TECHNICAL MEMORANDUM

DATE August 11, 2022 **Project No.** GL152030402

TO Dr. Alan Noell
Washington State Department of Ecology

CC Reserve Silica Reclamation Site Technical Group

FROM Gary Zimmerman **EMAIL gary.zimmerman@wsp.com**

REMEDIAL INVESTIGATION SOIL AND INFILTRATION POND SEDIMENT SAMPLING RESULTS
RESERVE SILICA RECLAMATION SITE
FACILITY ID NO.: 2041; CLEANUP SITE NO.: 4728

1.0 SOIL AND POND SEDIMENT SAMPLING PROGRAM

A Remedial Investigation (RI) and Feasibility Study (FS) Work Plan (Work Plan; Golder 2021) was prepared for the Reserve Silica Reclamation Site (Site) under Agreed Order No. DE 16052. Figures 1 and 2 depict the Site location and layout, respectively. The Work Plan was submitted to the Washington State Department of Ecology (Ecology) in July 2021 and was subsequently approved by Ecology. This technical memorandum summarizes the sampling and analysis of Site soils and pond sediments conducted at the Site in accordance with the Work Plan and in support the RI/FS.

Soil sampling was conducted in three areas identified in the Work Plan with the anticipated highest probability of surficial impacts to soil and sediments attributable to the discharge and overland flow of high pH groundwater from the Lower Disposal Area (LDA). These areas were labeled as Decision Units (DUs) -1, -2, and -3, and include the following areas:

- DU-1 is the area along the bench west of the Lower Haul Road where the high pH seepage daylights prior to entering the seepage collection ditch. Sampling in this area focused on the areas with the highest carbonate precipitates, which correlate with the past and/or current high pH groundwater seepage areas.
- DU-2 is the area west of the seepage collection trench, where high pH seepage water historically flowed prior to the construction of the seepage collection ditch.
- DU-3 is the South Pond area, where ephemeral upwelling of high pH groundwater occurs during the wet season of the year.

The locations of these three DUs are shown in Figure 3.

Additionally, surface sediment samples were collected of the precipitates that have accumulated in the Infiltration Ponds. The Infiltration Ponds consist of three interconnected infiltration ponds located in the northwest corner of the Site. The ponds were used to collect and infiltrate high pH seepage water from the LDA during the time period of approximately 1987 to 2018. Since 2018, effluent from the treatment system that neutralizes the high pH

seepage water and reduces the concentration of dissolved metals in the water has been discharged to the ponds for collection and infiltration. Figure 2 shows the location of the Infiltration Ponds and Figure 4 shows the sample locations within the ponds.

2.0 SAMPLING PROCEDURES

2.1 ISM Sampling

In accordance with the procedures in the Work Plan's Sampling and Analysis Plan (Appendix D of the Work Plan), soil samples from DU-1, -2, and -3 were collected using Incremental Sampling Methodology (ISM). ISM is a structured composite sampling and processing protocol that is designed to reduce data variability and increase the representativeness for a specified volume of a given media being investigated (ITRC 2020).

Each DU's boundary was established before the field sampling began. The boundaries were primarily based on visual observations and Site historical knowledge, and included the following:

- DU-1 Seepage precipitation area – this area is readily delineated by the presence of carbonate precipitates that have accumulated along the bench west of the Lower Haul Road and the known areas where high pH groundwater discharges to the surface along the bench. High pH seepage is not uniform across this area, but discharges at clearly visible locations. DU-1 was established to target the areas where the high pH seepage water is or historically has discharged and flowed overland to the seepage collection ditch, and therefore these samples represent the areas of likely highest impact along the bench immediately west of the Lower Haul Road.
- DU-2 Historical overland flow area – Prior to construction of the seepage collection ditch, the high pH groundwater discharging along the bench flowed west and then northwest towards the "constructed wetlands". The topography in this area, the clear presence of former flow paths, and the historical knowledge of personnel who historically observed the overland flow in this area allowed for relatively accurate delineation of the boundaries where the high pH water historically flowed. Historical infiltration of high pH water in this area potentially resulted in dissolution and adsorption of metals into the surficial soils. DU-2 samples targeted the surficial soils in this area to evaluate the concentration of metals present.
- DU-3 South Pond – The South Pond is a man-made depression in the wooded area west of the south end of the seepage bench. Seasonally, when groundwater elevations are elevated during wet periods, high pH groundwater daylights in the South Pond. Visual observations for the last five years indicate that water seldom extends beyond the margins of the South Pond. When standing water is present within the pond, it results from rising and lowering groundwater, with minimal surface inflow or outflow of stormwater. Most of the year the pond does not contain standing water, as the groundwater is lower than the ground surface.

Triplicate ISM samples were collected within each DU, meaning three replicate ISM samples per DU were collected and shipped to ALS Environmental Laboratory located in Kelso, Washington for processing and analysis. Each ISM sample in DU-1 and DU-3 was an aggregate of 30 increments. Each ISM sample in DU-2 was an aggregate of 50 increments. ISM samples from DU-2 include a greater number of increments because the DU-2 area is larger than DU-1 and DU-3. The increments were collected along a systematic local grid within each DU. Under the systematic grid sampling design, the second replicate increment locations were collected approximately 3 feet west of the first replicate increment locations, and the third replicate increment locations were collected approximately 3 feet south of the first replicate increments. Different colored flagging was used to

mark each increment location. Each sample increment was collected from the top 4 inches of soil/sediment/precipitates. The uppermost layer sampled is the zone of highest potential for human/ecological exposure by incidental trespass and biological activity. Additionally, if contaminants were deposited in these areas from the dissolution of solids and precipitation from high pH groundwater, the highest concentrations would be near the surface.

Sample increments were collected using a small hand shovel. Hand-held auger-type drilling equipment was required to collect many of the increments in DU-2 Seepage Area, because the material primarily consisted of very hard cementitious precipitates. At each increment location, approximately 50 grams of soil were collected and added to the respective sampling container for the DU sample. In conformance with ISM requirements, approximately equal volume/mass of material were collected from each increment at each increment location. Quality assurance checks were conducted by establishing a volume of soil equal to the desired mass into a graduated measuring container, and consistently collecting increments equal to that established volume. Further checks of consistent sample mass were performed during sample collection using a field scale to measure the mass of the ISM samples and comparing the triplicate samples' mass for consistency. The total mass of each ISM sample from DU-1 and DU-3 was approximately 1,500 grams and 1,750 grams, respectively. The total mass of each ISM sample from DU-2 was equal to approximately 2,500 grams (50 increments times 50 grams per increment). Collection of these higher soil volumes helps to control the fundamental error (FE) associated with the ISM soil sampling (ITRC 2020).

The following is a general description of the material sampled from each DU:

- DU-1 sampled material consisted of primarily cementitious calcium carbonates deposited by the precipitation of the dissolved solids in the high pH seepage groundwater after it seeps to the surface and is oxidized. The deposits were 1 to 6 inches thick in the DU-1 sample area. Underlying the deposits, weathered sandstone bedrock and/or silty fine sand soils were encountered. The sampled material was generally dry, except for the sample increments collected in areas where groundwater was actively seeping.
- DU-2 area contained surface grass and forest debris (leaves, twigs, etc.) at the surface. This surface organic material was removed at each location prior to soil sample collection. The surficial soils generally consisted of:
  - 0 to 1-inch: dark brown, silty fine Sand, trace roots, and other natural organic matter (topsoil).
  - Below 1-inch: medium brown, silty fine to medium brown Sand, trace fine gravel, trace roots (subsoil). Within the former stormwater flow erosion ditch (approximately 2 feet wide and 1 foot deep), a higher proportion of fine to coarse gravel was present.
  - In the northern end of DU2, within the area referred to as the "constructed wetlands", the soil was comprised of fill. The fill was medium to dark brown, silty fine to coarse Sand, trace fine to coarse gravel, trace pieces of orange-colored brick, and trace other debris.
- DU-3 South Pond soils consisted of clayey-silty fine Sand, with trace gravels present around the outer portions of the pond and more clayey high organic soil "muck" present in the center portion of the pond.

Each sample was analyzed for total arsenic, lead, antimony, vanadium, pH, and TOC. TOC is analyzed as it can affect the bioavailability and uptake of contaminants. Soil pH is analyzed to assess the impacted area and the partitioning of naturally occurring metals.

2.2 Infiltration Pond Sampling

The Infiltration Ponds are an active component of the seepage treatment system, and characteristics of the sediments within the Infiltration Ponds are likely to change over time. The Infiltration Ponds consist of three interconnected ponds. The three pond segments are oblong in shape and generally trend NE to SW. The water from the treatment system discharges to the eastern-most pond segment via a 10-inch diameter pipe. Prior to installing the treatment system, this pipe discharged untreated high pH water collected in the seepage collection ditch. The southeast end of the pond segment is the area where high pH water historically (before the interceptor trench was constructed) flowed along a natural drainage channel into the infiltration ponds. Water from this eastern pond flows into the middle pond through an opening in the berm that separates the two ponds. The opening is located only about 30 feet from the location where the pipe discharges into the eastern pond. Near that same location, water also flows over a low point in the berm that separates the middle pond from the western-most pond. These current and historical inflow areas were specifically identified for sample collection, along with collection of additional samples throughout the Infiltration Ponds. The RI evaluation included the collection of 10 sediment grab samples distributed throughout accessible areas of the ponds. Infiltration Pond samples included the following:

- Infl-Pond-S1-0122 – Collected approximately 5 feet from the end of the discharge pipe, along the primary water flow path. Light brown, wet, Clayey Silt, fine Sand (primarily calcium carbonates precipitate type material).
- Infl-Pond-S2-0122 – Collected along the water flow path from sample S1, at a location just before water enters the middle pond from the east pond. Surface material wet dark gray Silt, becoming lighter gray below 2-inches, Silty Clay, anoxic odor, precipitates.
- Infl-Pond-S3-0122 – Collected from middle pond near where the water flows across berm to western pond and located down flow of sample S2. Dark gray, some organic leaves and debris, anoxic odor, Clayey Silt trace fine Sand, precipitates (boat required to reach this area).
- Infl-Pond-S4-0122 (and duplicate: Infl-Pond-F1-0122) - Collected within the natural drainage ditch where high pH water historically entered the south portion of the eastern-most pond. During rain events, water still flows in this ditch, but the water is neutral pH and not impacted. Soil sample was damp, dark brown, fine Sandy Silt, trace fine rounded Gravel.
- Infl-Pond-S5-0122 – Collected in the same ditch as sample S4, but closer to the current ponded water. Soil sample was moderate brown, Silty fine Sand, trace roots, damp to moist.
- Infl-Pond-S6-0122 – Collected where the historical drainage ditch enters the eastern pond. Collected below the water. Dark gray, wet, fine Sandy Silt, mixture of soil and pond precipitates.
- Infl-Pond-S7-0122 – Collected from the middle pond, near where the gate next to well MW-5A is located. Collected from below the water. Dark gray, wet, Clayey Silt, trace organic matter. Mostly precipitates. (Used boat to reach this area).
- Infl-Pond-S8-0122 – Collected from the center area of the middle pond. Collected from below the water. This area, based on push probing with a steel rod, appears to have the thickest accumulation of fine precipitates. Dark gray, wet, homogenous Clayey Silt. (Used boat to reach this area).

- Infl-Pond-S9-0122 – Collected from south end of the western-most pond. Difficult area to access. Moderate brown, wet Silty Clay. Appears to be a more natural clay than the material observed in the middle pond.
- Infl-Pond-S10-0122 – Collected along the middle (NE to SE) and along the east side of the western-most pond. Difficult area to access. Moderate brown, wet, fine Sandy Silt.

Figure 4 shows the approximate locations of the Infiltration Ponds samples. All samples were collected from the top 10 centimeters (approximately 4-inches) of sediments/soils. The samples were collected using a stainless-steel hand driven environmental sampling device to extract a core sample that was placed directly into sample containers provided by the laboratory. The sampling device was decontaminated between each sample collected. The grab samples collected from the Infiltration Pond were analyzed for total arsenic, lead, antimony, vanadium, and TOC.

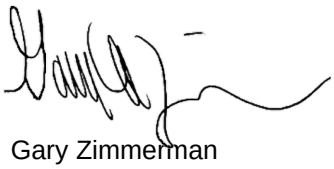
3.0 RESULTS

The triplicate ISM sample analytical results for DU-1, DU-2, and DU-3 are summarized in Table 1, and the Infiltration Ponds sample analytical results are summarized in Table 2. The analytical results indicate the following:

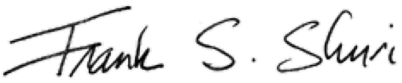
- Arsenic is the only COPC detected in any of the ISM soil samples at concentrations exceeding both the human health preliminary screening level (PSL) and ecological PSL for soil.
- Lead and vanadium were detected in all the ISM soil samples collected from DU-1, DU-2, and DU-3 at concentrations exceeding the ecological PSL but below the human health PSL. Antimony was detected in the DU-2 ISM soil samples and in one of the three DU-3 ISM soil samples at concentrations greater than the ecological PSL but below the human health PSL.
- For the Infiltration Pond grab samples: Arsenic is the only COPC that exceeded human health PSL or sediment PSL. Reported concentrations of antimony, lead, and vanadium are below the PSLs.

The PSLs are numerical screening levels against which sample analytical data are compared for identifying constituents of concern during the Site RI. The PSLs do not necessarily represent values that will be equivalent to Site cleanup levels that will be calculated under MTCA during the FS. PSLs applicable to the Site potential exposure pathways are based on MTCA Method A and B surface water, groundwater, and soil cleanup levels. Ecological PSLs are based on Terrestrial Ecological Evaluations (TEE) procedures contained in WAC 173-340-900 and applicable sediment management standards from Washington State Sediment Management Standards defined in WAC Chapter 173-204.

Golder Associates USA Inc.



Gary Zimmerman
Technical Principal



Frank Shuri, LG, LEG, PE
Senior Consultant

Distribution: See email distribution list

Attachments: Table 1 – Summary of Soil Laboratory Analytical Data – ISM Sampling
Table 2 – Summary of Infiltration Ponds Sediments Laboratory Analytical Data
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – ISM Decision Units and Sampling Locations
Figure 4 – Infiltration Ponds Sediment Sampling Locations

https://golderassociates.sharepoint.com/sites/119026/project files/6 deliverables/ri tech memos/2021 2022 soil and infil pond sediments sampling/soil tech memo/152030402-tm-rev0-soil-sampling-20220811.docx

4.0 REFERENCES

Golder Associates Inc. (Golder). 2021. Remedial Investigation/Feasibility Study Work Plan, Reserve Silica Reclamation Site, Ravensdale, Washington. July 22.

Interstate Technology and Regulatory Council (ITRC). 2020. Technical and Regulatory Guidance: Incremental Sampling Methodology (ISM) Update. ISM-2. October.

Tables

Table 1: Summary of Soil Laboratory Analytical Data - ISM Sampling

			Decision Unit ID	DU-1 (seep area)			DU-2 (historical flow area)			DU-3 (South Pond)		
			Sample ID	ISM1	ISM2	ISM3	ISM1	ISM2	ISM3	ISM1	ISM2	ISM3
			Collection Date	10/19/2021	10/19/2021	10/19/2021	1/25/2022	1/25/2022	1/25/2022	10/19/2021	10/19/2021	10/19/2021
Analyte	Site Soil Human Health PSL	Site Soil Ecological PSL	Site Sediment PSL									
Antimony (mg/kg)	32	5	-	0.879	0.916	0.86	14.3 J-	14.3	13.4	5.47 J-	4.37	4.94
Arsenic (mg/kg)	20	10	14	65.2	44.4	39.8	87.9	98.8	86.9	58.6	45.6	52.7
Lead (mg/kg)	250	50	360	63.8	64.5	56.1	120	145	130	178	176	164
Vanadium (mg/kg)	400	2	-	13.5	14.5	12.3	12.8	15.1	13.8	27.4	25.1	27.2
Total Solids	-	-	-	99.6%	99.6%	99.5%	99.3%	99.2%	99.1%	96.7%	94.7%	98.2%
Total Organic Carbon	-	-	-	0.566%	0.883%	0.918%	2.21%	1.76%	1.55%	2.73%	2.73%	1.54%
pH	-	-	-	9.23 J	8.46 J	9.86 J	8.27 J	8.14 J	8.25 J	8.63 J	8.46 J	8.81 J

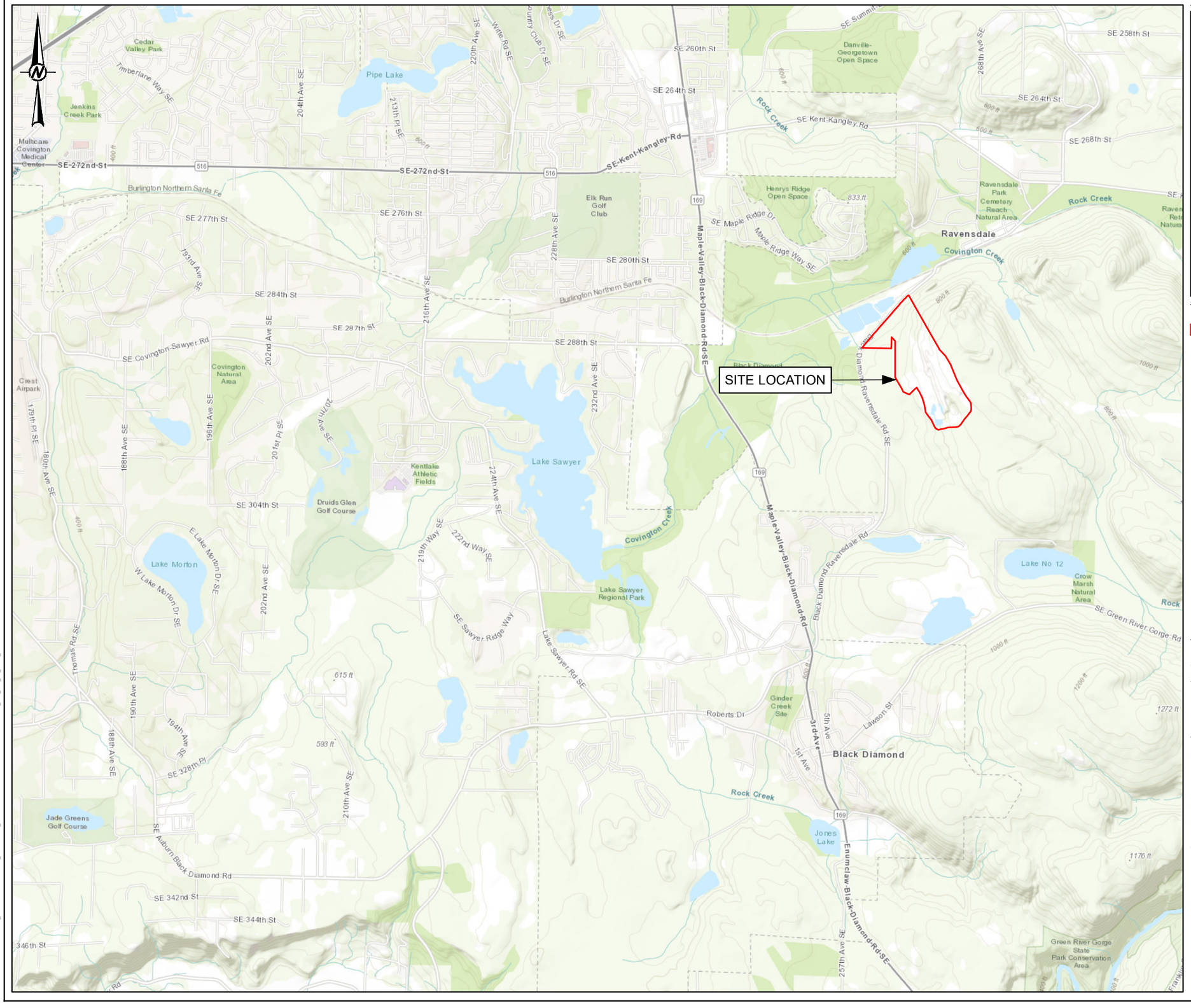
Notes:
J-: Analyte concentration estimated and potentially biased low.
J: Analysis exceeded recommended hold time.
Green cells indicate sample concentration exceed the Site Soil Ecological PSL.
Antimony, Arsenic, Lead and Vanadium Ecological PSL based on protection of plants
Blue cells indicate sample concentration exceed the Site Soil Human Health, Ecological and Sediment PSL.
PSL: Preliminary Screening Level | mg/kg: miligram per kilogram
" -" Screening Level not available

Table 2: Summary of Infiltration Ponds Sediments Laboratory Analytical Data

Sample ID			INFIL-POND-S1-0122	INFIL-POND-S2-0122	INFIL-POND-S3-0122	INFIL-POND-S4-0122	INFIL-POND-S5-0122	INFIL-POND-S6-0122	INFIL-POND-S7-0122	INFIL-POND-S8-0122	INFIL-POND-S9-0122	INFIL-POND-S10-0122
		Collection Date	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022	1/25/2022
Analyte	Site Soil Human Health PSL	Site Sediment PSL										
Antimony (mg/kg)	32	-	1.75 J	3.98	2.76	0.695	5.55	4.99 J	3.11	1.57	1.54	2.2
Arsenic (mg/kg)	20	14	35.2	35.9	28.5	24.2 J	26.3	47.5 J	21.1	41.3	41.6	26.7
Lead (mg/kg)	250	360	154	65.6	62	19.3 J	40.8	55.1 J	52.6	23.1	24.5	28.7
Vanadium (mg/kg)	400	-	28.7	53.4	39.2	47.7 J	31.8	46.1 J	54.9	61.3	62.1	37.7
Total Solids	-	-	67.1%	56.9%	58.7%	66.6%	68.4%	44.7%	51.7%	57.2%	62.6%	66.5%
Total Organic Carbon	-	-	2.52%	1.74%	1.75%	6.61%	3.41%	3.97%	1.45%	2.52%	0.87%	0.97%
pH	-	-	9.39 J	9.19 J	8.76 J	7.4 J	7.9 J	9.31 J	9.23 J	9.73 J	9.23 J	9.14 J

Notes:
U: Analyte was not detected above the Reporting Limit (RL).
J: Analysis exceeded recommended hold time.
Green cells indicate sample concentration exceed the Site Sediment PSL.
Blue cells indicate sample concentration exceed the Site Soil Human Health and Sediment PSL.
PSL: Preliminary Screening Level | ft bgs: feet below ground surface | mg/kg: miligram per kilogram

Figures



KEY MAP

LEGEND

Property Boundary

0 3,000 6,000

1 " = 3,000 FEET FEET

REFERENCE(S)

1. ASPECT CONSULTING (PROPERTY BOUNDARY)
2. ESRI (WASHINGTON STATE COUNTY BOUNDARY)
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET
4. MAP SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

CLIENT
HOLCIM

PROJECT
RI WORK PLAN 2020
RAVENSDALE, WA

TITLE
SITE LOCATION MAP

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2021-02-10
DESIGNED	TL
PREPARED	TL
REVIEWED	JX
APPROVED	GZ

PROJECT NO.	PHASE	REV.	FIGURE
152030420	004	A	1

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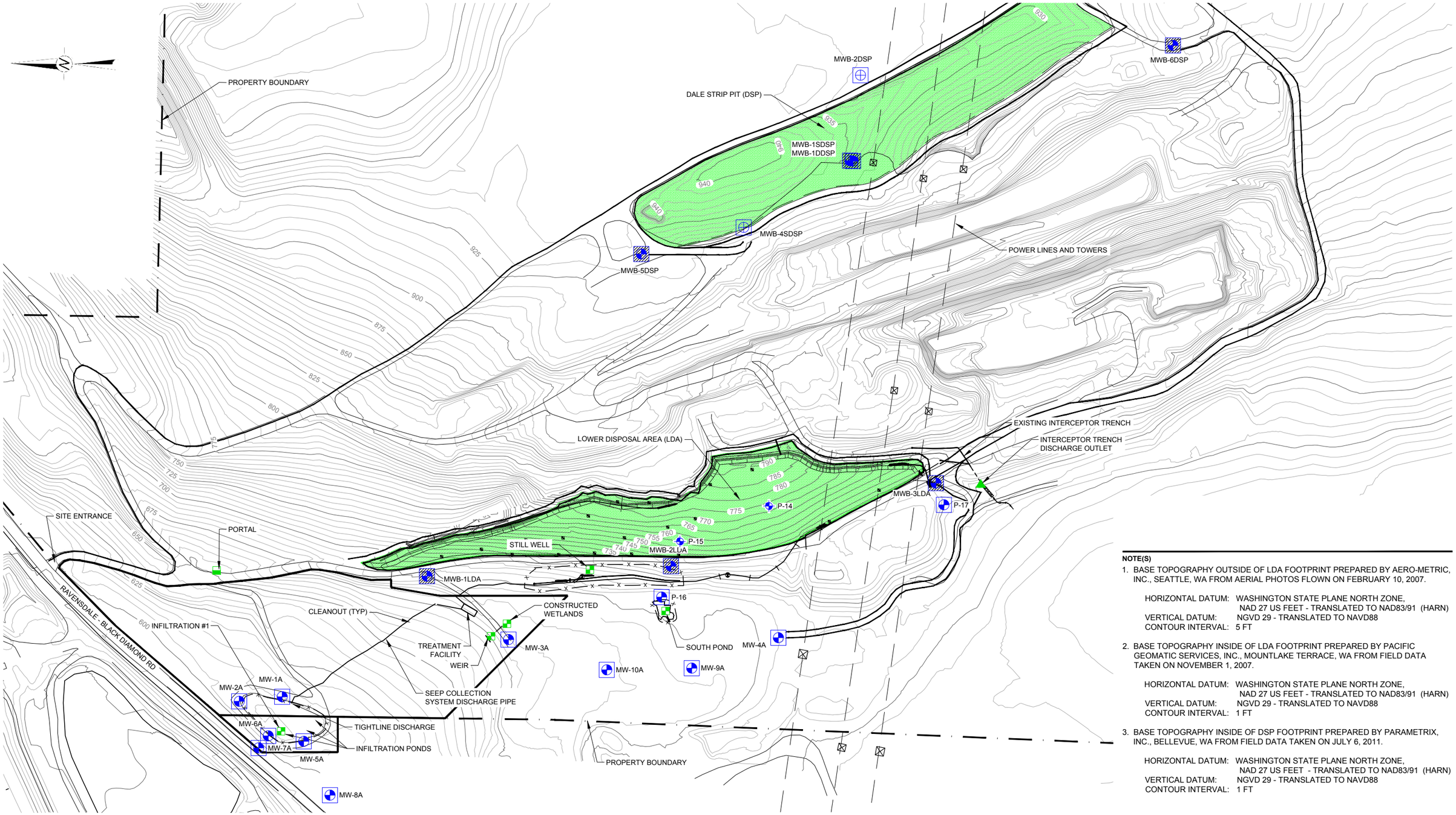

LEGEND

- COVER AREA
- MW-1A — ALLUVIAL MONITORING WELL
- MWB-1DDSP — BEDROCK MONITORING WELL
- MWB-2DSP — BEDROCK MONITORING WELL (NOTE 4)
- DISPOSAL AREA MONITORING WELL
- LDA SURFACE WATER SAMPLING LOCATION
- DSP BEDROCK SAMPLING LOCATION (PORTAL)
- INTERCEPTOR TRENCH SAMPLING LOCATION
- FENCE LINE

0 150 300
1" = 150' FEET

NOTE(S)

1. BASE TOPOGRAPHY OUTSIDE OF LDA FOOTPRINT PREPARED BY AERO-METRIC, INC., SEATTLE, WA FROM AERIAL PHOTOS FLOWN ON FEBRUARY 10, 2007.
   HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD 27 US FEET - TRANSLATED TO NAD83/91 (HARN)
   VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
   CONTOUR INTERVAL: 5 FT
2. BASE TOPOGRAPHY INSIDE OF LDA FOOTPRINT PREPARED BY PACIFIC GEOMATIC SERVICES, INC., MOUNTLAKE TERRACE, WA FROM FIELD DATA TAKEN ON NOVEMBER 1, 2007.
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   VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
   CONTOUR INTERVAL: 1 FT
3. BASE TOPOGRAPHY INSIDE OF DSP FOOTPRINT PREPARED BY PARAMETRIX, INC., BELLEVUE, WA FROM FIELD DATA TAKEN ON JULY 6, 2011.
   HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD 27 US FEET - TRANSLATED TO NAD83/91 (HARN)
   VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
   CONTOUR INTERVAL: 1 FT

CLIENT
HOLCIM

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-01-20
DESIGNED	JX
PREPARED	REDMOND
REVIEWED	JX
APPROVED	GZ

PROJECT
RI WORK PLAN 2020
RAVENSDALE, WA

TITLE
SITE PLAN

PROJECT NO.	PHASE	REV.	FIGURE
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LEGEND

- Sampling Location
- Decision Unit
- Treatment Tank
- South Pond
- Site Boundary
- Parcel

0 100 200

1 " = 100 FT FEET

REFERENCE(S)

1. GOLDER (DECISION UNITS, SAMPLING LOCATIONS, TREATMENT TANK)
2. ASPECT CONSULTING (SITE BOUNDARY, PARCEL)
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FT US
4. MAP SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

CLIENT
HOLCIM

PROJECT
RI 2021 AND 2022 ISM AND INFILTRATION POND SAMPLINGRAVENSDALE, WA

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-05-26
DESIGNED	TL
PREPARED	MK/MR
REVIEWED	JX
APPROVED	GZ

TITLE
ISM DECISION UNITS AND SAMPLING LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
152030402	004	0	3

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1 in

0

LEGEND

- Infiltration Ponds Sample Location
- Infiltration Ponds
- Site Boundary
- Parcel

0 50 100

1 " = 53 FT FEET

REFERENCE(S)

1. GOLDER (SAMPLING LOCATIONS)
2. ASPECT CONSULTING (SITE BOUNDARY, PARCEL)
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FT US
4. MAP SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

SOURCE: ESRI, MAXAR, EARTHSTAR GEOGRAPHICS, AND THE GIS USER COMMUNITY

CLIENT
HOLCIM

PROJECT
RI 2021 AND 2022 ISM AND INFILTRATION POND SAMPLINGRAVENSDALE, WA

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-05-26
DESIGNED	TL
PREPARED	MK/MR
REVIEWED	JX
APPROVED	GZ

TITLE
INFILTRATION PONDS SEDIMENT SAMPLING LOCATIONS

PROJECT NO.	PHASE	REV.	FIGURE
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