

September 22, 2014 (Revised December 29, 2014)



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City of Ft. Pierce
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RE: Revised Cost Proposal for Source Removal Activities for 2015
Parcel #1 – PCB and Petroleum Impacted Areas
Former H.D. King Site, Ft. Pierce

Dear Mr. Mimms:

Cardno is pleased to submit this revised technical and cost proposal for conducting 2015 Source Removal activities on Parcel #1 of the former HD King Power Plant site on behalf of the Ft. Pierce Redevelopment Agency (FPRA).

BACKGROUND

Cardno has completed the 2014 ISR program, detailed in the approved February 14, 2014 proposal, in accordance with the Notice to Proceed issued March 25, 2014. As you are aware, additional deeper soil contamination and areas of free-phase petroleum product were encountered below the design depth of 4.5 feet during implementation of the 2014 soil removal program. In addition, areas of landfill debris (wood, brick, metal, bottles, auto parts, etc.), product piping, large concrete footers/sumps, the former intake canal structure and former sheet-pile coffer dam/retaining wall for the +/-1,000,000 gallon AST were uncovered during the course of the soil removal program.

A supplemental proposal was submitted on May 9, 2014 to address the removal of an additional 2,650 tons of heavily impacted soil and free-product from below the water table in portions of the 2014 soil removal area. In addition, the May 9, 2014 proposal included an optional task for conducting one week of exploratory test pits in the area planned for removal during 2015. This optional test pit work was approved during the June 10th meeting and was subsequently conducted between June 12 and June 24, 2014. The previously submitted 2015 removal cost estimate, dated February 14, 2014, was revised on July 28, 2014 based on the results of the supplemental test pit work.

Due to the estimated costs to complete the remaining work in 2015 being close to 2 million dollars, it is our understanding that the City would like to split the remaining work between 2015 and 2016. Splitting the effort over two years should allow recovery of substantial additional voluntary cleanup tax credits (VCTCs).

Based on conversations with Treasure Coast Regional Planning Council (TCRPC) representatives, it is our understanding that an additional \$400,000 Revolving Loan Fund (RLF) loan will be utilized to fund a portion of the activities required in 2015. A separate proposal has been prepared to document activities to be funded under the RLF in 2015, and the following cost proposal details the remainder of the proposed 2015 source removal activities. This assumes that approximately half of the remaining source removal activities for the entire site will be conducted in 2015. The costs for removal of the additional deeper soil contamination remaining in the 2014 excavation area (as detailed in a May 9, 2014 proposal for \$311,090) have been included in this proposal. A separate cost proposal has been prepared for the final portion of the source removal work, to be conducted in 2016.

The costs presented below assume that the City will continue to provide the necessary "clean fill" as discussed in our previous meetings, and that the fill material has been staged across from the Savannah Road public works facility for subsequent use during 2015/2016. The costs presented also assume that City personnel and equipment will load the stockpiled fill material from the Savannah Road site into trucks returning from the landfill during the 2015 soil removal program planned for February through April 2015 and subsequent 2016 source removal activities.

PROPOSED SCOPE OF WORK

This Cost Proposal is broken down into three sections: source removal activities, reporting and groundwater sampling and monitoring. This proposal combined with the RLF proposal covers approximately ½ of the remaining identified contamination, with the other half to be removed in 2016 (separate proposal).

Task I 2015 Source Removal Elements

- A) Source Removal:** Cardno will provide environmental project oversight and post-excavation confirmatory soil sampling to confirm the removal of PCB/hydrocarbon contaminated soil as part of the 2015 phase of source removal activities. Post-excavation confirmatory sampling will be conducted in accordance with the EPA/FDEP-approved Revised ISRP. Sample collection and laboratory analytical testing will be implemented pursuant to FDEP SOPs and the EPA criteria.

It is anticipated that the source removal activities will be sequenced such that approximately 1/3 of the 2015 ISR area will be excavated at any one time so that effective ingress and egress to the excavation and staging areas are properly maintained. Confirmatory side-wall and bottom samples will be collected as the excavation proceeds, therefore reducing laboratory turn-a-round times (waiting for clean results) so that backfilling or over-excavation can proceed, as necessary.

Cardno will screen potentially contaminated soils discovered during excavation activities, as necessary, with an Organic Vapor Analyzer (OVA) equipped with a Photo Ionization detector (PID), as well conduct visual and olfactory observations to evaluate the potential presence of volatile contaminants. Soil will be direct loaded into dump/mini-wheeler trucks for transport to an approved/permitted landfill. The depth and thickness of impacted soil varies across the site and excavation activities will be targeting these areas by depth interval to minimize the potential for over excavation of non-impacted soils.

Groundwater is encountered at approximately four-and-a-half (4.5) to five (5) ft below land surface across much of the site and, based on recent test pit work, excavation activities will proceed below the water table to remove grossly contaminated soils generating free-product. Excavation below the water table will be conducted rapidly to limit the amount of water entering the excavation. Backfilling of open excavations will be conducted as soon as visual/olfactory observations and/or OVA readings indicate that the grossly-contaminated soil/free-product has been successfully removed to limit the accumulation of standing water in the excavations. Excavation work will proceed in an incremental manner across the site in approximately 100 ft grids to maintain accessibility during backfilling.

Upon completion of excavation activities, confirmatory laboratory analytical sampling will be conducted according to the ISR plan to verify removal of impacts to the appropriate regulatory criteria. Cardno proposes post-excavation confirmatory soil samples be collected from the sidewalls of the excavation at 25 ft intervals along the perimeter of the excavation. Samples will be collected at the mid-point of the sidewall at each sample location. In areas where the water table is not encountered in the base of the excavation, verification base samples will be collected as a five-point composite sample from each 40-ft square. Each 40-ft square of base area will be subdivided into four equal sections representing individual 20-ft square areas. Split soil samples will be collected from the center of each 20-ft square area and at the common corner of the 20-ft squares (effectively the center of the large 40-ft square that was divided into four sections). One half of each sample will be combined to represent the composite sample for the 40-ft square area, while the other samples will be archived at the laboratory. If any composite soil sample contains exceedances of SCTLs from Ch. 62-777, FAC, then each individual archived sample from that 40-ft square area will be analyzed to determine which smaller subset(s) of the 40-ft square are still impacted. If the composite sample results identify no regulatory exceedances then the archived samples will be discarded without being analyzed. Post-excavation confirmatory samples will be analyzed for PCB/petroleum hydrocarbons (historical impacts) only. If volatile impacts are suspected based on OVA readings, soil samples for volatiles analysis will be collected as discrete grab samples, as required by FDEP. Please note that final sampling protocols may be revised based on FDEP negotiations/requirements and associated costs will be adjusted accordingly.

As discussed, clean backfill will be provided by the City and will be transported to the site from the City's borrow/staging area by the trucking company providing transportation of the contaminated soil to the approved landfill. A total of twenty (20) soil samples were collected from the fill material prior to importing during the 2014 backfilling work. Based on the lack impacts detected and number of samples collected, further sampling of the fill source does not appear necessary, unless requested by FDEP.

It is our understanding that the fill material needed for the completion of the ISR backfilling in 2015/2016 has been or will be excavated from the public works facility and stockpiled at the staging area across Savannah Road until needed in 2015/2016. The stockpiled clean fill material will be picked up as a back-haul by trucks returning from disposing of contaminated soil at the landfill. This cost estimate assumes that City personnel and equipment will load the fill material into the trucks and that delays causing potential demurrage charges from the trucking company will not occur. During backfilling of excavated areas, fill material will be placed in 12-inch lifts and mechanically compacted using onsite excavation equipment and vibratory/roller compactors to approximately 95-98% modified proctor. Compaction testing and oversight will be conducted by Cardno staff and a certified geotechnical technician.

As you are aware, the contingency funds under the 2014 work scope were directed entirely at the removal of an additional 2,882.81 tons of heavily impacted soil and the 2014 areas requiring additional source removal were not backfilled. The cost of backfilling and compacting these areas once final removal has been completed has been included in this proposal. Based on the information gained from the recent test pit work, the project contingency has been reduced from 20% to 12.5%. This contingency will not be utilized without prior written authorization.

As the City is aware, large, below-grade concrete structures including the former power plant intake and outfall canals have been encountered during recent excavation activities. These rectangular canal structures are filled with crushed concrete and have generally been encountered at depths of greater than four feet below land surface (bls). The total depth of these structures is not known but appears to be greater than 10 feet bls. The limited costs included in this proposal for concrete removal and disposal are to cover smaller sections of concrete and rubble encountered during ISR activities that can readily be removed with the track-hoe and are not intended to address these larger subsurface concrete features. Similarly, the larger sheet piled retaining wall encountered in the vicinity of former AST #5 is located at a depth of four feet below original land surface and extends to more than 11 feet bls. Attempts to remove the sheet pile ring with the track-hoe have been unsuccessful and, in fact, removal may not be necessary depending on final development plans. To the extent that these features are visible and accessible during ISR activities (i.e. not covered by water, etc.), Cardno will engage the project surveyor to add the location of these features to the site survey for future reference during construction.

B) Reporting: An interim source removal report will be prepared documenting the removal activities and results of post-excavation confirmatory sampling and will be submitted to EPA/FDEP for review and approval. Final removal actions and reporting will be completed in early 2016 and is covered under a separate proposal.

Task II Groundwater Assessment and Natural Attenuation Monitoring

A) Semi-Annual Well Sampling: It is anticipated that the source removal activities will be completed on the slightly less than one-half of the remaining contaminated area by early- to mid-2015, concluding prior to the anticipated rainy-season. Monitor well installation and the first quarter of groundwater sampling were conducted in June 2014 and were covered under TCRPC Task Order BC2-12; the second quarter of groundwater monitoring was conducted in September 2014. Based on our December 19, 2014 meeting with FDEP, the sampling frequency has been reduced to semi-annual, with the final sampling event proposed for June 2015. As negotiated with FDEP, if groundwater concentrations remain consistent with those from the first two quarterly events, the Department is amenable to ending the groundwater sampling program and allowing conditional closure of the groundwater issues once the remaining soil impacts have been addressed. The portion of the existing sampling budget for the eliminated quarterly sampling event will be utilized to develop alternative groundwater cleanup target levels in support of conditional closure, and attending meetings with FDEP to negotiate final closure of the groundwater issues.

B) Reporting: Groundwater analytical results will be summarized and presented to FDEP for review. As discussed, FDEP has agreed to allow one semi-annual sampling event. Once the year of monitoring is completed and if groundwater concentrations remain consistent with those from the first two quarterly events, the Department is amenable to ending the groundwater sampling program and allowing conditional closure of the groundwater issues once the remaining soil impacts have been addressed. If the final semi-annual sampling results are consistent with the prior quarters, the Department is amenable to issuing a comfort letter noting that they are satisfied with that the groundwater issues will be satisfactorily addressed through the use of institutional controls preventing future use of groundwater at the site. Once final soil removal actions are complete in 2016, a conditional SRCO will be requested and a draft restrictive covenant (DRC) package with institutional controls on groundwater use will be prepared for FDEP review.

SCHEDULE OF COMPENSATION

Task I: 2015 Source Removal Elements

A) Approximately ½ of Remaining Identified Soil Contamination on Parcel #1

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|---|------------|
| Cardno TBE Labor & Expenses (estimated based on 3,216.90 tons @ \$7.05/ton) | \$22,769 |
| Mobilization/Demobilization | \$15,000 |
| Excavation, transportation and disposal (+/-3,216.90 tons @ \$68.50/ton) | \$220,357* |

| | |
|---|------------|
| Confirmatory sampling (estimated 115 samples @ \$210 ea.)..... | \$24,150 |
| Backfill and compaction for 2015 area (+/-3,216.90 cy @ \$10.20/cy) | \$32,812** |
| Backfill and compaction for remainder of 2014 area (+/-6,000 cy @ \$10.20/cy) | \$61,200** |
| Concrete/Debris Excavation (+/-800 cy @ \$15/cy) | \$12,000 |
| Concrete/Debris Disposal (+/-800 cy @ \$15/cy)..... | \$12,000 |
| Geotechnical Compaction Testing and Oversight (10 days @ \$1,200/day) | \$12,000 |
| Excavation and Handling of Clean Overburden (+/-1,000 cy @ \$25/cy) | \$25,000 |
| Sampling of Clean On-site Overburden – 2 samples @1/500 cy stockpile @ \$210 ea.) | \$420 |
| Erosion Control – (Installation of 1,250 feet of silt fence @ \$1.50/ft) | \$1,875 |
| Permits..... | \$150 |
| Task IA Subtotal..... | \$439,644 |

B) Reporting and Project Management

| | |
|---|-----------|
| Cardno TBE Labor & Expenses | \$20,300 |
| Task IA and IB Estimated Subtotal: | \$459,944 |
| Contingency 12.5% (Calculated to included \$400,000 RLF Portion)..... | \$107,493 |
| Estimated Task I Subtotal..... | \$567,437 |

Task II: Groundwater Assessment and Natural Attenuation Monitoring

- A) Semi-Annual Groundwater Sampling June 2015
- B) Groundwater Data Summary Report, development of Alternative GCTLs (as needed) and preparation of DRC package (upon completion of final soil removal actions)\$50,000

Estimated FPRA 2015 Project Subtotal (Not including 400,000 from RLF proposal) \$617,437

ESTIMATED 2015 GRAND TOTAL (Including \$400,000 RLF Funded Portion).....\$1,017,437

Notes: *Cost estimate assumes all remaining PCBs on-site are Non-TSCA. If levels greater than 50 mg/kg are encountered in confirmatory samples, additional fees will apply.

**Clean fill to be provided by City of Ft. Pierce from stockpiled fill material at the public works facility. Assumes City personnel and equipment will load clean fill into trucks returning from the landfill in 2015/2016.

PROPOSED PROJECT SCHEDULE

Cardno conducted a stakeholder meeting in December 2014 to coordinate ISR activities and importation of backfill from the off-site staging area. As previously discussed, a meeting was also held with FDEP on December 19, 2014, in which the 2014 removal action and proposed path forward for the remaining activities in 2015 and 2016 were discussed and agreed to with the Department. It is our

understanding that formal notice to proceed will occur sometime after the FPRA board meeting on January 20, 2015. Within one to two weeks of formal notice to proceed, Cardno will mobilize to the site to implement source removal activities. A tentative project schedule is further outlined below and will be adjusted based on notice-to-proceed (NTP):

- Notice to Proceed – January 31, 2015
- Mobilization and Source Removal Activities – February – May 2015
- Monitor Well Sampling and Reporting – June/July 2015
- Preparation and Submittal of Interim Source Removal Report – July 2015
- FDEP Approval of ISR Report – August /September 2015
- VCTC Preparation – September/October 2015

Cardno project fees and expenses will be billed on a lump sum basis. Excavation, transportation and disposal costs will be invoiced based on actual volume/tonnage of material disposed of at the landfill or imported to the project site. Work performed for this project will be in compliance with the current Agreement for Consulting Services contract with the FPRA.

After review of the scope of services, please call me or Greg Schultz at 727.531.3505, if you have any questions.

Sincerely,

Approved by:



Rick Hagberg, PG
Director
For Cardno
Email: Richard.Hagberg@Cardno.com

Signature: _____
Title: _____
Date: _____