APPENDIX E

Quality Assurance Project Plan

REPORT

Quality Assurance Project Plan
Remedial Investigation/Feasibility Study Work Plan
Reserve Silica Reclamation Site

Ecology Facility No. 2041/Cleanup site No. 4728

28131 Ravensdale-Black Diamond Road

Ravensdale, Washington 98051

Submitted to:

Mr. Alan Noell
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Submitted by:

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200,
Redmond, Washington, USA 98052

+1 425 883-0777

152030402

July 22, 2021

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1.0 INTRODUCTION

Golder Associates Inc. (Golder) prepared this Quality Assurance Project Plan (QAPP) to support the Reserve Silica Reclamation Site (Site) Remedial Investigation/Feasibility Study (RI/FS), and is included as Appendix E to the RI/FS Work Plan (Work Plan). This QAPP has been prepared in substantial accordance with the Ecology Publication No. 04-03-030 "Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies" (Ecology 2016). A full description of the Site background, previous investigations, remedial activities, preliminary conceptual site model (CSM), identified RI/FS data gaps, and planned investigations to fulfill those date gaps are discussed in the Work Plan. This QAPP provides procedures for making accurate measurements and obtaining representative, accurate, and precise analytical data to support the objectives of the RI/FS Work Plan. This QAPP shall be used in conjunction with the Sampling and Analysis Plan (SAP), provided in Appendix D to the Work Plan. The purpose of the SAP/QAPP is to ensure that field sample collection, handling and laboratory analysis conducted during the RI/FS generate data of sufficient quality to plan and evaluate remedial actions at the Site.

2.0 PROJECT ORGANIZATION

2.1 Organizational Structure

The organizational structure for the Site is shown graphically in Figure QAPP-1. Contact information for key personnel involved with Site RI are included in Table QAPP-1. Responsibilities of key project personnel involved in RI field sampling activities are described below.

Project Manager

The Golder Project Manager is Gary Zimmerman. The project manager is responsible for planning and executing all environmental sampling and analysis to support the RI/FS Work Plan and for preparing analytical data reports, including submittals to Washington State Department of Ecology (Ecology). The Project Manager prepares the specifications for the laboratory analysis and administers the laboratory subcontracts.

Ms. Carla Brock, LHG, Aspect Consulting, LLC (Aspect), will serve as the project manager for any remedial investigation tasks completed by Aspect. Aspect is the consulting firm representing Reserve Silica Corporation (Reserve Silica).

Chemist/Validator

Ms. Denise Carscadden, PE will serve as the lead Chemist/Validator. The Chemist/Validator reports to the Project Manager. The Chemist/Validator is responsible for coordinating with the offsite laboratory to obtain required analyses and for tracking samples, chain-of-custody, and other sampling and analysis documentation. The Chemist/Validator maintains the data files, including tabulating, compiling, and archiving data. The Chemist/Validator is responsible for the review and validation of laboratory analysis reports.

Project Quality Assurance Officer

Mr. Joseph Xi, PE, will serve as the Project Quality Assurance (QA) Officer, and will have overall responsibility for QA oversight. The project QA Officer communicates directly to the Consultant Team Project Manager. The QA Officer will initiate and monitor any necessary formal corrective actions and will assist in preparing QA/Quality Control (QA/QC) project summaries for the final report, including analysis of precision, accuracy, and completeness of data collected.

Database Coordinator

Mr. Joseph Xi, PE, will serve as the Database Coordinator. The Database Coordinator reports to the Project Manager. The Database Coordinator is responsible for setting up the project database, designing and formatting data tables, preparing customized data reports, entering essential information, troubleshooting, and maintaining the database.

Field Sampling Personnel

The Field Sampling Personnel report to the Project Manager. The Field Sampling Personnel are responsible for collecting all field samples in accordance with the SAP. Field Sampling Personnel are responsible for assembly, organization, and maintenance of all information collected during field activities (including sampling logbook, daily activity logbook, geologic boring logs, chain-of-custody forms, well construction details, and water-level measurements).

2.2 Use of Subcontractors

Analytical Resources, Inc. (ARI), a Washington State-accredited laboratory in Tukwila, Washington, has been providing analytical serves for permit required groundwater and surface water sampling conducted on the Site, and will continue to provide analyses of environmental samples collected from the Site during the RI. The laboratory Quality Assurance (QA) plan can be provided upon request.

Other subcontractors anticipated during the completion of the RI include a Washington State licensed drilling contractor and a Washington State licensed surveyor.

2.3 Planning Structure

Sampling and analysis at the Site are supported by several planning documents, which are briefly described as follows:

- Sampling and Analysis Plan (SAP; Appendix D of the Work Plan): The SAP presents the methods and procedures that will be used during RI field investigations.
- Quality Assurance Project Plan: This QAPP provides target data quality objectives and has been prepared in compliance with the requirements of Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies (Ecology 2016).
- Health and Safety Plan: The Health and Safety Plan (HASP; Appendix F of the RI/FS Work Plan) describes all necessary personal protective gear, Site controls, and monitoring requirements applicable to on-Site activities conducted during the RI/FS pursuant to 29 Code of Federal Regulations (CFR) 1910.120.

3.0 DATA QUALITY OBJECTIVES

An objective of the QAPP is to provide analytical data that is of known and defensible quality. Table QAPP-2 summarizes the RI monitoring parameters, and their respective analytical methods, method reporting limits and method detection limits.

The objectives for analytical data quality are defined by the quantitation limits achievable using the referenced analytical methods, and by the resulting goals for precision, accuracy, representativeness, completeness, and comparability of analytical data.

Table QAPP-2 presents quantitation limits and applicable standard United States Environmental Protection Agency (EPA) reference methods for each analytical parameter. The data quality objectives established for the sampling program are as follows:

- Precision: Analytical precision will be reported as required by the governing EPA reference method cited in Table QAPP-2.
- Accuracy (Bias): Accuracy will be reported as required by the governing EPA reference method cited in Table QAPP-2.
- Representativeness: The use of standard procedures for sample acquisition (as described in Section 3.4 the SAP) will facilitate the collection of representative data.
- Completeness: Completeness is defined as the percentage of valid analytical determinations to the total number of requested determinations in an individual sample delivery group. Completeness goals are established at 90 percent. Failure to meet this criterion shall be documented and evaluated in the data validation process described in Section 5.3 of this QAPP, and corrective action taken as warranted.
- Comparability: Approved analytical procedures shall require the consistent use of the reporting techniques and units specified by the EPA reference methods cited in Table QAPP-2 to compare the precision and accuracy of data sets from sequential rounds of sampling.

4.0 ANALYTICAL PROCEDURES

Table QAPP-2 references the standard EPA analytical methods, method reporting limits, and method detection limits for constituents of potential concern (COPCs) that shall be established as contractual requirements with the analytical laboratory. All sample containers, container preparation services, preservatives, trip blanks, and sample coolers shall be provided by the analytical laboratory as part of its agreement for services. Sample container type, volume requirements, preservation requirements, and special handling requirements are listed by sample matrix and parameter in Table QAPP-3.

5.0 DATA QUALITY CONTROL, VALIDATION, AND REPORTING

5.1 Laboratory Quality Control Procedures

The internal quality control checks performed by the analytical laboratory shall meet the following minimum requirements:

- Temperature monitoring of the transport coolers upon receipt to the laboratory. The monitoring temperature may be recorded from infra-red sensor instruments or by record of the temperature blank vial (if used) by the receiving personnel at the receiving laboratory. Temperature receipt data shall be recorded on a receipt form or chain-of-custody record, which will to be included in the laboratory deliverable report as agreed to under the contract with the testing laboratory.
- Matrix spike and matrix spike duplicate samples. Matrix spike and matrix spike duplicate samples require the addition of a known quantity of a representative analyte of interest to the sample as a measure of recovery percentage. The spike shall be made in a replicate of a field duplicate sample. Replicate samples are separate aliquots removed from the same sample container in the laboratory. Spike compound selection, quantities, and concentrations shall be described in the laboratory's analytical procedures. One sample shall be spiked per analytical batch, or once every 20 samples, whichever is greater.

- Quality control reference samples. A quality control reference sample shall be prepared from an independent standard at a concentration other than that used for calibration, but within the calibration range. Reference samples are required as an independent check on analytical technique and methodology and shall be run with every analytical batch, or every 20 samples, whichever is greater, or as specified in individual analytical methods. Acceptance criteria for quality control reference samples are prescribed in the CLP National Functional Guidelines (USEPA 2017a & 2017b).

5.2 Minimum Requirements for Laboratory Analytical Data Packages

All analytical data packages submitted by the analytical laboratory shall include:

- Sample receipt, chain-of-custody, and shipping documentation including identification of field sampling personnel and shipping personnel (or organization) and copies of completed chain-of-custody documentation noting dates of sample receipt.
- Analytical results for each sample for all analytes/constituents requested in the chain-of-custody.
- Analytical quality control results for laboratory method blanks, spikes, duplicates, laboratory control samples, matrix spike/matrix spike duplicates, surrogates, and internal standards.
- Sample extraction and preparation data including dates of sample extraction and analysis.

All data packages for all analytical parameters shall be reviewed and approved by the analytical laboratory's QA Officer prior to submittal for validation.

5.3 General Validation Requirements

All analytical data packages from each sample delivery group shall be validated in accordance with the detailed review described in EPA's CLP National Functional Guidelines (USEPA 2017a & 2017b). The data validator will perform a Tier II level validation on the analytical data packages. The guidelines help to ensure that the laboratory has met all contractual requirements, applicable reference method requirements, and the data quality objectives discussed in Section 3.0 and presented in Table QAPP-2. A sample delivery group may be interpreted as the group of samples delivered to the laboratory under a single chain-of-custody.

The data validator shall document all contacts with the laboratory to resolve questions related to the data package. The data validator's technical review will include documentation and evaluation of laboratory blanks, field blanks, equipment blanks, duplicates, matrix spikes/matrix spike duplicates, laboratory control samples, calibration data (as applicable for the specified method), and any requalification of analytical results that may be required as a result of the validation process. The validation report, laboratory contact documentation, copies of the laboratory sample concentration reports, and the as-reviewed laboratory data packages shall be routed to the Project Manager for data assessment purposes and to the permanent project records.

5.4 Data Review and Reporting

After data has been received, validated, and reviewed, data deemed valid and usable will be entered into the project data base for use during the RI/FS evaluations and reporting. The data will also be uploaded to an appropriate Site-specific database (maintained by Golder) as well as the electronic Environmental Information Management (EIM) System for acceptance by Ecology.

5.4.1 Database

Database files will be created for each compliance-monitoring round. The laboratory data will be compiled in an appropriate Site-specific database. Information fields which will be entered into the project database will include the following:

- Monitoring well information – location (x, y), elevation, screened interval, borehole diameter, casing diameter.
- Groundwater elevation data – date and time of measurement, measuring device, measured depth to groundwater from measuring point, elevation of measuring point, elevation of groundwater.
- Sample designation information – sample ID, QA/QC identification, date and time of sample collection.
- Analytical data containing laboratory data qualifiers and revised data qualifiers assigned during the data validation process.
- Table of data quality qualifier abbreviations and descriptions.

5.4.2 The Environmental Information Management System

The EIM System is Ecology's main database for environmental monitoring data. The EIM was developed to aid in the transfer of data for project sites in Washington State that are being monitored by Ecology or will eventually be reviewed by Ecology through various state programs. The EIM will facilitate, for both the PLPs and Ecology, efficient data transfer and review of data for the key components of the Site, including the following:

- Location Information - locations are where the data are collected and could include Geographic Information System (GIS) data, and sample reference information.
- Data Results - physical observations, field measurements, or laboratory analyses of samples will include the bulk of a database collected for the duration of the project.

The transfer of data will be facilitated by an online import tool (the EIM System) for sites that are required to submit data electronically to Ecology. Golder will utilize the EIM, as well as maintaining their own secure Site-specific database to record physical and chemical measurements and provide for retrieval of the data into reporting formats.

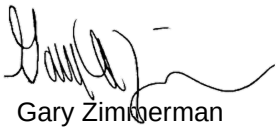
6.0 PREVENTIVE MAINTENANCE

All measurement and testing equipment used in the field and laboratory that directly affects the quality of the analytical data shall be subject to preventive maintenance measures that ensure equipment accuracy and minimize measurement system downtime. The analytical laboratory shall be responsible for performing or managing the maintenance of its analytical equipment.

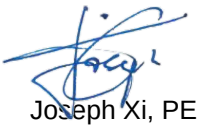
7.0 DOCUMENT DISTRIBUTION, VARIATION REQUEST, AND CHANGE CONTROL CONSIDERATIONS

Variations from established field procedures may be necessary in response to unique circumstances encountered during sampling activities. All such variations shall be documented on a Procedure Alteration Checklist (PAC) and submitted to the Project Manager and QA Officer for review and approval. The Project Manager or assigned Field Sampling Personnel are authorized to implement non-substantive variations based on immediate need, provided that the Project Manager and QA Officer are notified within 24 hours of the variation, and the PAC is forwarded to the Project Manager and QA Officer for review within two working days. Substantive variations require notification of the Project Manager, QA Officer, PLP Technical Leaders, and Ecology prior to implementation.

Golder Associates Inc.



Gary Zimmerman
Principal



Joseph Xi, PE
Senior Project Environmental Engineer

GZ/JX/sb

https://golderassociates.sharepoint.com/sites/119026/project files/6 deliverables/ri fs work plan/_ri work plan to ecology/2021-ri-workplan/2021-07/appendix e qapp/152030402-r-rev0-app e-qapp-072221.docx

8.0 REFERENCES

United States Environmental Protection Agency (USEPA) 2017a. Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review (SOM02.4). https://www.epa.gov/clp/national-functional-guidelines-organic-superfund-methods-data-review-som024. January.

USEPA. 2017b. Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review (ISM02.4). https://www.epa.gov/clp/national-functional-guidelines-inorganic-superfund-methods-data-review-ism024. January.

Washington State Department of Ecology (Ecology). 2016. Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies. Publication No. 04-03-030. July 2004 (Revised December 2016) February.

Tables

Table QAPP-1: Contact Information for Key Personnel

Company	Contact Person	Title	Phone Number	Site Address	Role
Golder Associates Inc.	Gary Zimmerman	Principal and Senior Consultant	425-883-0777	18300 NE Union Hill Rd, Ste 200 Redmond, WA 98052	Consultant for Holcim (US) Inc.
Holcim (US) Inc.	Travis Bennett	Sr. Manager, Closed Sites and Remediation	580-421-8926	14500 C.R.1550 Ada, OK 74820	Representative for Holcim (US) Inc.
Aspect Consulting LLC	Carla Brock	Associate Geologist	206-838-6593	710 2nd Ave #550 Seattle, WA 98104	Consultant for Reserve Silica Corporation
Reserve Silica Corporation	Marisa Floyd	Site Contact	425-432-1241	28131 SE Ravensdale Way Ravensdale, WA 98051	Representative for Reserve Silica Corporation
Washington State Department of Ecology (Ecology)	Alan Noell	Site Manager	425-649-7015	3190 160th Ave SE Bellevue, WA 98008	Representative for Ecology
Public Health - Seattle & King County (Public Health)	Darshan Dhillon	Site Contact	206-296-4600	401 5th Ave Seattle, WA 98104	Representative for Public Health

Table QAPP-2: Analytical Methods and Laboratory Limits

Analytes	Units	Water Matrix Analytical Method[1]	Water Sample Laboratory MDL[2]	Water Sample Laboratory MRL[3]	Solid Matrix Analytical Method[1]	Solid Sample Laboratory MDL[2]	Solid Sample Laboratory MRL[3]	Leaching Test Method	Leaching Test Analytical Method[1]	Leaching Test Laboratory MDL[2]	Leaching Test Laboratory MRL[3]
Metals											
Antimony	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0180	0.200	EPA 200.8	0.0180	0.200	EPA 1313	EPA 200.8	0.378	2
Arsenic[4]	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0220	0.200	EPA 200.8	0.0220	0.200	EPA 1313	EPA 200.8	0.313	1
Beryllium	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0290	0.200	EPA 200.8	0.0290	0.200	EPA 1313	EPA 200.8	0.182	1
Chromium (total)[5]	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.130	0.500	EPA 200.8	0.130	0.500	EPA 1313	EPA 200.8	1.53	2
Lead	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0680	0.100	EPA 200.8	0.0680	0.100	EPA 1313	EPA 200.8	0.128	1
Mercury	Water (µg/L) Solid (mg/kg)	EPA 7470A	0.013	0.1	EPA 7471B	0.00525	0.0250	EPA 1313	EPA 7471B	0.13	0.2
Nickel	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0500	0.500	EPA 200.8	0.0500	0.500	EPA 1313	EPA 200.8	0.336	1
Selenium	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.440	0.500	EPA 200.8	0.440	0.500	EPA 1313	EPA 200.8	1.51	5
Silver	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0170	0.200	EPA 200.8	0.0170	0.200	EPA 1313	EPA 200.8	0.177	1
Thallium	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.00800	0.200	EPA 200.8	0.00800	0.200	EPA 1313	EPA 200.8	0.148	1
Vanadium	Water (µg/L) Solid (mg/kg)	EPA 200.8	0.0400	0.200	EPA 200.8	0.0400	0.200	EPA 1313	EPA 200.8	0.991	1
Dioxins and Furans											
2,3,7,8-Tetrachloro dibenzo-p-dioxin (2,3,7,8-TCDD)	Water (pg/L)	EPA 1613B	1.10	10.0	-	-	-	-	-	-	-
1,2,3,7,8-Pentachloro dibenzo-p-dioxin (1,2,3,7,8-PeCDD)	Water (pg/L)	EPA 1613B	1.90	10.0	-	-	-	-	-	-	-
1,2,3,4,7,8-Hexachloro dibenzo-p-dioxin (1,2,3,4,7,8-HxCDD)	Water (pg/L)	EPA 1613B	1.60	10.0	-	-	-	-	-	-	-
1,2,3,6,7,8-Hexachloro dibenzo-p-dioxin (1,2,3,6,7,8-HxCDD)	Water (pg/L)	EPA 1613B	1.50	10.0	-	-	-	-	-	-	-
1,2,3,7,8,9-Hexachloro dibenzo-p-dioxin (1,2,3,7,8,9-HxCDD)	Water (pg/L)	EPA 1613B	1.70	10.0	-	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachloro dibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	Water (pg/L)	EPA 1613B	1.90	10.0	-	-	-	-	-	-	-
1,2,3,4,6,7,8,9-Octachloro dibenzo-p-dioxin (OCDD)	Water (pg/L)	EPA 1613B	34.0	10.0	-	-	-	-	-	-	-
2,3,7,8-Tetrachloro dibenzofuran (2,3,7,8-TCDF)	Water (pg/L)	EPA 1613B	0.600	10.0	-	-	-	-	-	-	-
1,2,3,7,8-Pentachloro dibenzofuran (1,2,3,7,8-PeCDF)	Water (pg/L)	EPA 1613B	2.10	10.0	-	-	-	-	-	-	-
2,3,4,7,8-Pentachloro dibenzofuran (2,3,4,7,8-PeCDF)	Water (pg/L)	EPA 1613B	2.00	10.0	-	-	-	-	-	-	-
1,2,3,4,7,8-Hexachloro dibenzofuran (1,2,3,4,7,8-HxCDF)	Water (pg/L)	EPA 1613B	1.70	10.0	-	-	-	-	-	-	-
1,2,3,6,7,8-Hexachloro dibenzofuran (1,2,3,6,7,8-HxCDF)	Water (pg/L)	EPA 1613B	2.20	10.0	-	-	-	-	-	-	-
1,2,3,7,8,9-Hexachloro dibenzofuran (1,2,3,7,8,9-HxCDF)	Water (pg/L)	EPA 1613B	2.00	10.0	-	-	-	-	-	-	-
2,3,4,6,7,8-Hexachloro dibenzofuran (2,3,4,6,7,8-HxCDF)	Water (pg/L)	EPA 1613B	1.30	10.0	-	-	-	-	-	-	-
1,2,3,4,6,7,8-Heptachloro dibenzofuran (1,2,3,4,6,7,8-HpCDF)	Water (pg/L)	EPA 1613B	2.20	10.0	-	-	-	-	-	-	-
1,2,3,4,7,8,9-Heptachloro dibenzofuran (1,2,3,4,7,8,9-HpCDF)	Water (pg/L)	EPA 1613B	2.10	10.0	-	-	-	-	-	-	-
1,2,3,4,6,7,8,9-Octachloro dibenzofuran (OCDF)	Water (pg/L)	EPA 1613B	5.40	10.0	-	-	-	-	-	-	-

Table QAPP-2: Analytical Methods and Laboratory Limits

Analytes	Units	Water Matrix Analytical Method[1]	Water Sample Laboratory MDL[2]	Water Sample Laboratory MRL[3]	Solid Matrix Analytical Method[1]	Solid Sample Laboratory MDL[2]	Solid Sample Laboratory MRL[3]	Leaching Test Method	Leaching Test Analytical Method[1]	Leaching Test Laboratory MDL[2]	Leaching Test Laboratory MRL[3]
General Chemistry											
Total Dissolved Solids	Water (mg/L)	SM 2540C	5.0	5.0	-	-	-	-	-	-	-
Total Organic Carbon	Solid (%)	-	-	-	EPA 9060A	0.02	0.02	-	-	-	-
Percent Moisture	Solid (%)	-	-	-	EPA 160.3	1	1	-	-	-	-
pH	Water (s.u.) Solid (s.u.)	EPA 150.1/SM9040C	0.01	0.01	EPA 9045D	0.01	0.01	-	-	0.01	0.01
Field Parameters[6]											
Turbidity	Water (NTU)	-	-	-	-	-	-	-	-	-	-
Dissolved Oxygen	Water (mg/L)	-	-	-	-	-	-	-	-	-	-
Conductivitiy	Water (µS/cm)	-	-	-	-	-	-	-	-	-	-
Temperature	Water (°C)	-	-	-	-	-	-	-	-	-	-
pH	Water (s.u.)	-	-	-	-	-	-	-	-	-	-
Oxidation Reduction Potential	Water (mV)	-	-	-	-	-	-	-	-	-	-

Notes:

[1] From SW-846, SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA 2014).

[2] Method Detection Limit (MDL) is specific to a laboratory from the results of MDL studies performed by the laboratory. The MDL's can change based on the results of future MDL studies

[3] Method Reporting Limit (MRL) is the Reporting Limit and is the laboratory Practical Quantitation Limit (PQL). All values are laboratory specific, but shall be considered minimums.

[4] Assumes arsenic is Arsenic-V.

[5] Assumes all chromium is trivalent chromium (Chromium-III).

[6] Field calibration and use in accordance with manufactures instructions and Golder quality procedures QP 11.1.

EISC - Ecological Indicator Soil Concentrations | GW - Groundwater | MTCA - Model Toxics Control Act | mV - millivolts | NTU - neophelometric units | SW - surface water | TEE - Terrestrial Ecological Evaluation

- Not applicable

Table QAPP-3: Sample Container Types, Volumes, Preparation, Handling Preservation, and Holding Times

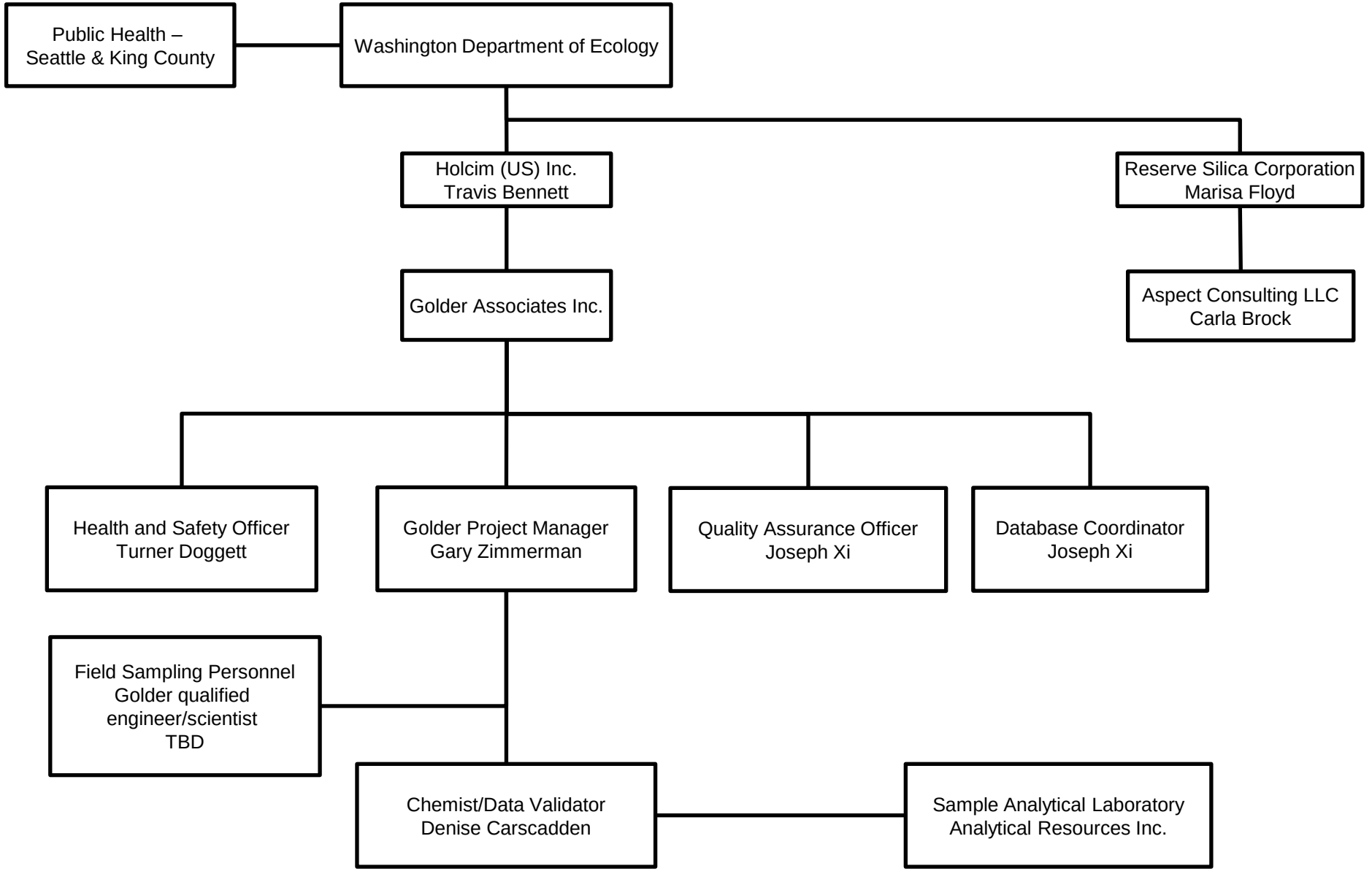
Method:	Phase	COPCs	Bottle Size[2]	Preservative	Hold Time	Soil/Sediment (Y/N)	GW (Y/N)	SW (Y/N)
EPA 6010C	solids	Metals	One-4 oz glass	Cool, <6°C	180 days	Y	N	N
	liquids	Metals [Filtered[1] + Non-filtered]	Two-500 mL plastic	HNO_3 to pH <2		N	Y	Y
EPA 200.8	solids	Metals	One-4 oz glass	Cool, <6°C	180 days	Y	N	N
EPA 200.8	liquids	Metals [Filtered[1] + Non-filtered]	Two-500 mL plastic	HCl to pH <2		N	Y	Y
EPA 160.3	solids	Percent Moisture	One-4 oz glass	Cool, <6°C	7 days	Y	N	N
SM 2540 C	liquids	TDS	One-1 L plastic	Cool, <6°C, Do not Freeze		N	Y	Y
EPA 9060A	solids	TOC	One-4 oz glass	Cool, <6°C	28 days	Y	N	N
EPA 9045D	solids	pH	Aliquot from existing sample	None	immediately	Y	N	N
EPA 150.1/SM9040C	liquids		One-500 mL plastic	Cool, <6°C, Do not Freeze		N	Y	Y
EPA 1613B	liquids	Dioxins/Furans	Two-1 L amber	Cool, <6°C, Do not Freeze	1 year	N	Y	Y

Notes:

1 - Field filter 0.45 µm disposable capsule filter; GeoTech Environmental Equipment.

2 - Sample containers will be combined based on requested methods.

Figures



CLIENT/PROJECT		TITLE
RI WORK PLAN 2021 RAVENSDALE, WA	GOLDER	**Organization Chart**

DRAWN	CHECKED	REVIEWED	DATE	SCALE	JOB NO.	DWG NO.	SUBTITLE	REV. NO.	FIGURE
JX	GZ	GZ	07-19-21	None	1520030402.002	NA	NA	NA	**QAPP-1**