



1701 Highway A-1-A, Suite 301
Vero Beach, Florida 32963
tel: 772-231-4301
fax: 772-231-4332

March 1, 2018

Mr. Himanshu Mehta, P.E.
Managing Director
Indian River County
Solid Waste Disposal District
1325 74th Avenue SW
Vero Beach, FL 32968

Subject: Indian River County
Segment 3, Cell 2 Expansion, Segment 2 Partial Closure, and
Landfill Gas System Expansion
100 Percent Opinion of Probable Construction Cost

Dear Mr. Mehta:

This letter provides the 100 Percent Opinion of Probable Cost of Construction (OPCC) for the Segment 3, Cell 2 Expansion, Segment 2 Partial Closure, and Landfill Gas System Expansion projects as prepared by CDM Smith Inc. (CDM Smith). The OPCC is based on the following:

PROJECT DESCRIPTION

The work of this Contract is located at the Indian River County Landfill at 1325 74th Avenue SW in Vero Beach, Florida. The work includes the construction of a new Class I municipal solid waste cell (Segment 3, Cell 2), partial closure of Segment 2 from approximate elevation 100 feet NGVD to the top, final grade of 180 feet NGVD, construction of a new landfill access road and improvements to the existing access road, construction of a new lift station and forcemain to augment the existing leachate management system, and improvements to the landfill gas collection system as further described below:

- Segment 3, Cell 2 Landfill Expansion - The work for the Segment 3, Cell 2 expansion includes the construction of a landfill bottom liner, leachate collection system (LCS), leachate detection system (LDS) and LDS pump station, associated gravity collection manholes, and site improvements. The proposed Cell 2 landfill bottom liner system is comprised of 6 inches of processed sand, a geosynthetic clay liner, a secondary 60-mil high density polyethylene (HDPE) liner, a secondary geonet, a primary 60-mil HDPE liner, a primary geocomposite, and 2 feet of protective sand.
- Leachate Pump Station and Forcemain - The LCS pump station will collect leachate from Segment 3, Cell 2 and future Cells 3 and 4 and convey it via a new leachate transmission forcemain which will tie-in to the existing forcemain located by the Biosolids Facility centrate



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pump station. The work includes duplex pumps, concrete wetwell, concrete slab and driveway, valves, and piping.

- Water Main Extension and Hydrant – The work includes all pipes, valves, fitting, hydrant, and ancillary components for the water main extension. Work also includes a water line to the LCS pump station and hose bib.
- Electrical and Instrumentation – The work includes all components required for electrical and instrumentation to the LCS and LDS pump stations and electrical connections for the air compressors including control panels, grounding, service and distribution, concrete encased ductbank, site lighting, handholes, conduits, disconnects and connections, circuits, and ancillary components. Also included is a 20-kW diesel genset for the LCS pump station.
- Segment 2 Partial Closure - The work for the Segment 2 Partial Closure includes the construction of a closure cap liner system, stormwater collection, landfill gas system expansion and improvements, and associated site improvements. The proposed Segment 2 partial closure system is comprised of 6 inches of cap foundation layer, a gas venting geocomposite, 40-mil linear low-density polyethylene (LLDPE) liner, stormwater geocomposite, 18 inches of protective soil, 6 inches of topsoil, and sod. All existing downcomers will be replaced and upsized to 24-inch corrugated HDPE pipe to be capable of handling the stormwater flows. The landfill gas system will be expanded in the closure area and will include additional vertical collection wells, horizontal collectors, new headers, new air and force main piping, and new well dewatering pumps.
- Segment 2 Access Road Extension and Improvements – The work includes a new landfill access road on top of the new Segment 2 Partial Closure area which will connect to the existing access road on the Segment 2 north sideslope. The work also includes resurfacing of the existing access road along the entire north sideslope of Segment 2.
- Air Compressor System – The work includes a turn-key air compressor system and metal building to be installed on the existing flare slab. The system will include air compressors, air dryers, and all required piping and components.

DERIVATION OF OPINION OF THE PROBABLE COST OF CONSTRUCTION

The prices for each item in this OPCC were prepared by CDM Smith. The material prices were obtained from recognized suppliers, wherever possible, and/or review of recent bids, and such prices reflect delivery to the project site. CDM Smith has reviewed recent bids within the last two years for St. Lucie County and Pinellas County for landfill expansions and closures and find that the OPCC is comparable to these bid prices.



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As of January 2018, the OPCCs for the elements listed above are:

Segment 3, Cell 2 Landfill Expansion	\$6,300,000
Leachate Pump Station and Force Main	\$ 300,000
Water Main Extension and Hydrant	\$ 200,000
Electrical and Instrumentation	\$ 700,000
Segment 2 Partial Closure	\$11,000,000
Segment 2 Access Road Extension and Improvements	\$ 600,000
<u>Air Compressor System</u>	<u>\$ 100,000</u>
Total	\$19,200,000

Included in **Attachment 1** is the bid form completed with the OPCC unit prices. It should be noted that the total value in the bid form is slightly higher than the value presented above due to a contingency on the estimated quantities.

We trust the above meets with your approval. If you have any questions or comments, please contact me in the Vero Beach office.

Sincerely,



Kevin N. Vann, P.E., BCEE
Principal Environmental Engineer
CDM Smith Inc.

KNV/AMH/jj
Attachment
File: PW_PL1_6706-221060.02.06

cc: Eric J. Grotke, CDM Smith
Amy Hightower, CDM Smith



Attachment 1 - Bid Form with OPCC Unit Costs

Item	Unit	Estimated Quantity	Unit Price	Total
BID ITEMS:				
1. SEGMENT 3 CELL 2 EXPANSION				
1A. Site Work				
a. Site Preparation, Clearing, Grubbing	L.S.	1	\$42,287.00	\$42,300
b. Site Grading	L.S.	1	\$11,756.00	\$11,800
c. Imported Common Fill - Subgrade	C.Y.	44,000	\$21.60	\$950,400
d. Interim Cell Stormwater Diversion Berm	L.F.	335	\$202.09	\$67,800
e. 24-inch by 36-inch Elliptical RCP Culvert	L.F.	200	\$146.96	\$29,400
f. Fabric Formed Concrete Riprap	S.F.	150	\$14.87	\$2,300
g. Coquina Shell Access Road and Shoulder	S.F.	4,050	\$1.77	\$7,200
1B. Liner System				
a. 6-inch Processed Sand Layer	C.Y.	11,500	\$34.12	\$392,400
b. Geosynthetic Clay Liner	S.F.	449,000	\$1.30	\$583,700
c. Secondary 60-mil Textured HDPE Geomembrane	S.F.	449,000	\$1.12	\$502,900
d. LDS Geonet	S.F.	449,000	\$1.13	\$507,400
e. LDS Geocomposite Double Sided	S.F.	11,000	\$0.96	\$10,600
f. Primary 60-mil Textured HDPE Geomembrane	S.F.	449,000	\$1.12	\$502,900
g. LCS Geocomposite Double Sided	S.F.	449,000	\$1.63	\$731,900
h. 24-inch Protective Sand Cover	C.Y.	49,000	\$33.22	\$1,627,800
i. Tie-in to Existing Cell (inclusive of all layers)	L.S.	1	\$17,000.00	\$17,000
j. Metal Information Signs	Ea.	10	\$228.53	\$2,300
k. Electrical Leak Location Survey	L.S.	1	\$35,000.00	\$35,000
l. Cleaning and Video Inspection of the Leachate Collection and Leachate Detection Systems	L.S.	1	\$5,000.00	\$5,000
m. Site Restoration Including Sod	L.S.	1	\$80,000.00	\$80,000
n. Miscellaneous	L.S.	1	\$0.00	\$0
1C. Leachate Detection System (LDS) Pump Station				
a. LDS Pump Station Pump Package including all components for a complete system (wetwell, hatch and safety grate, turbine meter with totalizer, 1.5-inch Schedule 80 PVC pipe and fittings, and control panel)	Ea.	1	\$109,240.00	\$109,300
b. 18-Foot x 13-Foot x 10-Inch Thick Concrete Slab	S.F.	234	\$12.84	\$3,100
c. Miscellaneous	L.S.	1	\$0.00	\$0
1D. Leachate Piping System				
a. Leak Detection System including SDR 15.5 HDPE Pipe, Fittings, Geotextile wrap, River Rock, Bootless Pipe Penetration, Cleanouts	L.S.	1	\$87,421.00	\$87,500
b. Leachate Collection System including SDR 15.5 HDPE Pipe and Fittings, Geotextile wrap, River Rock, Bootless Pipe Penetration, Cleanout, Plug Valves	L.S.	1	\$218,604.00	\$218,700
c. 5-Foot Diameter LCS Manhole	Ea.	2	\$5,095.81	\$10,200
d. Horizontal Directional Drill 10-Inch Solid SDR 15.5 HDPE Gravity Pipe	L.F.	100	\$173.69	\$17,400
e. Miscellaneous	L.S.	1		\$0
1E. Electrical and Instrumentation and Control				
a. Measurement and Control Instrumentation				
a.1. Programming Points	Ea.	29	\$640.90	\$18,600
a.2. Instruments	Ea.	16	\$3,318.49	\$53,100
a.3. Tower and Antenna	Ea.	1	\$106,043.21	\$106,100
b. Electrical Demolition Including Removal and Disposal	L.S.	1	\$2,169.00	\$2,200
c. Grounding	L.F.	520	\$27.48	\$14,300
d. Service & Distribution				
d.1. Panelboard PP-1	Ea.	1	\$11,777.00	\$11,800
d.2. Main Circuit Breaker	Ea.	1	\$7,796.00	\$7,800
d.3. ATS	Ea.	1	\$17,027.59	\$17,100
d.4. TPA-COMP-A	Ea.	1	\$3,500.00	\$3,500
d.5. TPA-LCS-A	Ea.	1	\$3,500.00	\$3,500
d.6. Panelboard LP-LDS	Ea.	1	\$3,500.00	\$3,500
d.7. Mounting Racks	Ea.	3		\$0
d.8. 20KW Diesel Genset	Ea.	1	\$64,413.00	\$64,500
e. Site Power				
e.1. Power Handhole with Grounding 3-Foot x 3-Foot x 3-Foot	Ea.	3	\$10,091.09	\$30,300
e.2. Control Handhole with Rack 2-Foot x 2-Foot x 2-Foot	Ea.	2	\$10,091.09	\$20,200
e.3. Concrete Encased Duct bank	L.S.	1	\$60,517.55	\$60,600
e.4. Associated directional drilling, trenching, excavation, backfill, and compaction as required for a complete underground system	L.S.	1		\$0
f. Site Lighting pole	Ea.	3	\$5,772.00	\$17,400

Attachment 1 - Bid Form with OPCC Unit Costs

Item	Unit	Estimated Quantity	Unit Price	Total
g. Branch Circuits and Feeders - All Conduit and Wire Per Schedules on E-3 and E-4 with all necessary fittings, pullboxes, supports, and appurtenances as required for a complete and operable system including material, installation, termination, and testing	L.S.	1	\$158,752.00	\$158,800
h. Short Circuit Coordination Study & Arc Flash Labels	L.S.	1	-	-
i. FPL Fee	L.S.	1	-	-
j. Miscellaneous Items	L.S.	1	\$0.00	\$0
1F. Survey	L.S.	1	\$15,000.00	\$15,000
TOTAL BID ITEM 1				\$7,164,600
2. SEGMENT 2 PARTIAL CLOSURE AND LANDFILL GAS SYSTEM EXPANSION				
2A. Partial Closure Construction				
a. Site Work				
a.1. Site Clearing and Preparation	L.S.	1	\$49,553.00	\$49,600
a.2. Site Grading	L.S.	1	\$22,853.00	\$22,900
a.3. Common Fill	C.Y.	30,000	\$17.30	\$519,000
b. Drainage & Containment				
b.1 Remove existing 15-inch and 18-inch downcomers and replace w/ 24-inch Corrugated HDPE Pipe	L.F.	2,500	\$76.36	\$190,900
b.2. 24-inch RCP	L.F.	80	\$75.15	\$6,100
b.3. 24-inch Corrugated HDPE drainage pipe	L.F.	1,150	\$105.61	\$121,500
b.4. 18-inch Corrugated HDPE drainage pipe	L.F.	850	\$82.10	\$69,800
b.5. 15-inch Corrugated HDPE drainage pipe	L.F.	520	\$50.30	\$26,200
b.6. 8-inch Solid HDPE drainage pipe	L.F.	400	\$32.13	\$12,900
b.7 8-inch Perforated HDPE pipe	L.F.	400	\$62.86	\$25,200
b.8. 4-inch Perforated HDPE Underdrain	L.F.	3,000	\$25.56	\$76,700
b.9. Fabric Formed Concrete Riprap	S.F.	11,500	\$12.21	\$140,500
b.10. Flash Board Risers	Ea.	42	\$265.08	\$11,200
c. New Asphalt Access Road	S.Y.	3,800	\$110.49	\$419,900
d. Resurface Existing Asphalt Access Road	S.Y.	2,950	\$58.50	\$172,600
e. LFG Collection Piping and Installation				
e.1. 12-inch SDR 17 HDPE Solid Pipe and Fittings	L.F.	1,600	\$83.19	\$133,200
e.2. 10-inch SDR 17 HDPE Solid Pipe and Fittings	L.F.	1,350	\$67.84	\$91,600
e.3. 8-inch SDR 17 HDPE Solid Pipe and Fittings	L.F.	800	\$62.86	\$50,300
e.4. 6-inch SDR 17 HDPE Solid Pipe and Fittings	L.F.	4,000	\$41.89	\$167,600
e.5 4-inch SDR 17 HDPE Solid Pipe and Fittings	L.F.	500	\$33.40	\$16,700
e.6. Vertical Extraction Well	V.F.	2,900	\$409.80	\$1,188,500
e.7. Horizontal Extraction Well	Ea.	4	\$1,916.29	\$7,700
e.8. Well Head	Ea.	39	\$1,395.19	\$54,500
e.9. Miscellaneous Valves & Fittings	L.S.	1	\$5,156.45	\$5,200
e.10. Access Riser	Ea.	38	\$568.93	\$21,700
e.11. Zone Valve	Ea.	18	\$4,412.13	\$79,500
e.12. Summit Vent	Ea.	4	\$374.66	\$1,500
f. Liner System				
f.1. 6-inch Cap Foundation Layer	C.Y.	23,200	\$32.88	\$762,900
f.2. 40-mil Linear Low-Density Polyethylene Geomembrane	S.F.	925,000	\$0.94	\$869,500
f.3. Geocomposite Drainage Layer	S.F.	925,000	\$1.48	\$1,369,000
f.4. Geocomposite Gas Venting Layer	S.F.	925,000	\$1.21	\$1,119,300
f.5. 18-inch Protective Soil Layer	C.Y.	69,500	\$39.76	\$2,763,400
f.6. 6-inch Top Soil Cover	C.Y.	23,200	\$28.22	\$654,800
f.7. Bahia Sod	S.F.	925,000	\$0.41	\$379,300
f.8. Metal Information Signs	Ea.	4	\$200.26	\$900
g. Compressed Air and Forcemain Piping, Fittings, Valves, and Ancillary Components				
g.1. 2-inch DR 11 HDPE Compressed Air & Forcemain Pipe (same trench)	L.F.	15,200	\$17.61	\$267,700
g.2. 2-inch Compressed Air & Forcemain Valves	Ea.	26	\$412.09	\$10,800.00
g.3 Well Dewatering Pump Assembly	Ea.	6	\$5,500.00	\$33,000.00
h. Turn-Key Air Compressor System Including All Equipment and Electrical Components and Connections and Prefabricated Metal Panel Enclosure (17 feet x 13 feet) with all appurtenances	L.S.	1	\$100,000.00	\$100,000.00
i. Concrete Gravity Wall for Existing Pump Station	L.F.	70	\$142.86	\$10,000.00
j. Site Restoration	L.S.	1	\$20,000.00	\$20,000.00
k. Miscellaneous	L.S.	1	-	-
2B. Survey	L.S.	1	\$40,000.00	\$40,000.00
TOTAL BID ITEM 2				\$12,083,600.00

Attachment 1 - Bid Form with OPCC Unit Costs

Item	Unit	Estimated Quantity	Unit Price	Total
3. PUBLIC CONSTRUCTION BOND AND INSURANCE (TOTAL)	L.S.	1		
4. MOBILIZATION AND DEMOBILIZATION (TOTAL)	L.S.	1		
5. WATER MAIN EXTENSION AND HYDRANT				
5A. Water Main Extension and Hydrant				
a. 8-inch C900 PVC Water Main	L.F.	1,750	\$71.78	\$125,700
b. Directional Drill 8-inch C900 PVC Water Main	L.F.	100	\$173.69	\$17,400
c. 8-inch Tapping Saddle & Gate Valve	Ea.	1	\$2,192.63	\$2,200
d. Hydrant and Ancillary Components	Ea.	1	\$4,954.05	\$5,000
e. 2-inch Sch 80 Pipe, Hose Bibb, Meter and Backflow preventer to LCS Pump Station	Ea.	1	\$2,538.95	\$2,600
f. Flushing, Disinfection, and Testing	L.S.	1	-	-
g. Miscellaneous	L.S.	1	-	-
5B. Survey	L.S.	1	\$3,000.00	\$3,000
TOTAL BID ITEM 5				\$155,900
6. LEACHATE COLLECTION SYSTEM (LCS) PUMP STATION AND FORCEMAINS				
6A. Leachate Collection System Pump Station				
a. Duplex LCS Pump Station Pump Package including all components for a complete system (precast wetwell, hatch and safety grate, turbine meter with totalizer, control panel, valves, ARV, pressure gauge, HDPE pipe and fittings, ductile iron pipe and fittings, pipe supports, miscellaneous appurtenances, and dewatering)	L.S.	1	\$218,449.48	\$218,500
b. 10-inch Concrete Slab and Driveway	S.F.	1,400	\$11.54	\$16,200
c. 5-Foot Diameter Pump Out Manhole	Ea.	1	\$6,289.98	\$6,300
6B. Leachate Force mains				
a. 2-Inch Dual Contained (in 4-Inch) HDPE Force main	L.F.	292	\$40.14	\$11,800
b. 2-Inch Plug Valve	Ea.	2	\$915.52	\$1,900
c. 4-Inch Solid SDR 11 HDPE Force main	L.F.	1,700	\$33.40	\$56,800
d. Directional Drill 4-Inch Solid DR 11 HDPE Force main	L.F.	100	\$115.14	\$11,600
e. 4-Inch Plug Valve	Ea.	2	\$1,124.53	\$2,300
6C. Survey	L.S.	1	\$3,000.00	\$3,000
TOTAL BID ITEM 6				\$328,400
7. CONTINGENCY ALLOWANCE (10%)	L.S.	1		\$1,973,250.00
GRAND TOTAL BID (Items 1-6)				\$19,732,500.00
GRAND TOTAL BID (Items 1-6 and 7)				\$21,705,750.00