ARUP LABORATORIES
800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Jonathan R. Genzen, MD, PhD, Chief Medical Officer

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB	12/5/1962
Gender:	Male
Patient Identifiers:	01234567890ABCD, 012345
Visit Number (FIN):	01234567890ABCD
Collection Date:	00/00/0000 00:00

Lead, Industrial Exposure Panel, Adults

ARUP test code 0025016

Lead, Industrial, Whole Blood

2.6 ug/dL (Ref Interval: <=4.9)

INTERPRETIVE INFORMATION: Lead, Industrial Exposure Panel, Adults
Analysis performed by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS).

Elevated results may be due to skin or collection-related contamination, including the use of a noncertified lead-free collection/transport tube. If contamination concerns exist due to elevated levels of blood lead, confirmation with a second specimen collected in a certified lead-free tube is recommended.

Reference interval and interpretive comments are based on the CDC's "Childhood Lead Poisoning Prevention: Recommended Actions Based on Blood Lead Level" and the "Adult Blood Lead Epidemiology and Surveillance: Reference Blood Lead Levels (BLLs) for Adults in the U.S." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Actions described by OSHA in 1978 and finalized in 1983 are shown below. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

Concentration	Comment
5-19.9 ug/dL	Medical removal is recommended for pregnant women or those who are trying or may become pregnant. Adverse health effects are possible. Reduced lead exposure and increased blood lead monitoring are recommended.
20-69.9 ug/dL	Adverse health effects are indicated. Medical removal from lead exposure is required by OSHA if blood lead level exceeds 50 ug/dL. Prompt medical evaluation is recommended.
Greater than 69.9 ug/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.

"Occupational Safety and Health Standards: Lead (1983). 29 CFR Part 1910.1025 App C"

Action required for workers with Elevated Lead Values OSHA, Occupational Exposure to Lead, 1978

No. of Tests	Lead	Action Required

H=High, L=Low, *=Abnormal, C=Critical

	1	Greater than or equal to 40.0 ug/dL	Notification of worker in writing; medical examination of worker and consultation.
	3 (average)	Greater than or equal to 50.0 ug/dL	Removal of worker from job with potential lead exposure.
	1	Greater than or equal to 60.0 ug/dL	Removal of worker from job with potential lead exposure.
	2	Less than 40.0 ug/dL	Reinstatement of worker in job with potential lead exposure is based upon symptoms and medical evaluation.

OSHA requirements in effect since 1978 call for the measurement of whole blood lead and zinc protoporphyrins (ZPP) (NCCLS document C42-A, Nov. 1996) to evaluate the occupational exposure to lead. OSHA requires ZPP whole blood testing to be reported in units of ug/dL. For adults, conversion of ZPP units of ug/dL whole blood assumes a hematocrit of 45 percent. Conversion factor: umol/mol heme x 0.584= ug/dL.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Zinc Protoporphyrin (ZPP) WholeBld Ratio

52 umol ZPP/ mol Hem (Ref Interval: 0-69)

INTERPRETIVE INFORMATION: Zinc Protoporphyrin (ZPP) WholeBld Ratio
This test was performed on the ProtoFluor Z system manufactured by Helena Laboratories. The result is not comparable to results obtained from extraction-based methods or from the AVIV ZPP system.

The test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Zinc Protoporphyrin, Blood

30 ug/dL (Ref Interval: 0-40)

INTERPRETIVE INFORMATION: Zinc Protoporphyrin, Blood

For occupational exposure to lead, OSHA requires ZPP whole blood concentration to be reported in units of ug/dL. For adults, conversion of ZPP to units of ug/dL assumes a hematocrit of 45%. This test was performed on the ProtoFluor Z system manufactured by Helena Laboratories. The result is not comparable to results obtained from extraction-based methods or from the AVIV ZPP system.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

H=High, L=Low, *=Abnormal, C=Critical

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Lead, Industrial, Whole Blood	24-109-148282	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Zinc Protoporphyrin (ZPP) WholeBld Ratio	24-109-148282	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Zinc Protoporphyrin, Blood	24-109-148282	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical