**SUMMARY OF ACTIVITIES FOR TASK ORDER 3012**
**TOWER STANDARD SITE, LAC DU FLAMBEAU INDIAN RESERVATION,**
**LAC DU FLAMBEAU, WISCONSIN**
**PERIOD OF CONTRACTING OFFICER'S APPROVAL THROUGH APRIL 18, 2017**

Revision 1
July 12, 2016

## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) retained Bristol Environmental Remediation Services, LLC (BERS) to assist Region 5 to conduct Site Investigation/Characterization and Remediation at the Tower Standard LUST site on the Lac du Flambeau (LDF) Indian Reservation, Lac du Flambeau, Wisconsin. The EPA assigned this project to BERS as Task Order (TO) No. 3012 under Contract No. EP-W-12-009.

The Site is located on fee land within the Lac du Flambeau Indian Reservation at the intersection of State Highway 70 and County Road D near Lac du Flambeau, Wisconsin. The Site is bordered on the north by State Highway 70, to the south by Haskell Lake, and to the southwest by the Haskell Lake Lodge motel. A construction office is located to the northwest of the intersection. A bait shop is now located on the property.

The Tower Standard gas station was built in the early 1940's and operated until 1997. Six underground storage tanks were located on the property, five of which contained leaded or unleaded gasoline. One tank contained waste oil. All tanks were removed in 1997. Following the closure of the gas station, the owner opened a bait and tackle shop called Bill and Linda's Lively Bait and Tackle on the site. This shop operates during the summer months.

Investigations at the Site began with a preliminary site assessment in 1997. Stained soils and odors were noted and contamination was confirmed by soil sampling. A sample collected from a private well at the Site in 1998 contained benzene. The Wisconsin LUST program paid to replace the well. Afterward, monitoring wells were installed at the Site and samples drawn from the wells showed petroleum compounds in the groundwater. Contamination was found to be moving downward in the aquifer, affected by the pumping of nearby drinking water wells. Subsequently, a groundwater pump and treat system was installed at the Site to remove petroleum contamination and prevent off-site migration. The Wisconsin LUST program determined that the site met conditions for closure in 2006, although soil and groundwater contamination was still present.

An unrelated investigation performed under the Targeted Brownfields Assessment (TBA) program was begun in 2011 in response to a request from the Tribe. A fireworks stand directly across Highway 70 from the Tower Standard Site burned down and the Tribe was concerned about perchlorate contamination leaching to groundwater and surface water. The purpose of the investigation was to identify the horizontal and vertical extent of perchlorate contamination in groundwater and assess potential routes of exposure to local residents or ecological receptors.



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Much of the work occurred on the south side of Highway 70, near the Tower Standard Site location because groundwater movement in this area is in part toward Haskell Lake.

While performing vertical aquifer sampling for perchlorates during the TBA investigation, strong petroleum odors were noted by the field geologist at 30 feet in one boring and at 40 to 50 feet in another boring. Samples were not analyzed for petroleum compounds at this time due to the nature of the TBA investigation.

The Tribe obtained a contractor to investigate the suspected petroleum contamination. Drilling in the same locations used during the TBA investigation, the contractor discovered a total volatile organic compounds (VOCs) concentration of over 47,000 parts per billion (ppb) at 25 feet in one groundwater sample taken near the Site. A sample collected immediately adjacent to Haskell Lake found total VOCs of over 2,500 ppb at 40 feet in the groundwater.

The Tribe expressed concern to EPA Region 5 about the persistence of petroleum-related contamination at the Site. Wisconsin reopened the Tower Standard LUST site to access State LUST funding and started the process of procuring additional field work activities to define the current status of contamination at and near the site.

BERS' subcontractor REI conducted private well sampling in 2014, and BERS developed a report on the findings under this contract, Task Order 1019.

BERS performed additional site activities under Task Order 2012, including another round of private well sampling in October 2015 and site investigation activities in March 2016. March 2016 activities included advancement of six soil borings, collection of subsurface soil samples, collection of groundwater samples from four existing monitoring wells, and collection of ambient air and sub-slab soil gas vapor samples.

## 2.0 PROJECT TASKS

Tasks include preparing the Administrative Work Plan and cost estimate, preparing monthly progress/site-specific financial reports; updating the existing Quality Assurance Project Plan (QAPP) and Site Safety and Health Plan (SSHP); uploading membrane interface probe-hydraulic profiling tool (MiHPT) data generated by the State of Wisconsin Petroleum Environmental Cleanup Fund Award (PECFA) contractor to a database maintained by the EPA Environmental Response Team (ERT) laboratory; participating in conference calls with the EPA and the LDF tribe; preparation of a Technical Work Plan; installing and developing two monitoring wells; collecting groundwater samples from six monitoring wells for analysis; overseeing field activities of the PECFA contractor; preparing a technical memorandum (tech memo) that summarizes site activities and provides recommendations for source area treatment.

The tasks presented here were derived from the EPA performance work statement received by BERS on June 27, 2016. A conference call with the EPA Subject Matter Expert (SME) occurred on June 30, 2016. This narrative includes the decisions made and guidance received during the conference call, as well as subsequent emails from the SME.

### Task 1: Statement of Work/Performance Work Statement/Specifications (Budget)



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The Performance Work Statement/Specifications (Administrative Work Plan) includes a description of the technical approach, resources, due dates for deliverables, detailed cost estimate by task, and a list of staff and estimated hours.

Monthly Progress/Financial Reports (Administrative)

BERS will submit monthly progress reports to the EPA and will maintain routine communication with the Subject Matter Expert (SME).

The Monthly Progress Reports are due to the Project Officer and to the Contracting Officer each month. The reports will document the work performed, deliverables submitted, difficulties encountered, actions taken, and budget status of the project.

Quality Assurance Project Plan (QAPP)

BERS will update the existing Region 5 QAPP that was approved by the EPA in July 2015 for TO 2012. The content will be updated as necessary and signatures will be needed on the QAPP approvals page. The existing QAPP is general in nature and it is assumed that minimal effort will be required to update the document.

The draft QAPP will be submitted to the EPA SME as a pdf via email within 15 days of receipt of the approved TO for the site. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the QAPP. The revised QAPP will be provided to the EPA for approval within 7 days of BERS' receipt of the SME's comments. Field work will not be conducted prior to receiving EPA approval on the final QAPP. One copy of the final QAPP will be provided to the EPA SME in both hard copy and PDF format on CD and one copy of the QAPP will be provided to the EPA Project Officer (on CD). BERS will also submit one copy of the final QAPP to the EPA SME in PDF format via email.

Site-Specific Safety and Health Plan (SSHP)

BERS will revise the site-specific SSHP generated for TO 2012 as necessary to incorporate TO 3012 activities. As field activities for TO 2012 were similar to those for TO 3012, it is assumed that minimal effort will be required to update the document.

The draft SSHP will be submitted to the EPA SME as a pdf via email within 15 days of receipt of the approved TO for the site. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the SSHP. The revised SSHP will be provided to the EPA for approval within 7 days of BERS' receipt of the SME's comments. BERS will provide one copy of the SSHP to the EPA SME in both hardcopy and PDF format on CD. BERS will also submit one copy of the final SSHP to the EPA SME in PDF format via email.

**Task 2 Site Investigation/Characterization**

The SME will acquire access to private properties with the assistance of the tribe prior to field work initiation. During site activities, a tribal representative will accompany the sampling team to assist with access and answer residents' questions. All access issues will be referred to the EPA Region 5 SME for resolution.



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Under TO 1019, BERS discovered that the site is not located on tribal property and so Tribal Employment Rights Ordinance (TERO) requirements would not apply; additionally, the SME contacted the Tribe and was told that there would be no TERO fee. BERS contacted the Tribe to determine if a business license was needed. Per the manager of the Lands Department, no license is needed and BERS has permission to conduct work but the work must be coordinated with the Water and Sewer Department (contact Scott Valure (715-614-6394). BERS assumes the EPA SME will make contact, based on procedures followed during previous TOs.

**Subtask a. Prepare a Work Plan/Conference Calls to Discuss Planning and Progress**

Work Plan

BERS will work with the Region 5 SME to plan and schedule field activities, which will include installation and development of two groundwater monitoring wells and sampling of six (two new and four existing) groundwater monitoring wells. One of the new monitoring wells will be installed in the vicinity of existing MW-16 well pair, and will be screened directly above the bedrock interface (estimated to be approximately 60 feet below the ground surface [bgs]). The second monitoring well will be installed in the vicinity of the existing MW-21 well pair, and will be screened at approximately 25 feet bgs. Both new wells will be developed following installation. The groundwater sampling effort will include all three wells in the MW-16 well nest and all three wells in the MW-21 well nest (including the two new wells).

Field activities will also include a separate mobilization to provide field oversight of PECFA contractor activities. One experienced BERS environmental scientist will oversee the PECFA contractor's monitoring well installation and development effort. The BERS environmental scientist will take notes and complete field forms during the field activities, to the level that would be required if BERS itself was performing the well installation and development. This field effort is assumed to last 14 work days. BERS also assumes that the PECFA contractor will be working five day weeks and taking weekends off, resulting in downtime for the BERS scientist.

The Work Plan will be submitted to the EPA SME as a pdf via email within 15 days of approval of the updated QAPP and HASP. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the Plan. The revised Plan will be provided to the EPA for approval within 7 days of BERS' receipt of the SME's comments. BERS will provide one of the final Plan to the EPA SME in both hardcopy format and an electronic copy on CD. BERS will also email a copy of the final Plan to the EPA SME in PDF format via email.

Conference Calls

BERS will participate in conference calls with the EPA SME and an LDF tribal representative prior to each field mobilization and prior to submittal of each draft tech memo. For cost estimating purposes, BERS has assumed that the project manager and primary field person will participate in pre-mobilization conference calls, and the project manager and senior remediation engineer will participate in each pre-submittal conference call. Each pre-mobilization conference call is assumed to take one hour and each pre-submittal conference call is assumed to take two hours.



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**Subtask b. Field Work**

BERS will perform site investigation activities, including installing and developing two groundwater monitoring wells. One monitoring well will be installed near the existing MW-16 well pair, and one will be installed near the existing MW-21 well pair. The well at MW-16 will be screened near the top of bedrock with an anticipated total depth of approximately 60 feet bgs. The well at MW-21 will be installed to a depth of approximately 25 feet bgs. Wells will be constructed of 2-inch schedule 40 polyvinyl chloride casing with 2-foot long 0.010 slot screens and completed with flush mount well guard surface completions.

Drilling will be performed by BERS subcontractor Coleman Engineering Company (CEC) using hollow-stem auger drilling equipment. CEC has experience drilling on this site, including under subcontract to BERS during a previous EPA TO. All drilling will be completed blind (no soil sampling will be performed). All downhole equipment will be decontaminated between borings. It is anticipated that boulders in the subsurface and heaving sands may result in difficult drilling; BERS has assumed that approximately 42.5 feet of borehole (50 percent of the footage required for monitoring well installation) will have to be abandoned and backfilled with grout.

Following well installation and development, BERS will collect groundwater samples from all three of the monitoring wells at each of the two well nests (including the two newly installed monitoring wells). Wells will be sampled using a low-flow groundwater sampling technique and a bladder pump. The bladder pump will be placed in the screened interval of each well during sampling. BERS will collect field measurements, including pH, dissolved oxygen, oxygen reduction potential, conductivity, water levels, and temperature for each well. BERS will also measure water levels in all monitoring wells located at the site (including those not being sampled). The groundwater samples will be analyzed by Pace Analytical, located in Minneapolis, Minnesota. Pace has performed chemical analyses for BERS on a number of projects for Region 5 under the existing contract and for two previous TOs at this site. The groundwater samples will be analyzed at the laboratory for volatile organic compounds (VOCs), ethylene dibromide (EDB), gasoline range organics (GRO), diesel range organics (DRO), sulfate, hydrogen sulfide, nitrate, and metals (arsenic, barium, cadmium, chromium, iron, lead, manganese, selenium, silver, and mercury). Six primary groundwater samples, one duplicate, one MS/MSD pair, one equipment rinsate blank, and one trip blank (for VOCs, EDB, and GRO) are anticipated.

BERS assumes that one BERS environmental scientist will mobilize to the site for site investigation activities. BERS also assumes that all activities will be performed in one mobilization that is estimated to take approximately one week.

All analytical data will be forwarded to the EPA SME upon receipt.

Field work will begin within 30 days after approval of the Work Plan; the targeted start date for the field effort is the first week of August 2016. BERS will coordinate with the SME and LDF Tribe on the schedule.



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**Subtask c. Field Oversight of PECFA Contractor Activities**

BERS will be present during drilling, well installation, and well development activities to be performed by the PECFA contractor. BERS will complete field notes and field forms (such as soil boring logs, monitoring well construction diagrams, and well development forms). The level of detail required for this effort is to be the equivalent of what BERS would record if BERS was the contractor performing the site investigation activities.

BERS assumes that one BERS environmental scientist will mobilize to the site for oversight activities. BERS assumes that the PECFA contractor's field effort will last for 14 field days. BERS also assumes that the PECFA contractor will be working a minimum of five days per week until the job is complete.

All field notes and field forms will be scanned and emailed in PDF format to the EPA SME within 10 days of completion of PECFA field activities.

The schedule for PECFA contractor activities is unknown at this time.

**Subtask d. MiHPT Data Upload/MiHPT Figure Development/Recommendations Tech Memo/Site Sampling Tech Memo**

MiHPT Data Upload

The PECFA contractor is anticipated to be performing a MiHPT investigation at the site starting on July 11, 2016. This investigation is anticipated to last between 4 and 5 days and to include approximately 25 MiHPT probe locations. Following completion of the MiHPT investigation and upon receipt of the MiHPT field data, BERS will upload the data to the Scribe database maintained by the EPA ERT laboratory. BERS will work with ERT laboratory personnel as necessary to complete this task. BERS assumes that, if necessary, a line of communication will be established with the PECFA contractor's MiHPT subcontractor to answer questions about the format of the MiHPT data.

MiHPT Figure Development

BERS will develop figures, including in plan view and cross sections, from the MiHPT data to allow for visualization of the source area plume and geologic information derived from the HPT data. BERS anticipates subcontracting MiHPT data visualization services to S2C2, Inc. of Raritan, New Jersey.

The MiHPT visualization subcontractor has stated that they will have their final report done within four weeks of receipt of data. BERS will work with the contractor to expedite this submittal schedule in an attempt to provide draft figures to the EPA SME in PDF format via email within 14 days of receipt of MiHPT data. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the figures. The final figures will be provided to the EPA in PDF format via email within 7 days of BERS' receipt of the SME's comments.



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Recommendations Tech Memo

BERS will prepare a tech memo providing recommendations for future data collection and recommendations and cost estimate for source remediation. If the MiHPT data is available in time, the recommendations memo will also summarize the results of the MiHPT study in regards to contaminated groundwater plume geometry.

If the MiHPT figures are available, the contaminated groundwater plume will be depicted in two-dimensional and three-dimensional figures, allowing for an estimation of the area and volume of contaminated groundwater in the source area and at the down-gradient end of the plume near the shore of Haskell Lake. BERS, along with EPA and the LDF tribe, will use this visual information to select future monitoring well locations for the purposes of monitoring the nature and extent of the plume over time. The tech memo will include recommendations for number and locations of additional monitoring wells, including depicting proposed locations on figures.

BERS will work with EPA and the LDF Tribe to provide recommendations for source control/remediation and cost estimates as appropriate for addressing highly contaminated soil and/or groundwater at the site. Using all data available (including laboratory analytical results received to date and results of the MiHPT study), BERS will propose remedial methods to the LDF tribe for best use of available funding in the timeframe allowed. Multiple remedial alternatives will be presented, including combinations of alternatives, spanning a range of efficacy and cost. Cost estimates for remedial activities discussed will be provided. BERS assumes that the LDF Tribe has approximately $70,000 in available funding for source area removal, but also that this does not represent the cost limit for remedial alternatives to be evaluated. BERS understands that this $70,000 is intended to be spent by the end of September 2016, though if a plan is in place it is possible that an extension could be granted. Recommendations and cost estimates will be included in the tech memo.

The draft recommendations tech memo will be submitted to the EPA SME in PDF format via email within 7 days of approval of final MiHPT figures, or by August 19, 2016, whichever date comes first. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the memo. The revised memo will be provided to the EPA for approval within 7 days of BERS' receipt of the SME's comments. BERS will provide one copy of the final memo to the EPA SME in both hardcopy format and in PDF format on CD. BERS will also submit one copy of the final memo to the EPA SME in PDF format via email.

Site Sampling Tech Memo

BERS will prepare a brief site sampling tech memo describing monitoring well installation and groundwater sampling activities, deviations from the Work Plan (if applicable), and presenting analytical results. Based on timing restrictions, BERS assumes that this will be a separate tech memo from the recommendations tech memo described above (which includes discussion of the MiHPT results and recommendations for future data collection and remedial activities); however it is also possible that the two memos will be combined. For the site sampling tech memo, sample locations will be displayed on an aerial photo site map. Analytical results will be displayed on figures, along with analytical results from TO 2012 site investigation activities.



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The draft site sampling tech memo will be submitted to the EPA SME in PDF format via email within 30 days of receipt of analytical data. Comments from the EPA will be addressed by BERS and accepted by the EPA prior to finalizing the memo. The revised memo will be provided to the EPA for approval within 7 days of BERS' receipt of the SME's comments. BERS will provide one copy of the final memo to the EPA SME in both hardcopy format and in PDF format on CD. BERS will also submit one copy of the final memo to the EPA SME in PDF format via email.



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