



January 17, 2014 (Revised February 14, 2014)

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RE: Proposal for Continued Interim Source Removal Activities for 2014
Parcel #1 – PCB and Petroleum Impacted Areas
Former H.D. King Site, Ft. Pierce

Dear Mr. Mimms:

Cardno TBE is pleased to submit this revised technical and cost proposal for conducting Continued Interim Source Removal (ISR) activities on Parcel #1 of the former HD King Power Plant site on behalf of the Ft. Pierce Redevelopment Agency (FPRA). The initial proposal, submitted on December 19, 2013, covered a scope designed to complete soil source removal activities and implement groundwater monitoring in calendar year 2014. Based on subsequent input from the City, the scope of work was split into calendar year 2014 and 2015 activities. This change was primarily due to the desire to maximize Voluntary Cleanup Tax Credits (VCTCs) available for eligible site restoration expenses. A revised proposal was submitted on January 17, 2014 to complete roughly half of the remaining soil removal work in 2014. A separate cost estimate was also prepared on January 17, 2014 for the work to be completed in early 2015.

Based on discussions with the City, the January 17, 2014 proposal for the 2014 work included costs to import all fill during 2014 required to complete the project; the fill for the 2015 portion of the excavation work was to be stockpiled in the retention pond area until needed. It is our understanding that the City now intends to stage the fill off site at the public works facility where it is being generated. This proposal revision is being submitted to remove the additional costs related to importing the fill required for 2015 during the ISR activities in 2014. In addition, the costs associated with re-handling the stockpiled fill material during 2015 have been removed from the 2015 cost estimate.

BACKGROUND

Cardno TBE prepared a Preliminary Engineering/Remedial Cost Estimate for the Former HD King Site contained in a Memo dated October 12, 2012 addressed to the FPRA, TCRPC and the Ft. Pierce Utility Authority. Those preliminary costs were based on best available data obtained during supplemental/confirmatory sampling

activities conducted to further delineate previously identified soil impacts consisting of primarily polychlorinated biphenyls (PCBs) and petroleum related contaminants.

The previously provided preliminary remedial cost estimate was based on the following:

- The anticipated end-use of the site.
- The previously detected PCBs exceeding Toxic Substance Control Act (TSCA) regulated concentrations could be removed under TSCA's "Self Implementing Process".
- The remaining PCB impacted soil containing less than 50 mg/kg PCBs could be disposed of locally in Florida.
- The FPRA did not want any encumbrances or deed restrictions placed on the property that may hinder redevelopment potential in the future.

Based on the anticipated remedial costs presented in the above referenced memo, FPRA requested and received additional funding from the TCRPC using their EPA BF Revolving Loan Fund (RLF) grant to conduct limited source removal activities consisting of supplemental infill sampling and subsequent soil removal in the previously identified TSCA PCB's areas and petroleum impacted area along the northern portion of the site adjacent to Moore's Creek.

Recent interim source removal activities were initiated using the RLF funding in early November 2013 and were completed by mid-December 2013. Reporting and FDEP Voluntary Cleanup Tax Credit (VCTC) applications for the assessment and remedial expenditures for 2013 were completed and submitted to the FDEP prior to the January 31, 2014 deadline.

To address the remainder of the soil and groundwater contamination identified on site, supplemental soil removal activities will be required followed by groundwater testing and monitoring. Several remedial strategies have been previously discussed with the most significant issue being the timing (potential phasing) of the future remedial activities in an effort to maximize the potential recovery of the available FDEP Brownfields cleanup tax credits. Under the Florida Brownfields Program tax credits associated with eligible site rehabilitation/cleanup activities are available up to 50% of eligible costs, not to exceed \$500,000 per annum.

Current remedial costs estimates indicate cleanup costs will exceed 2 million dollars (including a 20% contingency and groundwater monitoring). The FPRA and the FPUA have both expressed an interest in cleaning up the site in the most cost effective yet expeditious manner with soil removal activities to be completed during 2014, followed by groundwater testing and monitoring. A proposal outlining this approach was submitted to the FPRA on December 19, 2013. This scenario would fast-track the project and provides a shorter time to reach full closure of environmental issues and ultimately obtain a Site Rehabilitation Competition Order (SRCO). Once the SRCO has been obtained, a 25% VCTC "kicker" on the total cleanup cost (max allowable \$500,000) will be available to the FPRA/FPUA. Timeframes to reach site closure under this scenario is likely 18-24 months from initiation of remediation activities, assuming existing groundwater impacts do not require active remediation and groundwater closure can be obtained using risk-based closure criteria.

Based upon recent discussions with FPRA/FPUA staff, Cardno was requested to divide the source removal activities into two (2) separate proposals (2014 and 2015) to maximize the potential recovery of FDEP VCTC dollars. If the source removal activities were to be phased over a two-year period, the FPRA/FPUA would realize additional VCTC dollars over the previous scenario outlined in the December 19, 2013 proposal; however, by dividing the source removal into separate events the total projects costs were anticipated to be higher for the second year (2015) due to additional mobilizations, increases in transportation and disposal costs.

City engineering staff recently confirmed that the City project generating the fill material would be completed by the end of 2014 and that the fill material required for 2015 would need to be stockpiled pending its use at the HD King site. With the second phase of source removal activities anticipated being conducted in January through April 2015, the additional fill material required to support source removal activities in 2015 was to be imported and stockpiled on previously remediated portions of the HD King site during the 2014 activities. However, due to concerns over potential wind-blow soil adversely impacting nearby residents, the City has since determined that the most suitable location to stockpile the 2015 fill material is at their public works site where the material is to be excavated.

As the City has significantly more fill to dispose of than needed to backfill the ISR areas, it is proposed that the retention area on the southern side of the site be filled and compacted while the fill material is available; additional costs for transport of the additional fill, backfilling and compaction have been included in this proposal.

The December 19, 2013 proposal assumed that monitor well installation would not proceed until after the final backfill and compaction in 2015. It has since been confirmed that monitor well installation must be completed before the funding from the TCRPC assessment grant (under which the monitor well installation is funded) expires on June 30, 2014. If all monitor wells required by FDEP can be installed in June 2014 and quarterly sampling conducted through mid-2015, no significant increase in site closure schedule is anticipated due to the groundwater sampling. It is recommended that a meeting be scheduled with FDEP to obtain concurrence on the number and placement of the wells and the planned sample parameters. If monitor wells are required in areas proposed for excavation in 2015, then either the wells can be installed and sampled in 2014 to establish groundwater quality and then destroyed during the final excavation phase or the wells can be installed in those areas after final backfilling; resulting in a possible 12-18 month delay in site closure.

The following scope of services details proposed interim source removal activities for the remainder of 2014 on Parcel #1, assuming that approximately half of the remaining source removal activities for the entire site will be conducted in 2014 along with initial monitor well installation and sampling/monitoring. A separate cost estimate/proposal for completion of the remaining 2015 source removal activities is presented under a separate cover.

The costs presented below assume that the City will provide the necessary "clean fill" as discussed in our previous meeting on December 5, 2013. Furthermore, this proposal assumes that the FPRA will obtain supplemental TCRPC BF Revolving Loan Fund monies in the amount of \$300,000. A separate proposal was submitted on December 19, 2013 (revised February 13, 2014) to cover a portion of the source removal costs with the supplemental RLF funds (less programmatic expenses). If the TCRPC

RLF funding is not secured in 2014, either the scope of services could be reduced by that same amount; or additional funding would be needed to complete the attached scope in full.

PROPOSED SCOPE OF WORK

This Proposal/Scope of Work is broken down into three sections: source removal activities, reporting and groundwater sampling and monitoring.

Task I 2014 Source Removal Elements

A) Source Removal: Cardno TBE will provide environmental project oversight and post-excavation confirmatory soil sampling to confirm the removal of PCB/hydrocarbon contaminated soil as part of the interim 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 2014 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 TBE 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 (4) to five (5) ft below land surface across much of the site and excavation activities are not planned to proceed below the water table. Excavation work will proceed in an incremental manner across the site in approximately 100 ft grids to maintain accessibility during backfilling.

ISR work conducted in November and December 2013 identified a large number of rusted pipes near the western end of the excavation along Moore's Creek, some with obvious holes and some containing petroleum products (bunker C fuel and possibly fuel oil #5). Due to the presence of darkly stained soil with a strong petroleum odor in this area, the excavation proceeded deeper than designed in order to remove as much gross contamination as possible. While the pipes were removed from the excavated area, pipes were plugged along the southern sidewall of the excavation where they appear to run southward beneath the footprint of the former plant structure (apparently toward the former pump house and bulk storage tanks). A 20% contingency has been included in the event that additional deeper contamination is encountered in relation to these pipes or other unforeseen impacts.

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 TBE 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/metals (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.

Clean backfill will be provided by the City and this proposal assumes that the City will load all fill trucks at their borrow facility and that delays in loading leading to potential demurrage charges from the trucking company will not occur. Prior to acceptance of the fill for use on the HD King site, soil samples will be collected from the material and analyzed per FDEP Guidance for Sampling of Backfill for Sites Undergoing Excavation. Samples will be collected at a rate of one sample per 1,000 cubic yards of material imported. To ensure that the quality of the fill material is confirmed prior to the start of ISR activities and to prevent potential delays caused by laboratory analysis times, it is proposed that fifteen (15) fill samples (based on 9,000 cubic yards for 2014 ISR areas and 5,500 cubic yards for the retention pond area) be collected from in-place soil at the public works facility (i.e. prior to it being excavated).

The clean fill 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. It is anticipated that the "clean fill" will be picked up as a back-haul from the landfill run to minimize dead-head costs (i.e. driving empty trucks) back from the landfill (for the initial +/-9,000 tons). While more than enough fill dirt will be available during 2014, recent conversations with the City have indicated that the construction activities generating the fill material will be completed before the end of 2014. Therefore, the City has determined that it is preferable to stockpile the fill material needed for 2015 at their public works facility until needed at the HD King site.

Since excess fill material is available at the City public works project site, it is recommended that an additional 5,500 cubic yards of fill material be imported during the first phase of the 2014 ISR work to fill in the retention area. Additional costs for the transport, handling and compaction of that fill have been added to the proposal. The additional trucking costs will be incurred because the trucks will not have contaminated material to transport to the landfill once the initial 9,000 tons of contaminated material is removed, and will in effect be dedicated fill trucks. These costs and the costs of handling and compaction of the additional material were not anticipated at the time the December 19, 2013 proposal was prepared. The 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.

- B) Reporting:** An ISR 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. Supplemental removal activities will be conducted as funding is available and will be conducted in accordance with the aforementioned approved plans.

Task II Groundwater Assessment and Natural Attenuation Monitoring

- A) Well Installation and Sampling:** It is anticipated that the source removal activities will be completed on one-half of the remaining contaminated area by mid-2014 or as directed by FDEP, concluding prior to the anticipated rainy-season. As noted, previous work orders have authorized funds to conduct the initial installation and sampling of select groundwater monitoring wells to be installed in previously excavated areas or where previous groundwater impacts were identified in the 2009 Site Assessment Report (SAR). Wells will be sampled for the parameters identified in TCRPC Task Order BC2-12.
- B) Reporting:** Groundwater analytical results will be summarized and presented to FDEP for review. If groundwater sampling results indicate that groundwater contaminants, if present, are below Chapter 62-777, FAC Groundwater Cleanup Criteria, Cardno TBE will request a No Further Action determination from the FDEP concerning groundwater quality on Parcel #1. If groundwater impacts persist above groundwater cleanup target levels (GCTLs), additional assessment and/or long term monitoring may be required. Fees for the initial groundwater reporting are also covered by the previously reference Task Order. Supplemental groundwater assessment/well installations are considered outside the scope of the previously approved Task Order BC2-12.
- C) Natural Attenuation Monitoring:** If groundwater impacts are determined to be present onsite at concentrations exceeding GCTLs; supplemental assessment and/or Natural Attenuation Monitoring may be necessary to address groundwater concerns to FDEP's satisfaction. A specific Scope and Fee cannot be provided for these services at this time since the extent and magnitude of any impacts is currently unknown. However; as previously discussed, a preliminary budget of \$200,000 was presented to address groundwater impacts, excluding active

remediation. Proposed quarterly sampling for the 2nd through 4th quarter sampling event would be covered under this task. For purposes of the proposal, the budgetary number has been split equally into \$100,000 per year for 2014 and 2015.

SCHEDULE OF COMPENSATION

Task I: 2014 Source Removal Elements

A) Approximately 1/2 of Remaining Identified Soil Contamination on Parcel #1

ISR Plan	\$7,400
Cardno TBE Labor & Expenses (estimated based on 9,000 tons @ \$7.05/ton).....	\$63,450
Mobilization/Demobilization	\$15,000
Excavation, transportation and disposal (+/-4,712.07 tons @ \$68.50/ton [9,000 tons - 4,287.93 tons from the RLF Proposal]) ..	\$322,777*
Confirmatory sampling (estimated 225 samples @ \$210 ea.).....	\$47,250
Backfill and compaction (+/-9,000 cy @ \$10.20/cy).....	\$91,800**
Transport, backfill and compaction of retention pond area (+/-5,500 cy@ \$14.20)	\$78,100
Geotechnical Compaction Testing and Oversight (45 days @ \$1,200/day)	\$54,000
Excavation and Handling of Clean Overburden (+/-1,025 cy @ \$25/cy)	\$25,625
Sampling of Clean Overburden – 1 sample/500 cy stockpile @ \$210 ea.).....	\$420
Erosion Control – (Installation of 1,250 feet of silt fence @ \$1.50/ft)	\$1,875
Permits.....	<u>\$150</u>
Task IA Subtotal.....	\$707,847

B) Reporting and Project Management

Cardno TBE Labor & Expenses	\$21,750
Task IA and IB Estimated Subtotal:	\$729,597
Contingency 20% (includes tonnage removed under RLF funding)	\$204,664
Estimated Task I Subtotal.....	\$934,261

Task II: Groundwater Assessment and Natural Attenuation Monitoring

- A) Monitor Well Installation and 1st Quarter Sampling Covered by TCRPC Task Order BC2-12
- B) Groundwater Data Summary Report Covered by TCRPC Task Order BC2-12
- C) Natural Attenuation Monitoring (1/2 previously provided budgetary number)..... \$100,000

ESTIMATED 2014 PROJECT SUBTOTAL (Not Including RLF Loan Funds) \$1,034,261

Estimated RLF Amount (See separate 12/19/13 proposal – revised 2/13/14)300,000***

ESTIMATED 2014 PROJECT TOTAL (Including RLF Loan per 12/19/13 proposal)\$1,334,261

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. Assumes the fill material will be sampled and results suitable for placement on-site. Assumes trucking of 9,000 cy backfill will be on return trips from disposal of contaminated soil at landfill. City will load clean fill from their borrow area into trucks for transportation to the HD King site.

***Supplemental RLF funding covered under separate proposal submitted on 12/18/13 (revised 2/13/14)

PROPOSED PROJECT SCHEDULE

Within 30 days following receipt of written approval of the NTP, Cardno TBE will prepare and submit the ISR Plan to FDEP for approval. Concurrently, Cardno TBE will conduct stakeholder meetings and begin site preparations/mobilization. Upon approval of the ISR Plan, Cardno will mobilize to the site 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 – March 2014
- Preparation of ISRP – March 2014
- Mobilization and Source Removal Activities –March – August 2014
- Monitor Well Installation, Sampling and Reporting – June – September 2014
- Preparation and Submittal of Interim Source Removal Report - September – October 2014
- FDEP Approval of ISR Report – December 2014
- VCTC Preparation – October 2014
- Post Active Remedial Groundwater Monitoring – September 2014 – May 2015

Cardno TBE project fees and expenses will be billed on a lump sum basis, except for the geotechnical oversight services which will be billed on a time and materials or unit rate 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. If this proposal meets with your approval, your signature below will authorize Cardno TBE to begin scheduling of field activities and subcontracted services. 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,



Rick Hagberg, PG
Director
For Cardno TBE

Approved by:

Signed by: _____
Title: _____
Date: _____