

TECHNICAL CONSULTANT SUPPORT TO SPOKANE RIVER REGIONAL TOXICS TASK FORCE

SCOPE OF WORK

February 1, 2013-- DRAFT

This document describes the Phase 1 activities to be conducted by LimnoTech in support of the Spokane River Regional Toxics Task Force (SRRTTF). Phase 1 tasks will be broken down into Phase 1a and Phase 1b, and work on Phase 1b will not be commenced without written notice from the CLIENT. The Scope of Work is divided into sections corresponding to: 1) Technical Scope and Deliverables, 2) Budget, and 3) Schedule.

TECHNICAL SCOPE AND DELIVERABLES

Work will be conducted through a series of ten tasks:

PHASE 1a

1. Technical Consultant Work Plan
2. Data Request Memo
3. Standard Operating Procedures
4. Collection of Existing Data
5. Data Review and Evaluation
6. Data Gap Identification

PHASE 1B

7. Review of Modeling Tools
8. Data Collection Strategy
9. Quality Assurance Project Plan/Sampling and Analysis Plan
10. Scoping for Future Phases
11. Meetings and Coordination (Task 11 is split between Phase 1a and Phase 1b)

PHASE 1a

Task 1: Technical Consultant Work Plan

LimnoTech will update and revise the existing SRRTTF First Draft Work Plan adopted 10-24-2012 to make it a formal Technical Consultant Work Plan. The Technical Consultant Work Plan will include a detailed scope of work, budget, and schedule for Phase 1 work (consistent with the finalized version of the Scope of Work contained here). The Work Plan for Phases 2 through 4 will contain a more general description of tasks (data collection, analysis of data for characterization and quantification, assessment of BMPs, and development of a BMP plan) and sub-tasks for each phase, planning-level budgets estimates for each phase, and an estimated schedule corresponding to completion of all work by the end of 2016.

Deliverables:

- Draft Technical Consultant Work Plan
- Final Technical Consultant Work Plan, incorporating SRRTTF and Ecology comments on draft plan

Task 2: Data Request Memo

LimnoTech will prepare a technical memorandum listing all of the information required to define existing PCB and dioxin sources, loads and sinks. The memorandum will divide data needs into broad categories (e.g. point source loading, non-point source loading, environmental fate processes) and sub-categories (e.g. nonpoint source loads from industrial facilities, nonpoint source loads from railways, nonpoint source loads from residential areas). The memorandum will list the information needs required to define the magnitude of each category and sub-category. As appropriate, the memorandum will describe alternate means by which each data need can be satisfied (e.g. direct measurement, combination of indirect measurements and simple models, literature values). The memorandum will identify all data that has already been obtained, as well as other known and potential sources for satisfying each data need.

Deliverables:

- Draft Data Request Memo
- Final Data Request Memo, incorporating SRRTTF and Ecology comments on draft memo

Task 3: Standard Operating Procedures

LimnoTech will review the standard operating procedures for data analysis and collection currently employed by all agencies collecting data that may be used during this project. These procedures will be reviewed in order to ensure comparability of analytical data.

Deliverables:

- Memo summarizing standard operating procedures, and identifying any procedures that will not produce suitable data quality.

Task 4: Collection of Existing Data

LimnoTech will contact all data sources identified in the final Data Request memorandum. Initial contact will be made by telephone, with follow-up by emails as necessary. These calls will request existing information, as well as identify other sources of information or other relevant contacts. Any additional information sources identified during these calls will also be contacted. One visit to Spokane is planned to collect data that is best retrieved in person (e.g. historical land use documents). A log will be maintained documenting all calls/e-mails/visits and the information obtained from each source contacted.

Deliverables:

- Contact log documenting all calls/e-mails/visits and the information obtained.

Task 5: Data Review and Evaluation

LimnoTech will review all data collected in Task 3 and evaluate the quality and credibility of the data relative to satisfying the data needs identified in Task 1. This task will begin by defining the process to be used for determining data acceptability. The data will be reviewed for abnormalities, inconsistencies, or unusual results. If any of these occur, the data will be traced back to look for possible causes of the error. In the event that no error is found, the data will be assumed to be normal and appropriate for use in project reports and in decision-making. If an error is found and no resolution can be arrived at

concerning its source or cause, the data will be discarded. The results of the data review will be summarized in a technical memorandum. All relevant collected data will be placed in a database in a format suitable to SRRTTF and Ecology.

Deliverables:

- Technical memorandum summarizing data review
- Database containing all data in a format suitable to SRRTTF and Ecology.

Task 6: Data Gap Identification

LimnoTech will review the available data and determine where key information gaps exist in terms of assessing all relevant PCB and dioxin sources and sinks. This work will be conducted via two sub-tasks: 1) Development of an Initial Conceptual Model, and 2) Identification of Data Gaps and Refinement of Conceptual Model.

Subtask 6-1: Development of an Initial Conceptual Model

Based on both local and national knowledge of PCB and dioxin sources and sinks, LimnoTech will develop conceptual models identifying:

- Pollutant sources: This will focus on “true” sources, i.e. the ultimate origin of the pollutant in the watershed
- Delivery: The mechanisms by which each of the sources gets transported to the Spokane River or Lake Spokane
- Surface water processes: Fate processes occurring the Spokane River and Lake Spokane that may attenuate pollutant concentrations (e.g. volatilization)
- Sediment processes: Fate processes occurring the sediments beneath the Spokane River and Lake Spokane that may affect pollutant concentrations (e.g. resuspension, deep burial)

The intent of the initial conceptual model will be to include all mechanisms that could feasibly be important. Separate conceptual models will be developed for PCBs and dioxin.

Subtask 6-2: Identification of Data Gaps and Refinement of Conceptual Model

The information collected in Tasks 1 through 4 will be analyzed to estimate the magnitude of each component in the initial conceptual model. Best estimates, including uncertainty bounds, will be generated for each component of the conceptual model based on available data and/or scientific literature. This assessment will be used to divide all components of the conceptual model into three categories:

- Known to be insignificant: Not contributing to impairment, even at high end of the uncertainty range
- Known to be significant: Contributing to impairment, even at low end of the uncertainty range
- Significance uncertain: Uncertainty range too large to determine significance

Components identified as “Known to be insignificant” will be dropped from the final conceptual model. LimnoTech will then evaluate the uncertainty bounds for the remaining components and identify data

gaps that must be filled to accurately quantify pollutant sources and sinks. This analysis will be conducted separately for dioxins and PCBs.

Deliverables:

- Initial conceptual model
- Refined conceptual model, with “insignificant” components eliminated
- Technical memorandum describing data gaps

PHASE 1B

Task 7: Review of Modeling Tools

LimnoTech will review all available modeling tools that could be used for identification and quantification of PCBs and dioxins in subsequent phases of work. This review will be documented in a technical memorandum describing each model’s capabilities, data needs, advantages, and disadvantages. Recommendations will be provided regarding which models are most suitable for use in future phases.

Deliverables:

- Draft technical memorandum summarizing modeling tools
- Final technical memorandum summarizing modeling tools, incorporating SRRTTF and Ecology comments on draft memorandum

Task 8: Data Collection Strategy

This task is intended to develop a recommended strategy for collection of additional data for use in subsequent phases, giving consideration to the modeling tool(s) that are anticipated for use. Work will be conducted through two sub-tasks, corresponding to: 1) Attaining consensus on objectives, and 2) Development of strategy.

Subtask 8-1: Attaining Consensus on Objectives

LimnoTech will initiate this task by preparing a “data collection objectives” memorandum which will document all management-oriented objectives that need to be clarified prior to development of a data collection strategy. These objectives will cover the spectrum from overall project goals (e.g. “What is the magnitude of key sources?”) to technical planning objectives (e.g. “What agencies will be responsible for conducting monitoring?”) This memorandum will be provided to SRRTTF and Ecology in advance of a monitoring objectives meeting (Sub-task 10-2) designed to obtain consensus on these objectives.

Subtask 8-2: Development of Strategy

LimnoTech will prepare a draft data collection strategy, based on the consensus objectives defined in sub-task 8-1. The strategy will define sampling parameters, locations, frequency, and parties responsible for collection of the data. A draft strategy will be presented at a meeting with the SRRTTF (Sub-task 10-3) for discussion and comment. Based on feedback obtained at this meeting, LimnoTech will prepare a memorandum describing the data collection strategy.

Deliverables:

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- Draft data collection objectives memorandum
- Data collection objectives memorandum, incorporating feedback from monitoring objectives meeting
- Draft data collection strategy memorandum
- Final data collection strategy memorandum, incorporating SRRTTF and Ecology comments on draft plan

Task 9: Quality Assurance Project Plan/ Sampling and Analysis Plan

LimnoTech will prepare a Quality Assurance Project Plan (QAPP) that describes the quality procedures, criteria and corrective actions associated with the sampling and analysis program. The QAPP will be the basis for ensuring the type and quality of environmental data and information needed for a specific decision and that the quantity and quality objectives of EPA's Quality System (EPA, 2001; Requirements for Quality Assurance Project Plans, EPA QA/R-5) are met. Secondary data to be used in the modeling effort will also be addressed.

The purpose of the QAPP is to assure that:

- Sample collection and field measurements are conducted at planned frequencies and locations using appropriate sampling protocols and equipment;
- Samples are properly handled in the field and delivered to the laboratory, using appropriate sample bottles, labels, and preservatives;
- Sample handling and delivery is conducted using sample tracking systems and chain-of-custody procedures that properly identify samples being collected and ensure the control of those samples from field collection through analysis and data reduction;
- Proper preventive maintenance, equipment calibration, and approved analytical protocols will be implemented so that all field measurements and sampling analytical results will be valid;
- Records are produced and retained to document the quality of samples collected and analyzed, the validity of applied procedures, and the completeness of the investigation in relation to the approved scope of the project;
- Generated data are validated; and
- Calculations, evaluations, and decisions completed or deduced based on the results of the monitoring activities are accurate, appropriate, and consistent with the objectives of the water quality monitoring activities.

LimnoTech will also develop a Sampling and Analysis Plan (SAP) that describes the objectives of the program, sampling locations, criteria for initiating sampling, sampling methods, analytical parameters and protocols, and data management, to ensure that all resulting data is of adequate and consistent quality for use in the subsequent assessment effort. The SAP will be included as an appendix to the QAPP.

Deliverables:

- Draft QAPP/SAPP
- Interim QAPP/SAPP, incorporating feedback from SRRTTF
- Final QAPP/SAPP, incorporating feedback from Ecology

Task 10: Scoping for Future Phases

LimnoTech will prepare a detailed scope, schedule, budget for Phase 2 work, consistent with information contained in the QAPP and SAP. LimnoTech will also provide refined schedules and budgets for Phases 3 and 4, updating the estimates from Task 1 with information gained during the course of the first phase.

Deliverables:

- Draft scope, schedule, and budget
- Final scope, schedule, and budget, incorporating SRRTTF and Ecology comments on draft scope

Task 11: Meetings and Coordination

This task covers all meetings and other project coordination, and is divided into the following subtasks:

- Sub-task 11-1: Kickoff meeting (Phase 1a task)
- Sub-task 11-2: Monitoring objectives meeting (Phase 1a task)
- Sub-task 11-3: Mid-project meeting (Phase 1b)
- Sub-task 11-4: Public meeting (Phase 1b task)
- Sub-task 11-5: Project management and coordination (Split proportionately across Phase 1a and Phase 1b)

Any materials to be presented by LimnoTech at SRRTTF meetings will be provided to the SRRTTF no later than five working days before the meeting, to allow sufficient time for review prior to the meeting.

Sub-task 11-1: Kickoff meeting (Phase 1a)

LimnoTech will participate in a Kick-off Meeting with the SRRTTF and Ecology staff to initiate the project, and to discuss the data request, and identify additional source of information to be contacted.

Sub-task 11-2: Monitoring objectives meeting (Phase 1a)

LimnoTech will meet with the SRRTTF and Ecology staff to discuss the draft data collection objectives memorandum, and attain consensus on all management-oriented objectives related to monitoring.

Sub-task 11-3: Mid-project meeting (Phase 1b)

LimnoTech will meet with the SRRTTF and Ecology staff to discuss: 1) the review of existing data, 2) the identified data gaps, 3) potential modeling tools, and 4) the recommended data collection strategy (including estimated sampling and analysis costs).

Sub-task 11-4: Public meeting (Phase 1b)

LimnoTech will assist the SRRTTF with a public meeting or workshop to communicate the results of the Phase I work. This assistance will include preparation of meeting support materials (i.e. Phase 1 Fact Sheet targeted to the lay public, presentation materials), and presentation of Phase 1 findings at the meeting. LimnoTech will also attend an SRRTTF meeting, if one is held concurrently with the public meeting.

Sub-task 11-5: Project management and coordination (Proportionally split across Phases 1a and 1b)

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This task consists of project management activities, including preparation of monthly project status reports and phone participation in up to eight SRRTTF meetings.

Budget

The total cost for Phase 1a is \$71,377. The total cost for Phase 1b is \$72,998. An itemized breakdown of costs by task and sub-task are provided in the attached spreadsheet.

Schedule

The period of performance of this scope of work is expected to be March 2013 through March 2014. The completions dates associated with each task and deliverable are tabulated below.

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Task/Deliverable	Completion Date
Technical Consultant Work Plan <ul style="list-style-type: none"> • Draft Work Plan • Final Work Plan 	<p>March 25, 2013 Two weeks after comments received</p>
Data Request Memo <ul style="list-style-type: none"> • Draft Memo • Final Memo 	<p>March 18, 2013 Two weeks after comments received</p>
Review of Standard Operating Procedures <ul style="list-style-type: none"> • Memo 	<p>April 15, 2013</p>
Collection of Existing Data <ul style="list-style-type: none"> • Contact log 	<p>June 30, 2013</p>
Data Review and Evaluation <ul style="list-style-type: none"> • Data review memo • Database 	<p>July 31, 2013 July 31, 2013</p>
Data Gap Identification <ul style="list-style-type: none"> • Initial conceptual model • Refined conceptual model • Technical memorandum describing data gaps 	<p>August 15, 2013 August 31, 2013 August 31, 2013</p>
Review of Modeling Tools <ul style="list-style-type: none"> • Draft model memorandum • Final model memorandum 	<p>September 15, 2013 Two weeks after comments received</p>
Data Collection Strategy <ul style="list-style-type: none"> • Draft objectives memorandum • Final objectives memorandum • Draft strategy memorandum • Final strategy memorandum 	<p>October 15, 2013 Two weeks after comments received November 15, 2013 Two weeks after comments received</p>
Quality Assurance Project Plan/Sampling and Analysis Plan <ul style="list-style-type: none"> • Draft QAPP/SAPP • Interim QAPP • Final QAPP/SAPP 	<p>January 15, 2014 Two weeks after comments received Two weeks after comments received</p>
Phase 2 Scoping <ul style="list-style-type: none"> • Draft scope • Final scope 	<p>February 15, 2014 Two weeks after comments received</p>
Meetings and Coordination	<p>Ongoing</p>