



**NHDES Waste Management Division
29 Hazen Drive; PO Box 95
Concord, NH 03302-0095**



**PROPOSED SCOPE OF SERVICES AND BUDGET ESTIMATE
Fall 2022 Monitoring Round
Troy Mills Landfill Superfund Site
Troy, New Hampshire 03465**

**NHDES Site No.: 198405082
Project Number: 104**

Prepared For:
NH Department of Environmental Services
Hazardous Waste Remediation Bureau
29 Hazen Drive, PO Box 95
Concord, New Hampshire 03302-0095
Phone Number (603) 271-3649
Contact Name: Mr. Michael Summerlin, P.E.
Contact Email: michael.summerlinjr@des.nh.gov

Prepared By:
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Bedford, New Hampshire 03110-6984
Phone Number: (603) 232-8731
Contact Name: Ms. Megan E. Murphy
Contact Email: megan.murphy@gza.com

Date of Report: October 4, 2022



Known for excellence.
Built on trust.

GEOTECHNICAL

ENVIRONMENTAL

ECOLOGICAL

WATER

CONSTRUCTION
MANAGEMENT

5 Commerce Park North
Suite 201
Bedford, NH 03110
T: 603.623.3600
F: 603.624.9463
www.gza.com



VIA EMAIL

October 4, 2022
File No. 04.P000138.23

Mr. Michael Summerlin, P.E.
New Hampshire Department of Environmental Services
Waste Management Division
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03301-0095

Re: Proposed Scope of Services and Budget Estimate
Fall 2022 Monitoring Round
Troy Mills Landfill Superfund Site
Troy, New Hampshire
NHDES No. 198405082, Project No. 104

Dear Michael:

As requested, GZA GeoEnvironmental, Inc. (GZA) has prepared this letter describing GZA's proposed Scope of Services and Budget Estimate for a Fall 2022 groundwater monitoring round to assist the New Hampshire Department of Environmental Service (NHDES) and the United States Environmental Protection Agency (EPA) with the 2022 on-site monitoring activities at the Troy Mills Landfill Superfund Site (Site) located in Troy, New Hampshire.

The following Scope of Work has been developed based on our discussions with NHDES and our understanding of Site conditions. The work will be performed in general accordance with our NHDES Contract for Environmental Consulting Services effective as of July 1, 2019 through June 30, 2023 as approved by the Governor and Council on June 5, 2019.

SCOPE OF SERVICES

The proposed Scope of Services has been organized into the following tasks. Standard operating procedures (SOPs) for sampling, as well as the specific analyses to be performed for each sample, will be presented in detail in the Sampling and Analysis Plan (SAP) to be prepared following approval of the Scope of Work.

TASK 1 – PLAN DEVELOPMENT

GZA proposes to perform the following:

- Prepare the Scope of Services described herein;
- Prepare an updated Sampling and Analysis Plan (SAP) for the Site, which will be consistent with NHDES' Hazardous Waste Remediation Bureau (HWRB) Master Quality



Assurance Project Plan, approved November 2017, EQA RFA# 18008 (Revision # 1 February 2018, Revision # 2 October 2021); and

- Prepare an updated Site-specific Health and Safety Plan (HASP) for protection of GZA field personnel, addressing potential risks of exposure and safety issues associated with the proposed sampling tasks. GZA's Site-specific HASP will be consistent with the Occupational Safety and Health Administration standards, including 29 CFR 1910 and 1926.

TASK 2 – DESKTOP REVIEW

GZA proposes to perform a desktop review of available aerial photographs and files located on NHDES' OneStop, available historical records related to the Site provided by NHDES, and records related to the Site available at the Troy Historical Society or the Troy Town offices. GZA will also order the historical aerial package from our subcontractor, Environmental Data Resources, Inc./Lightbox Holdings, L.P. (EDR/Lightbox), and request that all available aerial photographs depicting the Site are provided. The purpose of the proposed review is to develop a revised site plan that more accurately defines the boundaries of the solid waste landfill and the drum disposal areas. The refined boundaries may be used to interpret existing data and select future exploration locations. GZA notes that the delineated boundaries will likely be based on multiple and/or non-surveyed sources of information and, therefore, should be considered approximate.

To complete the desktop review, GZA will travel to the NHDES' offices in Concord, Historical Societies in Troy and Fitzwilliam, and the Troy Town offices to review and obtain copies of files that are not available electronically.

The revised site plan will be presented and discussed in the report summarizing the work performed during the Fall 2022 monitoring round.

TASK 3 – FALL 2022 MONITORING ROUND

Comprehensive Water Level Gauging Round

GZA proposes to collect one comprehensive round of groundwater level measurements from each of the Site groundwater monitoring wells to be used to calculate the hydraulic head within each well, and estimate groundwater surface and hydraulic head equipotential contours from which, along with our understanding of Site and Site vicinity hydrogeology, we will infer directions of groundwater flow beneath the Site and Site vicinity. Depth-to-water at the Site will be measured using an electronic water level indicator probe. Groundwater elevations/hydraulic head will be calculated by subtracting the depth-to-groundwater from the reference elevation previously established for each well (top of PVC or casing).

As recommended in GZA's Spring 2020 Monitoring Data Report, dated August 13, 2020, GZA will collect a well-bottom measurement during the sampling event at well MW-702SX to monitor siltation within the well. A well-bottom measurement will also be collected at well M-1 when the dedicated pump is next removed for maintenance. Both wells have historically had a greater than 0.5-foot discrepancy between the reported and measured well depths.

Groundwater Sampling

The 2022 monitoring at the Site will include the following in accordance with the SAP prepared during Task 1 and recommendations in the Spring 2020 Monitoring Round Data Report dated August 13, 2020:



- Groundwater samples will be collected at 39 wells, including the 7 new monitoring wells scheduled to be installed during September and October 2022¹;
- Leachate samples will be collected at two locations; and
- Surface water samples will be collected at four locations.

GZA understands that, for the collected groundwater, leachate, and surface water samples, the following analyses will be completed by NHDES' subcontract laboratory, Alpha Analytical (Alpha) of Marlborough, Massachusetts (number of samples and analytical methods to be specified in the SAP):

- Volatile organic compounds (VOCs);
- Semi-VOCs (SVOCs);
- Total and dissolved arsenic and manganese;
- 1,4-dioxane (groundwater only); and
- Hardness (leachate and surface water only).

Samples for analysis of per- and polyfluoroalkyl Substances (PFAS) are planned to be collected at the above listed monitoring locations in conjunction with the Fall 2022 sampling round as described in the SAP. These services will be executed under the NHDES Work Scope Authorization (WSA) #4 contract dated August 11, 2022, associated with the EPA grant for a supplemental PFAS assessment and will be budgeted separately. PFAS analyses associated with this WSA will also be completed by Alpha.

GZA will coordinate sample courier services for samples going to Alpha.

TASK 4 – DATA EVALUATION AND DATA REPORT PREPARATION

GZA will assess the water quality concentration data collected relative to regulatory action limits and historical concentration data collected at the Site. GZA will prepare an electronic (.pdf) copy of a *DRAFT* report summarizing: work performed; results of the water quality sampling and analyses; results of water level/hydraulic head measurements; observations; the updated conceptual Site model; trend analyses; and our conclusions. The *DRAFT* report will include updated summary tables for water level data, well depth measurements, and water quality analytical results for samples collected during the monitoring round. Water quality data and water level data will be summarized as appropriate to the project objectives in figures and plots. GZA will submit the *DRAFT* report including a complete bookmarked electronic copy (.pdf), a Microsoft® Word version of the report text, and Microsoft® Excel® version of all tables to NHDES and EPA for review and comment.

GZA anticipates receipt of comments from both NHDES and EPA. For the purposes of this proposal, GZA has included time required to address comments and finalize the report, including preparation of a bookmarked electronic (.pdf) copy of the final report.

¹ A grant funding a supplement per- and polyfluoroalkyl substance (PFAS) assessment was awarded to NHDES by the United States Environmental Protection Agency (EPA) and is summarized in GZA's Proposed Scope of Services and Budget Estimate, dated June 13, 2022, and NHDES WSA #4.



TASK 5 – UPLOAD OF DATA TO NHDES’ ENVIRONMENTAL MONITORING DATABASE (EMD)

As requested by NHDES, GZA will upload the data results from Alpha to NHDES’ EMD for the existing wells. GZA has been provided a template and will enter appropriate information into the database.

TASK 6 – PROJECT COORDINATION, MANAGEMENT, AND MEETINGS

GZA anticipates that this project will include coordination between GZA’s Project Manager, NHDES, and EPA during the course of the project, and may include meeting(s) with NHDES and EPA to discuss findings, etc. Based on this, GZA has included time associated with overall project management and coordination, and limited time for the Project Manager to attend meeting(s) with NHDES and EPA.

SCHEDULE AND BUDGET ESTIMATE

GZA is prepared to initiate the proposed Scope of Work upon receipt of a WSA and has tentatively scheduled the annual monitoring event to be performed during November 2022. We anticipate that a *DRAFT* data report will be completed for NHDES and EPA review within 60 days following the receipt of the data results from Alpha.

Billings will be based on accrued time and expenses in accordance with our NHDES Environmental Consulting Services Contract as approved by the Governor and Council on June 5, 2019. The budget estimate to complete the proposed work is **\$111,635.84**. Refer to the attached Work Scope Budget Sheet for a breakdown of the cost estimate by task. This estimate is based on the anticipated Scope of Work outlined above, which represents our present judgment as to the level of effort requested. Actual charges may vary, either upward or downward, depending upon the execution of the work.

GZA greatly appreciates the opportunity to work on this important project. If you have any questions regarding the Scope of Work, please do not hesitate to contact Ms. Megan Murphy directly at (603) 232-8731.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

A handwritten signature in black ink, appearing to read 'Megan Murphy'.

Megan E. Murphy
Assistant Project Manager

A handwritten signature in black ink, appearing to read 'James M. Wieck'.

James M. Wieck, P.G.
Consultant/Reviewer

A handwritten signature in black ink, appearing to read 'Steven R. Lamb'.

Steven R. Lamb, P.G., C.G.W.P.
Principal

MEM/SRL/JMW: mem

\\GZA\Bedford\RFPs\FY23\04.P000138.23 Troy 2022 Sampling\Fall 2022 Sampling Round (non PFAS)\DRAFT 04.P000138.23 Troy Site Sampling Round 080222.docx

Attachment: Work Scope Budget Sheet



WORK SCOPE BUDGET SHEET

WORK SCOPE BUDGET SHEET - Troy Mills Landfill Superfund Site

NHDES No.: 198405082
UST Facility No.:
Date of Submittal: 10/04/22
Env-Or 600 Phase Code: RPI

Troy Mills Landfill
Facility Name: Superfund Site
Owner:
Town: Troy, NH
Priority No.:
Mailing Address: NHDES
29 Hazen Drive
P.O. Box 95
Concord, NH 03302-0095

GZA Job No. 04.P000138.23
GZA PM: Megan Murphy

Description By Task	Contractor	Description	Class Code	Overall Breakdown				Breakdown By Class						Assumptions
				Units	Type	Rate	Cost	Eng./Hydro. Services	Lab	Subsurface	Cont. Soil T&D	GW Treatment/Product Recover	Other	
Task 1. Plan Development	GZA	Plan Development												Includes Work Scope & Budget development and non-PFAS SAP text and table updates
		Principal / QA	E	2.0	hrs.	\$220.00	\$440.00	\$440.00	--	--	--	--	--	
		Senior Project Manager	E	8.0	hrs.	\$176.00	\$1,408.00	\$1,408.00	--	--	--	--	--	
		Professional Level III	E	15.0	hrs.	\$120.00	\$1,800.00	\$1,800.00	--	--	--	--	--	
		Drafter	E	2.0	hrs.	\$107.00	\$214.00	\$214.00	--	--	--	--	--	
		Word Processing	E	4.0	hrs.	\$90.00	\$360.00	\$360.00	--	--	--	--	--	
						Task 1 Total:	\$4,222.00	\$4,222.00	\$0	\$0	\$0	\$0	\$0	
Task 2. Desktop Review	GZA	Review												Includes time to travel for file review (2 days) and review of files and plan design (2 days). If necessary, create copys of files not available electronically.
		Principal / QA	E	2.0	hrs.	\$220.00	\$440.00	\$440.00	--	--	--	--	--	
		Senior Project Manager	E	4.0	hrs.	\$176.00	\$704.00	\$704.00	--	--	--	--	--	
		Professional Level III	E	32.0	hrs.	\$120.00	\$3,840.00	\$3,840.00	--	--	--	--	--	
		Drafter	E	16.0	hrs.	\$107.00	\$1,712.00	\$1,712.00	--	--	--	--	--	
		Expenses												
		Travel to NHDES Offices in Concord, New Hampshire	E	50.0	miles	\$0.63	\$31.25	\$31.25	--	--	--	--	--	
		Travel to Troy Historical Society	E	100.0	miles	\$0.63	\$62.50	\$62.50	--	--	--	--	--	
		EDR Package	E	1.0	ea	\$392.00	\$392.00	\$392.00	--	--	--	--	--	
		Copying Files	E	100.0	ea	\$1.00	\$100.00	\$100.00	--	--	--	--	--	
						Task 2 Total:	\$7,281.75	\$7,281.75	\$0	\$0	\$0	\$0	\$0	
Task 3. Fall 2022 Monitoring Round	GZA	Preparation and Field Work												Includes water level round and groundwater sampling round
		Senior Project Manager (assumes 3 12 hr days and 2 hrs per day for remaining field schedule)	E	63.0	hrs.	\$176.00	\$11,088.00	\$11,088.00						
		Professional Level III (assumes 1 day for WLs, 13 days sampling, 3 days prep/mobe, 1 day demobe)	E	206.0	hrs.	\$120.00	\$24,720.00	\$24,720.00	--	--	--	--	--	
		Professional Level II (assumes 1 day for WLs, 13 days sampling, 3 days prep/mobe, 1 day demobe)	E	206.0	hrs.	\$99.00	\$20,394.00	\$20,394.00	--	--	--	--	--	
		Professional Level I (assumes 4 6-hour days for sample pickups at site and processing time)	E	24.0	hrs.	\$90.00	\$2,160.00	\$2,160.00	--	--	--	--	--	
		Mileage for Sample Pickup and Delivery	E	440.0	miles	\$0.63	\$275.00	\$275.00	--	--	--	--	--	
	GZA	Equipment Rental and Supplies												39 GW wells via low flow (2 wells per day per person), 2 leachate, 4 SW samples WL round assumes 2 people, 1 day (12 hr day); GW sampling assumes 2 people, 12 days (12 hr days); 2 people, 1 day surface water/leachate sampling (12 hr day); 6 man days prep/mobe (10 hr davs) & 2 man davs demobe (8 hr davs) Based on Holiday Inn Express rates (\$177.98 w/ tax), plus meals
		Enterprise Box Truck Rental	E	2.0	week	\$1,092.95	\$2,185.90	\$2,185.90	--	--	--	--	--	
		Gator Rental (including drop off/pickup+environmental fee)	E	2.0	week	\$1,149.50	\$2,299.00	\$2,299.00	--	--	--	--	--	
		GZA Truck Rental (assumes 1 truck per day/9 work days)	E	2.0	week	\$506.00	\$1,012.00	\$1,012.00	--	--	--	--	--	
		Peri Geopump2 (1 pump/2 wks)	E	2.0	week	\$70.27	\$140.54	\$140.54	--	--	--	--	--	
		Peri Geopump2 (backup, 50 % OFF)	E	2.0	week	\$35.13	\$70.27	\$70.27						
		Non-dedicated QED Sample Pro Bladder Pump (2 pumps / 3 wks)	E	6.0	week	\$138.60	\$831.60	\$831.60	--	--	--	--	--	
		Teflon Bladder Kit (3 extra kits)	E	3.0	ea	\$52.80	\$158.40	\$158.40	--	--	--	--	--	
		100 ft Water Level Meter (2 meters / 3 wks)	E	6.0	week	\$46.97	\$281.82	\$281.82	--	--	--	--	--	
		100 ft Water Level Meter (Backup, 50% off)	E	2.0	week	\$23.49	\$46.97	\$46.97						
		In-Situ AquaTROLL 600 and Battery (2 units for 14 days)	E	28.0	day	\$140.34	\$3,929.46	\$3,929.46	--	--	--	--	--	
		In-Situ AquaTROLL 600 and Battery (backup)	E	14.0	day	\$140.34	\$1,964.73	\$1,964.73	--	--	--	--	--	
		Hach 2100Q Turbidity Meter (2 units / 3 wks)	E	3.0	week	\$74.31	\$222.92	\$222.92	--	--	--	--	--	
		Hach 2100Q Turbidity Meter (backup)	E	3.0	week	\$37.15	\$111.46	\$111.46	--	--	--	--	--	
		Masterflex Silastic Tubing Box of #14 (25 ft in box)	E	1.0	ea	\$93.83	\$93.83	\$93.83	--	--	--	--	--	
		Masterflex Silastic Tubing Box of #16 (25 ft in box)	E	1.0	ea	\$98.45	\$98.45	\$98.45	--	--	--	--	--	
		Calibration solution set (assumes 1 set plus extra solutions)	E	1.0	ea	\$309.10	\$309.10	\$309.10	--	--	--	--	--	
		Decon Solution (1 6-L Hexane; includes estimated shipping charge)	E	1.0	ea	\$591.76	\$591.76	\$591.76	--	--	--	--	--	
		Cooler Ice and DIstilled Water (3 coolers a day, 4 bags/cooler for 2 wks)	E	120.0	ea	\$3.03	\$363.00	\$363.00	--	--	--	--	--	
		Misc. Equipment and Supplies (decon supplies, PPE, paper towels/trash bags, etc.)	E	1.0	nte	\$500.00	\$500.00	\$500.00	--	--	--	--	--	
		Lodging/Meals per person (sampling crew 10 nights, SPM 3 nights)	E	23.0	day	\$228.78	\$5,261.89	\$5,261.89	--	--	--	--	--	
						Task 3 Total:	\$79,110.09	\$79,110.09	\$0	\$0	\$0	\$0	\$0	

WORK SCOPE BUDGET SHEET - Troy Mills Landfill Superfund Site

NHDES No.: 198405082

UST Facility No.:

Date of Submittal: 10/04/22

Env-Or 600 Phase Code: RPI

Troy Mills Landfill

Facility Name: Superfund Site

Owner:

Town: Troy, NH

Priority No.:

Mailing Address: NHDES

29 Hazen Drive

P.O. Box 95

Concord, NH 03302-0095

GZA Job No. 04.P000138.23

GZA PM: Megan Murphy

				Overall Breakdown				Breakdown By Class						Assumptions	
Description By Task	Contractor	Description	Class Code	Units	Type	Rate	Cost	Eng./Hydro. Services	Lab	Subsurface	Cont. Soil T&D	GW Treatment/Product Recover	Other		
Task 4. Data Evaluation and Data Report Preparation	GZA	Preparation and Review			Task 4 Total:			\$13,506.00	\$13,506.00	\$0	\$0	\$0	\$0	\$0	Including non-PFAS information in evaluation and report
		Principal	E	4.0	hrs.	\$220.00	\$880.00	\$880.00	--	--	--	--	--		
		Senior Project Manager	E	16.0	hrs.	\$176.00	\$2,816.00	\$2,816.00	--	--	--	--	--		
		Professional Level III	E	40.0	hrs.	\$120.00	\$4,800.00	\$4,800.00	--	--	--	--	--		
		Professional Level II	E	30.0	hrs.	\$99.00	\$2,970.00	\$2,970.00	--	--	--	--	--		
		Word Processing	E	8.0	hrs.	\$90.00	\$720.00	\$720.00	--	--	--	--	--		
		Drafter	E	10.0	hrs.	\$107.00	\$1,070.00	\$1,070.00	--	--	--	--	--		
		Expenses/Reproduction etc.	E	1.0	ea	\$250.00	\$250.00	\$250.00	--	--	--	--	--		
Task 5. Upload of Data to NHDES' EMD Database	GZA	Data Upload			Task 5 Total:			\$2,576.00	\$2,576.00	\$0	\$0	\$0	\$0	\$0	Includes non-PFAS data
		Senior Project Manager	E	1.0	hrs.	\$176.00	\$176.00	\$176.00	--	--	--	--	--		
		Professional Level III	E	20.0	hrs.	\$120.00	\$2,400.00	\$2,400.00	--	--	--	--	--		
Task 6. Project Coordination, Management & Meetings	GZA	Project Management			Task 6 Total:			\$4,940.00	\$4,940.00	\$0	\$0	\$0	\$0	\$0	
		Principal	E	4.0	hrs.	\$220.00	\$880.00	\$880.00	--	--	--	--	--		
		Senior Project Manager	E	20.0	hrs.	\$176.00	\$3,520.00	\$3,520.00	--	--	--	--	--		
		Administrator (Billing Coordinator)	E	6.0	hrs.	\$90.00	\$540.00	\$540.00							

TOTAL PROPOSED:

\$111,635.84	\$111,635.84	\$0	\$0	\$0	\$0	\$0
--------------	--------------	-----	-----	-----	-----	-----

Env-Or 600 Phase Code

IRA - Initial Response Action

FPR - Free Product Removal

ISC - Initial Site Characterization

SIR - Site Investigation/Reporting

RAP - Remedial Action Plan

RPI - Remedial Plan Implementation

GMP - GW Monitoring/Permits

Class Codes:

E = Eng./Hydrogeology Services

L = Laboratory Services

X = Subsurface Explorations

S = Cont. Soil Treatment/Disposal

G = GW Treatment/Product Recovery

O = Other

Comments: Lab sample c \$17,976 Full non-PFAS groundwater sampling round

58 VOC samples at \$72.00 per sample = \$4,176.00

Assumes 45 samples, 4 dups, 8 trip blanks, and 1 equipment blank (bladder pump) sent to Alpha

50 SVOC samples at \$155 per sample = \$7,750.00

Assumes 45 samples, 4 dups, and 1 equipment blank (water level) sent to Alpha

50 metals samples at \$46 per sample = \$2,300.00

Assumes 45 samples, 4 dups, and 1 equipment blank (bladder pump) sent to Alpha

50 1,4-dioxane samples at \$75 per sample = \$3,750.00

Assumes 45 samples, 4 dups, and 1 equipment blank (bladder pump) sent to Alpha