

## DOT PHMSA Internal Quarterly Report

**Date of Report:** 5th Quarterly Report Ending December 31, 2020

**Contract Number:** 693JK31910006

**Prepared for:** USDOT PHMSA

**Project Title:** Validation of Remote Sensing and Leak Detection Technologies under Realistic and Differing Conditions

**Prepared by:** GTI

**Contact Information:** Chris Moore, 847-768-0688, [cmoore@gti.energy](mailto:cmoore@gti.energy)

**For quarterly period ending:** December 31, 2020

### 1: Items Completed During this Quarterly Period:

**Figure 1. Payable Milestones Completed this Quarter**

Technical and Deliverable Milestone Schedule					
Task #	Activity/Deliverable	Title	Federal Cost	Cost Share	Total
5,6	Field testing of drone-mounted leak detection sensors under field conditions	Site characteristic plan including summary table of test locations	93,899	206,238.00	300,137
9	5th Quarterly Status Report	Submit 5th quarterly report	6,062	2,004.00	8,066
	<b>Fifth Payable Milestone</b>	<b>SUBTOTAL</b>	<b>99,961</b>	<b>208,242.00</b>	<b>308,203</b>

This table was populated with Items from Attachment #3, Technical and Deliverable Payable Milestone Schedule (in the contract) that were completed during this reporting period and are the corresponding items included on our next invoice.

### 2: Items Not-Completed During this Quarterly Period:

All payable milestones were completed this quarter. A summary table of test locations was not included in the site characteristic plan as the real-world testing sites have yet to be established and focus has shifted to include testing at a large-scale field laboratory (METEC).

### 3: Project Technical Status

#### **ACTIVITY: FIELD TESTING OF DRONE-MOUNTED LEAK DETECTION SENSORS UNDER FIELD CONDITIONS**

**Item Title:** Site Characteristics Plan Including Summary Table of Test Locations

**Item Number:** 9

**Task Numbers:** 5, 6

To date, the project team is actively engaging in discussions with potential partner utilities and TAP members to identify sites for the real-world testing. The request to partner utilities will be for sites that are hard-to-access such as canyons, wetlands, or hills provided they are accessible on foot to allow the project team to set up methane cylinders to simulate methane releases. We would like to invite TAP members with interest in the project and technology to provide in-kind support and volunteer sites for the testing. Through this communication GTI prepared Interim Report 3 – Site Characteristics Plan.

For the threat detection component of the project, GTI has decided to leverage the expertise of University of Dayton and utilize their software for automated threat detection. Video images acquired during the aerial survey and will be delivered to University of Dayton who will process the images and identify and classify any visible threats.

GTI is currently in the subcontracting phase with University of Dayton to leverage their threat detection systems in this project.

The large-scale controlled field testing is planned for Q2 2021 at a leak facility such as METEC at Colorado State University. Discussions with CSU and METEC to determine field testing will begin in January. However, travel restrictions created by the pandemic are still an issue and the team is currently working with industry partners to locate alternative test sites in and around the Austin, TX, area to be in proximity to SeekOps. Preliminary discussion with industry partners is underway to locate alternative test sites. The schedule for the large-scale controlled test is still on track to be in Q2 2021.

#### **ACTIVITY: COMPLETION OF PAYABLE MILESTONE: SUBMIT 5TH QUARTERLY STATUS REPORT**

**Item Title:** Submit 5th Quarterly Status Report

**Item Number:** 10

**Task Number:** 9

The fourth quarterly status report (this report) will be completed and submitted on schedule (on or before January 1, 2021).

#### **ACTIVITY: PROJECT MANAGEMENT**

**Item Title:** N/A

**Item Number:** N/A

**Task Number:** 9

During this quarter, GTI conducted project scheduling, budgeting, establishment of subcontract with University of Dayton, preparation of reports, and organization of required meetings.

### **4: Project Schedule**

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The project schedule through March 31, 2022 is shown below. The project is ahead of schedule SeekOps and who have experienced delays with contracting. A no-cost extension of 3 months was approved by DOT PHMSA and is reflected in the milestones and schedules within this report.

Progress on payable milestones (delineated by Item and Task number) are linked to the schedule.

#### **Figure 2. Project Schedule**

Task Name	2019			2020												2021												2022																							
	Quarter 4			Quarter 1			Quarter 2			Quarter 3			Quarter 4			Quarter 1			Quarter 2			Quarter 3			Quarter 4			Quarter 1																							
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar																					
Task 1 - Project Scoping and TAP																																																			
Task 2 - Validation Testing Framework																																																			
Task 3 - Drone System Integration				Design									Preliminary Testing																																						
Task 4 - Field Test Logistical Planning																																																			
Task 5 - Field Test Leak Detection Sensors																																																			
Task 6 - Field Test Integrity Threat Sensors																																																			
Task 7 - Analysis & Statistical Reasoning																																																			
Task 8 - Draft and Final Report																																																			
Task 9 - Project Management																																																			