MED-Granger Dam Removal Analysis Report

Ohio Department of Transportation

PID 99636

Subject Project: MED-Granger Dam Removal

Prepared by

Mead & Hunt

www.meadhunt.com

September 10, 2015

Table of Contents

Page

1. Introduction **1**
A. Purpose 1
B. Project Location 1
C. Project Goals 2
D. Project Scope 2
E. Limitations 2
2. Data Collection **2**
A. Dam Construction 2
B. Existing Site Conditions 3
C. Historical Conditions 4
D. Reference Reach 4
3. Hydraulic Analysis **5**
A. Modeling Approach 5
B. Existing Condition Model Basis 5
C. Flow Determination 7
D. Proposed Condition Model Basis 8
E. Results of Hydraulic Analysis 9
4. Conceptual Design **10**
5. Floodplain Management **11**
6. Environmental Assessments **11**
7. Construction Estimate **12**
8. Conclusion **12**

Tables

Table 1: Cross Section Locations Used for Corroborating HEC-RAS Geometric Model with Current Conditions **6**
Table 2: Summary of Discharges for North Branch Rocky River **7**

Figures

Figure 1: Project Location **1**
Figure 2: 1906 Topo **4**
Figure 3: 1963 Topo **4**
Figure 4: Reference Reach Typical Section **7**
Figure 5: Peak Discharge of Selected Flood Events for North Branch Rocky River **8**

Appendices

APPENDIX A: FEMA Maps

APPENDIX B: HEC-RAS

APPENDIX C: EXHIBITS

APPENDIX D: SEDIMENT SAMPLING

APPENDIX E: ESTIMATES

1. Introduction

A. Purpose

The MED-Granger Dam removal is proposed as mitigation for stream impacts associated with Ohio Department of Transportation (ODOT) MED-94-11.91 project which is currently scheduled for construction in 2016. This report provides the analysis to evaluate the suitability of mitigation, identify potential risks, and develop a plan for implementing the dam removal.

B. Project Location

The MED-Granger Dam is located in a suburban area in Medina County, Ohio on the North Branch Rocky River, approximately 240 feet north of Granger Road (County Highway 21). The dam is adjacent to the City of Medina Water Works facility located at 3733 Granger Road. The dam and surrounding property is owned by the City of Medina. The project location is shown in **Figure 1**.

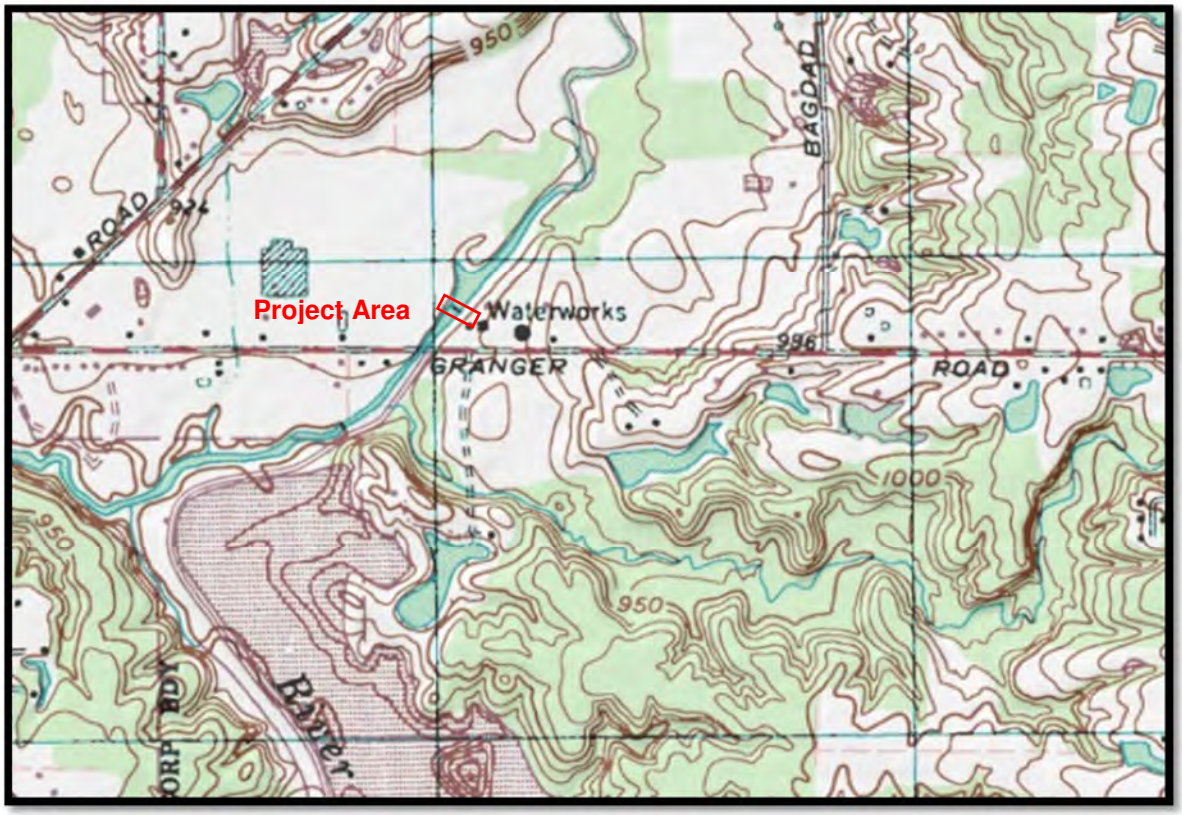


Figure 1: Project Location

C. Project Goals

The MED-SR94-11.91 project involves the construction of a roundabout at the intersection of State Route 94 (SR 94) and Granger Road. That project includes impacts to a tributary to the Rocky River within the Black-Rocky watershed, specifically 0.405 acre of wetland impacts and 795 linear feet of impacts to perennial Stream 1, which together equal greater than 0.5 acres of lost waters. ODOT Office of Environmental Services - Waterway Permits Unit (OES-WPU) has reviewed the subject project and determined that it will require a USACE Section 404 Individual Permit and OEPA Section 401 Water Quality Certification. Per the Waterway Permit Manual, the District is responsible for completing the Combined 404/401 Permit Application and coordinating it with OES-WPU for review and final agency submittal and approval. ODOT estimates that 1193 L.F. of stream mitigation will be required.

ODOT has identified the removal of the MED-Granger Dam as a potential mitigation for the MED-SR94-11.91 project stream impacts. The dam removal will need to restore a length of stream equivalent or greater than the length of stream mitigation required, create no rise in FEMA published flood profiles, and not have an adverse impact on existing infrastructure such as groundwater wells, bridges, and structures within the project vicinity.

D. Project Scope

The project would include the removal of the dam and associated infrastructure. The removal will enhance the flow and habitat of the North Branch Rocky River. The sediment accumulated in the impoundment area would be transported downstream through fluvial processes as the river works to achieve dynamic equilibrium over time. Channel reconstruction and restoration would be limited to the area in the immediate vicinity of the dam removal intended to restore the channel section within the limits of the dam construction.

E. Limitations

Improvements will be focused on a site level restoration based on historical conditions and reference reach characteristics. Limited topographic information of the river channel was available from pre-dam construction. Significant beaver activity was observed within this region. This evaluation does not take into consideration the creation of dams and subsequent impacts as a result of beaver activity.

2. Data Collection

A. Dam Construction

The MED-Granger Dam was constructed to provide a water supply in the 1920s. The original dam design plans, dated 1916, were reviewed for this analysis. The water treatment plant is no longer in operation as the City has purchased water supplied from the City of Avon Lake Water Treatment Plant on the shore of Lake Erie since 2002. The dam was constructed of concrete with steel rebar reinforcing. The dam is 6 feet high, approximately 10 inches at the top and 4 feet at the base with a stepped section on the downstream side of the dam. The dam is approximately 120 feet wide in an arched shape. Subsequent to the dam construction, a concrete splashpad was added which is not depicted on the original drawings. The pad was

poured without formwork and it is assumed that this concrete is non-reinforced and is approximately 18 inches thick.

B. Existing Site Conditions

The area immediately east of the dam contains the water treatment plant and well field now used primarily for administrative offices and equipment storage by the City. The area to the west of the dam is agricultural. The riparian area upstream is forested. The watershed contains a mix of suburban residential properties, open space, agricultural lands, roadways, and a portion of the City of Brunswick.

A survey was conducted in March 2015 which included a boundary survey of the City properties, topographic survey of the dam site, and channel cross-sections corresponding to the published FEMA floodplain sections and a reference section upstream. The topographic survey data was supplemented with the County LiDAR data (2006 OSIP). The data is in NAD83 horizontal position and NAVD88 vertical positioning.

Sediment has accumulated behind the dam within the area of impoundment. Selected bathymetric survey points were obtained by boat. Based on an estimated original channel profile, the amount of sediment accumulated was estimated to be 8,300 cubic yards.

This reach of North Branch Rocky River is within a floodplain area and is mapped by Federal Emergency Management Agency Flood Insurance Rate Maps (FIRMs) as a Zone AE floodplain with defined Base Flood Elevations (Map Revised August 19, 2013). FEMA floodplain maps and design models were obtained from FEMA.

The CH 21 Granger Road Bridge was replaced a few years ago (Medina County, Project No. C116Q/C117Q, Plans dated June 2013). The bridge span is over 100 feet wide with the existing channel width upstream approximately 45 feet wide.

Well inventory research was performed using ODNR Division of Soil and Water Resources online tools for Water Well Logs (http://soilandwater.ohiodnr.gov/search-file-well-logs). Research included a map-based search that extended 1000 feet in all directions from the dam and from the full extent of the pond. The map-based search revealed ten records, nine of which have been ruled out as inactive (listed as “test” or “dry”). The one potentially active well (Well Log 9952119 with listed owner Medina Water Works) is roughly 100 feet east of the upper end of the pond. The status of that well is being further investigated; however, it is expected to be abandoned or no longer to exist according to the City. Research also included a record-based search (to account for any logs that are not spatially referenced in the mapping tools) for any well log records located along Granger Road (County Road 21). This search revealed sixty-four records, all of which were determined as being sufficiently distant from the site (based on street address range, on listed spatial coordinates, or on listed relative distances to known intersections) or were ruled as being inconsequential due to being "test" wells.

C. Historical Conditions

Historical aerials were obtained ranging in date from 1950 to 1992 and along with historic topographic maps ranging in date from 1904 to 1994. The aerials depict development of the watershed whereas the riparian area has remained mostly forested. There is also evidence of some natural channel migration of the river upstream of the impoundment and developed channelization of the river downstream of the dam. The roadway crossing immediately downstream of the dam is present in all historical documents reviewed. Historical topo from 1906 and 1963 for the project area and adjacent reach of the North Branch Rocky River are shown in **Figures 2 and 3**.

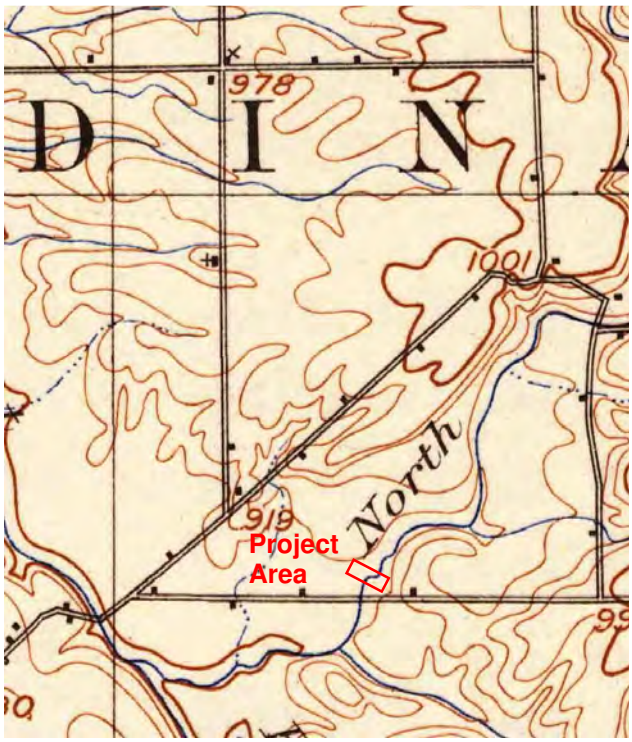


Figure 2: 1906 Topo

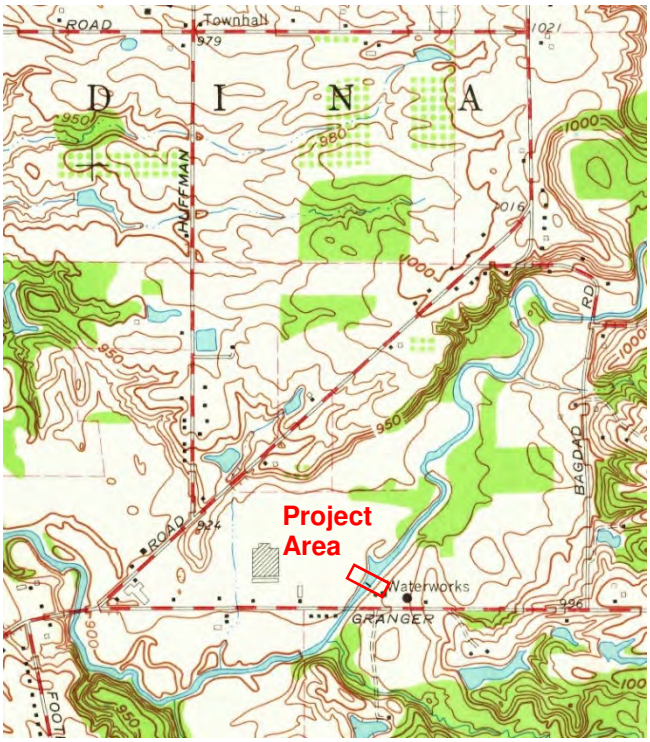


Figure 3: 1963 Topo

D. Reference Reach

The reach of the North Branch Rocky River upstream adjacent to the Bagdad Road crossing was initially identified as the reference reach. However, this reach of the river exhibited varying site conditions as it was confined by a shale cliff upstream of the bridge with a shale bedrock streambed downstream of the bridge. An alternate reference reach was selected based on observed site conditions.

The reference reach selected was immediately upstream of the impoundment which exhibited channel and riparian morphology and habitat to be expected to historically exist in the reach section impacted by the dam. Based on the topographic sections, representative bankfull and low flow channel dimensions were developed. The reference reach section is described in the next section in more detail.

3. Hydraulic Analysis

A. Modeling Approach

To evaluate the hydraulic effects and impacts of this project, modeling was performed using Hydrologic Engineering Center River Analysis System ("HEC-RAS") software, Version 4.1.0, published by the US Army Corps of Engineers. Comparative modeling has been performed for existing conditions and proposed conditions to evaluate potential changes to floodplain water surface elevations, flood widths, and flow velocities for various flood events. The modeling effort was informed by site observations, a detailed field survey, published FEMA data, design plans of existing structures, and County LiDAR information.

B. Existing Condition Model Basis

The North Branch Rocky River (and other surrounding conveyances) have been previously studied by FEMA in a Flood Insurance Study published as "Flood Insurance Study, Medina County, Ohio and Incorporated Areas," revised August 19, 2013 (FIS Numbers 39103CV001B and 39103CV002B for Volume 1 and Volume 2, respectively). Directly corresponding to this Medina County FIS, a published HEC-RAS model (Published Model) was obtained for North Branch Rocky River (with the embedded description, "Medina County 2011, NAD 83, NAVD 88"). This Published Model has been used as the existing condition geometric model.

Per the FIS, the limits of the detailed study for North Branch Rocky River extend "from its mouth at the confluence with West Branch Rocky River to a point approximately 0.3 mile upstream of Remsen Road." With those extents, the Published Model runs approximately half a mile (0.5 mi) downstream of the dam location and approximately five and a half miles (5.5 mi) upstream of the dam location. Per the FIS, some cross sections in the Published Model were surveyed in the field, while most of the cross sections were synthetically created using GIS-derived surface information.

The Published Model includes the subject dam as an "Inline Structure" and has pertinent cross sections immediately upstream and downstream of the dam, upstream and downstream of the CH 21 Granger Road Bridge, within the upstream impoundment, and along the portions of the upstream channel used as the reference reach. Floodplain mapping in the vicinity of the project can be seen on FEMA FIRM Numbers 39103C0162E and 39103C0164E. Portions of said FIRMs are included in **Appendix A**.

To verify the applicability of the Published Model to current site conditions, cross sections were surveyed in the field at locations correlating to specific named and unnamed cross section locations used in the Published Model. The cross section locations are summarized in **Table 1**. River stations (in feet) are numbered low to high from downstream to upstream. Cross sections are assigned alphabetic letters from low ('D') at the downstream end to high ('H') at the upstream end. **Table 1** is organized with cross sections listed from upstream to downstream for easy correlation to HEC-RAS standard output tables in **Appendix B**. Refer to **Appendix C** for relative cross section locations.

Table 1: Cross Section Locations Used for Corroborating HEC-RAS Geometric Model with Current Conditions

Published Study Cross Section Description	River Station, ft	Notes
"Section H"	4854	Part of upstream Reference Reach
"Section G"	3754	Within pool inundation area
"Section F"	3283	Within pool inundation area
"2887"	2887	Upstream side of Dam
"2850"	2850	Downstream side of Dam
"Section E"	2602	Between Dam and Granger Road Bridge
"Contraction"	2553	Upstream side of Granger Road Bridge
"Expansion"	2465	Downstream side of Granger Road Bridge
"Section D"	2414	Downstream of Granger Road Bridge

Downstream of the dam (Section D to River Station 2850), surveyed cross sections and previously modeled cross sections correlated well with regard to minimum channel elevation, top of bank elevations, and (top of bank) channel width.

Upstream of the dam within the pool inundation area (River Station 2887 to Section F, with Section G being on the cusp), the top of bank information (elevations and channel widths) correlated within reason. The surveyed cross sections provided information that was more accurate regarding dam-influenced sediment bed elevations in the channel. Riffle sections were observed in the field starting approximately at River Station 4250 (which is not a modeled section), which helped establish the approximate pool inundation area.

Upstream of the pool inundation area (starting with Section G on the cusp and continuing up to Section H), localized geomorphology caused more pronounced differences in the channel shape and amount of symmetry. The top of bank information (elevations and channel widths) matched reasonably; however, it was noted that channel bed information in the Published Model cross sections for all cross sections upstream until the next bridge crossing at Bagdad Road (River Station 8441) was unrealistically shallow and generically trapezoidal.

Although the Published Model cross sections upstream of the pool inundation area did not correlate well with observed field conditions in the actual channel, it was determined that the observed differences would not substantially affect the overall floodplain modeling in this area. The channel represents a small portion of the total floodplain. Additionally, there are no structures near this area that require fine-tuning of the floodplain extents and there is low potential of project impact within this area.

Since the Published Model cross sections correlated within reason to existing conditions near the dam and immediately downstream of the dam where the highest project impact will occur, no changes were made to the Published Model to represent the existing condition geometry.

C. Flow Determination

The FIS states that stream flow statistics used for this river were estimated with regression equations in the USGS application StreamStats. It further reports that a process of regionalization was used to relate stream flow statistics for a group of selected stream gaging locations to estimate stream flow statistics for ungaged sites such as for North Branch Rocky River. The reported peak discharges in cubic feet per second (cfs) for the lower (pertinent) portion of North Branch Rocky River for various flood events are listed in **Table 2**. These flow rates relate to a drainage area of 37.9 square miles.

Table 2: Summary of Discharges for North Branch Rocky River

Percent Annual Chance	10%	2%	1%	0.2%
Nominal Recurrence Interval	10-year event	50-year event	100-year event	500-year event
Peak Discharge	2800 cfs	4080 cfs	4640 cfs	5920 cfs

For the purposes of channel section design, a determination of the bankfull flow rate was made based on hydraulic modeling of a typical channel section in the reference reach. The typical section was developed based on surveyed channel sections from River Station 4737 to River Station 4854. The channel sections were spatially averaged and then made horizontally symmetrical to produce a typical section shown in **Figure 4**.

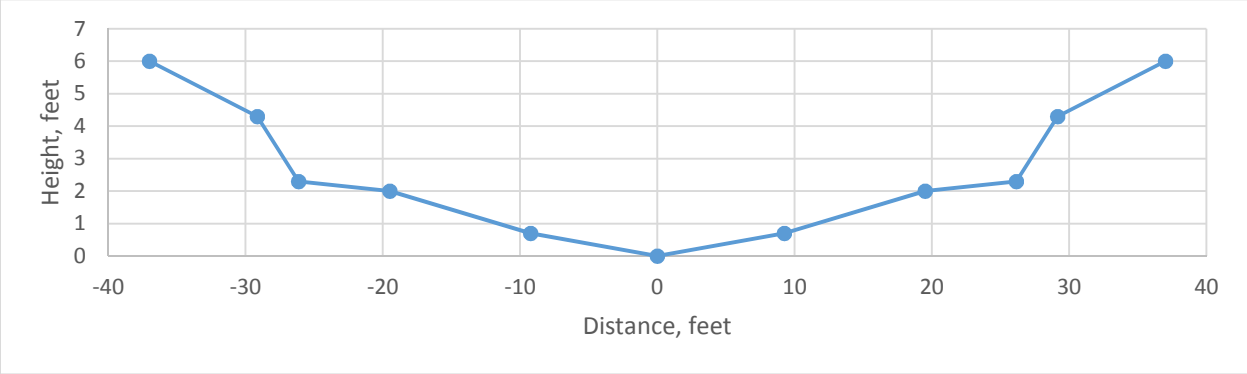


Figure 4: Reference Reach Typical Section

The bankfull flow rate was modeled using free-flowing normal flow conditions. A Manning's "n" friction value of 0.040 was used across the typical section in conjunction with the value used in this reach in the Published Model. Because of the effects of a nearby beaver dam and because of the downstream sediment accumulation in the pool inundation area, there was a degree of uncertainty in establishing a localized river gradient. A range of gradients from S=0.0020 feet/feet to S=0.0040 feet/feet produced a range of flow rates from approximately 1100 to 1600 cubic feet per second, respectively.

To fine-tune and validate a final value for the bankfull flow rate, an approximation of the nominal 1.4-year flood event[1] was made from a log (base 10) extrapolation of the various larger peak discharges provided by StreamStats. Per **Figure 5**, the extrapolated value for the 1.4-year event is 1231 cfs. This value falls within the potential range of values determined in the hydraulic analysis of the typical channel section.

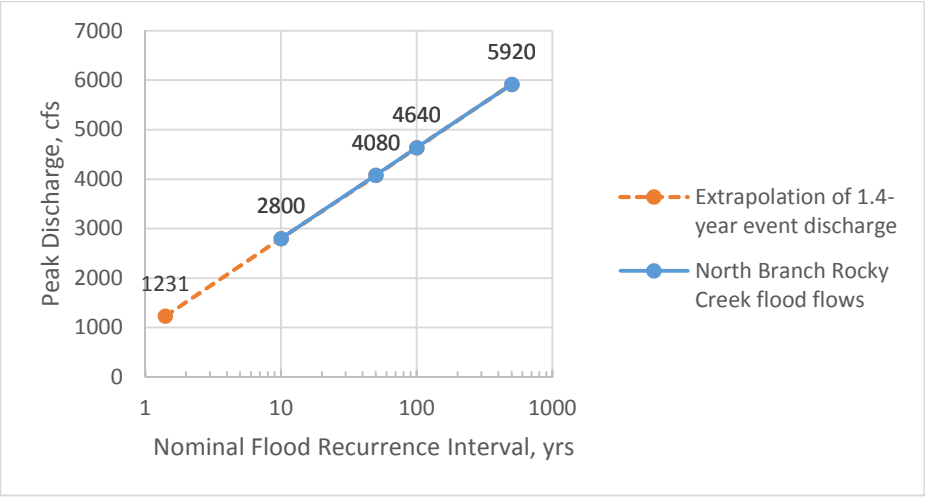


Figure 5: Peak Discharge of Selected Flood Events for North Branch Rocky River

The bankfull flow rate for the lower portion of the North Branch Rocky River (along with a similarly determined bankfull flow rate for the upper portion) was then entered into the Published Model to form a new flow profile, "Q1.4". This was done to evaluate the selected bankfull flow rate throughout the study area. The new resulting water surface profile was found in many local cross sections to be slightly higher than the designated overbank elevations. As opposed to performing a trial-and-error optimization of the bankfull flow rate in the vicinity of the dam-impacted river cross sections, the selected value was held for preliminary channel design.

D. Proposed Condition Model Basis

The Published Model has been modified as described herein to create a proposed Project Model. The Project Model includes a design channel section that will be used for stream reconstruction from the point of the dam removal location to a transition point approximately 140 feet downstream of the dam. The Project Model also includes modified upstream cross section geometry to account for anticipated head cutting and the export of accumulated sediment as the river returns to a more natural state.

The selected design channel is a trapezoidal channel. It has a base width (40 feet), top width (65 feet), and capacity (Q_{BF}) that are informed by the reference reach typical section. The downstream channel section

[1] The United States Geological Survey (USGS) performed a study on "Bankfull Characteristics of Ohio Streams and Their Relation to Peak Streamflows" (Scientific Investigations Report 2005-5153). In this study, 40 gaged stream sites were investigated. It was found that the flood recurrence interval that related to bankfull discharges for various stream locations varied widely, from 1.01 to 9.7 years with an average of 1.8 years and a median of 1.4 years. It was also determined that the recurrence interval had a strong correlation to channel slope: streams with very low bankfull-discharge recurrence intervals (less than 1.1 years) had lower gradients (approximately 0.002 ft/ft) and streams with very high bankfull-discharge recurrence intervals (greater than 2.5 years) had relatively high gradients (approximately 0.030 ft/ft). Based on a log-log plot of the data in the report, it was confirmed that the median value of 1.4 years is an appropriate value to use for this project with the related river gradients.

at the chosen tie-in location also aided in establishing the design channel top width. The bank slopes have been set at a maximum steepness of 2.5:1 (H:V) to provide bank stability during and after construction. The depth of the design channel has been capped so that the elevation of the constructed overbank area (bench) does not exceed the average captured sediment elevation on the upstream side of the dam. The overbank area is being designed to have a slight slope tilted toward the main channel. The constructed channel section will taper (narrow) down to match the existing downstream channel section that has a base width of approximately 24 feet roughly 140 feet downstream of the dam.

Manning's "n" friction factors from the Published Model for the left and right overbank regions and for the main channel have been carried over to the Project Model and are considered valid values for long term conditions including plant establishment.

Upstream of the dam, the Project Model accounts for near term head cutting of alluvial sediment by applying the chosen reference reach typical section upward from the dam location through the pool inundation area. The modeled inverts are based on surveyed channel inverts immediately below the dam and at Sections G and H. Additionally, the typical section has been applied upstream as far as Section H to account for known conditions and minor, natural geomorphologic changes.

It should be noted that based on field observations and surveys, it was determined that there are limitations in the Published Model data with regard to the upstream channel sections and streambed profile. The limitations are expected to stem from limitations in the original GIS source information used to create the floodplain cross sections, in that the GIS information did not have detailed contour information at or below the baseflow water surface.

The difference in the Published Model information and the surveyed channel information (which is used to inform the Project Model profile) is evident as plotted on the augmented Flood Profiles exhibit in **Appendix C**. The plot includes the streambed profile of the Published Model, the streambed profile based on the field survey from Section D to Section H, and the expected streambed profile used in the Project Model. Additionally, the plot includes a sketch of the probable actual streambed profile extending upstream from Section H towards the Bagdad Road (Township Highway 170) bridge crossing. This extrapolated profile is not meant to represent future head cutting but instead to show the probable current streambed elevation in comparison to the surveyed streambed information and the previously modeled streambed information.

E. Results of Hydraulic Analysis

The Published Model and Project Model were evaluated for the various flood events listed in **Table 2.** The results of the Project Model analysis show a slight decrease in floodplain water surface elevations (decrease of 0.05 feet for the 100-year event) and water surface top widths (decrease of 4.0 feet for the 100-year event) in the vicinity of the dam, with similar, diminishing changes extending upstream. Along with the slightly reduced floodplain inundation, there are higher flow velocities (increases of 1.4 feet per second for the 100-year event and 1.85 feet per second for the bankfull event) predicted in the dam vicinity, with similar changes upstream, due to the unrestricted flow of a deeper, non-encumbered stream condition.

Downstream of the dam, the results indicate that there will be no noticeable effects on the flood event water surfaces or velocities near or below the Granger Road (County Highway 21) bridge.

HEC-RAS output that compares the results of the Published Model and the Project Model can be found in **Appendix B** and includes a data output table, water surface profile plot, velocity profile plot, and floodplain extent exhibit. In the output sheets, the Published Model data is referenced as “Exist” and the Project Model data is referenced as “Pro.”

4. Conceptual Design

The project would include the removal of the dam and associated infrastructure. Removal items would include the concrete dam, concrete splashpad, adjacent retaining walls, and nearby intake structure, piping, pumps, and cistern and abandonment of associated utilities.

The sediment accumulated in the impoundment area would be transported downstream through fluvial processes as the river works to achieve dynamic equilibrium over time. Immediate release of sediment is expected during construction as the impoundment water level is lowered and the river cuts down to its original channel profile. It is not expected that that entire sediment load will be conveyed downstream during construction; instead it is expected that the river will cut a channel through the sediment that is similar in size and shape to the design channel section downstream of the dam. It is estimated that approximately 5800 cubic yards (of the estimated accumulated 8300 cubic yards) of sediment will be released during and in the short term following the impoundment drawdown. Over time, additional materials will be released from the uplands during flood events through natural fluvial processes.

Channel reconstruction and restoration is necessary to provide a stable bank section and limit channel migration to the east and west. This would be limited to the area in the immediate vicinity of the dam removal and would be completely within the property boundaries. The channel section will receive a soil bioengineering stabilization consisting of a stabilized toe and bank. The riparian uplands will be seeded extending approximately 860 feet upstream of the dam and approximately 140 feet downstream of the dam.

Site access will be from the east from the City property. A small access road will be required. For the initial dam opening, it is assumed that a small equipment pad will be constructed downstream of the dam on the lower river right (eastern) bank. The work area will be isolated from the river flow with diversion sandbags. An oil boom will be placed across the stream downstream of the work area.

An excavator with a pneumatic drill head will placed on the equipment pad and used to create a notch in the approximate center of the dam. This notch will allow for a controlled release of the impoundment. The notch will be widened and deepened until the impoundment is drained. It is assumed work will be performed during low flow conditions and the river will be allowed to flow uncontrolled through the center of the work area while concrete removal continues toward each river bank including the retaining walls.

As the dam is removed working outward from the center of the channel, booms and other devices will be used as much as possible to capture dam debris and/or keep waste concrete separate from the stream flow. Removal of the left (western) portion of the dam and construction of the river left bank will require access across the river and will require in-water work. Reconstruction of each river bank can commence as soon as the adjacent segment of the dam and splashpad and the adjacent headwalls are removed.

Restoration will include the banks, riparian uplands, and temporary access routes.

The concept site plans are included in **Appendix C**. Final design plans and specifications will be required for construction bidding and are expected to include additional details regarding site access, grading, and restoration.

5. Floodplain Management

The work will be performed within a FEMA mapped floodplain and floodway. Coordination with Medina County's floodplain management coordinator (Mr. Dan Willhoite, PE, dwillhoite@medinaco.org, 330-723-9561) has been initiated for understanding and preparing for local, state, and federal documentation requirements. Based on review of Medina County Floodplain Damage Reduction Regulations (FDRR) and with input from Ohio Department of Natural Resources, Medina County has noted the following requirements:

1. A professional engineer "No Rise Certification" certification, substantiated by a hydrologic and hydraulic study, must be prepared and submitted to the County. (FDRR Section 4.13 A)

2. A professional engineer certification of bank full conveyance capacity must be prepared and submitted to the County. (FDRR Section 4.13 C)

3. Pre-project notification must be given to U.S. Army Corps of Engineers and to Ohio Department of Natural Resources Division of Water Resources. Evidence of notification must be submitted to the County and to FEMA. (FDRR Section 4.13 C)

4. A statement specifying the entity with maintenance responsibilities must be submitted to the County. (FDRR Section 4.13 C)

5. Subsequent to County of approval of the included data and prior to construction, a CLOMR application should be filed with FEMA Region V. After project completion, a LOMR should be obtained from FEMA. (FDRR Section 3.8 A)

The draft hydrologic and hydraulic study has been prepared as part of this analysis and will be the primary supporting information for Items 1, 2, and 5. These items and the other two items require additional documentation that will be prepared during and after the design phase.

6. Environmental Assessments

Field surveys are in progress for the project with many studies at or nearing completion. The project is being coordinated through ODOT and is following their environmental processes for NEPA compliance.

To date, the sediment sampling and Section 106 RFR tasks are complete and the reports have been submitted to ODOT. An Inter-office Communication from ODOT was received on June 10, 2015 for the sediment sampling. The IOC stated: No further environmental site assessment or special management is warranted for the sediments during the dam removal. The sediment sampling report and IOC are included

in **Appendix D**. An IOC was received on July 29, 2015 for the Section 106 RFR. The IOC stated a finding of No Historic Properties Affected for the proposed project.

The ESA Screening report was submitted to ODOT on July 7, 2015. The ESA Screening was completed for the entire City owned property which includes the dam location. An IOC from ODOT was received on July 30, 2015. The ESA Screening IOC stated that No further environmental site assessment or material management is warranted for the project.

In addition, ecological studies are still in progress. The study area for the ecological studies is also the City owned property which includes the dam location, and the entire reach of the North Branch Rocky River within the boundaries. An Ecological Survey Report will be completed for the project. The ESR is scheduled to be completed in July. Results of biotic sampling (IBI) will also be included in the ESR. Biotic sampling within the North Branch Rock River will occur pre and post dam removal. The Level 1 ESR was submitted to ODOT on August 24, 2015. The report is being coordinated through ODOT with ODNR and USFWS.

The project's environmental clearance date is set for September 25, 2015. Based on the results of the environmental clearances, additional studies may be required.

The project will also likely require a Section 404 Nationwide Permit with Pre-Construction Notification (PCN). The waterway permit will be obtained prior to construction. It is estimated that five years of post-construction monitoring will be required.

7. Construction Estimate

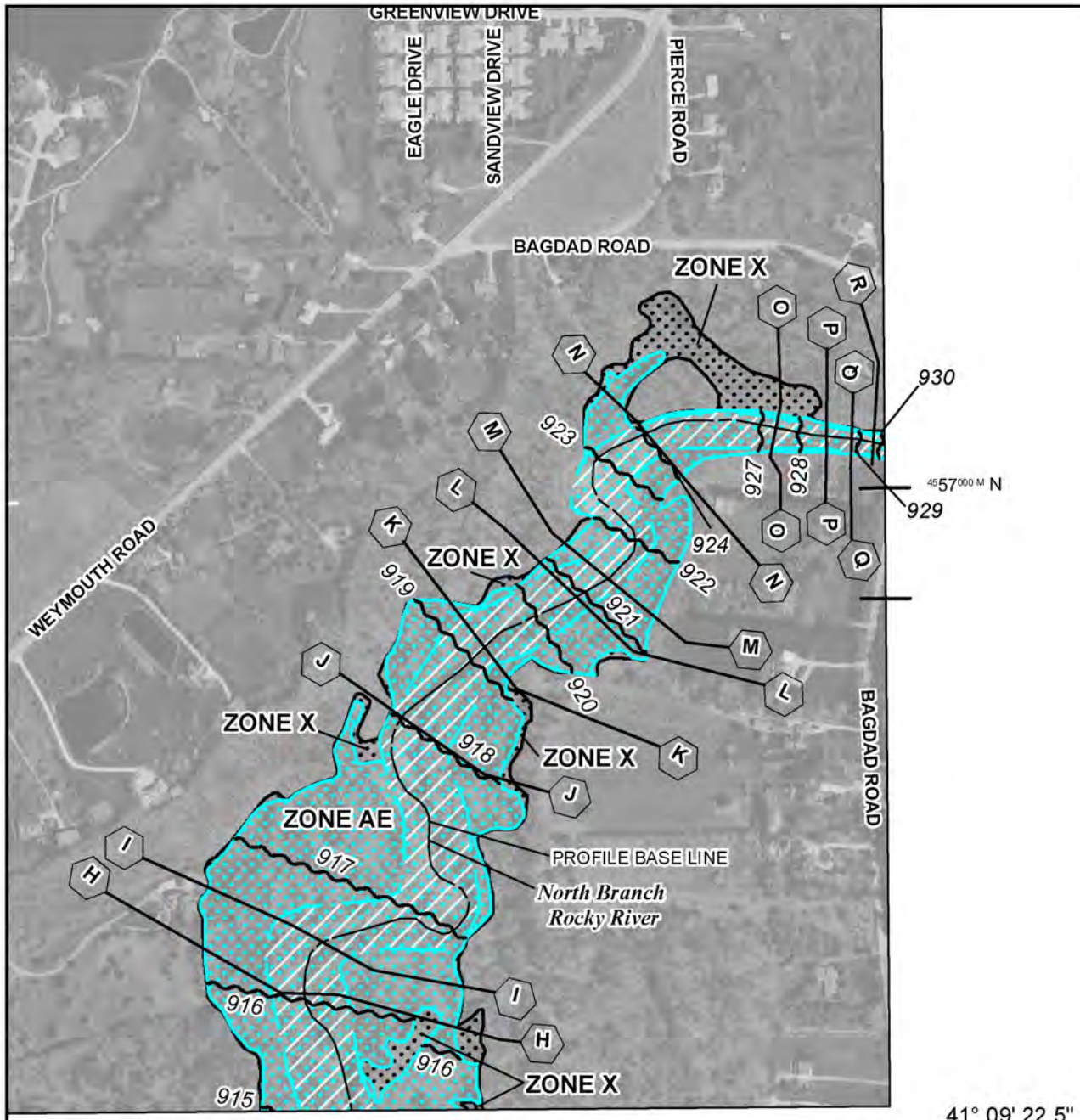
Construction cost estimate is included in **Appendix E**. The estimate includes allocations for design, construction administration, and permitting support services. A detailed scope and fee estimate for design and permitting support services will determine these actual costs.

8. Conclusion

There will be no increased risk of flooding due to the removal of the MED-Granger Dam. In addition, there will be no considerable change in channel velocity and sediment transport characteristics post-dam removal as compared to existing condition.

It is expected that the removal will return approximately 1200 linear feet of the North Branch Rocky River to a riverine setting which would provide a stream mitigation length in excess of that required for the MED-SR94-11.91 project. The distance is based on the distance from the dam to the first observed riffle area upstream during the March 2015 site investigations. However, the uplift to aquatic habitat will be much farther reaching.

APPENDIX A: FEMA Maps



tional Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0162E

FIRM

FLOOD INSURANCE RATE MAP

MEDINA COUNTY, OHIO

AND INCORPORATED AREAS

PANEL 162 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MEDINA, CITY OF	390383	0162	E
MEDINA COUNTY	390378	0162	E

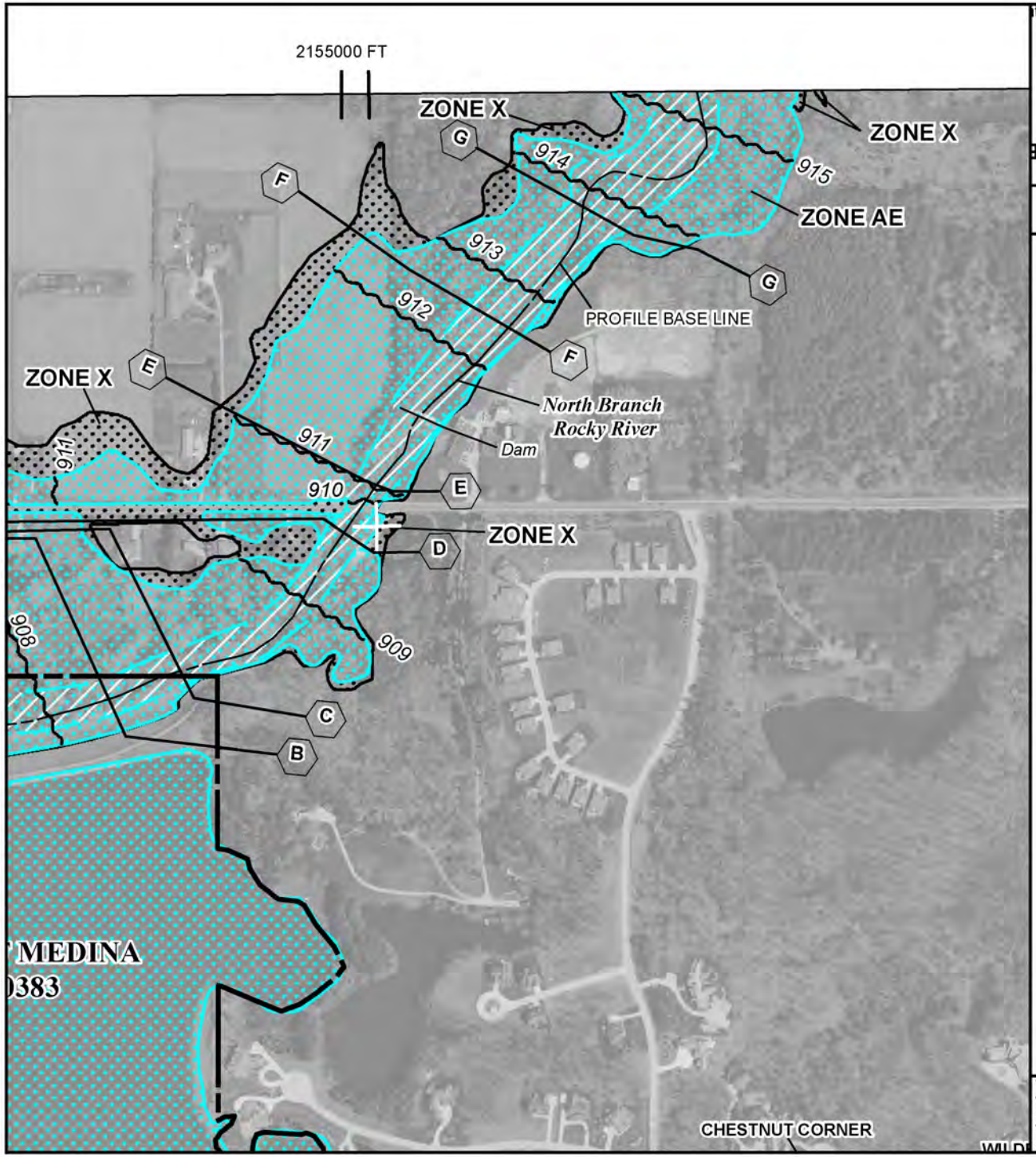
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
39103C0162E

MAP REVISED
AUGUST 19, 2013

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



tional Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0164E

FIRM

FLOOD INSURANCE RATE MAP

MEDINA COUNTY, OHIO

AND INCORPORATED AREAS

PANEL 164 OF 450

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MEDINA, CITY OF	390383	0164	E
MEDINA COUNTY	390378	0164	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
39103C0164E

MAP REVISED
AUGUST 19, 2013

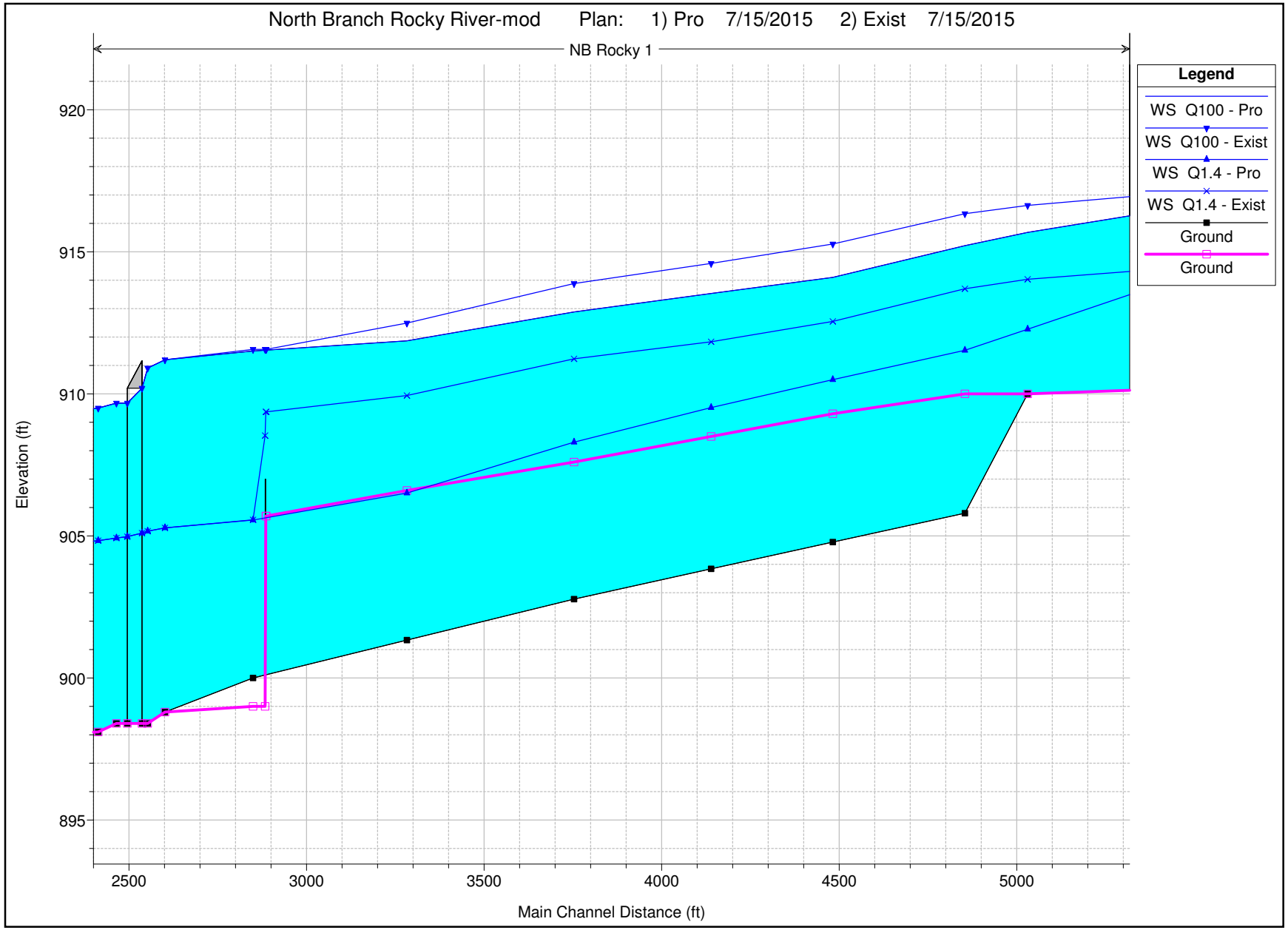
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

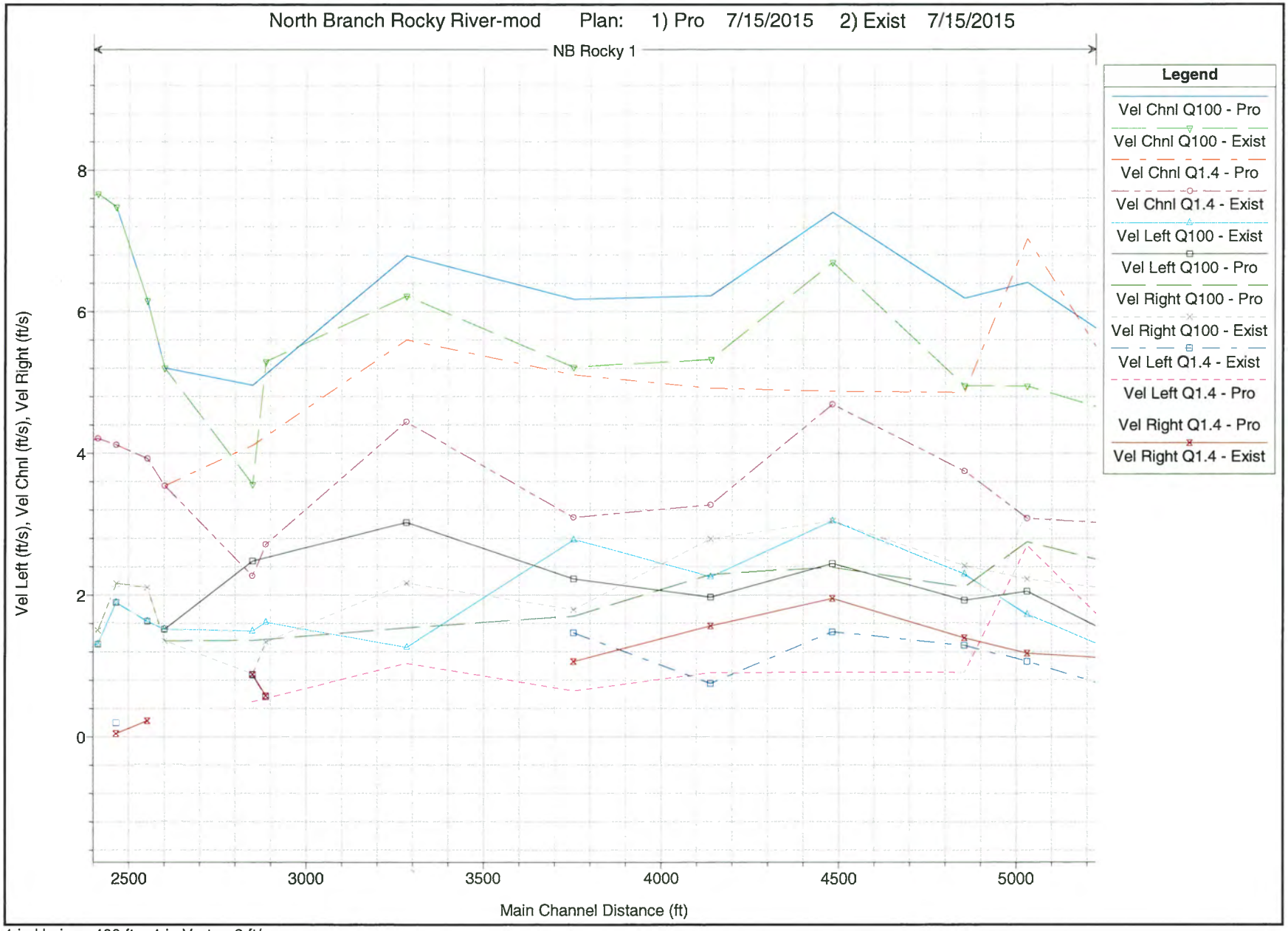
APPENDIX B: HEC-RAS

Section Name	River	Reach	River Station	Profile	Plan	Q Total (cfs)	Min Ch Elev (ft)	W.S. Elev (ft)	Crit W.S. Elev (ft)	E.G. Elev (ft)	E.G.Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Section H	NB Rocky	1	4854	Q100	Exist	4640.00	910.00	916.34	914.36	916.55	0.001805	4.95	1541.07	702.30	0.36
	NB Rocky	1	4854	Q100	Pro	4640.00	905.80	915.22	913.61	915.61	0.001974	6.19	1334.14	670.39	0.39
	NB Rocky	1	4854	Q1.4	Exist	1231.00	910.00	913.70	912.71	913.85	0.002254	3.75	521.00	591.91	0.36
	NB Rocky	1	4854	Q1.4	Pro	1231.00	905.80	911.53	909.59	911.90	0.002773	4.86	261.08	72.51	0.41
RS 4482	NB Rocky	1	4482	Q100	Exist	4640.00	909.30	915.27	913.64	915.68	0.003547	6.69	1114.62	641.29	0.50
	NB Rocky	1	4482	Q100	Pro	4640.00	904.78	914.09	912.48	914.74	0.002876	7.40	972.53	495.62	0.46
	NB Rocky	1	4482	Q1.4	Exist	1231.00	909.30	912.54	911.81	912.79	0.004159	4.69	389.72	365.56	0.48
	NB Rocky	1	4482	Q1.4	Pro	1231.00	904.78	910.49	908.58	910.86	0.002805	4.87	262.36	81.38	0.41
RS 4140	NB Rocky	1	4140	Q100	Exist	4640.00	908.50	914.59	912.16	914.86	0.002137	5.32	1307.19	580.42	0.39
	NB Rocky	1	4140	Q100	Pro	4640.00	903.84	913.53	911.36	913.95	0.001910	6.22	1209.43	544.06	0.38
	NB Rocky	1	4140	Q1.4	Exist	1231.00	908.50	911.83	910.54	911.95	0.001872	3.27	556.85	432.01	0.33
	NB Rocky	1	4140	Q1.4	Pro	1231.00	903.84	909.51	907.64	909.89	0.002890	4.92	264.98	175.79	0.42
Section G	NB Rocky	1	3754	Q100	Exist	4640.00	907.60	913.88	911.49	914.15	0.002058	5.21	1343.97	554.06	0.38
	NB Rocky	1	3754	Q100	Pro	4640.00	902.77	912.88	910.52	913.30	0.001759	6.17	1225.42	459.80	0.37
	NB Rocky	1	3754	Q1.4	Exist	1231.00	907.60	911.23	909.68	911.34	0.001607	3.09	561.22	335.33	0.30
	NB Rocky	1	3754	Q1.4	Pro	1231.00	902.77	908.30	906.57	908.70	0.003263	5.10	249.60	88.79	0.44
Section F	NB Rocky	1	3283	Q100	Exist	4640.00	906.60	912.49	911.53	912.94	0.003074	6.22	1148.80	611.89	0.48
	NB Rocky	1	3283	Q100	Pro	4640.00	901.33	911.87	908.68	912.44	0.001812	6.79	1124.18	394.12	0.40
	NB Rocky	1	3283	Q1.4	Exist	1231.00	906.60	909.93	908.64	910.24	0.003529	4.44	277.13	96.20	0.46
	NB Rocky	1	3283	Q1.4	Pro	1231.00	901.33	906.51	905.12	906.99	0.004005	5.60	222.95	66.42	0.51
Dam (D/S side)	NB Rocky	1	2850	Q100	Exist	4640.00	899.00	911.56	904.40	911.74	0.000371	3.56	1729.84	632.20	0.19
	NB Rocky	1	2850	Q100	Pro	4640.00	900.00	911.51	906.76	911.80	0.000801	4.96	1437.74	628.20	0.27
	NB Rocky	1	2850	Q1.4	Exist	1231.00	899.00	905.56	902.05	905.64	0.000422	2.27	566.89	121.21	0.18
	NB Rocky	1	2850	Q1.4	Pro	1231.00	900.00	905.55	902.91	905.81	0.001670	4.11	306.08	92.64	0.34
Section E	NB Rocky	1	2602	Q100	Exist	4640.00	898.80	911.20	905.31	911.57	0.001013	5.20	1173.13	652.02	0.29
	NB Rocky	1	2602	Q100	Pro	4640.00	898.80	911.20	905.31	911.57	0.001013	5.20	1173.13	652.02	0.29
	NB Rocky	1	2602	Q1.4	Exist	1231.00	898.80	905.28	901.88	905.47	0.001041	3.55	347.21	63.58	0.27
	NB Rocky	1	2602	Q1.4	Pro	1231.00	898.80	905.28	901.88	905.47	0.001041	3.55	347.21	63.58	0.27
Bridge (U/S side)	NB Rocky	1	2553	Q100	Exist	4640.00	898.40	910.91	905.78	911.46	0.001336	6.15	858.56	525.40	0.34
	NB Rocky	1	2553	Q100	Pro	4640.00	898.40	910.91	905.78	911.46	0.001336	6.15	858.56	525.40	0.34
	NB Rocky	1	2553	Q1.4	Exist	1231.00	898.40	905.16	902.06	905.40	0.001397	3.93	313.51	63.41	0.31
	NB Rocky	1	2553	Q1.4	Pro	1231.00	898.40	905.16	902.06	905.40	0.001397	3.93	313.51	63.41	0.31
Bridge	NB Rocky	1	2537			Bridge									
Bridge (D/S side)	NB Rocky	1	2465	Q100	Exist	4640.00	898.40	909.67	905.70	910.49	0.002122	7.48	711.49	824.38	0.42
	NB Rocky	1	2465	Q100	Pro	4640.00	898.40	909.67	905.70	910.49	0.002122	7.48	711.49	824.38	0.42
	NB Rocky	1	2465	Q1.4	Exist	1231.00	898.40	904.92	902.07	905.19	0.001583	4.12	298.74	61.54	0.33
	NB Rocky	1	2465	Q1.4	Pro	1231.00	898.40	904.92	902.07	905.19	0.001583	4.12	298.74	61.54	0.33
Section D	NB Rocky	1	2414	Q100	Exist	4640.00	898.10	909.50	905.63	910.36	0.002488	7.67	739.14	1060.02	0.44
	NB Rocky	1	2414	Q100	Pro	4640.00	898.10	909.50	905.63	910.36	0.002488	7.67	739.14	1060.02	0.44
	NB Rocky	1	2414	Q1.4	Exist	1231.00	898.10	904.83	901.69	905.10	0.001540	4.21	292.34	55.72	0.32
	NB Rocky	1	2414	Q1.4	Pro	1231.00	898.10	904.83	901.69	905.10	0.001540	4.21	292.34	55.72	0.32

Note: Modified sections in the Project Model (Pro) include Station 2850 (Dam D/S Side) through Station 4854 (Section H).
Note: In the Project Model (Pro), the inline structure representing the dam was removed. Additionally, a station immediately on the upstream side of the dam, Station 2887, was removed as it was considered redundant without the dam. Both elements are still in the Published Model (Exist), although they are not listed in this output table.

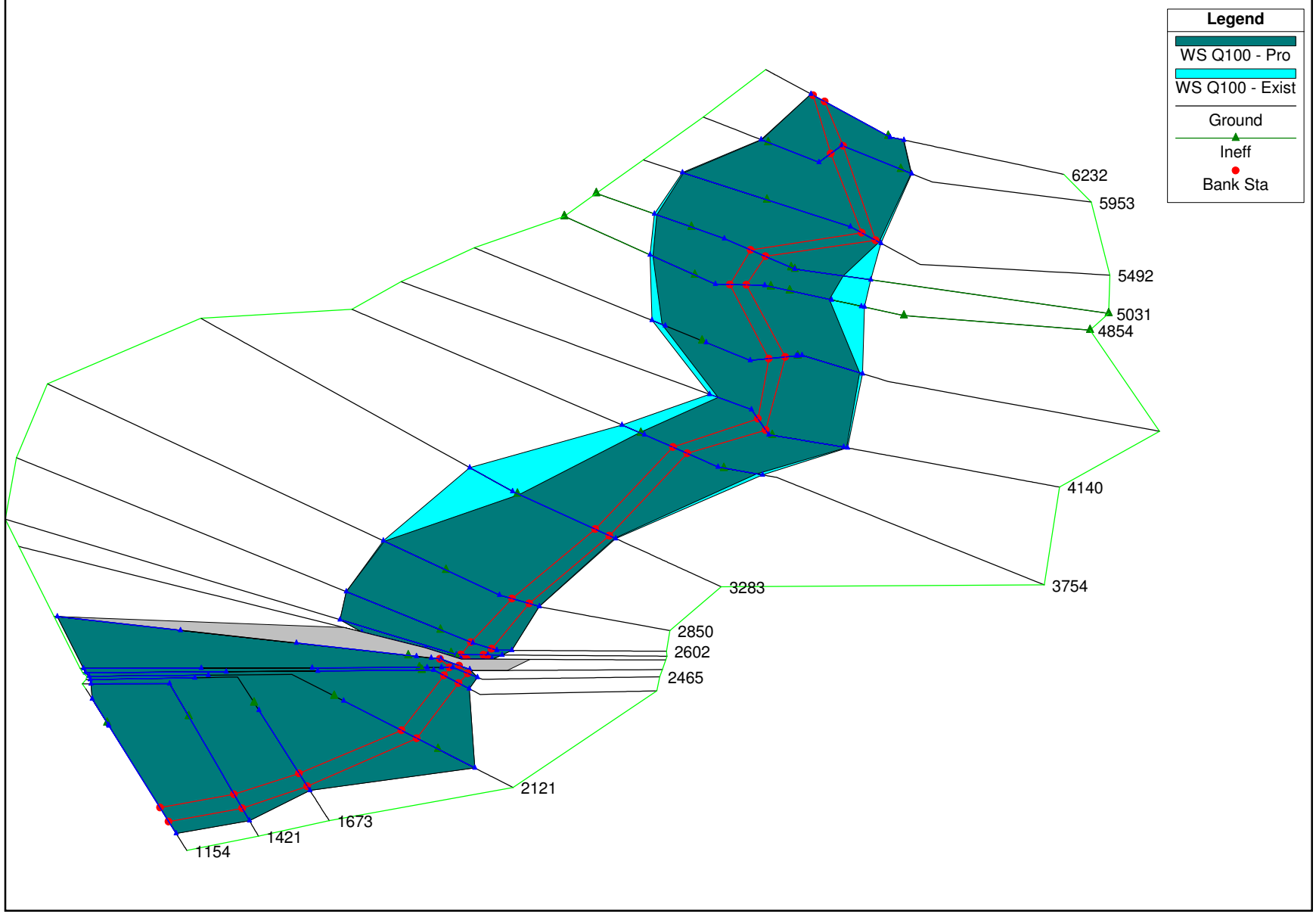


1 in Horiz. = 400 ft 1 in Vert. = 5 ft



1 in Horiz. = 400 ft 1 in Vert. = 2 ft/s

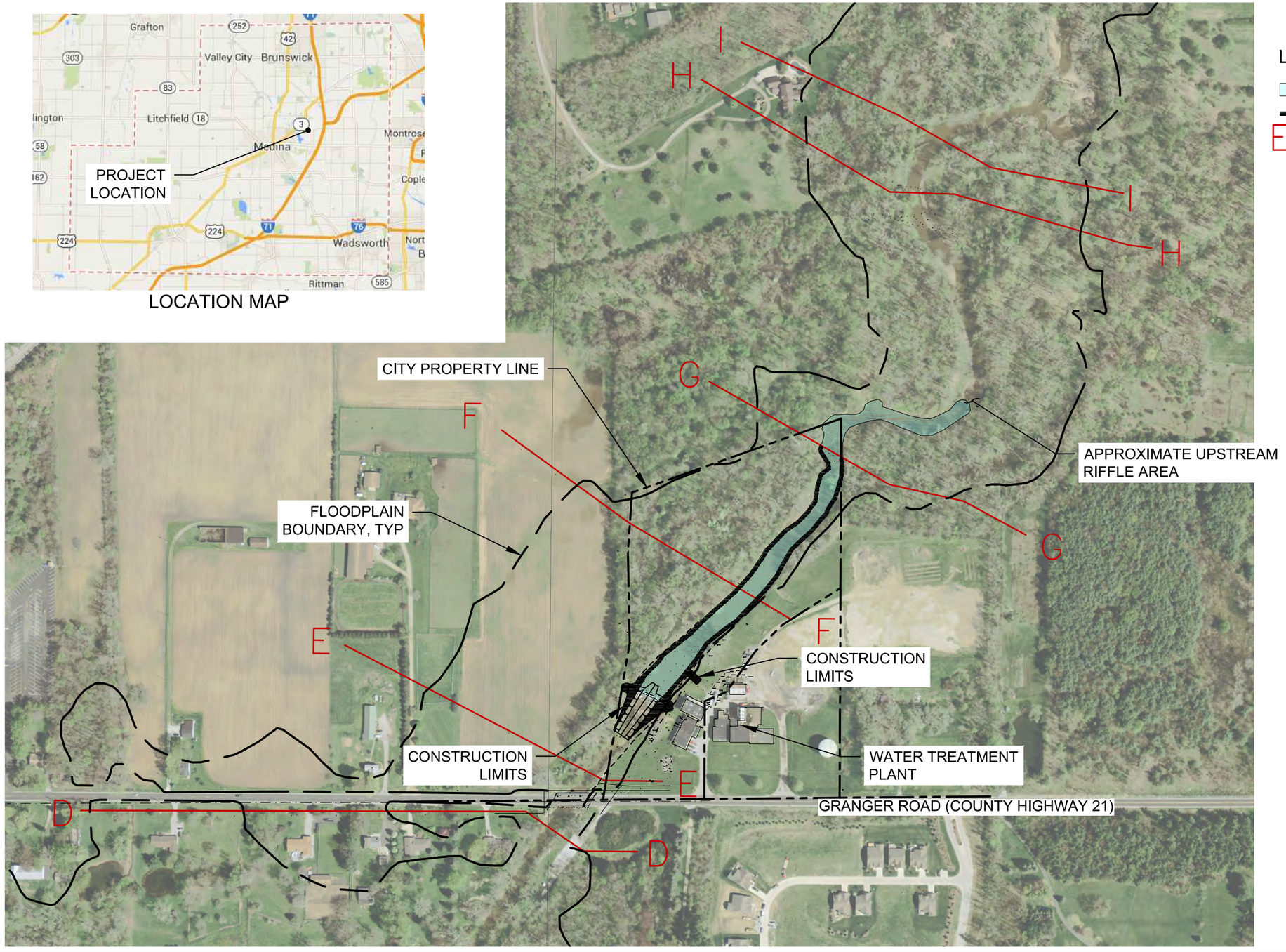
North Branch Rocky River-mod Plan: 1) Pro 7/15/2015 2) Exist 7/15/2015



1 in Horiz. = 600 1 in Vert. = 600

APPENDIX C: EXHIBITS

LOCATION MAP



LEGEND

- IMPOUNDMENT AREA
- POTENTIAL SEEDING AREA
- E — E FEMA CROSS SECTIONS

N

0 300 600

MEDINA-GRANGER DAM REMOVAL

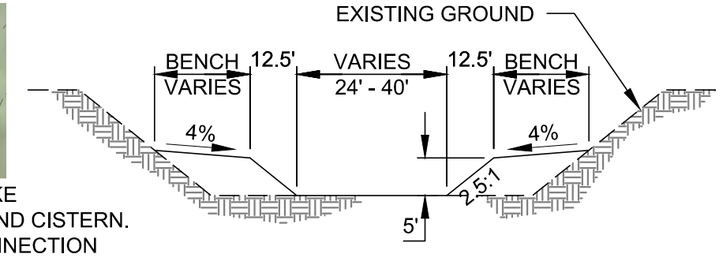
R4012500-130054.05
6/15/2015

PROJECT OVERVIEW AND SECTIONS

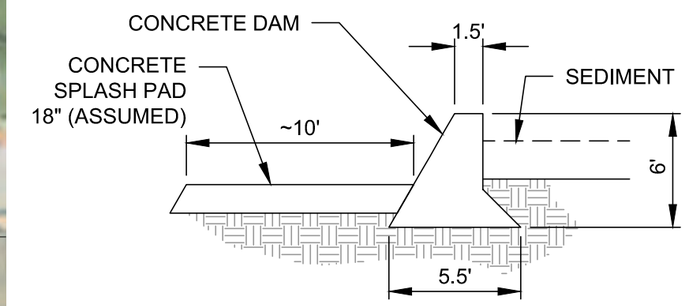
Mead & Hunt

EXHIBIT C.1

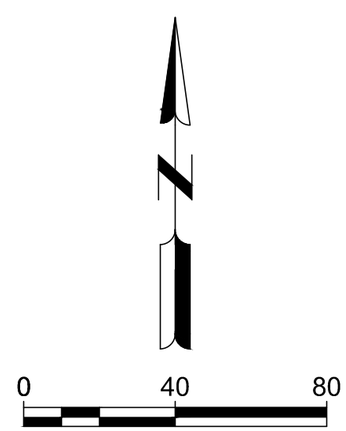
7/16/2015 3:29:52 PM
X:\4012500\130855.01\958279\96636\DWG\PROJECT OVERVIEW AND SECTIONS.DWG



TYPICAL CHANNEL SECTION



DAM SECTION



MEDINA-GRANGER DAM REMOVAL

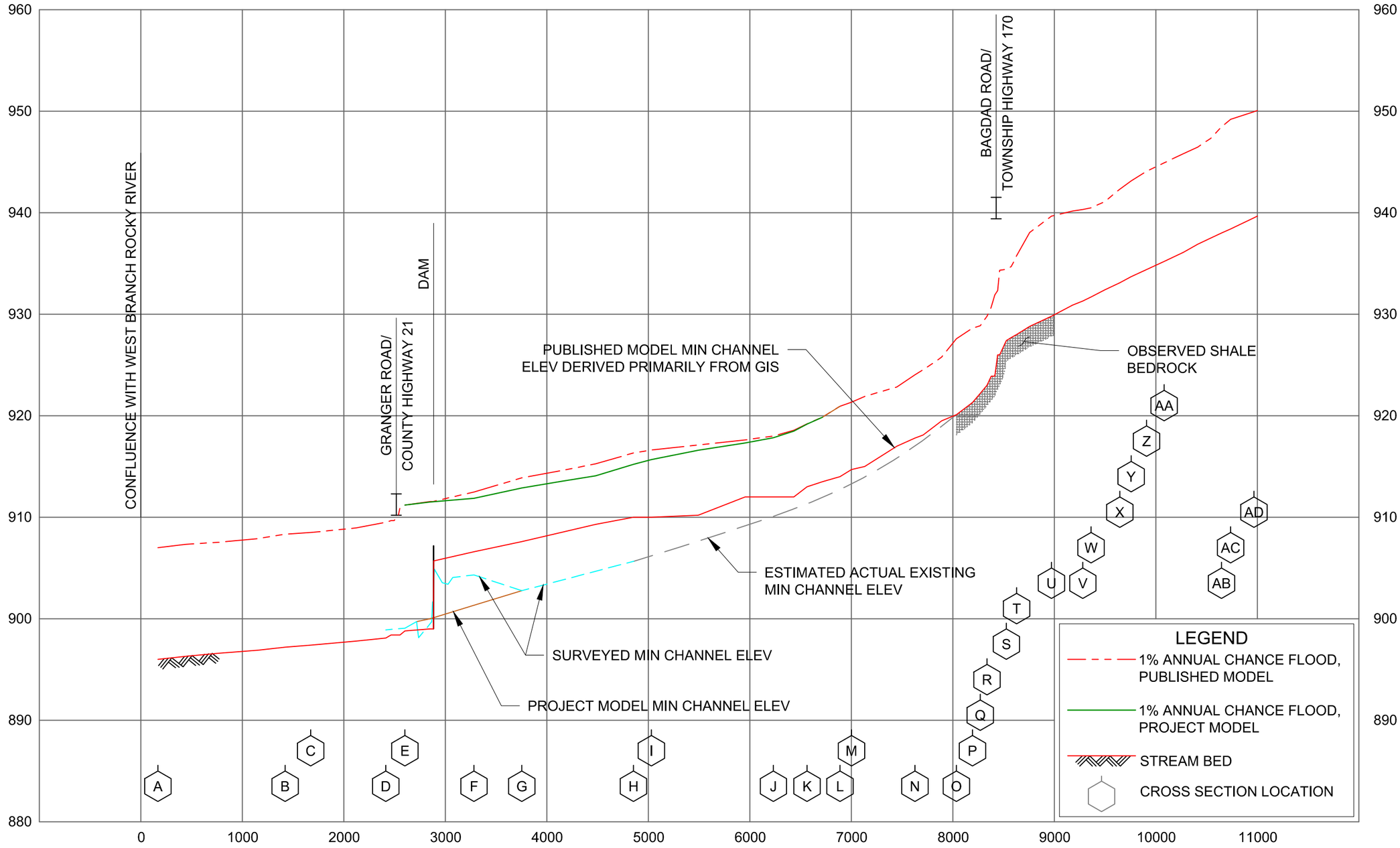
R4012500-130054.05
6/15/2015

IMPROVEMENT PLAN

Mead & Hunt

EXHIBIT C.2

9/10/2015 2:26:09 PM
X:\4012500\130055.01\9582\7596368\DWG\IMPROVEMENT PLAN.DWG



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH WEST BRANCH ROCKY RIVER

SCALE: 1"=1000' HORZ, 1"=100' VERT

CORE INFORMATION FROM FEMA FIS 39103CV002B

MEDINA-GRANGER DAM REMOVAL

RIVER PROFILE

R4012500-130054.05
6/15/2015

Mead & Hunt

EXHIBIT C.3

7/2/2015 4:12:51 PM
X:\4012500\130855.01\95827\99636\DWG\RIVER PROFILE.DWG

APPENDIX D: SEDIMENT SAMPLING

OHIO DEPARTMENT OF TRANSPORTATION
INTER-OFFICE COMMUNICATION
Office of Environmental Services

TO: Tim Farley, Acting District 3 Deputy Director
Attn: Mac Vance

DATE: June 10, 2015

Juliet D Denniss for

FROM: Timothy M. Hill, Administrator, Office of Environmental Services

SUBJECT: Phase II Environmental Site Assessment

PROJECT: MED – Granger Dam Removal – Sediment Sampling

PID: 99636

This office has reviewed the Phase II Environmental Site Assessment (ESA) for the above referenced project which was produced by Lawhon and Associates, Inc.

Based on the information, provided, no further environmental site assessment or special material management is warranted for the sediments during the dam removal.

If you have any questions or concerns, please contact Juliet Denniss, Environmental Supervisor, at (614) 466-7942.

TMH:jdd

c: Larry Hoffman, OES
File

Sediment Sampling Report

MED-Granger Dam Removal

PID 99636

By

Chantil Milam, Project Manager

Trevor Berger, Environmental Scientist

Shawen Jenkins, Environmental Scientist

Submitted By:

Lawhon & Associates, Inc.

1441 King Avenue

Columbus, Ohio 43212

614.481.8600

Submitted To:

Michael Ciotola

Mead & Hunt

4700 Lakehurst Court, Suite 110

Columbus, Ohio 43016

Lead Agency: Ohio Department of Transportation

June 2015

Signatures

Lawhon & Associates, Inc. (L&A) was subcontracted by Mead & Hunt to conduct Sediment Sampling for the MED-Granger Dam Removal project (PID 99636).

The Sediment Sampling was completed in accordance with the Service Work Order between Mead & Hunt, Inc. and Lawhon & Associates, Inc. dated January 15, 2015.

Shawen Jenkins
Environmental Scientist

Trevor Berger
Department Manager

TABLE OF CONTENTS

Signatures i
1.0 Introduction 1
1.1 Project Location 1
1.2 Nature and Purpose of the Transportation Improvement 1
1.3 Purpose 1
1.4 Scope of Work 1
1.5 Limitations and Exceptions 1
2.0 Sediment Sampling Activities 1
2.1 Sampling Procedures 1
2.2 Analytical Methods 1
3.0 Findings 2
3.1 Sediment Description 2
3.2 Analytical Results 2
4.0 Conclusions and Recommendations 2

APPENDICES

Appendix A Figure 1 – Sample Location Map
Appendix B Laboratory Analytical Results
Appendix C Chain-of-Custody

SEDIMENT SAMPLING REPORT
MED-Granger Dam Removal
PID 99636

1.0 Introduction

1.1 Project Location and Description

The MED-Granger Dam Removal project is located in a suburban area in Medina County, Ohio. The Granger Dam is located in the North Branch of the Rocky River, approximately 240 feet north of Granger Road, adjacent to the Medina Village Water Works facility located at 3733 Granger Road.

The dam removal is proposed as mitigation for stream impacts associated with Ohio Department of Transportation (ODOT) District 3's MED-SR94-11.91 project which is currently in the planning stages. The MED-SR94-11.91 project involves the construction of a roundabout at the intersection of State Route 94 (SR 94) and Granger Road.

1.2 Purpose

The purpose of this sediment sampling project is to determine whether regulated materials are present within the sediments which may be transported downstream following removal of the dam.

1.3 Limitations and Exceptions

The conclusions presented herein are professional opinions based on data contained in this report. They are intended only for the purpose, site locations, and project indicated. The investigation utilized best available technology and investigation practices for the scope of the project. This report is not a definitive investigation of the entire property and should not be interpreted as such.

2.0 Scope of Work

2.1 Sediment Sampling

L&A mobilized to the site on May 14, 2015 to collect a total of five (5) sediment samples. The sample locations are depicted on Figure 1 presented in Appendix A.

Sediments were collected from the surface of the stream bed to a depth of approximately 6 to 12 inches. Sediment samples were collected by manually driving and withdrawing a sampling probe consisting of a 2-inch diameter steel core tube, approximately 12 inches long, fitted with disposable acetate liners. Sediment samples were transferred from the acetate liners to laboratory supplied glassware and sealed with Teflon lids.

The disposable liner was replaced between sampling locations.

2.2 Analytical Methods

The sediment samples were submitted to ALS, a certified analytical lab located in Cincinnati, Ohio, for the following analyses: volatile organic compounds (VOC) by US EPA Method 8260, semi-volatile organic compounds (SVOC) by Method 8270, Resource Conservation and Recovery Act

(RCRA) 8 Metals by Method 6010/7471, organochlorine pesticides by Method 8081, and polychlorinated biphenyls (PCBs) by Method 8082.

3.0 Findings

3.1 Sediment Description

The sediments identified at each of the sampling locations consisted primarily of brown sands, gravel, and cobbles underlain by dark gray silt and organic matter.

3.2 Analytical Results

Analytical results were compared with the potentially applicable Ohio Voluntary Action Program (VAP) Generic Numerical Standards outlined under Ohio Administrative Code (OAC) 3745-300-08. The Ohio VAP Generic Numerical Standards for exposure of important ecological resources to sediments are the Ohio Specific Sediment Reference Values (SRVs). The SRVs applicable to the site are the SRVs for the Erie/Ontario Lake Plain Ecoregion. The Ohio VAP Generic Numerical Standards for human exposure to sediments are the VAP Generic Direct Contact Soil Standards (GDCSS) for residential land use. The analytical results were also compared to the concentrations presented in the study titled *Evaluation of Background Metal Concentrations in Ohio Soils*, conducted by Cox-Colvin & Associates and submitted to the Ohio EPA in 1996.

A summary of the laboratory analytical results for the sediment samples is outlined below and is presented in tabular form in Appendix B:

- Acetone was detected in SS-1 and SS-5 at concentrations of 0.012 and 0.013 milligrams per kilogram (mg/kg) respectively, well below the VAP human exposure standard of 64,000 mg/kg.

- Arsenic was detected in each sample at concentrations from 9.9 to 13 mg/kg. The concentration of 13 mg/kg, detected in SS-3, exceeds the VAP human exposure standard of 12 mg/kg; however, it is well below the VAP ecological resource exposure standard of 25 mg/kg and is consistent with typical concentrations of arsenic found in Ohio soils ranging from 0.5 to 56 mg/kg.

- Barium, chromium, and lead were detected in the sediments collected; however, the detected concentrations did not exceed the respective VAP human or ecological resource exposure standards, and the detected concentrations for each parameter are consistent with the background concentrations typically found in Ohio soils.

- No SVOCs were detected in excess of the laboratory detection limits.

- No organochlorine pesticides were detected in excess of the laboratory detection limits.

- No PCBs were detected in excess of the laboratory detection limits.

Laboratory data sheets and the chain-of-custody form are included in Appendices C and D.

4.0 Conclusions and Recommendations

Arsenic was detected in sediments behind Granger Dam at concentrations up to 13 mg/kg, exceeding the VAP human exposure standard of 12 mg/kg, however, the presence of arsenic in the sediments appears to be related to a regional background condition and therefore would not result in an abnormal exposure scenario. No other parameters were detected at concentrations exceeding the potentially applicable standards.

In L&A's opinion no further investigation or special handling of the sediments is warranted prior to the planned removal of the dam.

APPENDIX A

Sample Location Map

LEGEND

- Approximate Sediment Sample Location

APPENDIX B

Analytical Results Summary Table

Table 1: Analytical Results (in mg/Kg)

Sample ID	SS-1	SS-2	SS-3	SS-4	SS-5	Ohio VAP Standard - Exposure of Ecological Resources to Sediments	Ohio VAP Standard - Human Exposure to Sediments	Ohio Background Soil Metal Concentrations
Collect Date	**5/14/2015**	**5/14/2015**	**5/14/2015**	**5/14/2015**	**5/14/2015**			
Parameter	**Value**	**Value**	**Value**	**Value**	**Value**			
Volatile Organic Compounds								
Acetone	**0.012**	< 0.0066	< 0.0061	< 0.0058	**0.013**	NS[4]	64,000	NS
Semi-Volatile Organic Compounds								
No SVOCs Detected								
RCRA 8 Metals								
Arsenic	**10**	**11**	**13**	**11**	**9.9**	25	12	0.5-56
Barium	**24**	**33**	**19**	**24**	**26**	190	NS	9.3-323
Chromium	**6.6**	**6.5**	**6.5**	**6.4**	**6.2**	29	24	2.0-80.5
Lead	**8.3**	**7.9**	< 6	**7.9**	**9.3**	47	400	1.0-147
Organochlorine Pesticides								
No Pesticides Detected								
Polychlorinated Biphenyls								
No PCBs Detected								

Notes: Parameters that were not detected in all of the samples are not shown in the above table.
Highlighted values were detected in excess of a defined regulatory standard.
NS indicates that no standard exists for the given parameter.

APPENDIX C

Laboratory Analytical Reports

22-May-2015

Trevor Berger
Lawhon & Associates
1441 King Avenue
Grandview Heights, OH 43212

Tel: (614) 481-8600
Fax: 614-818-5219

Re: MED-Granger Dam Work Order: **1505450**

Dear Trevor,

ALS Environmental received 5 samples on 15-May-2015 01:40 PM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 53.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Chris Gibson

Electronically approved by: Chris Gibson

Chris Gibson
Project Manager

ALS Environmental

Date: 22-May-15

Client: Lawhon & Associates
Project: MED-Granger Dam
Work Order: **1505450**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1505450-01	SS-1	Soil		5/14/2015 10:50	5/15/2015 13:40	☐
1505450-02	SS-2	Soil		5/14/2015 11:20	5/15/2015 13:40	☐
1505450-03	SS-3	Soil		5/14/2015 11:50	5/15/2015 13:40	☐
1505450-04	SS-4	Soil		5/14/2015 13:00	5/15/2015 13:40	☐
1505450-05	SS-5	Soil		5/14/2015 12:20	5/15/2015 13:40	☐

ALS Environmental

Date: 22-May-15

Client: Lawhon & Associates
Project: MED-Granger Dam
Work Order: 1505450

Case Narrative

The analytical data provided relates directly to the samples received by ALS Laboratory Group and for only the analyses requested.

Results relate only to the items tested and are not blank corrected unless indicated.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Laboratory Group. Samples will be disposed in 30 days unless storage arrangements are made.

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Work Order: 1505450

Analytical Comments

Method	Type:	SampID	SeqNo	Analysis	Comments
Batch 28452					
	Analysis	1505450-03BMS	1059553	Organochlorine Pesticides	MS/MSD failed/ could not be calculated due to sample matrix interference.
	Analysis	1505450-03BMSD	1059554	Organochlorine Pesticides	MS/MSD failed/ could not be calculated due to sample matrix interference.

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			**SW8081A**		Prep Date: **5/18/2015**	Analyst: **SAD**
4,4`-DDD	ND		0.0043	mg/Kg-dry	1	5/21/2015
4,4`-DDE	ND		0.0043	mg/Kg-dry	1	5/21/2015
4,4`-DDT	ND		0.0043	mg/Kg-dry	1	5/21/2015
Aldrin	ND		0.022	mg/Kg-dry	10	5/21/2015
alpha-BHC	ND		0.022	mg/Kg-dry	10	5/21/2015
beta-BHC	ND		0.022	mg/Kg-dry	10	5/21/2015
Chlordane	ND		0.043	mg/Kg-dry	1	5/21/2015
delta-BHC	ND		0.043	mg/Kg-dry	10	5/21/2015
Dieldrin	ND		0.0043	mg/Kg-dry	1	5/21/2015
Endosulfan I	ND		0.0022	mg/Kg-dry	1	5/21/2015
Endosulfan II	ND		0.0043	mg/Kg-dry	1	5/21/2015
Endosulfan sulfate	ND		0.0043	mg/Kg-dry	1	5/21/2015
Endrin	ND		0.0043	mg/Kg-dry	1	5/21/2015
Endrin aldehyde	ND		0.0043	mg/Kg-dry	1	5/21/2015
Endrin ketone	ND		0.0043	mg/Kg-dry	1	5/21/2015
gamma-BHC (Lindane)	ND		0.022	mg/Kg-dry	10	5/21/2015
Heptachlor	ND		0.022	mg/Kg-dry	10	5/21/2015
Heptachlor epoxide	ND		0.00015	mg/Kg-dry	1	5/21/2015
Methoxychlor	ND		0.022	mg/Kg-dry	1	5/21/2015
Toxaphene	ND		0.086	mg/Kg-dry	1	5/21/2015
Surr: Decachlorobiphenyl	*101*		*51-130*	*%REC*	1	5/21/2015
Surr: Tetrachloro-m-xylene	*72.8*		*44-129*	*%REC*	1	5/21/2015
PCBS			**SW8082**		Prep Date: **5/18/2015**	Analyst: **TSA**
Aroclor 1016	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1221	ND		0.26	mg/Kg-dry	1	5/19/2015
Aroclor 1232	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1242	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1248	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1254	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1260	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1262	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1268	ND		0.13	mg/Kg-dry	1	5/19/2015
Surr: Decachlorobiphenyl	*89.6*		*22-156*	*%REC*	1	5/19/2015
Surr: Tetrachloro-m-xylene	*85.0*		*34-145*	*%REC*	1	5/19/2015
MOISTURE			**SM2540B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Moisture	**22**		**0.010**	**% of sample**	1	5/19/2015
MERCURY BY CVAA			**SW7471A**		Prep Date: **5/19/2015**	Analyst: **VAW**

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Mercury	ND		0.38	mg/Kg-dry	1	5/19/2015 01:44 PM
METALS BY ICP			**SW6010B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Arsenic	**10**		**6.3**	**mg/Kg-dry**	1	5/20/2015 01:55 PM
Barium	**24**		**13**	**mg/Kg-dry**	1	5/20/2015 01:55 PM
Cadmium	ND		1.3	mg/Kg-dry	1	5/20/2015 01:55 PM
Chromium	**6.6**		**2.5**	**mg/Kg-dry**	1	5/20/2015 01:55 PM
Lead	**8.3**		**6.3**	**mg/Kg-dry**	1	5/20/2015 01:55 PM
Selenium	ND		3.8	mg/Kg-dry	1	5/20/2015 01:55 PM
Silver	ND		1.3	mg/Kg-dry	1	5/20/2015 01:55 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270C**		Prep Date: **5/19/2015**	Analyst: **JCL**
1,2,4,5-Tetrachlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1,2,4-Trichlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1,2-Dichlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1,3-Dichlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1,3-Dinitrobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1,4-Dichlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1-Methylnaphthalene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
1-Naphthylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,3,4,6-Tetrachlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4,5-Trichlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4,6-Trichlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4-Dichlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4-Dimethylphenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4-Dinitrophenol	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
2,4-Dinitrotoluene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,6-Dichlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2,6-Dinitrotoluene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Acetylaminofluorene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Chloronaphthalene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Chlorophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Methylnaphthalene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Methylphenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Naphthylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Nitroaniline	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Nitrophenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
2-Picoline	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
3&4-Methylphenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
3,3`-Dichlorobenzidine	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
3-Methylcholanthrene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
4,6-Dinitro-2-methylphenol	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Aminobiphenyl	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Bromophenyl phenyl ether	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Chloro-3-methylphenol	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Chloroaniline	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Chlorophenyl phenyl ether	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Nitroaniline	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Nitrophenol	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
4-Nitroquinoline 1-oxide	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
5-Nitro-o-toluidine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
7,12-Dimethylbenz(a)anthracene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Acenaphthene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Acenaphthylene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Acetophenone	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Aniline	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Anthracene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Azobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzidine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzo(a)anthracene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzo(a)pyrene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzo(b)fluoranthene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzo(g,h,i)perylene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzo(k)fluoranthene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Benzyl alcohol	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
Bis(2-chloroethoxy)methane	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Bis(2-chloroethyl)ether	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Bis(2-chloroisopropyl)ether	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Bis(2-ethylhexyl)phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Butyl benzyl phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Carbazole	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Chrysene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Dibenzo(a,h)anthracene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Dibenzofuran	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Diethyl phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Dimethyl phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Di-n-butyl phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Di-n-octyl phthalate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Dinoseb	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Diphenylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Ethyl methanesulfonate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Fluoranthene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Fluorene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Hexachlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Hexachlorobutadiene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Hexachlorocyclopentadiene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Hexachloroethane	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Indeno(1,2,3-cd)pyrene	ND		0.19	mg/Kg-dry	1	5/19/2015 02:15 PM
Isophorone	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Isosafrole	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Methapyrilene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Methyl methanesulfonate	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Naphthalene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Nitrobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosodiethylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosodimethylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitroso-di-n-butylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosodi-n-propylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosomethylethylamine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosomorpholine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosopiperidine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
N-Nitrosopyrrolidine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
o-Toluidine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
p-Dimethylaminoazobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Pentachlorobenzene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Pentachloroethane	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Pentachloronitrobenzene	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
Pentachlorophenol	ND		2.1	mg/Kg-dry	1	5/19/2015 02:15 PM
Phenacetin	ND		0.85	mg/Kg-dry	1	5/19/2015 02:15 PM
Phenanthrene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Phenol	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Pyrene	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Pyridine	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Safrole	ND		0.42	mg/Kg-dry	1	5/19/2015 02:15 PM
Surr: 2,4,6-Tribromophenol	*68.8*		*18-115*	*%REC*	1	5/19/2015 02:15 PM
Surr: 2-Fluorobiphenyl	*45.9*		*30-116*	*%REC*	1	5/19/2015 02:15 PM
Surr: 2-Fluorophenol	*42.2*		*24-105*	*%REC*	1	5/19/2015 02:15 PM
Surr: 4-Terphenyl-d14	*65.4*		*40-127*	*%REC*	1	5/19/2015 02:15 PM
Surr: Nitrobenzene-d5	*46.4*		*32-106*	*%REC*	1	5/19/2015 02:15 PM
Surr: Phenol-d5	*45.8*		*39-123*	*%REC*	1	5/19/2015 02:15 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **LAK**
1,1,1,2-Tetrachloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1,1-Trichloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1,2,2-Tetrachloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1,2-Trichloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1-Dichloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1-Dichloroethene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,1-Dichloropropene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2,3-Trichlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2,3-Trichloropropane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2,4-Trichlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2,4-Trimethylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2-Dibromo-3-chloropropane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2-Dibromoethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2-Dichlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2-Dichloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,2-Dichloropropane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,3,5-Trimethylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,3-Dichlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,3-Dichloropropane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
1,4-Dichlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
2,2-Dichloropropane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
2-Butanone	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
2-Chlorotoluene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
2-Hexanone	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
4-Chlorotoluene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
4-Methyl-2-pentanone	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Acetone	**0.012**		**0.0064**	**mg/Kg-dry**	1	5/18/2015 12:21 PM
Benzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Bromobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Bromochloromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Bromodichloromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Bromoform	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Bromomethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Carbon disulfide	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Carbon tetrachloride	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Chlorobenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Chloroethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Chloroform	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Chloromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-1
Collection Date: 5/14/2015 10:50 AM

Work Order: 1505450
Lab ID: 1505450-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
cis-1,3-Dichloropropene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Dibromochloromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Dibromomethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Dichlorodifluoromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Ethylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Hexachlorobutadiene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Isopropylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
m,p-Xylene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Methyl tert-butyl ether	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Methylene chloride	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Naphthalene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
n-Butylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
n-Propylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
o-Xylene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
p-Isopropyltoluene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
sec-Butylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Styrene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
tert-Butylbenzene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Tetrachloroethene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Toluene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
trans-1,2-Dichloroethene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
trans-1,3-Dichloropropene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Trichloroethene	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Trichlorofluoromethane	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Vinyl chloride	ND		0.0064	mg/Kg-dry	1	5/18/2015 12:21 PM
Xylenes, Total	ND		0.013	mg/Kg-dry	1	5/18/2015 12:21 PM
Surr: 4-Bromofluorobenzene	*104*		*62.7-159*	*%REC*	1	5/18/2015 12:21 PM
Surr: Dibromofluoromethane	*97.8*		*67.3-136*	*%REC*	1	5/18/2015 12:21 PM
Surr: Toluene-d8	*83.9*		*83-124*	*%REC*	1	5/18/2015 12:21 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			**SW8081A**		Prep Date: **5/18/2015**	Analyst: **SAD**
4,4`-DDD	ND		0.0044	mg/Kg-dry	1	5/21/2015
4,4`-DDE	ND		0.0044	mg/Kg-dry	1	5/21/2015
4,4`-DDT	ND		0.0044	mg/Kg-dry	1	5/21/2015
Aldrin	ND		0.0022	mg/Kg-dry	1	5/21/2015
alpha-BHC	ND		0.0022	mg/Kg-dry	1	5/21/2015
beta-BHC	ND		0.0022	mg/Kg-dry	1	5/21/2015
Chlordane	ND		0.044	mg/Kg-dry	1	5/21/2015
delta-BHC	ND		0.0044	mg/Kg-dry	1	5/21/2015
Dieldrin	ND		0.0044	mg/Kg-dry	1	5/21/2015
Endosulfan I	ND		0.0022	mg/Kg-dry	1	5/21/2015
Endosulfan II	ND		0.0044	mg/Kg-dry	1	5/21/2015
Endosulfan sulfate	ND		0.0044	mg/Kg-dry	1	5/21/2015
Endrin	ND		0.0044	mg/Kg-dry	1	5/21/2015
Endrin aldehyde	ND		0.0044	mg/Kg-dry	1	5/21/2015
Endrin ketone	ND		0.0044	mg/Kg-dry	1	5/21/2015
gamma-BHC (Lindane)	ND		0.0022	mg/Kg-dry	1	5/21/2015
Heptachlor	ND		0.0022	mg/Kg-dry	1	5/21/2015
Heptachlor epoxide	ND		0.00016	mg/Kg-dry	1	5/21/2015
Methoxychlor	ND		0.022	mg/Kg-dry	1	5/21/2015
Toxaphene	ND		0.088	mg/Kg-dry	1	5/21/2015
Surr: Decachlorobiphenyl	*63.8*		*51-130*	*%REC*	1	5/21/2015
Surr: Tetrachloro-m-xylene	*74.0*		*44-129*	*%REC*	1	5/21/2015
PCBS			**SW8082**		Prep Date: **5/18/2015**	Analyst: **TSA**
Aroclor 1016	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1221	ND		0.26	mg/Kg-dry	1	5/19/2015
Aroclor 1232	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1242	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1248	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1254	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1260	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1262	ND		0.13	mg/Kg-dry	1	5/19/2015
Aroclor 1268	ND		0.13	mg/Kg-dry	1	5/19/2015
Surr: Decachlorobiphenyl	*59.0*		*22-156*	*%REC*	1	5/19/2015
Surr: Tetrachloro-m-xylene	*64.2*		*34-145*	*%REC*	1	5/19/2015
MOISTURE			**SM2540B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Moisture	**24**		**0.010**	**% of sample**	1	5/19/2015
MERCURY BY CVAA			**SW7471A**		Prep Date: **5/19/2015**	Analyst: **VAW**

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Mercury	ND		0.39	mg/Kg-dry	1	5/19/2015 01:46 PM
METALS BY ICP			**SW6010B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Arsenic	**11**		**6.5**	**mg/Kg-dry**	1	5/20/2015 01:58 PM
Barium	**33**		**13**	**mg/Kg-dry**	1	5/20/2015 01:58 PM
Cadmium	ND		1.3	mg/Kg-dry	1	5/20/2015 01:58 PM
Chromium	**6.5**		**2.6**	**mg/Kg-dry**	1	5/20/2015 01:58 PM
Lead	**7.9**		**6.5**	**mg/Kg-dry**	1	5/20/2015 01:58 PM
Selenium	ND		3.9	mg/Kg-dry	1	5/20/2015 01:58 PM
Silver	ND		1.3	mg/Kg-dry	1	5/20/2015 01:58 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270C**		Prep Date: **5/19/2015**	Analyst: **JCL**
1,2,4,5-Tetrachlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1,2,4-Trichlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1,2-Dichlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1,3-Dichlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1,3-Dinitrobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1,4-Dichlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1-Methylnaphthalene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
1-Naphthylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,3,4,6-Tetrachlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4,5-Trichlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4,6-Trichlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4-Dichlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4-Dimethylphenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4-Dinitrophenol	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
2,4-Dinitrotoluene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,6-Dichlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2,6-Dinitrotoluene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Acetylaminofluorene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Chloronaphthalene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Chlorophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Methylnaphthalene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Methylphenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Naphthylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Nitroaniline	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Nitrophenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
2-Picoline	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
3&4-Methylphenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
3,3`-Dichlorobenzidine	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
3-Methylcholanthrene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
4,6-Dinitro-2-methylphenol	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Aminobiphenyl	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Bromophenyl phenyl ether	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Chloro-3-methylphenol	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Chloroaniline	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Chlorophenyl phenyl ether	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Nitroaniline	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Nitrophenol	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
4-Nitroquinoline 1-oxide	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
5-Nitro-o-toluidine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
7,12-Dimethylbenz(a)anthracene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Acenaphthene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Acenaphthylene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Acetophenone	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Aniline	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Anthracene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Azobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzidine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzo(a)anthracene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzo(a)pyrene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzo(b)fluoranthene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzo(g,h,i)perylene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzo(k)fluoranthene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Benzyl alcohol	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
Bis(2-chloroethoxy)methane	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Bis(2-chloroethyl)ether	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Bis(2-chloroisopropyl)ether	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Bis(2-ethylhexyl)phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Butyl benzyl phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Carbazole	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Chrysene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Dibenzo(a,h)anthracene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Dibenzofuran	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Diethyl phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Dimethyl phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Di-n-butyl phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Di-n-octyl phthalate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Dinoseb	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Diphenylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Ethyl methanesulfonate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Fluoranthene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Fluorene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Hexachlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Hexachlorobutadiene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Hexachlorocyclopentadiene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Hexachloroethane	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Indeno(1,2,3-cd)pyrene	ND		0.20	mg/Kg-dry	1	5/19/2015 02:43 PM
Isophorone	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Isosafrole	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Methapyrilene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Methyl methanesulfonate	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Naphthalene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Nitrobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosodiethylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosodimethylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitroso-di-n-butylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosodi-n-propylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosomethylethylamine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosomorpholine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosopiperidine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
N-Nitrosopyrrolidine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
o-Toluidine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
p-Dimethylaminoazobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Pentachlorobenzene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Pentachloroethane	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Pentachloronitrobenzene	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
Pentachlorophenol	ND		2.2	mg/Kg-dry	1	5/19/2015 02:43 PM
Phenacetin	ND		0.87	mg/Kg-dry	1	5/19/2015 02:43 PM
Phenanthrene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Phenol	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Pyrene	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Pyridine	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Safrole	ND		0.43	mg/Kg-dry	1	5/19/2015 02:43 PM
Surr: 2,4,6-Tribromophenol	*74.2*		*18-115*	*%REC*	1	5/19/2015 02:43 PM
Surr: 2-Fluorobiphenyl	*67.8*		*30-116*	*%REC*	1	5/19/2015 02:43 PM
Surr: 2-Fluorophenol	*69.1*		*24-105*	*%REC*	1	5/19/2015 02:43 PM
Surr: 4-Terphenyl-d14	*65.6*		*40-127*	*%REC*	1	5/19/2015 02:43 PM
Surr: Nitrobenzene-d5	*71.6*		*32-106*	*%REC*	1	5/19/2015 02:43 PM
Surr: Phenol-d5	*72.9*		*39-123*	*%REC*	1	5/19/2015 02:43 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **LAK**
1,1,1,2-Tetrachloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1,1-Trichloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1,2,2-Tetrachloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1,2-Trichloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1-Dichloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1-Dichloroethene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,1-Dichloropropene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2,3-Trichlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2,3-Trichloropropane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2,4-Trichlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2,4-Trimethylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2-Dibromo-3-chloropropane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2-Dibromoethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2-Dichlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2-Dichloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,2-Dichloropropane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,3,5-Trimethylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,3-Dichlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,3-Dichloropropane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
1,4-Dichlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
2,2-Dichloropropane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
2-Butanone	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
2-Chlorotoluene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
2-Hexanone	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
4-Chlorotoluene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
4-Methyl-2-pentanone	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Acetone	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Benzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Bromobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Bromochloromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Bromodichloromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Bromoform	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Bromomethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Carbon disulfide	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Carbon tetrachloride	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Chlorobenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Chloroethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Chloroform	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Chloromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-2
Collection Date: 5/14/2015 11:20 AM

Work Order: 1505450
Lab ID: 1505450-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
cis-1,3-Dichloropropene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Dibromochloromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Dibromomethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Dichlorodifluoromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Ethylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Hexachlorobutadiene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Isopropylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
m,p-Xylene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Methyl tert-butyl ether	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Methylene chloride	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Naphthalene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
n-Butylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
n-Propylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
o-Xylene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
p-Isopropyltoluene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
sec-Butylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Styrene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
tert-Butylbenzene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Tetrachloroethene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Toluene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
trans-1,2-Dichloroethene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
trans-1,3-Dichloropropene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Trichloroethene	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Trichlorofluoromethane	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Vinyl chloride	ND		0.0066	mg/Kg-dry	1	5/18/2015 12:52 PM
Xylenes, Total	ND		0.013	mg/Kg-dry	1	5/18/2015 12:52 PM
Surr: 4-Bromofluorobenzene	*95.5*		*62.7-159*	*%REC*	1	5/18/2015 12:52 PM
Surr: Dibromofluoromethane	*105*		*67.3-136*	*%REC*	1	5/18/2015 12:52 PM
Surr: Toluene-d8	*106*		*83-124*	*%REC*	1	5/18/2015 12:52 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			**SW8081A**		Prep Date: **5/18/2015**	Analyst: **SAD**
4,4`-DDD	ND		0.0040	mg/Kg-dry	1	5/21/2015
4,4`-DDE	ND		0.0040	mg/Kg-dry	1	5/21/2015
4,4`-DDT	ND		0.0040	mg/Kg-dry	1	5/21/2015
Aldrin	ND		0.020	mg/Kg-dry	10	5/21/2015
alpha-BHC	ND		0.020	mg/Kg-dry	10	5/21/2015
beta-BHC	ND		0.020	mg/Kg-dry	10	5/21/2015
Chlordane	ND		0.040	mg/Kg-dry	1	5/21/2015
delta-BHC	ND		0.040	mg/Kg-dry	10	5/21/2015
Dieldrin	ND		0.0040	mg/Kg-dry	1	5/21/2015
Endosulfan I	ND		0.0020	mg/Kg-dry	1	5/21/2015
Endosulfan II	ND		0.0040	mg/Kg-dry	1	5/21/2015
Endosulfan sulfate	ND		0.0040	mg/Kg-dry	1	5/21/2015
Endrin	ND		0.0040	mg/Kg-dry	1	5/21/2015
Endrin aldehyde	ND		0.0040	mg/Kg-dry	1	5/21/2015
Endrin ketone	ND		0.0040	mg/Kg-dry	1	5/21/2015
gamma-BHC (Lindane)	ND		0.020	mg/Kg-dry	10	5/21/2015
Heptachlor	ND		0.020	mg/Kg-dry	10	5/21/2015
Heptachlor epoxide	ND		0.00014	mg/Kg-dry	1	5/21/2015
Methoxychlor	ND		0.020	mg/Kg-dry	1	5/21/2015
Toxaphene	ND		0.080	mg/Kg-dry	1	5/21/2015
Surr: Decachlorobiphenyl	*71.0*		*51-130*	*%REC*	1	5/21/2015
Surr: Tetrachloro-m-xylene	*105*		*44-129*	*%REC*	1	5/21/2015
PCBS			**SW8082**		Prep Date: **5/18/2015**	Analyst: **TSA**
Aroclor 1016	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1221	ND		0.24	mg/Kg-dry	1	5/19/2015
Aroclor 1232	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1242	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1248	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1254	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1260	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1262	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1268	ND		0.12	mg/Kg-dry	1	5/19/2015
Surr: Decachlorobiphenyl	*85.8*		*22-156*	*%REC*	1	5/19/2015
Surr: Tetrachloro-m-xylene	*77.2*		*34-145*	*%REC*	1	5/19/2015
MOISTURE			**SM2540B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Moisture	**17**		**0.010**	**% of sample**	1	5/19/2015
MERCURY BY CVAA			**SW7471A**		Prep Date: **5/19/2015**	Analyst: **VAW**

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Mercury	ND		0.36	mg/Kg-dry	1	5/19/2015 01:52 PM
METALS BY ICP			**SW6010B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Arsenic	**13**		**6.0**	**mg/Kg-dry**	1	5/20/2015 02:01 PM
Barium	**19**		**12**	**mg/Kg-dry**	1	5/20/2015 02:01 PM
Cadmium	ND		1.2	mg/Kg-dry	1	5/20/2015 02:01 PM
Chromium	**6.5**		**2.4**	**mg/Kg-dry**	1	5/20/2015 02:01 PM
Lead	ND		6.0	mg/Kg-dry	1	5/20/2015 02:01 PM
Selenium	ND		3.6	mg/Kg-dry	1	5/20/2015 02:01 PM
Silver	ND		1.2	mg/Kg-dry	1	5/20/2015 02:01 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270C**		Prep Date: **5/19/2015**	Analyst: **JCL**
1,2,4,5-Tetrachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1,2,4-Trichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1,2-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1,3-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1,3-Dinitrobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1,4-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1-Methylnaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
1-Naphthylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,3,4,6-Tetrachlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4,5-Trichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4,6-Trichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4-Dichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4-Dimethylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4-Dinitrophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
2,4-Dinitrotoluene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,6-Dichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2,6-Dinitrotoluene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Acetylaminofluorene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Chloronaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Chlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Methylnaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Methylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Naphthylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Nitroaniline	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Nitrophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
2-Picoline	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
3&4-Methylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
3,3`-Dichlorobenzidine	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
3-Methylcholanthrene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
4,6-Dinitro-2-methylphenol	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Aminobiphenyl	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Bromophenyl phenyl ether	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Chloro-3-methylphenol	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Chloroaniline	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Chlorophenyl phenyl ether	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Nitroaniline	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Nitrophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
4-Nitroquinoline 1-oxide	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
5-Nitro-o-toluidine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
7,12-Dimethylbenz(a)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Acenaphthene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Acenaphthylene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Acetophenone	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Aniline	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Azobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzidine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzo(a)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzo(a)pyrene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzo(b)fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzo(g,h,i)perylene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzo(k)fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Benzyl alcohol	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
Bis(2-chloroethoxy)methane	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Bis(2-chloroethyl)ether	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Bis(2-chloroisopropyl)ether	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Bis(2-ethylhexyl)phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Butyl benzyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Carbazole	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Chrysene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Dibenzo(a,h)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Dibenzofuran	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Diethyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Dimethyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Di-n-butyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Di-n-octyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Dinoseb	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Diphenylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Ethyl methanesulfonate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Fluorene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Hexachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Hexachlorobutadiene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Hexachlorocyclopentadiene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Hexachloroethane	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Indeno(1,2,3-cd)pyrene	ND		0.18	mg/Kg-dry	1	5/19/2015 03:11 PM
Isophorone	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Isosafrole	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Methapyrilene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Methyl methanesulfonate	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Naphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Nitrobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosodiethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosodimethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitroso-di-n-butylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosodi-n-propylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosomethylethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosomorpholine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosopiperidine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
N-Nitrosopyrrolidine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
o-Toluidine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
p-Dimethylaminoazobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Pentachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Pentachloroethane	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Pentachloronitrobenzene	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
Pentachlorophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 03:11 PM
Phenacetin	ND		0.80	mg/Kg-dry	1	5/19/2015 03:11 PM
Phenanthrene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Phenol	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Pyrene	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Pyridine	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Safrole	ND		0.40	mg/Kg-dry	1	5/19/2015 03:11 PM
Surr: 2,4,6-Tribromophenol	*64.8*		*18-115*	*%REC*	1	5/19/2015 03:11 PM
Surr: 2-Fluorobiphenyl	*55.1*		*30-116*	*%REC*	1	5/19/2015 03:11 PM
Surr: 2-Fluorophenol	*56.5*		*24-105*	*%REC*	1	5/19/2015 03:11 PM
Surr: 4-Terphenyl-d14	*57.6*		*40-127*	*%REC*	1	5/19/2015 03:11 PM
Surr: Nitrobenzene-d5	*56.2*		*32-106*	*%REC*	1	5/19/2015 03:11 PM
Surr: Phenol-d5	*56.2*		*39-123*	*%REC*	1	5/19/2015 03:11 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **LAK**
1,1,1,2-Tetrachloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1,1-Trichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1,2,2-Tetrachloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1,2-Trichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1-Dichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,1-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2,3-Trichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2,3-Trichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2,4-Trichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2,4-Trimethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2-Dibromo-3-chloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2-Dibromoethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2-Dichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,2-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,3,5-Trimethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,3-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,3-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
1,4-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
2,2-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
2-Butanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
2-Chlorotoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
2-Hexanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
4-Chlorotoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
4-Methyl-2-pentanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Acetone	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Benzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Bromobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Bromochloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Bromodichloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Bromoform	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Bromomethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Carbon disulfide	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Carbon tetrachloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Chlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Chloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Chloroform	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Chloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-3
Collection Date: 5/14/2015 11:50 AM

Work Order: 1505450
Lab ID: 1505450-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
cis-1,3-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Dibromochloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Dibromomethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Dichlorodifluoromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Ethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Hexachlorobutadiene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Isopropylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
m,p-Xylene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Methyl tert-butyl ether	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Methylene chloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Naphthalene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
n-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
n-Propylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
o-Xylene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
p-Isopropyltoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
sec-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Styrene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
tert-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Tetrachloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Toluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
trans-1,2-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
trans-1,3-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Trichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Trichlorofluoromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Vinyl chloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 01:22 PM
Xylenes, Total	ND		0.012	mg/Kg-dry	1	5/18/2015 01:22 PM
Surr: 4-Bromofluorobenzene	*97.6*		*62.7-159*	*%REC*	1	5/18/2015 01:22 PM
Surr: Dibromofluoromethane	*102*		*67.3-136*	*%REC*	1	5/18/2015 01:22 PM
Surr: Toluene-d8	*85.0*		*83-124*	*%REC*	1	5/18/2015 01:22 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			**SW8081A**		Prep Date: **5/18/2015**	Analyst: **SAD**
4,4`-DDD	ND		0.0038	mg/Kg-dry	1	5/21/2015
4,4`-DDE	ND		0.0038	mg/Kg-dry	1	5/21/2015
4,4`-DDT	ND		0.0038	mg/Kg-dry	1	5/21/2015
Aldrin	ND		0.019	mg/Kg-dry	10	5/21/2015
alpha-BHC	ND		0.019	mg/Kg-dry	10	5/21/2015
beta-BHC	ND		0.019	mg/Kg-dry	10	5/21/2015
Chlordane	ND		0.038	mg/Kg-dry	1	5/21/2015
delta-BHC	ND		0.038	mg/Kg-dry	10	5/21/2015
Dieldrin	ND		0.0038	mg/Kg-dry	1	5/21/2015
Endosulfan I	ND		0.0019	mg/Kg-dry	1	5/21/2015
Endosulfan II	ND		0.0038	mg/Kg-dry	1	5/21/2015
Endosulfan sulfate	ND		0.0038	mg/Kg-dry	1	5/21/2015
Endrin	ND		0.0038	mg/Kg-dry	1	5/21/2015
Endrin aldehyde	ND		0.0038	mg/Kg-dry	1	5/21/2015
Endrin ketone	ND		0.0038	mg/Kg-dry	1	5/21/2015
gamma-BHC (Lindane)	ND		0.019	mg/Kg-dry	10	5/21/2015
Heptachlor	ND		0.019	mg/Kg-dry	10	5/21/2015
Heptachlor epoxide	ND		0.00014	mg/Kg-dry	1	5/21/2015
Methoxychlor	ND		0.019	mg/Kg-dry	1	5/21/2015
Toxaphene	ND		0.077	mg/Kg-dry	1	5/21/2015
Surr: Decachlorobiphenyl	*70.2*		*51-130*	*%REC*	1	5/21/2015
Surr: Tetrachloro-m-xylene	*83.4*		*44-129*	*%REC*	1	5/21/2015
PCBS			**SW8082**		Prep Date: **5/18/2015**	Analyst: **TSA**
Aroclor 1016	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1221	ND		0.23	mg/Kg-dry	1	5/19/2015
Aroclor 1232	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1242	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1248	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1254	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1260	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1262	ND		0.11	mg/Kg-dry	1	5/19/2015
Aroclor 1268	ND		0.11	mg/Kg-dry	1	5/19/2015
Surr: Decachlorobiphenyl	*64.2*		*22-156*	*%REC*	1	5/19/2015
Surr: Tetrachloro-m-xylene	*70.2*		*34-145*	*%REC*	1	5/19/2015
MOISTURE			**SM2540B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Moisture	**14**		**0.010**	**% of sample**	1	5/19/2015
MERCURY BY CVAA			**SW7471A**		Prep Date: **5/19/2015**	Analyst: **VAW**

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Mercury	ND		0.35	mg/Kg-dry	1	5/19/2015 01:54 PM
METALS BY ICP			**SW6010B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Arsenic	**11**		**5.8**	**mg/Kg-dry**	1	5/20/2015 02:03 PM
Barium	**24**		**12**	**mg/Kg-dry**	1	5/20/2015 02:03 PM
Cadmium	ND		1.2	mg/Kg-dry	1	5/20/2015 02:03 PM
Chromium	**6.4**		**2.3**	**mg/Kg-dry**	1	5/20/2015 02:03 PM
Lead	**7.9**		**5.8**	**mg/Kg-dry**	1	5/20/2015 02:03 PM
Selenium	ND		3.5	mg/Kg-dry	1	5/20/2015 02:03 PM
Silver	ND		1.2	mg/Kg-dry	1	5/20/2015 02:03 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270C**		Prep Date: **5/19/2015**	Analyst: **JCL**
1,2,4,5-Tetrachlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1,2,4-Trichlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1,2-Dichlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1,3-Dichlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1,3-Dinitrobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1,4-Dichlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1-Methylnaphthalene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
1-Naphthylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,3,4,6-Tetrachlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4,5-Trichlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4,6-Trichlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4-Dichlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4-Dimethylphenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4-Dinitrophenol	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
2,4-Dinitrotoluene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,6-Dichlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2,6-Dinitrotoluene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Acetylaminofluorene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Chloronaphthalene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Chlorophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Methylnaphthalene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Methylphenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Naphthylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Nitroaniline	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Nitrophenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
2-Picoline	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
3&4-Methylphenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
3,3`-Dichlorobenzidine	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
3-Methylcholanthrene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
4,6-Dinitro-2-methylphenol	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Aminobiphenyl	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Bromophenyl phenyl ether	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Chloro-3-methylphenol	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Chloroaniline	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Chlorophenyl phenyl ether	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Nitroaniline	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Nitrophenol	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
4-Nitroquinoline 1-oxide	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
5-Nitro-o-toluidine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
7,12-Dimethylbenz(a)anthracene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Acenaphthene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Acenaphthylene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Acetophenone	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Aniline	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Anthracene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Azobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzidine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzo(a)anthracene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzo(a)pyrene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzo(b)fluoranthene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzo(g,h,i)perylene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzo(k)fluoranthene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Benzyl alcohol	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
Bis(2-chloroethoxy)methane	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Bis(2-chloroethyl)ether	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Bis(2-chloroisopropyl)ether	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Bis(2-ethylhexyl)phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Butyl benzyl phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Carbazole	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Chrysene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Dibenzo(a,h)anthracene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Dibenzofuran	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Diethyl phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Dimethyl phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Di-n-butyl phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Di-n-octyl phthalate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Dinoseb	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Diphenylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Ethyl methanesulfonate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Fluoranthene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Fluorene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Hexachlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Hexachlorobutadiene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Hexachlorocyclopentadiene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Hexachloroethane	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Indeno(1,2,3-cd)pyrene	ND		0.18	mg/Kg-dry	1	5/19/2015 03:39 PM
Isophorone	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Isosafrole	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Methapyrilene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Methyl methanesulfonate	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Naphthalene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Nitrobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosodiethylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosodimethylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitroso-di-n-butylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosodi-n-propylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosomethylethylamine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosomorpholine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosopiperidine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
N-Nitrosopyrrolidine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
o-Toluidine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
p-Dimethylaminoazobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Pentachlorobenzene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Pentachloroethane	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Pentachloronitrobenzene	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
Pentachlorophenol	ND		1.9	mg/Kg-dry	1	5/19/2015 03:39 PM
Phenacetin	ND		0.77	mg/Kg-dry	1	5/19/2015 03:39 PM
Phenanthrene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Phenol	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Pyrene	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Pyridine	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Safrole	ND		0.39	mg/Kg-dry	1	5/19/2015 03:39 PM
Surr: 2,4,6-Tribromophenol	*57.5*		*18-115*	*%REC*	1	5/19/2015 03:39 PM
Surr: 2-Fluorobiphenyl	*50.6*		*30-116*	*%REC*	1	5/19/2015 03:39 PM
Surr: 2-Fluorophenol	*52.6*		*24-105*	*%REC*	1	5/19/2015 03:39 PM
Surr: 4-Terphenyl-d14	*53.3*		*40-127*	*%REC*	1	5/19/2015 03:39 PM
Surr: Nitrobenzene-d5	*54.1*		*32-106*	*%REC*	1	5/19/2015 03:39 PM
Surr: Phenol-d5	*54.2*		*39-123*	*%REC*	1	5/19/2015 03:39 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **LAK**
1,1,1,2-Tetrachloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1,1-Trichloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1,2,2-Tetrachloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1,2-Trichloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1-Dichloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1-Dichloroethene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,1-Dichloropropene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2,3-Trichlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2,3-Trichloropropane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2,4-Trichlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2,4-Trimethylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2-Dibromo-3-chloropropane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2-Dibromoethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2-Dichlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2-Dichloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,2-Dichloropropane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,3,5-Trimethylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,3-Dichlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,3-Dichloropropane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
1,4-Dichlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
2,2-Dichloropropane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
2-Butanone	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
2-Chlorotoluene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
2-Hexanone	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
4-Chlorotoluene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
4-Methyl-2-pentanone	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Acetone	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Benzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Bromobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Bromochloromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Bromodichloromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Bromoform	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Bromomethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Carbon disulfide	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Carbon tetrachloride	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Chlorobenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Chloroethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Chloroform	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Chloromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-4
Collection Date: 5/14/2015 01:00 PM

Work Order: 1505450
Lab ID: 1505450-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
cis-1,3-Dichloropropene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Dibromochloromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Dibromomethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Dichlorodifluoromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Ethylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Hexachlorobutadiene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Isopropylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
m,p-Xylene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Methyl tert-butyl ether	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Methylene chloride	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Naphthalene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
n-Butylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
n-Propylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
o-Xylene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
p-Isopropyltoluene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
sec-Butylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Styrene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
tert-Butylbenzene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Tetrachloroethene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Toluene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
trans-1,2-Dichloroethene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
trans-1,3-Dichloropropene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Trichloroethene	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Trichlorofluoromethane	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Vinyl chloride	ND		0.0058	mg/Kg-dry	1	5/18/2015 01:53 PM
Xylenes, Total	ND		0.012	mg/Kg-dry	1	5/18/2015 01:53 PM
Surr: 4-Bromofluorobenzene	*99.1*		*62.7-159*	*%REC*	1	5/18/2015 01:53 PM
Surr: Dibromofluoromethane	*103*		*67.3-136*	*%REC*	1	5/18/2015 01:53 PM
Surr: Toluene-d8	*104*		*83-124*	*%REC*	1	5/18/2015 01:53 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ORGANOCHLORINE PESTICIDES			**SW8081A**		Prep Date: **5/18/2015**	Analyst: **SAD**
4,4`-DDD	ND		0.0041	mg/Kg-dry	1	5/21/2015
4,4`-DDE	ND		0.0041	mg/Kg-dry	1	5/21/2015
4,4`-DDT	ND		0.0041	mg/Kg-dry	1	5/21/2015
Aldrin	ND		0.0020	mg/Kg-dry	1	5/21/2015
alpha-BHC	ND		0.0020	mg/Kg-dry	1	5/21/2015
beta-BHC	ND		0.0020	mg/Kg-dry	1	5/21/2015
Chlordane	ND		0.041	mg/Kg-dry	1	5/21/2015
delta-BHC	ND		0.0041	mg/Kg-dry	1	5/21/2015
Dieldrin	ND		0.0041	mg/Kg-dry	1	5/21/2015
Endosulfan I	ND		0.0020	mg/Kg-dry	1	5/21/2015
Endosulfan II	ND		0.0041	mg/Kg-dry	1	5/21/2015
Endosulfan sulfate	ND		0.0041	mg/Kg-dry	1	5/21/2015
Endrin	ND		0.0041	mg/Kg-dry	1	5/21/2015
Endrin aldehyde	ND		0.0041	mg/Kg-dry	1	5/21/2015
Endrin ketone	ND		0.0041	mg/Kg-dry	1	5/21/2015
gamma-BHC (Lindane)	ND		0.0020	mg/Kg-dry	1	5/21/2015
Heptachlor	ND		0.0020	mg/Kg-dry	1	5/21/2015
Heptachlor epoxide	ND		0.00015	mg/Kg-dry	1	5/21/2015
Methoxychlor	ND		0.020	mg/Kg-dry	1	5/21/2015
Toxaphene	ND		0.082	mg/Kg-dry	1	5/21/2015
Surr: Decachlorobiphenyl	*72.8*		*51-130*	*%REC*	1	5/21/2015
Surr: Tetrachloro-m-xylene	*80.4*		*44-129*	*%REC*	1	5/21/2015
PCBS			**SW8082**		Prep Date: **5/18/2015**	Analyst: **TSA**
Aroclor 1016	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1221	ND		0.24	mg/Kg-dry	1	5/19/2015
Aroclor 1232	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1242	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1248	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1254	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1260	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1262	ND		0.12	mg/Kg-dry	1	5/19/2015
Aroclor 1268	ND		0.12	mg/Kg-dry	1	5/19/2015
Surr: Decachlorobiphenyl	*64.6*		*22-156*	*%REC*	1	5/19/2015
Surr: Tetrachloro-m-xylene	*72.6*		*34-145*	*%REC*	1	5/19/2015
MOISTURE			**SM2540B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Moisture	**18**		**0.010**	**% of sample**	1	5/19/2015
MERCURY BY CVAA			**SW7471A**		Prep Date: **5/19/2015**	Analyst: **VAW**

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Mercury	ND		0.36	mg/Kg-dry	1	5/19/2015 01:56 PM
METALS BY ICP			**SW6010B**		Prep Date: **5/18/2015**	Analyst: **VAW**
Arsenic	**9.9**		**6.0**	**mg/Kg-dry**	1	5/20/2015 02:06 PM
Barium	**26**		**12**	**mg/Kg-dry**	1	5/20/2015 02:06 PM
Cadmium	ND		1.2	mg/Kg-dry	1	5/20/2015 02:06 PM
Chromium	**6.2**		**2.4**	**mg/Kg-dry**	1	5/20/2015 02:06 PM
Lead	**9.3**		**6.0**	**mg/Kg-dry**	1	5/20/2015 02:06 PM
Selenium	ND		3.6	mg/Kg-dry	1	5/20/2015 02:06 PM
Silver	ND		1.2	mg/Kg-dry	1	5/20/2015 02:06 PM
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270C**		Prep Date: **5/19/2015**	Analyst: **JCL**
1,2,4,5-Tetrachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1,2,4-Trichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1,2-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1,3-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1,3-Dinitrobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1,4-Dichlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1-Methylnaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
1-Naphthylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,3,4,6-Tetrachlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4,5-Trichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4,6-Trichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4-Dichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4-Dimethylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4-Dinitrophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
2,4-Dinitrotoluene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,6-Dichlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2,6-Dinitrotoluene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Acetylaminofluorene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Chloronaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Chlorophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Methylnaphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Methylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Naphthylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Nitroaniline	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Nitrophenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
2-Picoline	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
3&4-Methylphenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
3,3`-Dichlorobenzidine	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
3-Methylcholanthrene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
3-Nitroaniline	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
4,6-Dinitro-2-methylphenol	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Aminobiphenyl	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Bromophenyl phenyl ether	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Chloro-3-methylphenol	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Chloroaniline	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Chlorophenyl phenyl ether	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Nitroaniline	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Nitrophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
4-Nitroquinoline 1-oxide	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
5-Nitro-o-toluidine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
7,12-Dimethylbenz(a)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Acenaphthene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Acenaphthylene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Acetophenone	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Aniline	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Azobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzidine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzo(a)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzo(a)pyrene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzo(b)fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzo(g,h,i)perylene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzo(k)fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Benzyl alcohol	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
Bis(2-chloroethoxy)methane	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Bis(2-chloroethyl)ether	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Bis(2-chloroisopropyl)ether	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Bis(2-ethylhexyl)phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Butyl benzyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Carbazole	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Chrysene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Dibenzo(a,h)anthracene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Dibenzofuran	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Diethyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Dimethyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Di-n-butyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Di-n-octyl phthalate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Dinoseb	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Diphenylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Ethyl methanesulfonate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Fluoranthene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Fluorene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Hexachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Hexachlorobutadiene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Hexachlorocyclopentadiene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Hexachloroethane	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Indeno(1,2,3-cd)pyrene	ND		0.18	mg/Kg-dry	1	5/19/2015 04:07 PM
Isophorone	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Isosafrole	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Methapyrilene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Methyl methanesulfonate	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Naphthalene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Nitrobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosodiethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosodimethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitroso-di-n-butylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosodi-n-propylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosomethylethylamine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosomorpholine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosopiperidine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
N-Nitrosopyrrolidine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
o-Toluidine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
p-Dimethylaminoazobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Pentachlorobenzene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Pentachloroethane	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Pentachloronitrobenzene	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
Pentachlorophenol	ND		2.0	mg/Kg-dry	1	5/19/2015 04:07 PM
Phenacetin	ND		0.80	mg/Kg-dry	1	5/19/2015 04:07 PM
Phenanthrene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Phenol	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Pyrene	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Pyridine	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Safrole	ND		0.40	mg/Kg-dry	1	5/19/2015 04:07 PM
Surr: 2,4,6-Tribromophenol	*62.9*		*18-115*	*%REC*	1	5/19/2015 04:07 PM
Surr: 2-Fluorobiphenyl	*60.2*		*30-116*	*%REC*	1	5/19/2015 04:07 PM
Surr: 2-Fluorophenol	*59.5*		*24-105*	*%REC*	1	5/19/2015 04:07 PM
Surr: 4-Terphenyl-d14	*54.3*		*40-127*	*%REC*	1	5/19/2015 04:07 PM
Surr: Nitrobenzene-d5	*63.4*		*32-106*	*%REC*	1	5/19/2015 04:07 PM
Surr: Phenol-d5	*61.0*		*39-123*	*%REC*	1	5/19/2015 04:07 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			**SW8260B**			Analyst: **LAK**
1,1,1,2-Tetrachloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1,1-Trichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1,2,2-Tetrachloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1,2-Trichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1-Dichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,1-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2,3-Trichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2,3-Trichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2,4-Trichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2,4-Trimethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2-Dibromo-3-chloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2-Dibromoethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2-Dichloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,2-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,3,5-Trimethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,3-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,3-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
1,4-Dichlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
2,2-Dichloropropane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
2-Butanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
2-Chlorotoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
2-Hexanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
4-Chlorotoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
4-Methyl-2-pentanone	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Acetone	**0.013**		**0.0061**	**mg/Kg-dry**	1	5/18/2015 02:23 PM
Benzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Bromobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Bromochloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Bromodichloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Bromoform	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Bromomethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Carbon disulfide	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Carbon tetrachloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Chlorobenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Chloroethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Chloroform	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Chloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM

Note:

ALS Environmental

Date: *22-May-15*

Client: Lawhon & Associates
Project: MED-Granger Dam
Sample ID: SS-5
Collection Date: 5/14/2015 12:20 PM

Work Order: 1505450
Lab ID: 1505450-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
cis-1,2-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
cis-1,3-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Dibromochloromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Dibromomethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Dichlorodifluoromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Ethylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Hexachlorobutadiene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Isopropylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
m,p-Xylene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Methyl tert-butyl ether	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Methylene chloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Naphthalene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
n-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
n-Propylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
o-Xylene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
p-Isopropyltoluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
sec-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Styrene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
tert-Butylbenzene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Tetrachloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Toluene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
trans-1,2-Dichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
trans-1,3-Dichloropropene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Trichloroethene	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Trichlorofluoromethane	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Vinyl chloride	ND		0.0061	mg/Kg-dry	1	5/18/2015 02:23 PM
Xylenes, Total	ND		0.012	mg/Kg-dry	1	5/18/2015 02:23 PM
Surr: 4-Bromofluorobenzene	*96.9*		*62.7-159*	*%REC*	1	5/18/2015 02:23 PM
Surr: Dibromofluoromethane	*100*		*67.3-136*	*%REC*	1	5/18/2015 02:23 PM
Surr: Toluene-d8	*86.3*		*83-124*	*%REC*	1	5/18/2015 02:23 PM

Note:

ALS Environmental

Date: 22-May-15

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28451** Instrument ID **GC3** Method: **SW8082**

MBLK Sample ID: **MBLK-28451-28451** Units: **mg/Kg** Analysis Date: **5/19/2015**
Client ID: Run ID: **GC3_150519A** SeqNo: **1057817** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	ND	0.10								
Aroclor 1221	ND	0.20								
Aroclor 1232	ND	0.10								
Aroclor 1242	ND	0.10								
Aroclor 1248	ND	0.10								
Aroclor 1254	ND	0.10								
Aroclor 1260	ND	0.10								
Surr: Decachlorobiphenyl	0.0624	0	*0.1*	0	*62.4*	*22-156*	0			
Surr: Tetrachloro-m-xylene	0.0756	0	*0.1*	0	*75.6*	*34-145*	0			

LCS Sample ID: **LCS-28451-28451** Units: **mg/Kg** Analysis Date: **5/19/2015**
Client ID: Run ID: **GC3_150519A** SeqNo: **1057818** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1260	1.491	0.10	2	0	74.5	50-133	0			
Surr: Decachlorobiphenyl	0.0666	0	*0.1*	0	*66.6*	*22-156*	0			
Surr: Tetrachloro-m-xylene	0.078	0	*0.1*	0	*78*	*34-145*	0			

MS Sample ID: **1505451-03CMS** Units: **mg/Kg** Analysis Date: **5/19/2015**
Client ID: Run ID: **GC3_150519A** SeqNo: **1057820** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1260	1.469	0.10	2.028	0	72.4	31-150	0			
Surr: Decachlorobiphenyl	0.06552	0	*0.1014*	0	*64.6*	*22-156*	0			
Surr: Tetrachloro-m-xylene	0.07789	0	*0.1014*	0	*76.8*	*34-145*	0			

MSD Sample ID: **1505451-03CMSD** Units: **mg/Kg** Analysis Date: **5/19/2015**
Client ID: Run ID: **GC3_150519A** SeqNo: **1057821** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1260	1.366	0.098	1.969	0	69.4	31-150	1.469	7.23	53	
Surr: Decachlorobiphenyl	0.06083	0	*0.09843*	0	*61.8*	*22-156*	0.06552	*7.42*		
Surr: Tetrachloro-m-xylene	0.07283	0	*0.09843*	0	*74*	*34-145*	0.07789	*6.71*		

The following samples were analyzed in this batch: 1505450-01B 1505450-02B 1505450-03B 1505450-04B 1505450-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28452** Instrument ID **GC9** Method: **SW8081A**

MBLK Sample ID: **MBLK-28452-28452** Units: **mg/Kg** Analysis Date: **5/21/2015**
Client ID: Run ID: **GC9_150521A** SeqNo: **1059546** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4`-DDD	ND	0.0033								
4,4`-DDE	ND	0.0033								
4,4`-DDT	ND	0.0033								
Aldrin	ND	0.0017								
alpha-BHC	ND	0.0017								
beta-BHC	ND	0.0017								
Chlordane	ND	0.033								
delta-BHC	ND	0.0033								
Dieldrin	ND	0.0033								
Endosulfan I	ND	0.0017								
Endosulfan II	ND	0.0033								
Endosulfan sulfate	ND	0.0033								
Endrin	ND	0.0033								
Endrin aldehyde	ND	0.0033								
Endrin ketone	ND	0.0033								
gamma-BHC (Lindane)	ND	0.0017								
Heptachlor	ND	0.0017								
Heptachlor epoxide	ND	0.00012								
Methoxychlor	ND	0.017								
Toxaphene	ND	0.067								
Surr: Decachlorobiphenyl	0.0852	0	*0.1*	0	*85.2*	*51-130*	0			
Surr: Tetrachloro-m-xylene	0.0938	0	*0.1*	0	*93.8*	*44-129*	0			

LCS Sample ID: **LCS-28452-28452** Units: **mg/Kg** Analysis Date: **5/21/2015**
Client ID: Run ID: **GC9_150521A** SeqNo: **1059547** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4`-DDT	0.0304	0.0033	0.04	0	76	25-163	0			
Aldrin	0.0166	0.0017	0.02	0	83	29-148	0			
Dieldrin	0.0326	0.0033	0.04	0	81.5	36-148	0			
Endrin	0.0386	0.0033	0.04	0	96.5	27-168	0			
gamma-BHC (Lindane)	0.0106	0.0017	0.02	0	53	20-139	0			
Heptachlor	0.0164	0.0017	0.02	0	82	30-149	0			
Surr: Decachlorobiphenyl	0.0818	0	*0.1*	0	*81.8*	*51-130*	0			
Surr: Tetrachloro-m-xylene	0.0846	0	*0.1*	0	*84.6*	*44-129*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28452** Instrument ID **GC9** Method: **SW8081A**

MS Sample ID: **1505450-03BMS** Units: **mg/Kg** Analysis Date: **5/21/2015**
Client ID: **SS-3** Run ID: **GC9_150521A** SeqNo: **1059553** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4`-DDT	0.03046	0.0033	0.04008	0	76	9-177	0			
Aldrin	ND	0.0017	0.02004	0	0	52-138	0			S
Dieldrin	0.03407	0.0033	0.04008	0	85	31-160	0			
Endrin	0.03948	0.0033	0.04008	0	98.5	22-168	0			
gamma-BHC (Lindane)	ND	0.0017	0.02004	0	0	39-132	0			S
Heptachlor	ND	0.0017	0.02004	0	0	49-138	0			S
Surr: Decachlorobiphenyl	0.07455	0	*0.1002*	0	*74.4*	*51-130*	0			
Surr: Tetrachloro-m-xylene	0.1066	0	*0.1002*	0	*106*	*44-129*	0			

MSD Sample ID: **1505450-03BMSD** Units: **mg/Kg** Analysis Date: **5/21/2015**
Client ID: **SS-3** Run ID: **GC9_150521A** SeqNo: **1059554** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
4,4`-DDT	0.03126	0.0033	0.04008	0	78	9-177	0.03046	2.6	45	
Aldrin	ND	0.0017	0.02004	0	0	52-138	0	0	27	S
Dieldrin	0.03487	0.0033	0.04008	0	87	31-160	0.03407	2.33	48	
Endrin	0.04108	0.0033	0.04008	0	102	22-168	0.03948	3.98	68	
gamma-BHC (Lindane)	0.06693	0.0017	0.02004	0	334	39-132	0	200	28	SR
Heptachlor	ND	0.0017	0.02004	0	0	49-138	0	0	26	S
Surr: Decachlorobiphenyl	0.07836	0	*0.1002*	0	*78.2*	*51-130*	0.07455	*4.98*		
Surr: Tetrachloro-m-xylene	0.1026	0	*0.1002*	0	*102*	*44-129*	0.1066	*3.83*		

The following samples were analyzed in this batch:

1505450-01B	1505450-02B	1505450-03B
1505450-04B	1505450-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28483** Instrument ID **HG1** Method: **SW7471A**

MBLK Sample ID: **MBLK-28483-28483** Units: **mg/Kg** Analysis Date: **5/19/2015 01:28 PM**
Client ID: Run ID: **HG1_150519B** SeqNo: **1057823** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.30								

LCS Sample ID: **LCS-28483-28483** Units: **mg/Kg** Analysis Date: **5/19/2015 01:30 PM**
Client ID: Run ID: **HG1_150519B** SeqNo: **1057824** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	1.161	0.29	1.099	0	106	69-147	0			

MS Sample ID: **1505451-05B MS** Units: **mg/Kg** Analysis Date: **5/19/2015 02:03 PM**
Client ID: Run ID: **HG1_150519B** SeqNo: **1057838** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.9796	0.30	0.8229	0.1657	98.9	69-147	0			

MSD Sample ID: **1505451-05B MSD** Units: **mg/Kg** Analysis Date: **5/19/2015 02:05 PM**
Client ID: Run ID: **HG1_150519B** SeqNo: **1057839** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.9921	0.30	0.8278	0.1657	99.8	69-147	0.9796	1.26	20	

The following samples were analyzed in this batch:

1505450-01B	1505450-02B	1505450-03B
1505450-04B	1505450-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28475** Instrument ID **ICP3** Method: **SW6010B**

MBLK Sample ID: **MBLK-28475-28475** Units: **mg/Kg** Analysis Date: **5/20/2015 01:34 PM**
Client ID: Run ID: **ICP3_150520A** SeqNo: **1058588** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	5.0								
Barium	ND	10								
Cadmium	ND	1.0								
Chromium	ND	2.0								
Lead	ND	5.0								
Selenium	ND	3.0								
Silver	ND	1.0								

LCS Sample ID: **LCS-28475-28475** Units: **mg/Kg** Analysis Date: **5/20/2015 01:37 PM**
Client ID: Run ID: **ICP3_150520A** SeqNo: **1058589** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	104	5.0	100	0	104	80-120	0			
Barium	99.54	10	100	0	99.5	80-120	0			
Cadmium	105.9	1.0	100	0	106	80-120	0			
Chromium	100.6	2.0	100	0	101	80-120	0			
Lead	108	5.0	100	0	108	80-120	0			
Selenium	103.5	3.0	100	0	104	80-120	0			
Silver	96.94	1.0	100	0	96.9	80-120	0			

LCSD Sample ID: **LCSD-28475-28475** Units: **mg/Kg** Analysis Date: **5/20/2015 01:40 PM**
Client ID: Run ID: **ICP3_150520A** SeqNo: **1058590** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	104.2	5.0	100	0	104	80-120	104	0.192	20	
Barium	99.59	10	100	0	99.6	80-120	99.54	0.0502	20	
Cadmium	105.9	1.0	100	0	106	80-120	105.9	0	20	
Chromium	101.1	2.0	100	0	101	80-120	100.6	0.496	20	
Lead	108.1	5.0	100	0	108	80-120	108	0.0925	20	
Selenium	102.8	3.0	100	0	103	80-120	103.5	0.679	20	
Silver	96.98	1.0	100	0	97	80-120	96.94	0.0413	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28475** Instrument ID **ICP3** Method: **SW6010B**

MS Sample ID: **1505451-05B MS** Units: **mg/Kg** Analysis Date: **5/20/2015 02:15 PM**
Client ID: Run ID: **ICP3_150520A** SeqNo: **1058650** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	120.9	4.9	98.58	20.87	101	75-125	0			
Barium	175	9.9	98.58	92.29	83.9	75-125	0			
Cadmium	99.86	0.99	98.58	0.6033	101	75-125	0			
Chromium	112.1	2.0	98.58	21.64	91.7	75-125	0			
Lead	224.4	4.9	98.58	165.6	59.6	75-125	0			S
Selenium	97.65	3.0	98.58	1.414	97.6	75-125	0			
Silver	89.74	0.99	98.58	1.273	89.7	75-125	0			

MSD Sample ID: **1505451-05B MSD** Units: **mg/Kg** Analysis Date: **5/20/2015 02:18 PM**
Client ID: Run ID: **ICP3_150520A** SeqNo: **1058651** Prep Date: **5/18/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	121	4.9	98.46	20.87	102	75-125	120.9	0.126	20	
Barium	178.7	9.8	98.46	92.29	87.8	75-125	175	2.11	20	
Cadmium	100.5	0.98	98.46	0.6033	101	75-125	99.86	0.668	20	
Chromium	112.7	2.0	98.46	21.64	92.5	75-125	112.1	0.583	20	
Lead	246.7	4.9	98.46	165.6	82.3	75-125	224.4	9.46	20	
Selenium	97.56	3.0	98.46	1.414	97.6	75-125	97.65	0.098	20	
Silver	89.81	0.98	98.46	1.273	89.9	75-125	89.74	0.0793	20	

The following samples were analyzed in this batch: 1505450-01B 1505450-02B 1505450-03B 1505450-04B 1505450-05B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

MBLK Sample ID: **MBLK-28478-28478** Units: **µg/Kg** Analysis Date: **5/19/2015 12:22 PM**
Client ID: Run ID: **SVMS2_150519A** SeqNo: **1058179** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4,5-Tetrachlorobenzene	ND	330								
1,2,4-Trichlorobenzene	ND	330								
1,2-Dichlorobenzene	ND	330								
1,3-Dichlorobenzene	ND	330								
1,3-Dinitrobenzene	ND	330								
1,4-Dichlorobenzene	ND	330								
1-Methylnaphthalene	ND	330								
1-Naphthylamine	ND	330								
2,3,4,6-Tetrachlorophenol	ND	330								
2,4,5-Trichlorophenol	ND	330								
2,4,6-Trichlorophenol	ND	330								
2,4-Dichlorophenol	ND	330								
2,4-Dimethylphenol	ND	330								
2,4-Dinitrophenol	ND	1,600								
2,4-Dinitrotoluene	ND	330								
2,6-Dichlorophenol	ND	330								
2,6-Dinitrotoluene	ND	330								
2-Acetylaminofluorene	ND	330								
2-Chloronaphthalene	ND	330								
2-Chlorophenol	ND	330								
2-Methylnaphthalene	ND	330								
2-Methylphenol	ND	330								
2-Naphthylamine	ND	330								
2-Nitroaniline	ND	1,600								
2-Nitrophenol	ND	330								
2-Picoline	ND	330								
3&4-Methylphenol	ND	330								
3,3`-Dichlorobenzidine	ND	660								
3-Methylcholanthrene	ND	330								
3-Nitroaniline	ND	1,600								
4,6-Dinitro-2-methylphenol	ND	1,600								
4-Aminobiphenyl	ND	660								
4-Bromophenyl phenyl ether	ND	330								
4-Chloro-3-methylphenol	ND	660								
4-Chloroaniline	ND	660								
4-Chlorophenyl phenyl ether	ND	330								
4-Nitroaniline	ND	660								
4-Nitrophenol	ND	1,600								
4-Nitroquinoline 1-oxide	ND	330								
5-Nitro-o-toluidine	ND	330								
7,12-Dimethylbenz(a)anthracene	ND	330								
Acenaphthene	ND	330								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

Acenaphthylene	ND	330
Acetophenone	ND	330
Aniline	ND	330
Anthracene	ND	330
Azobenzene	ND	330
Benzidine	ND	330
Benzo(a)anthracene	ND	330
Benzo(a)pyrene	ND	330
Benzo(b)fluoranthene	ND	330
Benzo(g,h,i)perylene	ND	330
Benzo(k)fluoranthene	ND	330
Benzyl alcohol	ND	660
Bis(2-chloroethoxy)methane	ND	330
Bis(2-chloroethyl)ether	ND	330
Bis(2-chloroisopropyl)ether	ND	330
Bis(2-ethylhexyl)phthalate	ND	330
Butyl benzyl phthalate	ND	330
Carbazole	ND	330
Chrysene	ND	330
Dibenzo(a,h)anthracene	ND	330
Dibenzofuran	ND	330
Diethyl phthalate	ND	330
Dimethyl phthalate	ND	330
Di-n-butyl phthalate	ND	330
Di-n-octyl phthalate	ND	330
Dinoseb	ND	330
Diphenylamine	ND	330
Ethyl methanesulfonate	ND	330
Fluoranthene	ND	330
Fluorene	ND	330
Hexachlorobenzene	ND	330
Hexachlorobutadiene	ND	330
Hexachlorocyclopentadiene	ND	330
Hexachloroethane	ND	330
Indeno(1,2,3-cd)pyrene	ND	150
Isophorone	ND	330
Isosafrole	ND	330
Methapyrilene	ND	330
Methyl methanesulfonate	ND	330
Naphthalene	ND	330
Nitrobenzene	ND	330
N-Nitrosodiethylamine	ND	330
N-Nitrosodimethylamine	ND	330
N-Nitroso-di-n-butylamine	ND	330
N-Nitrosodi-n-propylamine	ND	330
N-Nitrosomethylethylamine	ND	330
N-Nitrosomorpholine	ND	330
N-Nitrosopiperidine	ND	330

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

N-Nitrosopyrrolidine	ND	330					
o-Toluidine	ND	330					
p-Dimethylaminoazobenzene	ND	330					
Pentachlorobenzene	ND	330					
Pentachloroethane	ND	330					
Pentachloronitrobenzene	ND	660					
Pentachlorophenol	ND	1,600					
Phenacetin	ND	660					
Phenanthrene	ND	330					
Phenol	ND	330					
Pyrene	ND	330					
Pyridine	ND	330					
Safrole	ND	330					
Surr: 2,4,6-Tribromophenol	2471	0	*3330*	0	*74.2*	*18-115*	0
Surr: 2-Fluorobiphenyl	1232	0	*1670*	0	*73.8*	*30-116*	0
Surr: 2-Fluorophenol	2467	0	*3330*	0	*74.1*	*24-105*	0
Surr: 4-Terphenyl-d14	1187	0	*1670*	0	*71.1*	*40-127*	0
Surr: Nitrobenzene-d5	1277	0	*1670*	0	*76.5*	*32-106*	0
Surr: Phenol-d5	2538	0	*3330*	0	*76.2*	*39-123*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

LCS Sample ID: **LCS-28478-28478** Units: **µg/Kg** Analysis Date: **5/19/2015 12:51 PM**
Client ID: Run ID: **SVMS2_150519A** SeqNo: **1058180** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1346	330	1670	0	80.6	48.1-106	0			
1,4-Dichlorobenzene	1219	330	1670	0	73	55.5-89.4	0			
2,4-Dinitrotoluene	1478	330	1670	0	88.5	58.8-123	0			
2-Chlorophenol	1329	330	1670	0	79.6	34.7-116	0			
4-Chloro-3-methylphenol	1410	660	1670	0	84.4	32.1-109	0			
4-Nitrophenol	ND	1,600	1670	0	85	36.2-146	0			
Acenaphthene	1314	330	1670	0	78.7	52-119	0			
Acenaphthylene	1388	330	1670	0	83.1	46-118	0			
Anthracene	1424	330	1670	0	85.3	56-109	0			
Benzo(a)anthracene	1576	330	1670	0	94.4	48-121	0			
Benzo(a)pyrene	1470	330	1670	0	88	62-111	0			
Benzo(b)fluoranthene	1429	330	1670	0	85.6	44-115	0			
Benzo(g,h,i)perylene	1369	330	1670	0	82	47.9-113	0			
Benzo(k)fluoranthene	1491	330	1670	0	89.3	61-121	0			
Carbazole	1413	330	1670	0	84.6	43.3-146	0			
Chrysene	1557	330	1670	0	93.2	61-120	0			
Dibenzo(a,h)anthracene	1398	330	1670	0	83.7	56-119	0			
Fluoranthene	1437	330	1670	0	86	63-120	0			
Fluorene	1334	330	1670	0	79.9	56.3-103	0			
Indeno(1,2,3-cd)pyrene	1382	150	1670	0	82.8	55-109	0			
Naphthalene	1339	330	1670	0	80.2	50-106	0			
N-Nitrosodi-n-propylamine	1309	330	1670	0	78.4	25.3-127	0			
Pentachlorophenol	ND	1,600	1670	0	69.5	22.1-105	0			
Phenanthrene	1430	330	1670	0	85.6	59-109	0			
Phenol	1370	330	1670	0	82	36.9-97.8	0			
Pyrene	1445	330	1670	0	86.5	55-117	0			
Surr: 2,4,6-Tribromophenol	3027	0	*3330*	0	*90.9*	*18-115*	0			
Surr: 2-Fluorobiphenyl	1308	0	*1670*	0	*78.3*	*30-116*	0			
Surr: 2-Fluorophenol	2659	0	*3330*	0	*79.9*	*24-105*	0			
Surr: 4-Terphenyl-d14	1263	0	*1670*	0	*75.6*	*40-127*	0			
Surr: Nitrobenzene-d5	1377	0	*1670*	0	*82.5*	*32-106*	0			
Surr: Phenol-d5	2773	0	*3330*	0	*83.3*	*39-123*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

MS Sample ID: **1505451-03cms** Units: **µg/Kg** Analysis Date: **5/19/2015 01:19 PM**
Client ID: Run ID: **SVMS2_150519A** SeqNo: **1058181** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	987	330	1666	0	59.3	50.6-92	0			
1,4-Dichlorobenzene	938.2	330	1666	0	56.3	40.1-84.3	0			
2,4-Dinitrotoluene	1310	330	1666	0	78.7	50.3-127	0			
2-Chlorophenol	976.1	330	1666	0	58.6	33.3-109	0			
4-Chloro-3-methylphenol	1106	660	1666	0	66.4	35.8-116	0			
4-Nitrophenol	ND	1,600	1666	0	71.9	38.7-135	0			
Acenaphthene	1012	330	1666	0	60.8	44-108	0			
Acenaphthylene	1073	330	1666	0	64.4	50.4-96.7	0			
Anthracene	1202	330	1666	0	72.2	51-106	0			
Benzo(a)anthracene	1313	330	1666	0	78.8	47-114	0			
Benzo(a)pyrene	1256	330	1666	0	75.4	55-106	0			
Benzo(b)fluoranthene	1187	330	1666	0	71.2	40-106	0			
Benzo(g,h,i)perylene	1160	330	1666	0	69.7	49-113	0			
Benzo(k)fluoranthene	1288	330	1666	0	77.3	57-119	0			
Carbazole	1235	330	1666	0	74.1	28.5-114	0			
Chrysene	1312	330	1666	0	78.8	52-107	0			
Dibenzo(a,h)anthracene	1205	330	1666	0	72.4	46-116	0			
Fluoranthene	1240	330	1666	0	74.5	52-120	0			
Fluorene	1061	330	1666	0	63.7	53-107	0			
Indeno(1,2,3-cd)pyrene	1195	150	1666	0	71.8	51-107	0			
Naphthalene	1006	330	1666	0	60.4	18.2-126	0			
N-Nitrosodi-n-propylamine	1020	330	1666	0	61.2	46.5-116	0			
Pentachlorophenol	ND	1,600	1666	0	63.5	28.9-156	0			
Phenanthrene	1220	330	1666	0	73.2	52-105	0			
Phenol	1005	330	1666	0	60.4	25.9-90.3	0			
Pyrene	1264	330	1666	0	75.9	51-111	0			
Surr: 2,4,6-Tribromophenol	2316	0	*3321*	0	*69.7*	*18-115*	0			
Surr: 2-Fluorobiphenyl	962.4	0	*1666*	0	*57.8*	*30-116*	0			
Surr: 2-Fluorophenol	1967	0	*3321*	0	*59.2*	*24-105*	0			
Surr: 4-Terphenyl-d14	1093	0	*1666*	0	*65.6*	*40-127*	0			
Surr: Nitrobenzene-d5	1044	0	*1666*	0	*62.7*	*32-106*	0			
Surr: Phenol-d5	2021	0	*3321*	0	*60.9*	*39-123*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **28478** Instrument ID **SVMS2** Method: **SW8270C**

MSD Sample ID: **1505451-03cmsd** Units: **µg/Kg** Analysis Date: **5/19/2015 01:47 PM**
Client ID: Run ID: **SVMS2_150519A** SeqNo: **1058182** Prep Date: **5/19/2015** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	1124	330	1672	0	67.2	46.6-90.1	987	13	18	
1,4-Dichlorobenzene	1075	330	1672	0	64.3	40.1-84.3	938.2	13.6	20	
2,4-Dinitrotoluene	1323	330	1672	0	79.2	50.3-127	1310	0.999	20	
2-Chlorophenol	1135	330	1672	0	67.9	33.3-109	976.1	15	20	
4-Chloro-3-methylphenol	1232	660	1672	0	73.7	35.8-116	1106	10.7	20	
4-Nitrophenol	ND	1,700	1672	0	70.9	38.7-135	1198	0	20	
Acenaphthene	1147	330	1672	0	68.6	44-108	1012	12.5	20	
Acenaphthylene	1219	330	1672	0	72.9	50.4-96.7	1073	12.7	20	
Anthracene	1222	330	1672	0	73.1	51-106	1202	1.6	24	
Benzo(a)anthracene	1324	330	1672	0	79.2	47-114	1313	0.821	21	
Benzo(a)pyrene	1293	330	1672	0	77.3	55-106	1256	2.85	20	
Benzo(b)fluoranthene	1232	330	1672	0	73.7	40-106	1187	3.78	20	
Benzo(g,h,i)perylene	1226	330	1672	0	73.3	49-113	1160	5.5	20	
Benzo(k)fluoranthene	1296	330	1672	0	77.5	57-119	1288	0.598	24	
Carbazole	1232	330	1672	0	73.7	28.5-114	1235	0.228	20	
Chrysene	1297	330	1672	0	77.6	52-107	1312	1.17	19	
Dibenzo(a,h)anthracene	1248	330	1672	0	74.6	46-116	1205	3.43	20	
Fluoranthene	1222	330	1672	0	73.1	52-120	1240	1.5	20	
Fluorene	1167	330	1672	0	69.8	53-107	1061	9.58	20	
Indeno(1,2,3-cd)pyrene	1260	150	1672	0	75.4	51-107	1195	5.3	20	
Naphthalene	1160	330	1672	0	69.4	18.2-126	1006	14.2	20	
N-Nitrosodi-n-propylamine	1178	330	1672	0	70.4	46.5-116	1020	14.3	17	
Pentachlorophenol	ND	1,700	1672	0	61.2	28.9-156	1058	0	20	
Phenanthrene	1255	330	1672	0	75.1	52-105	1220	2.84	20	
Phenol	1242	330	1672	0	74.3	25.9-90.3	1005	21.1	17	R
Pyrene	1253	330	1672	0	75	51-111	1264	0.851	20	
Surr: 2,4,6-Tribromophenol	2303	0	*3333*	0	*69.1*	*18-115*	2316	*0.585*		
Surr: 2-Fluorobiphenyl	1136	0	*1672*	0	*68*	*30-116*	962.4	*16.6*		
Surr: 2-Fluorophenol	2283	0	*3333*	0	*68.5*	*24-105*	1967	*14.9*		
Surr: 4-Terphenyl-d14	1064	0	*1672*	0	*63.6*	*40-127*	1093	*2.69*		
Surr: Nitrobenzene-d5	1171	0	*1672*	0	*70.1*	*32-106*	1044	*11.5*		
Surr: Phenol-d5	2336	0	*3333*	0	*70.1*	*39-123*	2021	*14.5*		

The following samples were analyzed in this batch:

1505450-01b	1505450-02b	1505450-03b
1505450-04b	1505450-05b	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **R118364** Instrument ID **VMS2** Method: **SW8260B**

MBLK Sample ID: **MBLK-R118364** Units: **µg/Kg** Analysis Date: **5/18/2015 08:40 AM**
Client ID: Run ID: **VMS2_150518A** SeqNo: **1057127** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0								
1,1,1-Trichloroethane	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,1-Dichloropropene	ND	5.0								
1,2,3-Trichlorobenzene	ND	5.0								
1,2,3-Trichloropropane	ND	5.0								
1,2,4-Trichlorobenzene	ND	5.0								
1,2,4-Trimethylbenzene	ND	5.0								
1,2-Dibromo-3-chloropropane	ND	5.0								
1,2-Dibromoethane	ND	5.0								
1,2-Dichlorobenzene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
1,2-Dichloropropane	ND	5.0								
1,3,5-Trimethylbenzene	ND	5.0								
1,3-Dichlorobenzene	ND	5.0								
1,3-Dichloropropane	ND	5.0								
1,4-Dichlorobenzene	ND	5.0								
2,2-Dichloropropane	ND	5.0								
2-Butanone	ND	5.0								
2-Chlorotoluene	ND	5.0								
2-Hexanone	ND	5.0								
4-Chlorotoluene	ND	5.0								
4-Methyl-2-pentanone	ND	5.0								
Acetone	ND	5.0								
Benzene	ND	5.0								
Bromobenzene	ND	5.0								
Bromochloromethane	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	5.0								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,2-Dichloroethene	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **R118364** Instrument ID **VMS2** Method: **SW8260B**

Dibromomethane	ND	5.0					
Dichlorodifluoromethane	ND	5.0					
Ethylbenzene	ND	5.0					
Hexachlorobutadiene	ND	5.0					
Isopropylbenzene	ND	5.0					
m,p-Xylene	ND	5.0					
Methyl tert-butyl ether	ND	5.0					
Methylene chloride	ND	5.0					
Naphthalene	ND	5.0					
n-Butylbenzene	ND	5.0					
n-Propylbenzene	ND	5.0					
o-Xylene	ND	5.0					
p-Isopropyltoluene	ND	5.0					
sec-Butylbenzene	ND	5.0					
Styrene	ND	5.0					
tert-Butylbenzene	ND	5.0					
Tetrachloroethene	ND	5.0					
Toluene	ND	5.0					
trans-1,2-Dichloroethene	ND	5.0					
trans-1,3-Dichloropropene	ND	5.0					
Trichloroethene	ND	5.0					
Trichlorofluoromethane	ND	5.0					
Vinyl chloride	ND	5.0					
Xylenes, Total	ND	10					
Surr: 4-Bromofluorobenzene	48.61	0	*50*	0	*97.2*	*62.7-159*	0
Surr: Dibromofluoromethane	48.1	0	*50*	0	*96.2*	*67.3-136*	0
Surr: Toluene-d8	52.3	0	*50*	0	*105*	*83-124*	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **R118364** Instrument ID **VMS2** Method: **SW8260B**

LCS Sample ID: **LCS-R118364** Units: **µg/Kg** Analysis Date: **5/18/2015 09:11 AM**
Client ID: Run ID: **VMS2_150518A** SeqNo: **1057128** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	61.36	5.0	50	0	123	53.6-149	0			
1,1-Dichloroethene	63.19	5.0	50	0	126	38.8-176	0			
1,2-Dichloroethane	64.55	5.0	50	0	129	54.4-145	0			
1,3-Dichlorobenzene	52.91	5.0	50	0	106	54.2-137	0			
1,4-Dichlorobenzene	51.38	5.0	50	0	103	52.8-135	0			
Benzene	63.17	5.0	50	0	126	56-148	0			
Carbon tetrachloride	61.34	5.0	50	0	123	51.9-151	0			
Chlorobenzene	55.79	5.0	50	0	112	55.4-137	0			
Chloroform	62.12	5.0	50	0	124	51.1-147	0			
cis-1,2-Dichloroethene	62.87	5.0	50	0	126	47.6-149	0			
Ethylbenzene	57.31	5.0	50	0	115	55.8-142	0			
m,p-Xylene	114.8	5.0	100	0	115	57.6-141	0			
Styrene	58.15	5.0	50	0	116	59.6-143	0			
Tetrachloroethene	61.04	5.0	50	0	122	56.2-160	0			
Toluene	61.34	5.0	50	0	123	56-143	0			
Trichloroethene	58.88	5.0	50	0	118	56.5-143	0			
Surr: 4-Bromofluorobenzene	49.82	0	*50*	0	*99.6*	*62.7-159*	0			
Surr: Dibromofluoromethane	52.6	0	*50*	0	*105*	*67.3-136*	0			
Surr: Toluene-d8	51.63	0	*50*	0	*103*	*83-124*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **R118364** Instrument ID **VMS2** Method: **SW8260B**

MS Sample ID: **1505413-12A MS** Units: **µg/Kg** Analysis Date: **5/18/2015 09:45 AM**
Client ID: Run ID: **VMS2_150518A** SeqNo: **1057129** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	55.49	5.0	50	0	111	66.9-140	0			
1,1-Dichloroethene	55.77	5.0	50	0	112	41.4-161	0			
1,2-Dichloroethane	57.98	5.0	50	0	116	58.9-137	0			
1,3-Dichlorobenzene	50.59	5.0	50	0	101	56.3-126	0			
1,4-Dichlorobenzene	51.03	5.0	50	0	102	58.3-122	0			
Benzene	56.66	5.0	50	0	113	35.8-162	0			
Carbon tetrachloride	56.85	5.0	50	0	114	53.2-137	0			
Chlorobenzene	51.7	5.0	50	0	103	65.6-137	0			
Chloroform	54.95	5.0	50	0	110	58-130	0			
cis-1,2-Dichloroethene	55.15	5.0	50	0	110	52.9-138	0			
Ethylbenzene	53.38	5.0	50	0	107	57.5-134	0			
m,p-Xylene	106.7	5.0	100	0	107	56.4-135	0			
Styrene	55.6	5.0	50	0	111	60.9-135	0			
Tetrachloroethene	58.55	5.0	50	0	117	52.1-160	0			
Toluene	56.35	5.0	50	0	113	67.7-135	0			
Trichloroethene	53.21	5.0	50	0	106	56.5-136	0			
Surr: 4-Bromofluorobenzene	49.95	0	*50*	0	*99.9*	*62.7-159*	0			
Surr: Dibromofluoromethane	50.7	0	*50*	0	*101*	*67.3-136*	0			
Surr: Toluene-d8	50.19	0	*50*	0	*100*	*83-124*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Lawhon & Associates
Work Order: 1505450
Project: MED-Granger Dam

QC BATCH REPORT

Batch ID: **R118364** Instrument ID **VMS2** Method: **SW8260B**

MSD Sample ID: **1505413-12A MSD** Units: **µg/Kg** Analysis Date: **5/18/2015 10:17 AM**
Client ID: Run ID: **VMS2_150518A** SeqNo: **1057130** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	63.61	5.0	50	0	127	66.9-140	55.49	13.6	31.2	
1,1-Dichloroethene	62.84	5.0	50	0	126	41.4-161	55.77	11.9	38.1	
1,2-Dichloroethane	65.27	5.0	50	0	131	58.9-137	57.98	11.8	26.2	
1,3-Dichlorobenzene	51.64	5.0	50	0	103	56.3-126	50.59	2.05	21	
1,4-Dichlorobenzene	52.46	5.0	50	0	105	58.3-122	51.03	2.76	28.7	
Benzene	63.72	5.0	50	0	127	35.8-162	56.66	11.7	23.6	
Carbon tetrachloride	65.94	5.0	50	0	132	53.2-137	56.85	14.8	32.3	
Chlorobenzene	56.92	5.0	50	0	114	65.6-137	51.7	9.61	20	
Chloroform	62.92	5.0	50	0	126	58-130	54.95	13.5	28.2	
cis-1,2-Dichloroethene	62.96	5.0	50	0	126	52.9-138	55.15	13.2	23.7	
Ethylbenzene	58.57	5.0	50	0	117	57.5-134	53.38	9.27	24.9	
m,p-Xylene	118.3	5.0	100	0	118	56.4-135	106.7	10.4	25.1	
Styrene	59.04	5.0	50	0	118	60.9-135	55.6	6	22.8	
Tetrachloroethene	65.62	5.0	50	0	131	52.1-160	58.55	11.4	24.7	
Toluene	51.42	5.0	50	0	103	67.7-135	56.35	9.15	20	
Trichloroethene	60.02	5.0	50	0	120	56.5-136	53.21	12	20	
Surr: 4-Bromofluorobenzene	47.97	0	*50*	0	*95.9*	*62.7-159*	49.95	*4.04*		
Surr: Dibromofluoromethane	52.67	0	*50*	0	*105*	*67.3-136*	50.7	*3.81*		
Surr: Toluene-d8	41.81	0	*50*	0	*83.6*	*83-124*	50.19	*18.2*		

The following samples were analyzed in this batch:

1505450-01A	1505450-02A	1505450-03A
1505450-04A	1505450-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 22-May-15

Client: Lawhon & Associates
Project: MED-Granger Dam
WorkOrder: **1505450**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
E	EPA Method
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitaion Limit
SDL	Sample Detection Limit
SW	SW-846 Method

Units Reported	Description
% of sample	
µg/Kg-dry	
mg/Kg-dry	

ALS Environmental

Sample Receipt Checklist

Client Name: **LAWHON-WESTERVILLE** Date/Time Received: **15-May-15 13:40**

Work Order: **1505450** Received by: **RDN**

Checklist completed by Christie Freet (eSignature) 15-May-15 (Date) Reviewed by: Chris Gibson (eSignature) 19-May-15 (Date)

Matrices:

Carrier name: Courier

Shipping container/cooler in good condition?	Yes ☐	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☐
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.8		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☐	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

APPENDIX D

Chain-of-Custody

Field Chain-of-Custody Record

Page 1 of 1

☒ REGULAR Status ☐ RUSH Status 1505450 Cooler Temp: 2.8 (Lab only)

17390

Date 5/14/15 Purchase Order No. _____ Billing Address (if different) _____

Company Name Lawhon + Associates, Inc

Address 1441 KING AVE

City: COLUMBUS State: OH Zip: 43212

Person to Contact Trevor Berger

Email Address tberger@lawhon-assoc.com

Telephone (614) 361-6721

Fax Telephone ( ) _____

Project No. _____

Sampling Site MED-GRANGER DAM

Date/Time of Collection 5/14/15

VAP ☐ Yes ☒ No

Sample Number	Site ID	Date	Time	Lab Sample Number	Preservation	Sample Type	VOC	SVOC	RCRA Metals	Pesticides	PCB					No. of Containers
01	SS-1	5/14/15	10:50			S	X	X	X	X	X					4
02	SS-2	↓	11:20			S	X	X	X	X	X					4
03	SS-3	↓	11:50			S	X	X	X	X	X					4
04	SS-4	↓	13:60			S	X	X	X	X	X					4
05	SS-5	↓	12:20			S	X	X	X	X	X					4

Notes:

Failure to complete all portions of this form may delay analysis. Please fill in this form *LEGIBLY*.

Relinquished by: (Signature)	Time / Date	Received by: (Signature)	Time / Date
[signature]	5/15/15 0911	Christie Freek	5/15/15 0911
Christie Freek	5/15/15 1338	[signature]	5/15/15 13:40

Ship to: ALS | Environmental
4388 Glendale - Milford Road
Cincinnati, Ohio 45242
Phone: 513.733.5336
Fax: 513.733.5347

Carrier / Airbill #

Date / Time:

APPENDIX E: ESTIMATES

OPINION OF PROBABLE CONSTRUCTION COST

Client:	Ohio Department of Transportation	Project Name:	MED-Granger Dam Removal
Address:	1980 W. Broad Street, Columbus, OH 43223	Project Number:	PID 99636 (MED-94-11.91)
Location:	Medina Water Works, 3733 Granger Road, Medina, OH	Estimator:	Thayne
Date:	July 14, 2015	M & H Project Number:	4012500-130054.05

Medina - Granger Dam Removal - Concept Plan Estimate

CSI	DESCRIPTION	QTY	UNITS	UNIT COST[1]	TOTAL COST	Total Cost With Multipliers
01 70 00	Mobilization, 10%	1	LS	$19,000.00	$19,000	$24,130
-	Temporary access and erosion control[2]	1	LS	$10,000.00	$10,000	$12,700
-	Temporary construction easement[2]	1	LS	$1,500.00	$1,500	$1,905
-	Instream pollution control[2]	1	LS	$5,000.00	$5,000	$6,350
03 05 05	100050 Selective concrete demolition [dam][3]	92	CY	$350.00	$32,200	$40,894
03 05 05	100050 Selective concrete demolition [splash pad][3]	80	CY	$350.00	$28,000	$35,560
03 05 05	100050 Selective concrete demolition [intake structure and cistern][3]	50	CY	$350.00	$17,500	$22,225
31 22 16	103300 Fine Grading, slopes, gentle, finishing grading	466	SY	$0.20	$93	$118
31 22 16	103310 Fine Grading, slopes, steep, finishing grading	516	SY	$0.25	$129	$164
31 23 16	130500 Excavation, common earth, 1 CY bucket[2,4]	202	CY	$11.00	$2,222	$2,822
31 23 23	154000 Borrow, common earth, 1 CY bucket[5]	844	BCY	$19.65	$16,585	$21,062
31 23 23	201278 Cycle hauling (12 CY truck; 20 mi; 40 mph; 20 min wait/load/unload)[6,7]	275.2	LCY	$11.00	$3,027	$3,845
31 23 23	235680 Compaction, 2 passes, 12" lifts, sheepsfoot or wobbly wheel roller	1046	ECY	$0.40	$418	$531
-	Coir log, 12", staked[2]	300	LF	$23.00	$6,900	$8,763
-	Willow stake plantings[8]	0.09	AC	$18,000.00	$1,545	$1,963
-	Native seed mix and mulch[9]	3333	SY	$1.50	$5,000	$6,350
	Sub-Total				$149,120	
	DESIGN CONTINGENCY	25.00 %			$37,280	
	JOB CONDITIONS MULTIPLIER	2.00 %			$2,982	
	CONSTRUCTION COST ESTIMATE TOTAL (ROUNDED)				$190,000	$190,000
	Design and construction management	25.00 %			$47,500	
	Permitting	15.00 %			$28,500	
	IBI sampling (2 years estimated)	2	YR	$5,000.00	$10,000	
	Post-construction monitoring (5 years estimated)	5	YR	$12,000.00	$60,000	
	PROFESSIONAL SERVICES				$146,000	

Notes:

1) Unit Cost values obtained from RSMeans unless otherwise noted.
2) Unit Cost value provided by Estimator based on various information
3) Unit Cost value established based on ODOT bridge removal costs in 2014.
4) Excavation is for dam buttress demolition
5) Shrink/swell factors have not been taken into account.
6) Concrete debris bulking factor of 1.6.
7) Concrete disposal is at no cost per disposal locations within 30 miles of project site.
8) Unit Cost value taken from "Hartman Plan" by ES,Inc.
9) Unit Cost value taken from Ohio DOT bid tab 2015-06-19