

Solutient GeoSciences, Inc.
3800 Paluxy Drive, Suite 260
Tyler, Texas 75703
(903) 581-4340 Tel (903) 581-4399 Fax

August 3, 2016

David Dugger
Municipal Solid Waste Facilities Manager
City of Denton
1527 S. Mayhill Road
Denton, Tx. 76208

Re: Proposal
2017-2019 Landfill Hydrogeological Consulting and Analytical Services
City of Denton Landfill (MSW Permit No. 1590A)
1527 S. Mayhill Road
Denton (Denton County), Texas

Dear Mr. Dugger:

In accordance with your recent request, Solutient GeoSciences, Inc. (Solutient) is pleased to submit the following proposal for providing hydrogeological consulting and analytical services at the City of Denton (City) landfill for a 3-year period commencing October 1, 2016 and ending September 30, 2019. Solutient will serve as the City's professional services consultant relative to all landfill groundwater monitoring, data review, reporting, and general geological and hydrogeological services, as needed, for the above referenced facility.

Scope of Services

As we understand it, the work will consist of conducting quarterly and semi-annual groundwater monitoring events and reporting in accordance with the existing Texas Commission on Environmental Quality (TCEQ) approved Groundwater Sampling and Analysis Plan (GWSAP) and 30 TAC, Chapter 330, Subchapters F and J. The following discussion provides a detailed explanation of the services to be provided.

- Hydrogeological Consulting - includes 1) generation and on-going maintenance of existing groundwater analytical data base, 2) management and direct supervision of groundwater monitoring events, 3) review of analytical data, 4) preparation of annual groundwater monitoring reports, including groundwater contour maps and semi-annual statistical evaluations, 4) evaluation and submittal of site-appropriate statistical analysis method(s), and 5) correspondence with TCEQ regarding groundwater issues. The City will be continually informed of all monitoring results and provided on-going recommendations and opinions regarding necessary action, if needed.

- Analytical Services - includes sampling and analysis of groundwater samples collected at landfill facility in accordance with the TCEQ-approved GWSAP. A total of twenty groundwater monitoring wells, which comprise the facility (MSW Permit No. 1590A) groundwater monitoring system, will be gauged, purged, and sampled using dedicated, low-flow pumps and a Well Wizard[®] micropurge system. The wells will be sampled semi-annually for detection monitoring constituents, which are presented in Table 5-1, GWSAP. Also included in the work plan is a provision for up to two verification re-sampling/assessment monitoring events at up to three monitoring wells per year. Assessment samples would be analyzed for 40 CFR Part 258 Appendix II constituents. Lastly, four leachate samples will be collected and analyzed for necessary pre-treatment constituents, as required by the waste water treatment plant and the landfill re-circulation requirements. All analyses will be performed using EPA-approved methods by Ana-Lab Corporation.
- Sanitas[™] for Ground Water Maintenance Agreement - provides for annual upgrades and software support of Sanitas[™], a statistical analysis software package used to perform statistical evaluation of groundwater quality data.
- Annual Detection Groundwater Monitoring Report - includes preparation of annual detection and assessment groundwater monitoring report.
- Background Statistical Evaluation Report - perform evaluation of most recent 2-year period of analytical data in 2018 and incorporate into background data, as appropriate.
- Contingency Funding - includes a provision for contingency funds for the possibility of additional wells to be included for assessment monitoring in the event any facility well enters assessment monitoring as per recent regulatory requirements and implementation procedures.

All services provided will be coordinated and performed under the direct supervision of Mr. Leslie A. Jeske, P.G., Hydrogeologist. Mr. Jeske has served as the primary groundwater consultant at the facility since 1999.

Low-flow purging and sampling activities will be conducted using instruments and equipment owned and maintained by the City. In the event the instruments are found in need of repair, the City will be promptly notified to insure minimal delays in completing the scheduled monitoring events. The City will be responsible for all costs associated with repairs and on-going maintenance.

Cost Estimate

Based upon the above scope of services and our understanding of the project, we have prepared the attached Probable Cost Estimate which shows the estimated quantities of work and unit fees. It is estimated that the total amount of this contract for October 1, 2016 - September 30, 2019 should not exceed \$ 304,961.00. In the event additional services are

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required beyond those detailed in this contract, such will be performed on a time and materials basis at the unit rate as shown on the Probable Cost Estimate.

You will be notified if unforeseen conditions are encountered or there is a necessity to change the scope of work. Additional work will not be performed without first obtaining your approval of the additional costs. An invoice will be submitted on a monthly basis for the percent of work completed for each event. It will be based upon the actual work performed and the unit prices shown in the attached Probable Cost Estimate.

If you have any questions after reviewing this proposal, please do not hesitate to contact me at (903) 581-4340. As always, we look forward to working with the City in this endeavor.

Very truly yours,
Solutient GeoSciences, Inc.

A handwritten signature in black ink, appearing to read "Leslie A. Jeske". The signature is fluid and cursive, with the first name "Leslie" being more prominent.

Leslie A. Jeske, P.G.
Hydrogeologist

Attach: Probable Cost Estimate

cc: Rebecca Hunter, City of Denton

PROBABLE COST ESTIMATE

August 3, 2016

**2017-2019 Landfill Hydrogeological Consulting and Analytical Services
City of Denton Landfill (MSW Permit No. 1590A)
Denton (Denton County), Texas**

Item	Quantity	Unit	Unit Rate	Cost
December 2016 Quarterly Verification Re-sampling, & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	8	hour	\$ 165.00	\$ 1,320.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	12	hour	\$ 165.00	\$ 1,980.00
Environmental Technician	34	hour	\$ 100.00	\$ 3,400.00
Subsistence	2	day	\$ 170.00	\$ 340.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 16,236.00
March 2017 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	27	hour	\$ 170.00	\$ 4,590.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 170.00	\$ 3,060.00
Environmental Technician	60	hour	\$ 100.00	\$ 6,000.00
Subsistence	4	day	\$ 170.00	\$ 680.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 30,256.00
June 2017 Quarterly Verification Re-sampling & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	4	hour	\$ 170.00	\$ 680.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	10	hour	\$ 170.00	\$ 1,700.00
Environmental Technician	34	hour	\$ 100.00	\$ 3,400.00
Subsistence	2	day	\$ 170.00	\$ 340.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 15,316.00
September 2017 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	31	hour	\$ 170.00	\$ 5,270.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 170.00	\$ 3,060.00
Environmental Technician	60	hour	\$ 100.00	\$ 6,000.00
Subsistence	4	day	\$ 170.00	\$ 680.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 30,936.00
2017 Annual Detection Monitoring Report:				
Hydrogeologist	20	hour	\$ 170.00	\$ 3,400.00
			Subtotal:	\$ 3,400.00
2017 Groundwater Statistical Analysis Software:				
Sanitas for Groundwater Software Annual Maintenance Agreement (cost +15%)	1	LS	\$ 400.00	\$ 400.00
			Subtotal:	\$ 400.00
2017 Contingency Funds:				
			Subtotal:	\$ 2,500.00
December 2017 Quarterly Verification Re-sampling, & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	8	hour	\$ 170.00	\$ 1,360.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist,				

PROBABLE COST ESTIMATE

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**2017-2019 Landfill Hydrogeological Consulting and Analytical Services
City of Denton Landfill (MSW Permit No. 1590A)
Denton (Denton County), Texas**

Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	12	hour	\$ 170.00	\$ 2,040.00
Environmental Technician	34	hour	\$ 100.00	\$ 3,400.00
Subsistence	2	day	\$ 170.00	\$ 340.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 16,336.00
March 2018 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	27	hour	\$ 175.00	\$ 4,725.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 175.00	\$ 3,150.00
Environmental Technician	60	hour	\$ 103.00	\$ 6,180.00
Subsistence	4	day	\$ 170.00	\$ 680.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 30,661.00
June 2018 Quarterly Verification Re-sampling & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	4	hour	\$ 175.00	\$ 700.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	10	hour	\$ 175.00	\$ 1,750.00
Environmental Technician	34	hour	\$ 103.00	\$ 3,502.00
Subsistence	2	day	\$ 170.00	\$ 340.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 15,488.00
September 2018 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	31	hour	\$ 175.00	\$ 5,425.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 175.00	\$ 3,150.00
Environmental Technician	60	hour	\$ 103.00	\$ 6,180.00
Subsistence	4	day	\$ 170.00	\$ 680.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 31,361.00
2018 Annual Detection Monitoring Report:				
Hydrogeologist	20	hour	\$ 175.00	\$ 3,500.00
			Subtotal:	\$ 3,500.00
2018 Update to Background Statistical Evaluation Report:				
Hydrogeologist	25	hour	\$ 175.00	\$ 4,375.00
			Subtotal:	\$ 4,375.00
2018 Groundwater Statistical Analysis Software:				
Sanitas for Groundwater Software Annual Maintenance Agreement (cost +15%)	1	LS	\$ 400.00	\$ 400.00
			Subtotal:	\$ 400.00
2018 Contingency Funds:				
			Subtotal:	\$ 2,500.00
December 2018 Quarterly Verification Re-sampling, & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	8	hour	\$ 175.00	\$ 1,400.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	12	hour	\$ 175.00	\$ 2,100.00

PROBABLE COST ESTIMATE

August 3, 2016

**2017-2019 Landfill Hydrogeological Consulting and Analytical Services
City of Denton Landfill (MSW Permit No. 1590A)
Denton (Denton County), Texas**

Environmental Technician	34	hour	\$ 103.00	\$ 3,502.00
Subsistence	2	day	\$ 170.00	\$ 340.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 16,538.00
March 2019 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	27	hour	\$ 180.00	\$ 4,860.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 180.00	\$ 3,240.00
Environmental Technician	60	hour	\$ 105.00	\$ 6,300.00
Subsistence	4	day	\$ 180.00	\$ 720.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 31,046.00
June 2019 Quarterly Verification Re-sampling & Assessment Monitoring Event:				
Statistical Evaluation and Reporting (Verification/Assessment Monitoring)	4	hour	\$ 180.00	\$ 720.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	10	hour	\$ 180.00	\$ 1,800.00
Environmental Technician	34	hour	\$ 105.00	\$ 3,570.00
Subsistence	2	day	\$ 180.00	\$ 360.00
Sampling Vehicle	3	day	\$ 70.00	\$ 210.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (3 wells & 1 QC sample)	4	each	\$ 365.00	\$ 1,460.00
Verification/Assessment Appendix II Constituents (3 wells & 2 QC samples)	5	each	\$ 1,465.00	\$ 7,325.00
			Subtotal:	\$ 15,646.00
September 2019 Semi-Annual Detection/Background Monitoring Event:				
Statistical Evaluation and Reporting	31	hour	\$ 180.00	\$ 5,580.00
Groundwater Chemistry Review, Data Base Update, Analytical Data Evaluation Checklist, Groundwater Contour Map, and Report Preparation:				
Hydrogeologist	18	hour	\$ 180.00	\$ 3,240.00
Environmental Technician	60	hour	\$ 105.00	\$ 6,300.00
Subsistence	4	day	\$ 180.00	\$ 720.00
Sampling Vehicle	5	day	\$ 70.00	\$ 350.00
Mileage	335	mile	\$ 0.60	\$ 201.00
Analytical Services:				
Updated Table 5-1 GWSAP Constituents (20 wells, 7 QC samples, & 2 leachate samples)	29	each	\$ 365.00	\$ 10,585.00
Assessment Appendix II Constituents (MW-4U & 1 QC sample)	2	each	\$ 1,465.00	\$ 2,930.00
Waste Water Pre-Treatment Constituents (2 leachate samples)	4	each	\$ 465.00	\$ 1,860.00
			Subtotal:	\$ 31,766.00
2019 Annual Detection Monitoring Report:				
Hydrogeologist	20	hour	\$ 170.00	\$ 3,400.00
			Subtotal:	\$ 3,400.00
2019 Groundwater Statistical Analysis Software:				
Sanitas for Groundwater Software Annual Maintenance Agreement (cost +15%)	1	LS	\$ 400.00	\$ 400.00
			Subtotal:	\$ 400.00
2019 Contingency Funds:				
			Subtotal:	\$ 2,500.00
			TOTAL:	\$ 304,961.00

Notes:

1. Scope of work allows for two (2) assessment monitoring events with a total of three (3) wells each.
2. Additional work will be performed upon authorization by the City of Denton utilizing the unit rates as shown above.