose dry chemical portable fire extinguishers for the Work in accordance with the International Fire Code Chapter 14, as locally amended, and as required by WISHA and other applicable regulations. Existing building fire extinguishers or new fire extinguishers specified by the Contract Documents for the Project do not alleviate Subcontractor's responsibility to provide temporary fire extinguishers for the Work.
 - F. Existing Fire Separations: Existing fire separations, including floor-to-floor separations, shall not be impaired by work site activities.
 - G. Occupant Egress in Existing Buildings: The Subcontractor shall not block active exits, exit hallways, exit corridors and the exit access to a public way.
 1. Exits are to remain free of work site materials, equipment, and rubbish at all times, unless approved by Owner.
 2. For HMC, Work which blocks or restricts exit corridors shall only occur at night with prior approval of the Owner. If approved, work that blocks or restricts exit corridors must be cleared by 6:00 a.m. each day.
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APPENDIX A- University of Washington SAFETY REQUIREMENTS

- H. Emergency Access: Outdoor storage and staging operations and work site fencing shall not impede egress, restrict or narrow fire fighting access (including roads or lanes), or present a fire exposure to existing buildings.
 - 1. Access to emergency services including, but not limited to, fire hydrants, fire department connections, fire command centers, fire alarm panels, valves and similar equipment and systems for emergency vehicles and emergency response personnel must be kept free and unobstructed at all times, unless specifically approved by the Owner.
 - 2. Temporary obstruction of emergency access may be allowed for special cases (e.g., crane installations and hoisting) on a short-term basis. A written plan must be submitted to the Owner for approval at least two weeks prior to the scheduled date of obstruction.

1.6 CHEMICAL HAZARD COMMUNICATION

- A. General: The Owner and the Subcontractor are responsible under the Washington Administrative Code 296-800-170 through 296-800-18020 (Employer Chemical Hazard Communication) to provide a safe and healthy environment for their employees.
- B. Responsibilities:
 - 1. The Owner maintains a centralized collection of all Material Safety Data Sheets (MSDS) for Owner materials. These MSDS are available to the Subcontractor if an unknown chemical is discovered in the work area; a worker is concerned about exposure; and the Subcontractor suspects the material originates with the Owner.
 - a. The Subcontractor shall coordinate with the Owner's Representative to receive this information.
 - 2. The Subcontractor shall establish a Chemical Hazard Communication Program (WAC 296-155-180) which includes multiemployer workplaces (WAC 296-800-17007), and provide hazard communication information and training to its employees and the employees of the Subcontractor's Subcontractors (of any tier).
 - a. The information shall include: signage demarcating regulated areas and entrances; signage indicating the location of the Subcontractor's binder containing all MSDS used for Work; and prominently posted lists identifying all hazardous chemicals present in the workplace.
 - b. In addition to MSDS training which is regulated by the Employer Chemical Hazard Communication standard, training shall include those MSDS that are available for any Owner's chemical product present at the jobsite.

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APPENDIX A- University of Washington SAFETY REQUIREMENTS

3. The Subcontractor shall provide the Owner chemical hazard information (MSDS) for all chemical products the Subcontractor and the Subcontractor's Subcontractor's (of any tier) bring onto the jobsite for Owner's information prior to application including, but not limited to, all paints, glues, mastics, epoxies and cleaning products.
 - a. At the jobsite, the Subcontractor shall establish and maintain a binder(s) of all hazardous chemicals MSDS used for Work and indicate where utilized.
 - (1) The MSDS shall be bound in a slant-D, 3-ring, view binder with clear vinyl overlay inserts on the front cover and spine. The binder shall have heavy duty nylon reinforced hinges.
 - (2) The binder shall have a cover slip sheet and a spine sheet typed with "MSDS used for Work," University Project name, University Project number, University Facility number, A/E name, and Subcontractor name.
 - (3) The MSDS shall be organized by specification division and section with tabbed dividers between the sections or, when presented in a logical format by Subcontractor and approved by Owner, between categories.

1.7 CHEMICALS OF INTEREST REPORTING

- A. Prior to work being performed by the Subcontractor and/or the Subcontractor's Subcontractors (of any tier), the Subcontractor shall submit to Owner a completed "Contractor Declaration and Reporting Form for Department of Homeland Security – Chemicals of Interest" for chemicals listed in 6 CFR (Code of Federal Regulations) Appendix A to Part 27 that will be used on the jobsite. Individual declarations shall be provided by the Subcontractor and the Subcontractor's Subcontractors (see Appendix A of the Specifications for a copy of the form).

END OF SECTION

June 20, 2019

Appendix B- Sample Task Order**Time-and-Materials Task Order No. TBD**

SUBCONTRACTOR:	PermaFix Environmental Services	CONTRACTOR:	Triad National Security, LLC
Address:	1093 Commerce Park Drive, Ste. 300 Oak Ridge, TN 37830	Address:	P.O. Box 1663, MS P215 Los Alamos, NM 87544
Contact:	Jessica Carrese	Subcontract Administrator:	Charles Gibson
Telephone:	(865) 342-7649	Telephone:	(505) 665-4177
E-mail:	jcarrese@perma-fix.com	E-mail:	cegibson@lanl.gov

1. This Task Order is issued pursuant to Subcontract No. **TBD** between CONTRACTOR and SUBCONTRACTOR. The terms and conditions of the referenced subcontract and any modifications thereto in effect on the date of this Task Order are incorporated herein by reference. The FAR and DEAR clauses contained in Appendix SFA-1 shall apply to this task order based on the ceiling price of this task order.
2. Effective Date: **TBD**
3. Period of Performance: **TBD** through **TBD**
4. SUBCONTRACTOR shall perform the work or provide the services described below:
TBD
5. The work or services called for in the preceding paragraph shall be performed and required deliveries shall be made in accordance with the following schedule:
TBD
6. The Ceiling Price for all work called for under this Task Order is \$ **TBD**
 - (a) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Direct Labor charges is \$ **TBD**
 - (b) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Other Direct charges is \$ **TBD**
 - (c) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of Travel charges is \$ **TBD**
 - (d) The maximum amount (Not-to-Exceed) that CONTRACTOR shall be liable for reimbursement of charges for Materials is \$ **TBD**
7. SUBCONTRACTOR waives its right, if any, to monies to which it might otherwise have been entitled for any amount expended in excess of any maximum amount (Not-to-Exceed) stated in the preceding section, except as authorized by CONTRACTOR in writing prior to the time that such cost is incurred.

8. SUBCONTRACTOR'S labor categories, level of effort for each category and the fixed hourly rates upon which the Not-to-Exceed amount for reimbursement of Direct Labor charges is based are listed below. Reimbursement for Direct Labor shall be at the fixed hourly rates listed below for the actual effort performed by each category.

Labor Category	Level of Effort	Hourly Rate
TBD	TBD	TBD

9. Limitation of Funds:

In accordance with Exhibit B Special Condition 105, *Limitation of Funds*, the amount of funds presently available for payment by CONTRACTOR and allotted to this task order is \$ **TBD**. It is estimated that such funds will cover performance through **TBD**. SUBCONTRACTOR shall perform or have performed Work or Services up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted to this task order. If additional funds are allotted to this task order, CONTRACTOR shall modify this task order to reflect such additional funding.

For SUBCONTRACTOR:

For CONTRACTOR:

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: _____

Title: _____

Date: _____

Modification Number 06

SUBCONTRACTOR:	Perma-Fix Environmental Services, Inc.	CONTRACTOR:	Triad National Security, LLC
Address:	1093 Commerce Park Drive, Ste. 300, Oak Ridge, TN 37830	Address:	P.O. Box 1663, MS E540 Los Alamos, NM 87544
Contact:	Tracey Spencer, Contract Administration Manager	Subcontract Administrator:	Joleen Montoya
Telephone:	(865) 690-0501 ext. 2081 - office	Telephone:	505-695-4359
E-mail:	tspencer@perma-fix.com	E-mail:	montoyaj@lanl.gov

SUBCONTRACTOR is is not required to sign this modification.

The subcontract between CONTRACTOR and SUBCONTRACTOR modified as described herein. Except as modified, all other terms and conditions remain unchanged and in full force and effect. This modification is effective on the date of signature by the last party to sign.

MODIFICATION

1. Subcontract Form of Agreement (dated August 21, 2019), Article 6 Ceiling Price is replaced in its entirety with the below:

CEILING PRICE:

This subcontract is priced on a Time-and-Materials basis. The Ceiling Price for all work called for under this subcontract is **Eight Million Seven Hundred Thousand Dollars (\$ 8,700,000.00)**. Payments will be made to SUBCONTRACTOR in accordance with the prices set forth in Exhibit "C" and with the payment provisions of this subcontract. The SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price.

2. Exhibit "B" Special Conditions (dated July 22, 2019), SC-105 Limitation of Funds is replaced in its entirety with the below:

SC-105 LIMITATION OF FUNDS (Aug 2014)

- (a) The amount of funds presently available for payment by CONTRACTOR and allotted to this subcontract is **Eight Million Seven Hundred Thousand US Dollars (\$8,700,000.00)**. SUBCONTRACTOR shall perform or have performed Work up to the point at which the total amount paid and payable approximates, but does not exceed the total amount actually allotted.
- (b) CONTRACTOR will allot additional funds incrementally to the subcontract up to the full subcontract ceiling, provided funds are made available by GOVERNMENT. Directed Change Orders issued under the Changes clause shall not be considered an authorization to exceed the allotted amount.
- (c) SUBCONTRACTOR shall notify CONTRACTOR in writing whenever it has reason to believe that the amount to be invoiced under this subcontract in the next thirty (30) days, when added to all previously invoiced amounts, will exceed 80% of the total funds allotted. Upon notification, CONTRACTOR will allot additional funds or may suspend or terminate the subcontract in accordance with its terms.

- (c) SUBCONTRACTOR is not authorized to continue performance or otherwise incur costs in excess of the allotted funds, unless one of the following exceptions applies: (1) if required to protect and maintain the Work in accordance with General Condition GC-44 SUSPENSION; or (2) protect and preserve the property related to this subcontract in accordance with GC- 47(x) TERMINATION FOR CONVENIENCE.
3. Exhibit "B" Special Conditions (dated July 22, 2019), SC-3A Commencement, Progress, and Completion of Work is replaced in its entirety with SC-3C Commencement, Progress, and Completion of the Work as shown below:

SC-3C COMMENCEMENT, PROGRESS AND COMPLETION OF THE WORK [Task Order Agreement] (Jun 2009)

- (a) Notwithstanding anything contained in the subcontract documents to the contrary, this "subcontract" does not procure or specify a firm quantity of services from SUBCONTRACTOR. It is a blanket agreement for the work or services specified in Exhibit D, Scope of Work, and provides the terms and conditions that will be applicable to any bilateral written task orders (i.e., orders for the performance of tasks during the period of performance) issued hereunder.

Base Year Period of Performance: June 30, 2019 through March 31, 2021.

- (b) SUBCONTRACTOR'S authority to perform work under this "subcontract" is contingent upon the issuance of one or more task orders. When a task order is issued, SUBCONTRACTOR shall furnish sufficient personnel, equipment, and facilities and shall work such hours to assure prosecution of the work to completion in accordance with the schedule contained in any task order.
- (c) The initial term of this "subcontract" during which task orders may be issued hereunder is **twelve (12) months** beginning on the effective date of this "subcontract". The term of this "subcontract" may be extended for up to **twenty four (24) months** beyond the initial term by giving written notice to the SUBCONTRACTOR by the date specified as the expiration date of the subcontract. CONTRACTOR will attempt to give the SUBCONTRACTOR a preliminary written notice of its intent to extend the term of the subcontract at least sixty (60) days before the then current expiration date; however, the preliminary notice shall not be a commitment by CONTRACTOR to extend the term of the subcontract. Failure to provide the preliminary notice at least sixty (60) days before the current expiration date does not prevent CONTRACTOR from the exercise of an option. The exercise of an option to extend the term of this subcontract shall be accomplished by a bilateral written subcontract modification issued by CONTRACTOR. Such extensions may be made from time to time or in one modification. The period of performance of tasks ordered and delivery dates for any deliverable items shall be specified in each task order.
- (d) The maximum cumulative dollar value of all task orders that may be issued pursuant to this "subcontract" is the ceiling price set forth below. A price ceiling will also be established for each task order and cannot be exceeded, except by mutual written agreement of the parties. The ceiling price for all work called for under this "subcontract" is **Eight Million Seven Hundred Thousand U.S. Dollars (\$8,700,000.00)**. SUBCONTRACTOR waives its right to monies to which it might otherwise have been entitled for any amount expended in excess of the ceiling price for this "subcontract".

- (e) CONTRACTOR may issue one or more task orders to SUBCONTRACTOR for work or services required by CONTRACTOR. When and if ordered by CONTRACTOR and accepted by SUBCONTRACTOR, SUBCONTRACTOR shall perform the work or furnish the services specified in a task order. Each task order issued shall: (1) be deemed to be an individual subcontract priced upon the basis specified in the task order; (2) contain a price ceiling that cannot be exceeded without mutual written agreement of the parties; and (3) be subject to the terms and conditions of this "subcontract". In the event of conflict between a task order and this "subcontract", this "subcontract" shall control. SUBCONTRACTOR shall complete any task order issued during the effective period of this "subcontract" and not completed within that period within the time specified in the task order. This "subcontract" shall govern the rights and obligations of the parties with respect to that task order to the same extent as if the task order was completed during the effective period of this "subcontract".
- (f) When applicable, SUBCONTRACTOR shall be required to submit certified cost or pricing data to CONTRACTOR prior to the issuance of a task order.

Subcontract ceiling before modification:	\$	7,000,000.00
Dollar amount of this modification:	\$	1,700,000.00
Subcontract ceiling as modified:	\$	8,700,000.00

The undersigned personally assert authorization to execute this modification on behalf of the parties.

For SUBCONTRACTOR:

For CONTRACTOR:

By: Tracey Testerman Spencer
 Name: Tracey Testerman Spencer
 Title: Contract Administration Manager
 Date: Nov. 4, 2020

By: JOLEEN MONTOYA (Affiliate) Digitally signed by JOLEEN MONTOYA (Affiliate) Date: 2020.11.04 08:41:27 -0700
 Name: Joleen Montoya
 Title: Procurement Specialist
 Date: _____

LIST OF SUBSIDIARIES OF PERMA-FIX ENVIRONMENTAL SERVICES, INC.
(THE "COMPANY")**Treatment**

Perma-Fix of Florida, Inc. ("PFF"), a Florida Corporation, is a 100% owned subsidiary of the Company.

Diversified Scientific Services, Inc., ("DSSI") a Tennessee Corporation, is a 100% owned subsidiary of the Company.

East Tennessee Materials and Energy Corporation, ("M&EC") a Tennessee Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Northwest Richland, Inc. ("PFNWR"), a Washington Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix Northwest, Inc. ("PFNW"), a Washington Corporation, is a 100% owned subsidiary of the Company.

Services

Safety and Ecology Corporation ("SEC"), a Nevada corporation, is a 100% owned subsidiary of the Company.

SEC Radcon Alliance, LLC ("SECRA"), a Tennessee corporation, is a 100% owned subsidiary of the Company.

Perma-Fix Environmental Services UK Limited, a United Kingdom corporation, is a 100% owned subsidiary of the Company.

Safety and Ecology Holdings Corporation ("SEHC"), a Nevada corporation, is a 100% owned subsidiary of the Company.

SEC Federal Services Corporation, a Nevada corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Canada, a Canadian corporation, is a 100% owned subsidiary of the Company.

Medical

Perma-Fix Medical S.A, a Polish Corporation, is a majority owned subsidiary of the Company.

Perma-Fix Medical Corporation, a Delaware corporation, is a 100% owned subsidiary of Perma-Fix Medical, S.A.

Discontinued Operations

Perma-Fix of South Georgia, Inc. ("PFSG"), a Georgia Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Michigan, Inc. ("PFMI"), a Michigan Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Memphis, Inc. ("PFM"), a Tennessee Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Dayton, Inc. ("PFD"), an Ohio Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix Treatment Services, Inc. ("PFTS"), an Oklahoma Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Orlando, Inc. ("PFO"), a Florida Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Maryland, Inc. ("PFMD"), a Maryland Corporation, is a 100% owned subsidiary of the Company.

Perma-Fix of Pittsburgh, Inc. ("PFP"), a Maryland Corporation, is a 100% owned subsidiary of the Company.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 29, 2021, with respect to the consolidated financial statements included in the Annual Report of Perma-Fix Environmental Services, Inc. on Form 10-K for the year ended December 31, 2020. We consent to the incorporation by reference of said report in the Registration Statements of Perma-Fix Environmental Services, Inc. on Forms S-3 (File No. 333-231429, File No. 333-115061, File No. 333-70676, File No. 333-43149, File No. 333-87437 and File No. 333-14513) and Forms S-8 (File No. 333- 223917, File No. 333-203137, File No. 333-153086, and File No. 333-110995).

/s/ GRANT THORNTON LLP

Atlanta, Georgia
March 29, 2021

CERTIFICATIONS

I, Mark Duff, certify that:

1. I have reviewed this annual report on Form 10-K of Perma-Fix Environmental Services, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of the internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2021

/s/ Mark Duff

Mark Duff
Chief Executive Officer, President
and Principal Executive Officer

CERTIFICATIONS

I, Ben Naccarato, certify that:

1. I have reviewed this annual report on Form 10-K of Perma-Fix Environmental Services, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of the internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 29, 2021

/s/ Ben Naccarato

Ben Naccarato
Chief Financial Officer and
Principal Financial Officer

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Perma-Fix Environmental Services, Inc. ("PESI") on Form 10-K for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Form 10-K"), I, Mark Duff, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Form 10-K fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §78m or §78o(d)); and
- (2) The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 29, 2021

/s/ Mark Duff

Mark Duff
Chief Executive Officer, President and
Principal Executive Officer

This certification is furnished to the Securities and Exchange Commission solely for purpose of 18 U.S.C. §1350 subject to the knowledge standard contained therein, and not for any other purpose.

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Perma-Fix Environmental Services, Inc. ("PESI") on Form 10-K for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Form 10-K"), I, Ben Naccarato, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Form 10-K fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §78m or §78o(d)); and
- (2) The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 29, 2021

/s/ Ben Naccarato

Ben Naccarato

Chief Financial Officer and Principal Financial Officer

This certification is furnished to the Securities and Exchange Commission solely for purpose of 18 U.S.C. §1350 subject to the knowledge standard contained therein, and not for any other purpose.
