



February 6, 2017

Mr. Dennis Kress
City of Collinsville
Director of Water/Wastewater
300 Simpson St
Collinsville, IL 62234

Subject: Proposal for the Continuation of Engineering Services at the Closed Collinsville Landfill for 2017

Dear Mr. Kress:

Tetra Tech, Inc. is pleased to provide this time and materials proposal to the City of Collinsville (the City) for continuation of engineering services at the Closed Collinsville Landfill. Services described in this proposal includes preparation of the Potable Well Survey and Trending Report, assistance with the land use controls (LUCs), the collection of the of annual groundwater monitoring samples, and preparation of the annual assessment and trending report.

2016 TASKS PERFORMED

During 2016, Tetra Tech provided engineering services associated with the landfill's monitoring program, the petition for adjusted standards, and teamed with the City to complete a potable well survey.

Groundwater Monitoring Program

- Communicated with the City on many occasions to provide updates on the status of the Petition for Adjusted Standards, new parameters, potable well survey, land use controls and groundwater monitoring.
- Collected the 1st, 2nd, 3rd and 4th Quarter 2016 groundwater samples
- Submitted groundwater data electronically to the Illinois Environmental Protection Agency (IEPA) after receipt of the quarterly analytical results for each quarter sampled.
- Submitted a quarterly Significant Change Letter to the IEPA after receipt of the quarterly analytical results.
- Submitted the 2016 Annual Assessment Monitoring Report on July 27, 2016 as a Supplement Permit Application.

Tetra Tech, Inc.

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Potable Water Well Survey

As a part of IPCB's February 4, 2016 Order, Tetra Tech teamed with the City conducted a potable well water survey. The purposes of the survey were to assess the number and use of water wells within a ½ mile radius of the perimeter of the Collinsville Landfill and evaluate whether potable or non-potable domestic use wells identified during the survey were located downgradient of the landfill perimeters. The tasks performed included:

- Review of databases and website to locate water wells within ½ mile of the landfill perimeter;
- The approximate well locations found were plotted on a map and the well record that included well logs (if available), date constructed, approximate location and well owner were provided to the City;
- The City went door to door, identified whether the presence of wells were known, the use if any, the name and address of current property owner and the current residential occupant. The City plotted the locations on the Madison County Assessors GIS map and provided the information to Tetra Tech; and
- Tetra Tech reviewed the information on the figure against the well record and the information provided by the City and added the wells use to the figure.

Petition for Adjusted Standards (Submitted December 4, 2014 and approved February 4, 2016)

Costs associated with the 2016 interaction with the IPCB and the IEPA concerning the Petition were not included in the January 2016 proposal because Board interaction is specific to each site and each problem or question the IPCB finds. The 2016 interaction with the IPCB included the inclusion of new groundwater parameters in the analytical program and assistance with development of a LUC prohibiting the installation of new potable wells near the landfill. The interaction with the IPCB was not extensive but the other two tasks did impact the budget. However, every year, Tetra Tech makes a conscious effort to economize and provide the City with the best value for each labor hour and environmental service provided. This year, Tetra Tech assisted with the development of the land use controls and added additional analytical parameters as a result of the IPCB's order at no additional cost to the City.

Tetra Tech performed the following additional activities concerning the petition at no additional costs to the City:

- Participated in two conference calls with the IPCB on January 11, 2016 and February 22, 2016. The IPCB did not show for the February 22, 2016 meeting;
- Beginning during the 1st Quarter sampling event, collecting of perchlorate and 1,4-dioxane were added to the quarterly groundwater sampling event at a cost of \$3,850;
- Prepared a summary for the City in March 2016 describing the IPCB's opinion and order and developed a schedule for post closure care;

- Gathered IEPA example text for Ordinances and Memoranda of Understanding (MOUs) and copies of ordinances and MOUs prohibiting use of groundwater that have been approved in Madison County, IL in July 2016; and
- Throughout the remainder of the year assisted you with requests for information concerning LUCs.

The IPCB approved the Petition for Adjusted Standards and issued their opinion and order on February 4, 2016. Tetra Tech partnered with the City and completed the groundwater survey in 2016. The survey and first trending report were submitted to IEPA in January 2017 and 2017 marks the start of the final process to close the landing. Annual monitoring will be performed in October 2017. One additional annual sampling events will occur in October 2018 and after the report is submitted to IEPA, Tetra Tech will submit a post closure care plan and an application for cessation of post closure care. After the application is approved, the landfill will be closed.

2015 SUPPLEMENTAL PERMIT APPROVALS

From January 1, 2016 through December 31, 2016 IEPA issued one permit:

2016 Permits Issued for the Closed Collinsville Landfill			
Permit Number	Date of IEPA Approval	Description	Document Submittal and IEPA Request for Extension for Review
2016-341-SP	10/24/15	The permit approves the 2016 annual report.	7/27/16 No extension requests from the IEPA.

No permit additional applications were submitted to IEPA in 2016. However, the 2016-2017 Potable Well Survey and Trending Report were submitted to IEPA as a permit application on January 18, 2017 and we are currently awaiting IEPA approval.

PROPOSED SCOPE OF FUTURE WORK

Tetra Tech has developed this proposal to address the requirements of Supplemental Permit No. 2016-341-SP and the IPCB's order for submittal of the 2016-2018 Potable Well Survey and Trending Report, annual monitoring and preparation and submittal of the 2017-2018 Trending and Groundwater Assessment Report.

The proposed scope of work to address permit requirements includes:

- **Task 1, 2016-2017 Potable Well Survey and Trending Report** - The report includes the results of the potable well survey and a figure depicting the location, address and current use of the wells located within a - 0.5 mile radius of the boundary of the landfill

as defined in the IPCB's order. The analytical results for groundwater samples collecting during the 1st, 2nd, 3rd, and 4th Quarters of 2016 and analysis of the results and groundwater levels were including in the results. Five years of analytical results for the parameters listed in the IPCB's order - pH ammonia, arsenic, boron chloride, iron, manganese, sulfate, total dissolved solids (TDS), total organic carbon (TOC), total organic halides (TOX), zinc, perchlorate, and 1,4-dioxane were not compared to background values. Instead, the 14 parameters were trended to evaluate whether a significant change in groundwater quality has occurred. Additionally, specific conductance and barium were trended to assess the historical significance of the exceedances of background values observed in 2016. Tetra Tech's trending assessment included a qualitative (graphical depiction of concentrations versus time) and quantitative analysis (Mann-Kendall statistical testing) of five years of analytical data.

- **Task 2, Annual Monitoring** – Annual monitoring includes the collection of the groundwater samples in October 2016 at landfill monitoring locations MW1, MW2, MW4, and MW6 for routine List 1, List 2 parameters, List 3 inorganic parameters including perchlorate, and the short list of List 3 organic compounds (benzene, dichloromethane, para-dichlorobenzene, ortho-dichlorobenzene, monochlorobenzene, pentachlorophenol, picloram, and 1,4-dioxane). Electronic data reporting and evaluation of a significant change in groundwater quality is a requirement of the permit and is included in the scope of this task. **Tetra Tech plans to purge each well of the bottom sediment and develop each well for clarity for a maximum of one hour.**
- **Task 3, 2017 Trending Report** - Following receipt of the October 2016 sampling results, Tetra Tech will summarize the data, compare the data to specific screening criteria identified in Supplemental Permit 2016-341-SP (criteria include: Class I Groundwater Standards, background values, and a value that is equal to two times the practical quantitation limit for each organic compound) and will create concentration versus time graphs and perform trending for pH ammonia, arsenic, boron chloride, iron, manganese, sulfate, TDS, TOC, TOX, zinc, perchlorate, and 1,4-dioxane using six years of data and a program designed to perform the Mann-Kendall statistical trending test.. The results will be submitted as the Annual Trending and Assessment Monitoring Report to be submitted to IEPA no later than January 15, 2017

PROPOSED COST

Tetra Tech proposes to perform this scope on a Time-and-Materials basis based on the estimates provided in Attachment A. Total Not-to-Exceed cost to perform the 2017 activities described above is \$44,823.00. Detailed costs for the individual tasks included in the scope of work are provided for your convenience. Summary costs for each task are:

2016 Project Cost Summary

Task	Description	Costs
1	2016-2017 Potable Groundwater Survey and Trending Report and assistance with 2017 development of the land use control	\$14,829.00
2	2017 Annual Monitoring	\$16,622.00
3	2017 Trending and Groundwater Assessment Report	\$13,372.00
	Total Project Costs	\$44,823.00

The costs were based on the requirements of Supplemental Permit Numbers, 2016-341-SP, the IPCB order and discussions with IEPA. Based on our experience, the annual sampling event will require no more than 2.5 days to develop each well and collect the required samples and water levels. However, **in order to develop the wells, the hole present in the road west of the landfill and the downed trees leading to MW-2 will require resolution. The hole will need to be filled and the soil compacted and the downed trees will need to be removed.**

Should conditions be encountered that change the scope of work or level of effort necessary to meet project objectives, the City will be notified immediately. No additional work beyond the proposed scope of work will be performed without the City's approval. Tetra Tech will perform additional activities, if requested, according to the fee schedule in place or as defined through future proposals to perform the additional work.

Mr. Dennis Kress
City of Collinsville
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Tetra Tech appreciates the opportunity to provide the City of Collinsville with this proposal. If you have any questions regarding this proposal or would like to schedule a meeting to discuss the project, please call me at (618) 343-2318. Tetra Tech looks forward to continuing our good working relationship with the City of Collinsville.

Respectfully Submitted,

A handwritten signature in cursive script that reads "Nancy Dickens".

Nancy Dickens, L.P.G.
Project Manager/Geologist

Enclosures

Tetra Tech, Inc.

COST ESTIMATE - 2017 GENERAL ENGINEERING SERVICES, COLLINSVILLE, ILLINOIS COST SUMMARY SHEET

DIRECT LABOR	FY 2017 Total Hours	FY 2017 Rate	Cost
Program Manager	7.00	\$178.00	\$1,246.00
Project Manager	145.00	\$129.00	\$18,705.00
Engineering Engineer	7.00	\$146.00	\$1,022.00
Statistician/Data Validator/Reviewer	27.00	\$130.00	\$3,510.00
Senior Chemist	4.00	\$113.00	\$452.00
Project Geologist	20.00	\$104.00	\$2,080.00
Environmental Scientist	33.00	\$83.00	\$2,739.00
Contract Administrator	17.00	\$83.00	\$1,411.00
Drafting	31.00	\$68.00	\$2,108.00
Clerk/Copying	22.00	\$58.00	\$1,276.00
Data Manager	29.00	\$71.00	\$2,059.00
Total Direct Labor			\$36,608.00

DIRECT COSTS AND SUBCONTRACTOR COSTS	Rate	No.	Cost
Digital Camera	\$25.00	1	\$25.00
Water Quality Meter - daily rental	\$100.00	2	\$200.00
Water Level - daily rental	\$25.00	2	\$50.00
Turbidity Meter (daily rental)	\$35.00	2	\$70.00
Filters	\$20.00	4	\$80.00
Sampling Equipment	\$300.00	1	\$300.00
Analytical			
<u>TekLab</u>			
List 2 - misc. methods (4 wells plus 1 duplicate)	\$380.00	5	\$1,900.00
List 3 (4 wells plus duplicate) inorganic compounds + perchlorate	\$317.00	5	\$1,585.00
List 3 (4 wells plus duplicate) reduced organic compounds (8 com	\$285.00	6	\$1,710.00
Reproduction/shipment of letters/report to IEPA	\$500.00	3	\$1,500.00
Sample Shipping / Packing Supplies	\$25.00	1	\$25.00
Fee @ 10%			\$744.50
Total Other Direct Costs			\$8,189.50

INDIRECT COSTS	Rate	No.	Cost
Mileage - Eastport Plaza to Landfill and back	\$0.510	50	\$25.50
Total Travel and Per Diem Cost			\$25.50

General Engineering Services

<i>Total Groundwater Monitoring and Other Tasks</i>	
Direct Labor	\$36,608.00
Other Direct Costs	\$8,189.50
Travel and Per Diem	\$25.50
Total Estimated Cost	\$44,823.00

<i>FY 2017 Cost Summary By Task</i>	
Task 1 - 2017 Trending Report/LUCs	\$14,829.00
Task 2 - 2017 Annual Monitoring	\$16,622.00
Task 3 - 2018 Annual Report	\$13,372.00

COST ESTIMATE

Assistance with Land Use Controls and 2017 Trending/Groundwater Survey Report

COLLINSVILLE, IL

General Engineering Services

Trending Report for 2017

DIRECT LABOR	Rate	Hours	Cost
Program Manager	\$178.00	3.00	\$534.00
Project Manager	\$129.00	70.00	\$9,030.00
Engineering Engineer	\$146.00	3.00	\$438.00
Statistician/Data Validator/Reviewer	\$130.00	7.00	\$910.00
Senior Chemist	\$113.00	-	\$0.00
Project Geologist	\$104.00	-	\$0.00
Environmental Scientist	\$83.00	8.00	\$664.00
Contract Administrator	\$83.00	6.00	\$498.00
Drafting	\$68.00	20.00	\$1,360.00
Clerk/Copying	\$58.00	6.00	\$348.00
Data Manager	\$71.00	7.00	\$497.00
Total Direct Labor		130	\$14,279.00

Direct Labor	\$14,279.00
Other Direct Costs	\$550.00
Travel and Per Diem	\$0.00
Total Estimated Cost	\$14,829.00

DIRECT COSTS AND SUBCONTRACTOR COSTS	Rate	No.	Cost
Digital Camera	\$25.00	0	\$0.00
Water Quality Meter - daily rental	\$100.00	0	\$0.00
Water Level - daily rental	\$25.00	0	\$0.00
Turbidity Meter (daily rental)	\$35.00	0	\$0.00
Filters	\$20.00	0	\$0.00
Sampling Equipment	\$300.00	0	\$0.00
Analytical			
<u>TekLab</u>			
List 2 - misc. methods (4 wells plus 1 duplicate)	\$380.00	0	\$0.00
List 3 (4 wells plus duplicate) inorganic compounds + perc	\$317.00	0	\$0.00
List 3 (4 wells plus duplicate) reduced organic compounds	\$285.00	0	\$0.00
Reproduction/shipment of letters/report to IEPA	\$500.00	1	\$500.00
Sample Shipping / Packing Supplies	\$25.00	0	\$0.00
Fee @ 10%			\$50.00
Total Other Direct Costs			\$550.00

INDIRECT COSTS	Rate	No.	Cost
Mileage - Eastport Plaza to Landfill and back	\$0.510	0	\$0.00
Total Travel and Per Diem Cost			\$0.00

CLOSED COLLINSVILLE LANDFILL, COLLINSVILLE, IL

2017 Annual Monitoring

DIRECT LABOR	Rate	Hours	Cost
Program Manager	\$178.00	1.00	\$178.00
Project Manager	\$129.00	15.00	\$1,935.00
Engineering Engineer	\$146.00	1.00	\$146.00
Statistician/Data Validator/Reviewer	\$130.00	10.00	\$1,300.00
Senior Chemist	\$113.00	2.00	\$226.00
Project Geologist	\$104.00	20.00	\$2,080.00
Environmental Scientist	\$83.00	25.00	\$2,075.00
Contract Administrator	\$83.00	5.00	\$415.00
Drafting	\$68.00	1.00	\$68.00
Clerk/Copying	\$58.00	4.00	\$232.00
Data Manager	\$71.00	12.00	\$852.00
Total Direct Labor		96	\$9,507.00

General Engineering Services

Annual Monitoring for 2017	
Direct Labor	\$9,507.00
Other Direct Costs	\$7,089.50
Travel and Per Diem	\$25.50
Total Estimated Cost	\$16,622.00

DIRECT COSTS AND SUBCONTRACTOR COSTS	Rate	No.	Cost
Digital Camera	\$25.00	1	\$25.00
Water Quality Meter - daily rental	\$100.00	2	\$200.00
Water Level - daily rental	\$25.00	2	\$50.00
Turbidity Meter (daily rental)	\$35.00	2	\$70.00
Filters	\$20.00	4	\$80.00
Sampling Equipment	\$300.00	1	\$300.00
Analytical			
<u>TekLab</u>			
List 2 - misc. methods (4 wells plus 1 duplicate)	\$380.00	5	\$1,900.00
List 3 (4 wells plus duplicate) inorganic compounds + perchlorate	\$317.00	5	\$1,585.00
List 3 (4 wells plus duplicate) reduced organic compounds (8 compounds)	\$285.00	6	\$1,710.00
Reproduction/shipment of letters/report to IEPA	\$500.00	1	\$500.00
Sample Shipping / Packing Supplies	\$25.00	1	\$25.00
Fee @ 10%			\$644.50
Total Other Direct Costs			\$7,089.50

INDIRECT COSTS	Rate	No.	Cost
Mileage - Eastport Plaza to Landfill and back	\$0.510	50	\$25.50
Total Travel and Per Diem Cost			\$25.50

CLOSED COLLINSVILLE LANDFILL, COLLINSVILLE, IL

2017-2018 Annual Report with Trending

DIRECT LABOR	Rate	Hours	Cost
Program Manager	\$178.00	3.00	\$534.00
Project Manager	\$129.00	60.00	\$7,740.00
Engineering Engineer	\$146.00	3.00	\$438.00
Statistician/Data Validator/Reviewer	\$130.00	10.00	\$1,300.00
Senior Chemist	\$113.00	2.00	\$226.00
Project Geologist	\$104.00	-	\$0.00
Environmental Scientist	\$83.00	-	\$0.00
Contract Administrator	\$83.00	6.00	\$498.00
Drafting	\$68.00	10.00	\$680.00
Clerk/Copying	\$58.00	12.00	\$696.00
Data Manager	\$71.00	10.00	\$710.00
Total Direct Labor		116	\$12,822.00

General Engineering Services

2018 Annual Report	
Direct Labor	\$12,822.00
Other Direct Costs	\$550.00
Travel and Per Diem	\$0.00
Total Estimated Cost	\$13,372.00

DIRECT COSTS AND SUBCONTRACTOR COSTS	Rate	No.	Cost
Digital Camera	\$25.00	0	\$0.00
Water Quality Meter - daily rental	\$100.00	0	\$0.00
Water Level - daily rental	\$25.00	0	\$0.00
Turbidity Meter (daily rental)	\$35.00	0	\$0.00
Filters	\$20.00	0	\$0.00
Sampling Equipment	\$300.00	0	\$0.00
Analytical			
<u>TekLab</u>			
List 2 - misc. methods (4 wells plus 1 duplicate)	\$380.00	0	\$0.00
List 3 (4 wells plus duplicate) inorganic compounds +	\$317.00	0	\$0.00
List 3 (4 wells plus duplicate) reduced organic compounds	\$285.00	0	\$0.00
Reproduction/shipment of letters/report to IEPA	\$500.00	1	\$500.00
Sample Shipping / Packing Supplies	\$25.00	0	\$0.00
Fee @ 10%			\$50.00
Total Other Direct Costs			\$550.00

INDIRECT COSTS	Rate	No.	Cost
Mileage - Eastport Plaza to Landfill and back	\$0.510	0	\$0.00
Total Travel and Per Diem Cost			\$0.00