EXPLANATION OF SIGNIFICANT DIFFERENCES

FOR THE

ST. MARIES CREOSOTE SITE

ST. MARIES, IDAHO

CERCLIS IDENTIFICATION NUMBER: SFN1002095

FEBRUARY 2014

Issued by: **Date:**

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Remedial Cleanup Program
Office of Environmental Cleanup
U.S. Environmental Protection Agency

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February 2014

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1.0 INTRODUCTION

1.1 Site Name and Location

The St. Maries Creosote site is on the bank of the St. Joe River at 1369 Railroad Avenue in the City of St. Maries, Idaho. The site lies within the boundary of the Coeur d'Alene Tribe Reservation and encompasses approximately 13 acres of low-lying vacant land and 3 acres of sediments in the adjacent St. Joe River. The Comprehensive Environmental, Response, Compensation, and Liability Information System (CERCLIS) identification (ID) number for this site is ID SFN1002095.

1.2 Lead and Support Agencies

The U.S. Environmental Protection Agency (EPA) is the lead agency for conducting response actions, and the Coeur d'Alene Tribe is the support agency for the site. Because the site is wholly within the Coeur d'Alene Tribe Reservation, tribal, rather than state, laws and requirements apply. For this project, EPA coordinates on an informal basis with the Idaho Department of Environmental Quality.

1.3 Statement of Purpose

EPA issued a Record of Decision (ROD) for the site on July 20, 2007. The components of the remedy selected in the ROD are summarized in Section 2.3. This Explanation of Significant Differences (ESD) sets forth several changes that EPA is making to the selected remedy. EPA may document changes to a remedial action after a ROD is issued through an ESD if such changes do not fundamentally alter the remedy with respect to scope, performance, or cost consistent with Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC §9617(c), and the National Contingency Plan (NCP), 40 CFR Section 300.435(c)(2)(i).

A Consent Decree (CD) for the site was entered into by the United States of America on behalf of EPA and the Coeur d'Alene Tribe as plaintiffs and the Potentially Responsible Parties (PRPs) as defendants in November 2009. ARCADIS U.S. Inc., (ARCADIS) a voluntary remediation party retained by the PRPs, also signed the CD.

This ESD describes four changes to the site remedy based on information obtained since the ROD was issued. This information includes technical data and information obtained as part of remedial design, including sampling analysis, development of a sediment transport model (which was anticipated in the ROD), and bench scale treatment studies using contaminated soils. Collectively, these studies were used to update the conceptual site model and to more accurately determine the volumes of contaminated soil and sediment that that require cleanup based on the cleanup levels in the ROD. These studies and some preliminary engineering calculations conducted as part of the remedial design effort led to and are the basis for the changes described in this ESD.

1.4 Administrative Record

This ESD and supporting documents will become part of the Administrative Record file for this site, in accordance with the NCP, Section 300.825(a)(2). The Administrative Record is available for review at the following locations:

- St. Maries Public Library, 822 West College Avenue, St. Maries, ID, 83861, (208)245-3732
- U.S. EPA Region 10 Superfund Records Center, 1200 Sixth Avenue Seattle, WA, 98101 (please call 206-553-4494 for an appointment)

2.0 BACKGROUND

2.1 Summary of Site History

The St. Maries Creosote site is located on the south bank of the St. Joe River. The site is within the boundary of the Coeur d'Alene Tribe Reservation. Immediately west of the site, the Potlatch Corporation operates a lumber and plywood mill. A city park with docks and river access borders the east side of the site. A flood control levee maintained by the U.S. Army Corps of Engineers forms the southern boundary of the site. Because the site lies outside of the flood protection area, it is subject to seasonal flooding. The St. Joe River flows into Lake Coeur d'Alene approximately 10 miles west of the site. Water levels in the lake are controlled by operations at the downstream Post Falls Dam, and for much of the year the St. Joe River adjacent to the site is within the slow backwater zone of the lake.

From 1939 through 1960, the site was used for peeling and treating logs to be used for utility poles. The bottom portion of the poles were treated by soaking them in large vats filled with heated creosote, a wood preservative containing 80 percent polynuclear aromatic hydrocarbons (PAHs); no pentachlorophenol or other wood-preserving chemicals were used. The treatment vats were located approximately 50 to 75 feet from the bank of the St. Joe River. Soils, groundwater, and river sediments adjacent to the site became contaminated with creosote as a result of site operations.

2.2 EPA Actions to Date and Contamination

Property owners reported soil staining, a noticeable odor (as creosote), and sheen along the bank of the river in November 1998. In January 1999, EPA issued a Unilateral Administrative Order to the property owners under CERCLA §106 removal authority for removal of creosote contaminated soil and debris. Approximately 200 tons of contaminated soil and debris were removed from the site and replaced with clean soils in February 1999. After the discharge of creosote to the river was significantly reduced by the removal action, a remedial investigation and feasibility study effort commenced, culminating in the 2007 ROD.

Despite the removal action, soils, groundwater, and river sediments at the site remain contaminated. In the upland portion of the site, approximately 44,000 cubic yards of soil and associated groundwater exceeded the cleanup levels established in the ROD. The area of impacted soil encompasses approximately 1.5 acres and is shown in Figure 1. Contaminated soils range in depth from surface soils of 1 foot or less to a maximum depth of 60 feet below ground surface. The in-river portion of the site includes approximately 41,188 cubic yards of sediment that exceed cleanup levels. The areal extent of sediment contamination is shown in Figure 2. Sediment contamination ranges in depth from 14 feet offshore of the former processing area to less than 2 feet in downstream areas.

2.3 Brief Summary of the 2007 ROD

In the ROD, EPA affirmed the need for remedial action and identified exposure pathways that pose unacceptable risks to humans and the environment. These risk pathways for humans include using groundwater from the site as drinking water and direct contact with upland and riverbank soils for workers or recreational users (although this risk is marginal). Unacceptable risks for the environment include toxicity to benthic organisms from contamination in sediments and river bank soils, toxicity to bottom-dwelling fish from contact with sediment, and toxicity to mink that feed on bottom-dwelling fish. Conditions have not changed since the ROD was signed that would indicate different or additional risk pathways.

Contaminants of concern (COCs) were identified as PAHs; benzene, toluene, ethylbenzene, and xylene (BTEX); and other semivolatile organic compounds (SVOCs). Seven PAH compounds found on site are classified as carcinogenic: benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, and indeno(1,2,3-cd)pyrene. The COCs have not changed since the ROD was issued. The ROD identified numeric cleanup levels for COCs in soil, groundwater, sediment, and water to be discharged to the St. Joe River. These cleanup levels are found in Tables 23 through 26 of the ROD.

In the ROD, EPA established five remedial action objectives (RAOs) for the project:

- **RAO 1—**Protect aquatic and benthic organisms by preventing direct contact of benthic organisms with COCs in surface sediment in the St. Joe River at concentrations greater than protective levels.
- **RAO 2—**Prevent migration of impacted groundwater and free-phase creosote to surface sediment in the St. Joe River that would result in COC concentrations greater than protective levels for aquatic and benthic organisms.
- **RAO 3—**Prevent the downstream transport of COCs that result in COC concentrations in water or sediment that exceed levels protective of aquatic and benthic organisms.
- **RAO 4—**Prevent human dermal contact with or ingestion of COCs in soils at concentrations greater than protective levels.
- **RAO 5—**Prevent exposure to and contamination of groundwater by COCs at concentrations exceeding levels protecting the use of groundwater as a drinking water source.

The ROD summarized nine different cleanup alternatives, including a “no action” alternative and the selected alternative. The remedy selected by EPA in the 2007 ROD requires the following:

- Excavation and on-site thermal treatment of contaminated upland soil to a depth of 20 feet below ground surface
- In-situ solidification of contaminated soils deeper than 20 feet, to be accomplished by auguring into the soil a mixture of Portland cement, blast furnace slag, and other reagents as needed to solidify the soil and prevent off-site migration of contamination
- Dredging, dewatering, and on-site thermal treatment of contaminated sediment and bank soils
- Temporary installation of a metal sheet pile wall in the river to protect downstream water quality during dredging of the most highly contaminated sediments
- Backfilling of dredged areas of the river with clean soils
- Restoration of impacted areas along the river bank
- Collection and on-site treatment of contaminated groundwater encountered during excavation, water drained from dredged sediments, and stormwater that becomes contaminated during construction, with discharge of treated water to the St. Joe River

3.0 DESCRIPTION OF CHANGES TO THE ROD

3.1 Change No. 1: Revise the Sediment Cleanup Area

The most significant change EPA is making in this ESD is related to the sediment portion of the remedy. The ROD used concentrations of PAHs in sediment as the sole factor in determining which sediments required cleanup. With this ESD, EPA is approving a different approach for delineating the sediment area requiring cleanup. This approach includes sediment chemistry as a primary factor, but also considers several other lines of evidence (see

Table 1 below) to develop a map delineating specific areas and depths where sediment will be removed from the river.

The ROD provides cleanup levels (in Table 25) for 16 individual chemicals and 2 chemical groups called low-molecular weight PAHs (LPAHs) and high-molecular weight PAHs (HPAHs). The ROD requires sediment that fails any one of the cleanup levels to be dredged from the river. The ROD also estimated that 16,978 cubic yards (cy) of sediment would need to be dredged. However, the ROD acknowledged that a large area of sediment had yet to be characterized. Additional characterization has been completed that shows a much larger area of sediment contamination than assumed in the ROD. Contamination extends deeper into the sediment and is found farther downstream than anticipated. Based on the cleanup levels in the ROD and the additional sediment sampling conducted, an estimated 41,188 cy of sediment would be required to be dredged. This revised volume is almost two and a half times the volume presented in the ROD. The map showing the delineated area based on the ROD cleanup levels is provided in Figure 2.

The ROD anticipated possible changes in the sediment cleanup requirements and provided two avenues by which the cleanup levels and/or cleanup area could be modified. First, the ROD allowed sediment toxicity tests to be used to determine "the extent of shoreline, nearshore, and offshore sediments which pose a current or reasonably anticipated future risk to benthic organisms." Second, the ROD allowed for a sediment transport analysis to be performed. Contaminated sediments in the offshore portion of the site deeper than 10 centimeters (cm) could be left in place if the sediment transport analysis showed that they would not be exposed during potential future scour events.

A sediment toxicity study and a sediment transport analysis were performed, and both were considered when developing the revisions presented in this ESD. The toxicity study did not support developing new cleanup levels because there was no predictive relationship between sediment chemistry and toxicity. Although in more than half of the samples, no toxicity was observed despite chemical concentrations that exceeded one or more of the ROD cleanup levels, not enough data was developed to support new cleanup numbers. The sediment transport study showed that scour would not occur deeper than 3 feet below the current sediment surface during a 100-year flood event. EPA added a safety factor of two and determined that it would be safe to leave contaminated sediment in place deeper than 6 feet below the sediment surface.

In revising the sediment cleanup area, EPA also considered whether creosote was present in the form of nonaqueous phase liquid (NAPL), which EPA considers to be source material. Therefore, EPA now proposes to define areas of sediment requiring cleanup based on (1) chemistry, (2) the presence of NAPL, (3) proximity to the source area, and (4) the potential for exposure of subsurface sediments during future scour events. Each of these lines of evidence was used to generate a map of areas requiring cleanup. These maps were then layered on top of one another and added together to generate a sitewide cleanup map. Table 1 below summarizes how each layer contributed to the cleanup map. The analysis used to generate the map is presented in detail in a 2013 technical memorandum entitled *St. Maries Creosote Site Sediment Lines of Evidence (LOE)-Based Sediment Remedy* (ARCADIS, 2013). The resulting revised sediment cleanup area, shown on Figure 3, will result in the dredging of 17,821 cy of contaminated sediment.

Table 1. Summary of Lines of Evidence

Line of Evidence	Description	Impact on Cleanup Area
Presence of NAPL	The remedy presented in this ESD targets for removal sediments containing mobile NAPL.	The cleanup will include NAPL contaminated sediments in areas below the depth of potential scour. Even though these deep sediments will not become exposed in the future, they are targeted for removal because of the potential for NAPL to migrate.
Sediment Chemistry	All sediment subject to future exposure due to scour that has a total PAH concentration greater than or equal to 100 milligrams per kilogram (mg /kg) will be removed. The surface weighted average concentration of both LPAHs and HPAHs in surface sediments must meet the ROD cleanup levels. Meeting the ROD cleanup levels for individual PAH compounds is no longer required.	Some sediment that fails one or more of the chemical-specific cleanup levels in the ROD will be left in place. Most of the contaminated sediment that will be left in place is below the depth of potential scour.

Line of Evidence	Description	Impact on Cleanup Area
Proximity to Source Area	Sediments adjacent to the former upland processing area will be removed even if they do not fail other lines of evidence.	Adjacent to the former processing area, there are discrete areas of clean sediment in between contaminated areas. Contaminant concentrations are typically high in this area, and most of the mobile NAPL is found here. Removing the discrete areas of clean sediment is a conservative decision intended to account for variability in the data.
Potential for Scour	The sediment transport study showed that scour will not occur below 3 feet during a 100-year flood.	The cleanup will leave some contamination in place at depths below 6 feet.

The ROD did not specify how compliance would be measured. With this ESD, EPA is establishing that the surface-weighted average concentration of PAHs in the top 2 feet of sediment will be used to determine compliance with the ROD, as amended by the ESD.

The original remedy of dredging contaminated sediment has not changed. As required in the ROD, contaminated sediment will be dredged and removed from the river, dredged areas will be backfilled with clean imported material, and a temporary watertight sheet pile wall will be used to enclose the most highly contaminated sediments during cleanup.

By including the presence of NAPL as a line of evidence, the remedy described in this ESD targets for removal the most highly toxic sediments in the river. The remedy will also minimize the potential for future transport of contaminants from subsurface sediments to surface sediments and downstream areas. This revised cleanup decision is cost-effective and efficient. Less than half the volume of sediment that fails one or more of the cleanup standards in the ROD will be dredged, but more than 95 percent of the contamination will be removed.

The sediment remedy remains protective of human health and the environment and will continue to meet the relevant RAOs in the ROD. The surface weighted average concentrations of both LPAHs and HPAHs in surface sediments will meet the ROD standards when the cleanup is complete.

3.2 Change No. 2: Reduce Depth of Soils Slated for Thermal Treatment

The ROD required that the top 20 feet of contaminated soils in the upland portion of the site be excavated and thermally treated on site. Contaminated soils deeper than 20 feet (from 20 feet down to a maximum depth of 60 feet) would be treated by in-situ solidification. The ROD did not provide a basis for the depth of 20 feet. Other documents in the administrative record imply that the depth of 20 feet was selected to provide adequate space for the excess soil "swell" that will occur when Portland cement and other reagents are augured into the subsurface soils in the area slated for in-situ solidification. Sampling conducted after the ROD was issued and preliminary engineering calculations have shown that removing the top 20 feet of soil would be dangerous and difficult to accomplish.

The depth at which groundwater is encountered varies seasonally but during construction is expected to be approximately 7 feet below the current ground surface. If surface soils were excavated to a depth of 20 feet, groundwater would flow into the excavation. It would be difficult to pump water out of the excavation fast enough to keep it open, and the extracted groundwater would need to be treated before it could be discharged to the river.

Soil borings in the upland revealed a layer of sand that begins approximately 30 feet below ground surface. Pump tests in the sand show that water flows readily through this layer and that water in this layer is directly connected to the river. If excavation were attempted down to a depth of 20 feet, water pressure in the sand layer could cause upward pressure on the relatively thin (10 feet thick) layer of soil above it, causing a type of failure called "base heave." Water and soil could be pushed upward into the excavation, creating unsafe conditions for workers.

In recognition of these potential problems, EPA is changing the depth of soil that will be excavated and treated in the upland area from 20 feet to a nominal depth of 10 feet. Soils deeper than 10 feet will now be included in the area to be solidified in place. Engineering calculations performed as part of the design show that an excavation depth of 10 feet will provide sufficient space to contain soil "swell" during in-situ solidification.

The upland soil remedy remains protective of human health and the environment and will continue to meet the relevant RAOs in the ROD. Solidified soils will still be buried below the surface, protecting people and animals from direct contact. By preventing groundwater from flowing through the treated soils, solidification will protect groundwater and the St. Joe River.

3.3 Change No 3: Add a Barrier Wall to the Upland Cleanup Plan

Through this ESD, EPA is revising the upland portion of the remedy to include an underground barrier wall. The wall will encircle the area containing contaminated soils in the upland portion of the site. It will be keyed into a dense layer of silt that acts as a confining layer for groundwater approximately 60 feet below ground surface.

Among other benefits, the barrier wall will accomplish the following:

- Significantly reduce the flow of groundwater into the soil excavation area, reducing the need to pump and treat water from the excavation area
- Contain excess soil “swell” during injection of slurry and mixing of subsurface soils
- Make conditions safer for construction workers

The upland soil remedy remains protective of human health and the environment and will continue to meet the relevant RAOs in the ROD. Adding an underground barrier wall will only enhance the protectiveness of the remedy.

3.4 Change No. 4: Revise the Soil Cleanup Number for Benzene

When determining soil cleanup numbers in the ROD, EPA considered two risk pathways: (1) protecting people and animals from direct contact with contaminants in soil and (2) protecting groundwater. EPA developed concentrations protective of both pathways, then selected the lower of the two numbers. The cleanup number of 0.002 mg/kg for benzene in the ROD was selected to protect groundwater, and it was based on a model that predicted groundwater concentrations assuming that all the benzene in soils left on site would leach into groundwater.

During the design effort, thermal treatment tests, as well as contaminant-leaching studies, were conducted. The thermal tests showed that the cleanup level could not be achieved with the thermal treatment system selected in the ROD. Additionally, the contaminant-leaching studies concluded that benzene would not leach from treated soil and sediment as assumed in the ROD. Because benzene will not leach into groundwater at the assumed concentrations, the cleanup number in the ROD is overly conservative, and therefore, this number can be revised.

EPA is revising the soil cleanup number for benzene from 0.002 mg/kg to 1.1 mg/kg, a concentration that will protect people from unacceptable risk due to direct contact and incidental ingestion. At the same time, EPA is adding a new testing requirement to confirm that benzene in leachate will not impact groundwater. Thermally treated soils must be tested and may be left on site if they protect both human health and groundwater, as detailed below:

- **Protection of human health—**Thermally treated soil and sediment must not contain benzene above a concentration of 1.1 mg/kg, the residential soil concentration for benzene in the current EPA Regional Screening Levels table.
- **Protection of Groundwater—**The lowest concentration of benzene in soil that could "fail" the leachate test is 0.044 mg/kg. Thermally treated soil and sediment with benzene concentrations at or above 0.044 mg/kg must undergo synthetic precipitate leaching procedure testing for benzene. The benzene concentration in leachate must not exceed 2.2 micrograms per liter (μg/L), which is the groundwater cleanup level for benzene in the 2007 ROD.

In 2006, EPA issued a "contained-in determination" that allowed on-site disposal of treated soils. Although the soils to be treated contain a listed waste under the Resource Conservation and Recovery Act, EPA is allowed to make the determination that contaminated environmental media no longer contains listed waste. That determination must be based on a site-specific analysis of the treatment levels necessary to protect human health and the environment. The revised benzene level in this ESD continues to be protective of human health and the environment at the St. Maries Creosote site. Therefore, with this ESD, EPA is also revising the 2006 contained-in determination. Treated soils that meet the cleanup level for benzene described above, as well as meet all other soil cleanup levels in the 2006 contained-in determination, may be disposed of on site.

The remedy remains protective of human health and the environment and will continue to meet the relevant RAOs in the ROD. Benzene concentrations in treated soils left on site will be at or below the concentration protective of human health. Leachate testing will confirm that benzene will not leach from treated soils into the groundwater at concentrations above drinking water standards.

4.0 CHANGE IN COST

In the ROD, the cost of the selected remedy was estimated at $12,007,000. The currently estimated cost of construction is $23,030,738. This cost increase is due to a number of factors, including increased costs over the intervening 7 years of both construction materials (particularly steel for the sheet pile wall) and labor and the addition of the underground barrier wall.

5.0 SOURCES OF INFORMATION

The following information in the Administrative Record supports the need for the significant differences described herein:

- ARCADIS. 2013. *St. Maries Creosote Site Sediment Lines of Evidence (LOE)-Based Sediment Remedy*. September 30. (Note: This document is in Appendix C of the Pre-Design Report listed below. and it includes the sediment transport analysis.)
- ARCADIS. 2013. *St. Maries Creosote Site Pre-Design Report*. September 30.
- EPA. 2014. *St. Maries Creosote Site– Revised cleanup number and testing requirements for benzene*. Memorandum to the St. Maries Creosote Site File from Helen Bottcher, Remedial Project Manager. January 6.
- EPA. 2006. *St. Maries Creosote Site – Proposed Approach for Contained In Determination and Clean Up Levels for Thermally Treated Soils and Sediment*. Memorandum from Judi Schwarz to Dave Bartus. June 12.
- EPA. 2014 *St. Maries Creosote Site - Contained-In Determination for Offsite Beneficial Re-Use of Thermally Treated Soils*. Letter from Kate Kelly, Director of EPA Region 10 Office of Air, Waste, and Toxics, to Jennifer Williams, ARCADIS. June. (Note: This letter is still in draft form.)

6.0 SUPPORT AGENCY ACCEPTANCE

The Coeur d'Alene Tribe has been closely involved with the site investigation and remedial design process and is aware of the changes to the ROD contained in this ESD. In a letter dated February 14, 2014, EPA offered to consult with the Tribe on a formal government-to-government basis before finalizing the ESD. Citing their decade-long involvement with EPA on the project, the Tribe declined the offer of formal consultation in a February 20, 2014, reply.

7.0 STATUTORY DETERMINATIONS

The amended remedy for the site, as modified by this ESD, continues to satisfy the requirements of §121 of CERCLA to accomplish the following:

- Protect human health and the environment, through a combination of treatment, engineering controls, and institutional controls
- Comply with applicable or relevant and appropriate requirements
- Be cost-effective
- Utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable
- Satisfy the preference for treatment as a principal element

8.0 PUBLIC PARTICIPATION COMPLIANCE

The public participation requirements for an ESD are set out in the NCP §300.435(c)(2)(ii) as follows: (A) Make the ESD and supporting information available to the public in the administrative record established and the information repository; and (B) Publish a notice that briefly summarizes the ESD, including the reasons for such differences, in a major local newspaper of general circulation. These public participation requirements for an ESD will be been met as follows:

The ESD and supporting information will be added to the administrative record established under §300.815 and made available on the EPA's Website and in the information repositories listed in Section 1.0 of this ESD. In addition, when this ESD is issued, a public notice of its availability will be published in the *St. Maries Gazette Record*.

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LEGEND

- EXTENT OF SOIL EXCEEDING ROD CLEANUP LEVELS WITHIN THERMAL TREATABILITY ZONE
- EXTENT OF SOIL EXCEEDING ROD CLEANUP LEVELS WITHIN IN SITU STABILIZATION ZONE

0 175 350
SCALE IN FEET

ST. MARIES CREOSOTE SITE
ST. MARIES, IDAHO

PRE-DESIGN REPORT

EXTENT OF SOIL EXCEEDING ROD CLEANUP LEVELS

ARCADIS

FIGURE
1

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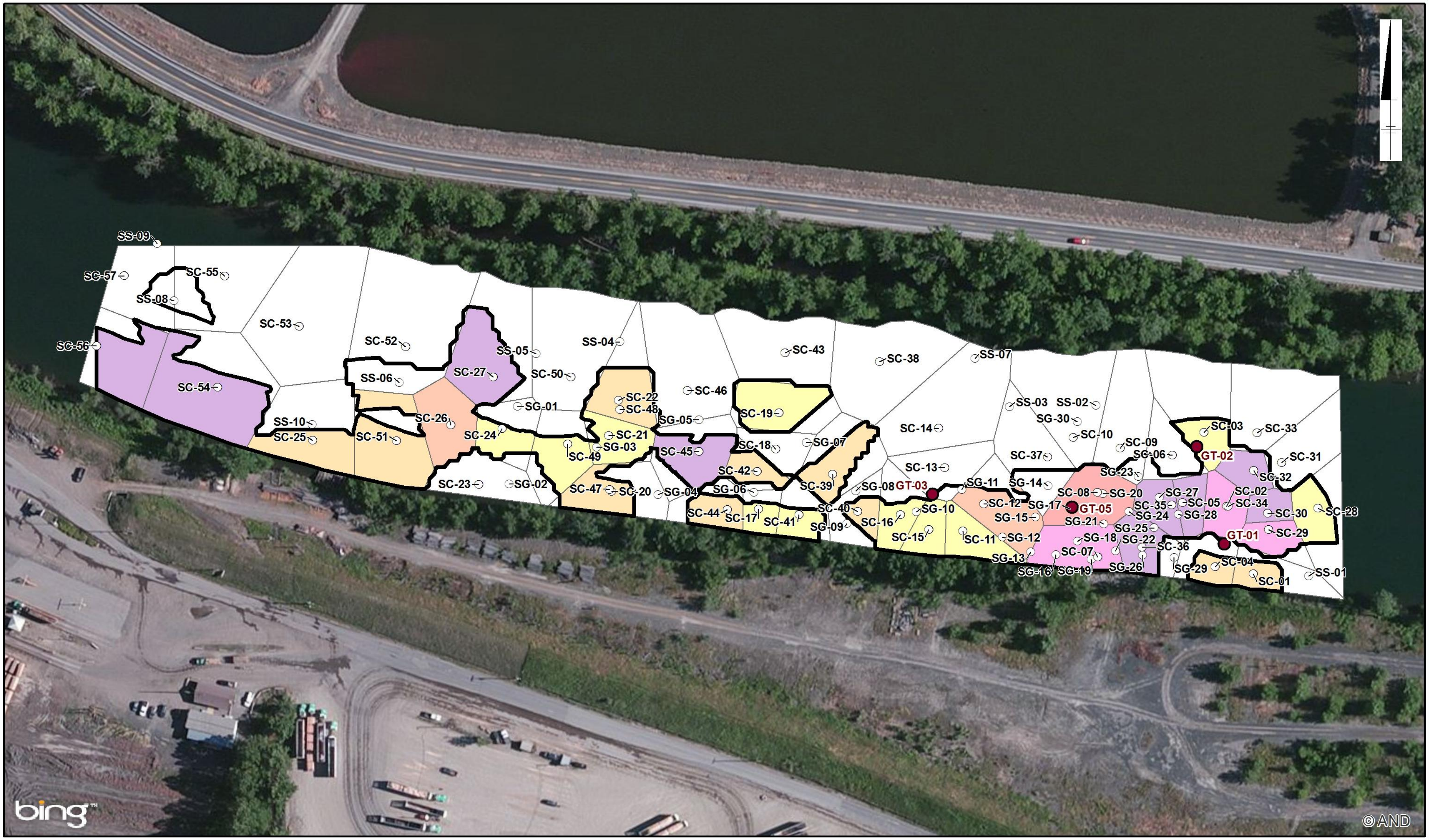

LEGEND

- ROD-Based Removal Delineation
- Sediment Sample Locations
- Geotechnical Sample Locations
- 2 ft Proposed Removal Depth
- 4 ft Proposed Removal Depth
- 6 ft Proposed Removal Depth
- 8 ft Proposed Removal Depth
- 10 ft Proposed Removal Depth
- 12 ft Proposed Removal Depth
- 14 ft Proposed Removal Depth

0 175 350

SCALE IN FEET

NOTES:
ROD = record of decision
ft = feet

ST. MARIES CREOSOTE SITE
ST. MARIES, IDAHO

ROD-BASED BOUNDARY

ROD-BASED REMOVAL DELINEATION

ARCADIS

FIGURE
2

CITY: (DEN-TECH) DIV/GROUP: (ENV/GIS) DB: (R.MCKINNEY) LD: (R.MCKINNEY) PIC: () PM: J.WILLIAMS) TM: ()
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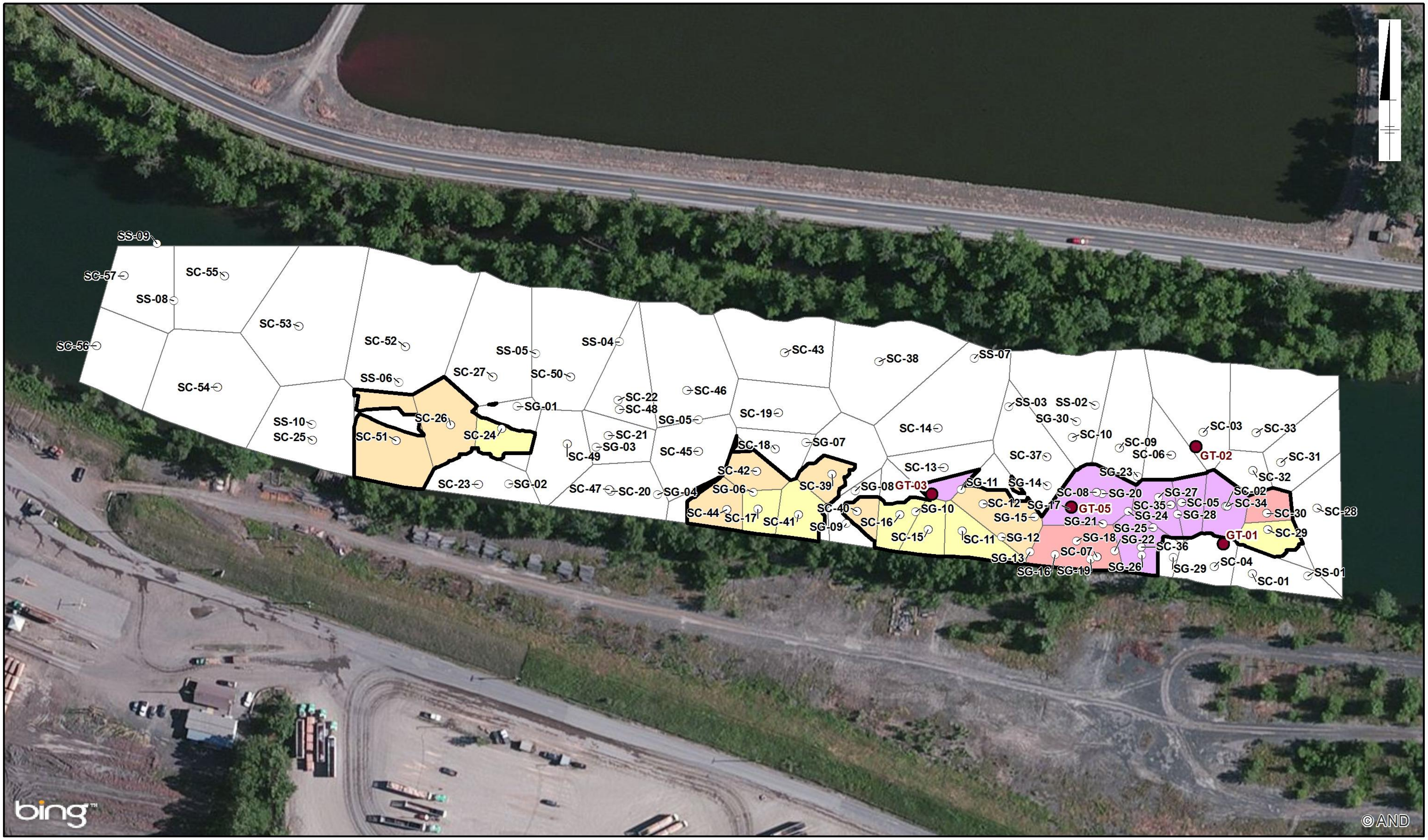

LEGEND

- LOE-Based Removal Delineation
- 2 ft Proposed Removal Depth
- 4 ft Proposed Removal Depth
- 8 ft Proposed Removal Depth
- 12 ft Proposed Removal Depth
- Sediment Sample Locations
- Geotechnical Sample Locations

0 175 350

SCALE IN FEET

NOTES:
LOE = lines of evidence
ft = feet

ST. MARIES CREOSOTE SITE
ST. MARIES, IDAHO

LOE-BASED SEDIMENT REMEDY

ESD CLEANUP MAP

ARCADIS

FIGURE
3