



PRINCIPAL  
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# Crawford & Associates Engineering, PC

Engineering Consultants, Planners, Geologists & Surveyors

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ASSOCIATES

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Daniel J. Russell, LS

July 29, 2014

Mr. Timothy W. Wales, PE, City Engineer  
City of Saratoga Springs  
474 Broadway  
Saratoga Springs, NY 12866

**Re: Revised Proposal for Engineering Services  
Saratoga Springs Landfill Waste Edge Evaluation  
C&A# 4458.00**

Dear Mr. Wales,

Crawford & Associates appreciates this opportunity to propose our services to you. We take great pride in our ability to provide a diverse range of engineering expertise combined with superior responsiveness to our clients' needs for clear communication, adherence to budget and schedules and quality engineering outcomes. We have particular expertise and breadth of experience in landfill closures, having closed nine (9) landfills throughout a three (3) county region and will bring this expertise to bear for the City of Saratoga Springs.

## Statement of Problem

The City of Saratoga Springs owns and maintains a 9.2 acre municipal landfill on Weibel Avenue. The landfill has been closed since the early 1990's. It has recently come to the City's attention that the northern edge of the landfill extends onto two adjacent parcels. One of the adjacent property owners wishes to construct a building on the very tight parcel and appears to be precluded from doing so due to the presence of the landfill edge. At one time, the parcel had been owned by the City but was sold at some point following the landfill closure. Additional waste, likely construction and demolition debris in nature, can also be found on the adjacent site. At this time, the City is seeking an engineering investigation into where the landfill edge actually exists in relation to the property line and remedies that will remove the impact on adjacent landowners.

At the same time, the City has contracted with another firm for the design of improvements to the landfill's gas extraction system. It is possible that a gas interceptor trench will be installed near the northern edge of the landfill as part of that project. High gas readings were discovered on the adjacent parcel in June of this year. The source of this gas has not been confirmed. Additionally, the City has contracted for the installation of a 2 megawatt solar array on the landfill. For this reason, and a reluctance to disturb the cap any more than necessary, the City will require that any waste removed from the adjacent property be hauled off site for disposal. There is no leachate collection system at the landfill.



### **Engineering Tasks**

1. Review background information from existing annual monitoring reports as submitted to New York State Department of Environmental Conservation (NYSDEC). Research adjacent property ownership history and deed information to confirm property line. Work with City surveyor to obtain basemap and source deeds. We understand the property line has been flagged by the City Surveyor, clearly showing the property line between the City property and the adjacent properties of Tara Stone and National Grid. Contact adjacent property owners for coordination of test pit work and for existing environmental data or reports on their properties. Please note if National Grid has a separate process, other than notification, to obtain approval to conduct test pits these will be additional services.
2. Review plans for amendment to the existing gas extraction system to determine possible impact or opportunity for coordination. We assume this activity is undergoing a separate review by NYSDEC.
3. Prepare investigation work procedure for approval by NYSDEC. Prepare site specific health and safety plan for field work. Conduct field work by observing and documenting the digging of shallow test pits to determine landfill cap edge. The landfill cap edge will be determined by the presence of a layer of 6" topsoil overlying 12 " of select fill (barrier protection layer) above a 40 ml HDPE geomembrane. Care will be taken to avoid complete penetration of the barrier protection layer to avoid damage to the geomembrane cover.

Crawford & Associates assumes 2 days of field work and that access to both the parcels owned by Stone and National Grid can be accessed. We further assume the City surveyor will survey test pit locations and prepare drawings showing edge of landfill cover and property line. The City should be aware that it may be necessary to clear heavy vegetation and remove trees to facilitate the test pit work. We assume this work will be completed prior to our being on site for observation of the test pits, and that we can receive an autocad file of the survey information.

4. Prepare Report of Findings for submission to the City. The Report of Findings will include options and preliminary cost estimates for remedial work that will re-establish the landfill edge to within the property line as well as an outline of the procedure for conducting the remedial work.
5. Should it be confirmed that the landfill cap edge extends onto the adjacent properties, then Crawford & Associates would anticipate the following additional work which we can provide costs for at the appropriate time:
  - a. Preparation of a Workplan for the chosen remedial work for submission to the NYSDEC for approval as part of an amendment to the Closure Plan for the Landfill.
  - b. Preparation of plans and specifications for bidding waste relocation work. Crawford & Associates would anticipate the use of City front end documents.
  - c. Assistance during the bid process in answering questions, attending a pre-bid meeting if needed and review of bids.
6. If desired, the test pit work can be extended to include the determination of the depth and lateral extent of construction and demolition debris located on the adjacent parcel. The removal and proper disposal of this material can be included in the determinations of options for waste relocation. Cost estimates for the



removal and disposal of this waste can be developed. We would budget an additional two days of field work for these additional test pits. Due to the potential for the presence of explosive gas on the adjacent property, Crawford & Associates would monitor gas levels during excavation activities.

#### **Proposed Engineering Fees**

Crawford & Associates proposes to complete tasks 1 through 4 as described above for a proposed fee *not to exceed* \$10,500.

Should the City want to conduct the additional test pit work to determine the extent of the C&D debris on the adjacent property at this time, we would invoice the City on a time and materials basis. Preparation of the work plan, coordination of the work plan with NYSDEC and development of construction documents will also be completed on a time and materials basis. For budgetary purposes, we estimate the services discussed in task 5 and 6 will be *up to \$9,000*.

Due to the unpredictable nature of this project, there may be additional work needed to coordinate and advise the City on circumstances which may arise. We propose to provide these additional services on a time and material basis in accordance with the attached Schedule of Fees.

#### **Experience in Landfill Closures**

Crawford & Associates is a multi-discipline engineering firm serving the Hudson Valley and northeastern New York since 1992. We provide civil, environmental, structural, and MEP engineering and land surveying services to local, county, state, institutional, and private clients. We have worked with municipal clients on issues pertaining to solid waste since our inception. We maintain a staff of 20 professional engineers, staff engineers, scientists, land surveyors.

We believe our strength lies in developing the relationships needed to really know our clients' needs, tailoring our work to meet those needs within whatever time and budget constraints exist, communicating frequently throughout the project progress and achieving project success. Through this process our clients come to trust us. We are proud of the fact that we have relationships with several municipal clients that have spanned more than 15 years. We believe this is due to our strong belief in developing true partnerships with our clients.

Specific to this project for the City of Saratoga Springs, Crawford & Associates has extensive experience in closing and monitoring landfills under the NYS Part 360 regulations. We have closed nine (9) landfills located in three counties. For most of those landfills, we initially conducted waste edge determinations to determine the extent of the landfill as part of mandated Closure Investigations. We then designed a grading plan for the landfill which generally required relocating waste to reduce the footprint of the landfill and subsequent capping costs. We are experienced in waste edge determinations and waste relocation activities. This experience will be valuable to the City of Saratoga Springs as it proceeds with this important project.



We hope you find this proposal acceptable. If you have any questions, please feel free to contact me at the below number or via my email at [david@crawfordandassociates.com](mailto:david@crawfordandassociates.com). We look forward to working with the City of Saratoga Springs.

Very truly yours,

A handwritten signature in blue ink, reading "David J. Crawford".

David J. Crawford, P.E.  
Principal



## Crawford & Associates

### SCHEDULE OF RATES & FEES

<u>Employee Classification</u>	<u>Hourly Rate</u>
Principal	\$ 190.00
Project Manager	\$ 139.50
Assistant Project Manager	\$ 115.00
Senior Professional	\$ 114.00
Professional III	\$ 97.00
Professional II	\$ 88.50
Professional I	\$ 82.50
Professional	\$ 74.75
Technician II	\$ 74.75
Technician I	\$ 69.00
Administration II	\$ 63.25
Administration I	\$ 57.50
Express Mail/Courier Services*	Invoiced Amount Plus 15%
Long Distance Phone Calls	Invoiced Amount Plus 15%
Copying	\$0.04 per page
Drawing Reproduction	\$2.50 per drawing sheet
Travel	\$0.485 per mile
Subcontractor/Consultant	Invoiced Amount Plus 10%

\*No cost if Client's Federal Express Account Number is used.

#### Equipment Rental Rates

1.) Surveyor Model DM 4.....\$150.00/d	18.) Shop Vac Wet/Dry Vacuum.....\$ 25.00/d
2.) One Liter Bag Sampler & Probe Jack...\$ 20.00/d	19.) Water Level Meter w/Probe.....\$ 25.00/d
3.) Portable Explosive Gas Monitor.....\$ 75.00/d	20.) Raynger ST Noncontact Thermometer...\$ 20.00/d
4.) Digital Sound Level Meter.....\$ 25.00/d	21.) (2) Garmin Rino 120 2-way Radio/GPS..\$ 50.00/d
5.) Magnetic Locator.....\$ 50.00/d	22.) Edalman Auger.....\$ 20.00/d
6.) Yardage Pro Compact 6000.....\$ 5.00/d	23.) Ebara SS Self Prime Pump.....\$ 60.00/d
7.) Hanna Portable pH-EC-TDS PH Meter...\$ 30.00/d	24.) Goulds GS30 Submersible Well Pump...\$100.00/d
8.) Minolta Auto Meter w/Diffuser.....\$ 25.00/d	25.) Radon Test Kits.....\$25.00/ea
9.) MultiMeter w/ carrying case.....\$ 15.00/d	26.) Ideal Circuit Tracer.....\$ 20.00/d
10.) Rolotape 15 1/2" Measuring Wheel.....\$ 10.00/d	27.) Modutec Ammeter.....\$ 20.00/d
11.) Coleman Powermate Electric Generator.\$100.00/d	28.) Laser Mark Level.....\$ 20.00/d
12.) xPower600 Indoor-Outdoor Generator...\$100.00/d	29.) 6 FT Bubble Level.....\$ 10.00/d
13.) Amprobe Megohmmeter.....\$ 20.00/d	30.) Turbotorch Self Lighting Hand Torch....\$ 20.00/d
14.) MiniRAE 2000 Photo-Ionization Detector\$ 75.00/d	31.) Laptop Computer.....\$ 50.00/d
15.) MiniRAE Plus Photo Ionization Detector.\$ 75.00/d	32.) McLaughlin Verifier/Locator.....\$195.00/d
16.) DeWalt Cordless Screwdriver.....\$ 5.00/d	33.) Verifier Digital Pipe & Cable Locator.....\$ 75.00/d
17.) Secchi Disk.....\$ 15.00/d	34.) Deep Water Sampler.....\$ 75.00/d

Note: The Engineer reserves the right to change the Billing Rates from time to time.

6/15/06