State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

A meeting of the Waste Management and Radiation Control Board has been scheduled for May 9, 2024 at 1:30 p.m. at the Utah Department of Environmental Quality, (Multi-Agency State Office Building) Conference Room #1015, 195 North 1950 West, SLC.

Board members and interested persons may participate electronically/telephonically.

Join via the Internet: meet.google.com/gad-sxsd-uvs
Join via the Phone: (US) +1 978-593-3748 PIN: 902 672 356#

AGENDA

I. Call to Order and Roll Call.

II. Public Comments on Agenda Items.

III. Declarations of Conflict of Interest.

IV. Approval of the meeting minutes for the April 11, 2024 Board meeting ..... Tab 1 (**Board Action Item**).

V. Petroleum Storage Tanks Update ..... Tab 2

VI. Petroleum Storage Tanks Rules ..... Tab 3

A. Approval of proposed changes to Petroleum Storage Tanks Rules UAC R311 for initial publication and 30-day public comment period (**Board Action Item**).

VII. Low-Level Radioactive Waste ..... Tab 4

A. Energy*Solutions* request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption from the treatment standards for uranium extraction process residues encased in cement for macroencapsulation (Information Item).

B. Energy*Solutions* request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption for the direct macroencapsulation treatment of lithium and lithium-ion batteries (Information Item).

(Over)

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VIII. Hazardous Waste Section ..... Tab 5

A. Proposed Stipulation and Consent Order between the Director and Big West Oil LLC (Information Item).
B. Clean Harbors Grassy Mountain, LLC request for a site-specific treatment variance from the Utah Hazardous Waste Management Rules to treat baghouse dust containing High Subcategory Mercury by stabilization instead of retort and recovery (Information Item).

IX. Administrative Rules ..... Tab 6

A. Approval from the Board to proceed with formal rulemaking and public comment on proposed changes to UAC R313-17 and UAC R313-24 of the Radiation Control Rules. (**Board Action Item**).

X. X-Ray Program ..... Tab 7

A. Approval from the Board for the Executive Secretary to extend the expiration date for certain Mammography Imaging Medical Physicists (**Board Action Item**).

XI. Director's Report.

XII. Other Business.

A. Miscellaneous Information Items.
B. Scheduling of next Board meeting (June 13, 2024).

XIII. Adjourn.

In compliance with the Americans with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact LeAnn Johnson, Office of Human Resources at 385-226-4881, Telecommunications Relay Service 711, or by Email at leannjohnson@utah.gov.

Waste Management and Radiation Control Board Meeting Minutes
Utah Department of Environmental Quality
Multi-Agency State Office Building (Conf. Room #1015)
195 North 1950 West, SLC
April 11, 2024
1:30 p.m.

Board Members Participating at Anchor Location: Brett Mickelson (Chair), Mark Franc, Jeremy Hawk, Vern Rogers

Board Members Participating Virtually: Dr. Richard Codell, Dr. Steve McIff, Nathan Rich, Dennis Riding (Vice-Chair), Kim Shelley, Shane Whitney

Board Members Excused/Absent: Danielle Endres and Scott Wardle

UDEQ Staff Members Participating at Anchor Location: Brent Everett, Doug Hansen, Morgan Atkinson, Tom Ball, Brenden Catt, Avery Holyoak, Allie King, Jalynn Knudsen, Arlene Lovato, Deborah Ng, Stevie Norcross, Jordan Payne, Bret Randall, Elisa Smith, Brian Speer, David Wilson, Raymond Wixom

Others Attending at Anchor Location: None.

Other UDEQ employees and interested members of the public also participated either electronically or telephonically. This meeting was recorded.

I. Call to Order and Roll Call.

Chairman Mickelson called the meeting to order at 1:30 p.m. Roll call of Board members was conducted; see above.

II. Public Comments on Agenda Items – None.

III. Declaration of Conflict of Interest – None.

IV. Approval of the meeting minutes for the February 8, 2024 Board meeting (Board Action Item).

Marc Franc requested Paragraph 6 of Section VIII be corrected to read as follows:

… and commented that upstanding members of the regulated community would not expect to receive violations with lack of good faith enhancements or willfulness enhancements as it is clear that this facility was operating outside of its regulatory requirements with no apparent attempt to correct the violations when noted.

It was moved by Marc Franc and seconded by Vern Rogers and UNANIMOUSLY CARRIED to approve the February 8, 2024, Board meeting minutes with the corrected language stated above to Paragraph 6 of Section VIII.

V. Annual Open Meetings, Conflicts, Ethics and Records Training (Information Item). (Training provided by Raymond Wixom, Assistant Attorney General, Office of Utah Attorney General)

The Open Meetings, Conflicts, Ethics and Records Training was presented by Raymond Wixom, Assistant Attorney General, Utah Attorney General's Office. (A hard copy of the Annual Open Meetings, Conflicts,

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Ethics and Records Training presentation material was included with the official copy of the April 11, 2024 meeting minutes).

Dr. Codell asked for clarification concerning discussions among Board members over technical issues as they review the materials associated with an agenda item. Specifically, if a Board member is unclear about an agenda item that may require him to talk it over with another Board member who has more expertise (subject-matter expert) in that particular area and could clarify, can they be contacted or do those discussions between two or three Board members need to take place in a public forum.

Dr. Codell stated he does not want to do anything unacceptable, but the above may occur, as there may be a situation when Board members are asked to review technical issues associated with an agenda item.

Mr. Wixom stated that Board members should not get together to predetermine a decision on any matter. However, if a Board member asks another Board member a specific question on a specific matter to receive clarity on a technical issue, etc. that they are knowledgeable about (subject-matter expert), that is acceptable. Mr. Wixom further discussed other situations where this practice is not acceptable and advised all Board members to be cautious and careful in these situations.

There were no additional comments or questions.

VI. Petroleum Storage Tanks Update.

Brent Everett, Director, Division of Environmental Response and Remediation (DERR), informed the Board that the cash balance of the Petroleum Storage Tank (PST) Enterprise Fund for the end of February 2024, is $33,858,578.00. The cash balance at the end of March 2024 was $33,732,739.00. The DERR continues to watch the balance of the PST Enterprise Fund closely to ensure sufficient cash is available to cover qualified claims for releases.

Mr. Everett updated the Board on House Bill (HB) 373 Environmental Quality Amendments and HB 230 State Agency Application Review Requirements.

- HB 373 requires meetings between the Federalism Commission and the Utah Department of Environmental Quality.
- HB 230 was not passed out of committee. There may be additional questions during the interim.

Mr. Everett also mentioned that HB 89 Tax Refund Amendments, run by Representative Steve Eliason, limits the total amount of interest that may accrue each year on a tax overpayment or over collection. This applies to facilities claiming a refund on a portion of the Environmental Assurance Fee assessed to facilities that do not participate in the Environmental Assurance Program, but who paid the surcharge.

VII. Petroleum Storage Tanks Rules.

A. Proposed changes to R311 of the Petroleum Storage Tanks Rules (Information Item).

Avery Holyoak, Leaking Underground Storage Tank Remedial Assistance Section Manager, informed the Board that the DERR is proposing changes to R311, the PST Rules. The rules to be amended are:

R311-201. Petroleum Storage Tanks: Certification Programs and UST Operator Training.
R311-203. Petroleum Storage Tanks: Technical Standards.
R311-204. Petroleum Storage Tanks: Closure and Remediation.
R311-206. Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.

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This matter does not require Board action at this time. Upon completion of informal stakeholder comment, the Division intends to return to the Board to initiate the formal rulemaking process.

Dennis Riding asked about the DERR's existing red-tag authority. Ms. Holyoak explained that the DERR does have an existing red tag authority but it does not include red-tagging a tank for a failed line tightness test or a visually evident leak. The DERR is asking for authority to red-tag tanks that have failed a tightness test or have an appearance of a leak.

Mr. Riding asked if the DERR is expanding beyond the Legislative intent with the addition of leak detection provisions on all PSTs and not just those participating in the Environmental Assurance Program since one goal of the legislation in Senate Bill (SB) 40 is to ensure aboveground petroleum storage tanks (APSTs) have financial responsibility for their tanks.

Ms. Holyoak explained that SB 40's main goal was to ensure APSTs obtain a certificate of compliance (COC). One of the requirements to obtain a COC is tank tightness testing. SB 40 allowed for one-time tank tightness testing to obtain the original COC. In order to continue issuing a COC for these APSTs, the DERR is requesting the authority to require ongoing tank tightness tests in order to ensure continued tank tightness.

Mr. Everett explained that SB 40 originated through a State audit. The audit questioned why APSTs were not held to the same regulatory standards as underground petroleum storage tanks. As the DERR is implementing the new regulations, the DERR is striving to update rules to reflect different regulations based on the type of PST.

Ms. Holyoak also explained that double walled spill buckets were originally required as part of SB40. The DERR realizes that not all APSTs need to have double walled spill buckets because not all fill ports are below ground. The DERR is proposing to remove this requirement.

There were no other questions or comments.

VIII. Administrative Rules.

A. Approval from the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Solid and Hazardous Waste Rules R315-309 and R315-310 of the Utah Administrative Code to correct rule and statutory references and language, clarify rule language, remove requirements that are no longer necessary, add some new requirements to the rules, and add language and requirements to rules as required by legislation passed by the Utah State Legislature (**Board Action Item**).

Tom Ball, X-Ray and Technical Support Manger in the Division of Waste Management and Radiation Control (Division), reviewed the request for approval from the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Administrative Code (UAC) R315-309 and UAC R315-310 of the Solid Waste Rules to correct rule and statutory references and language, clarify rule language, remove requirements that are no longer necessary, add some new requirements to the rules, and add language and requirements to rules as required by legislation passed by the Utah State Legislature.

Mr. Ball stated that Division staff have been going through the solid waste rules updating and amending the rules and have presented them to the Board during the last few Board meetings. These rules have not been updated or amended for several years. This is an ongoing process and Mr. Ball reminded the Board that these two rules UAC R315-309 and UAC R315-310 were brought to the Board with proposed changes in November of 2023, but were not approved due to comments received. All comments have been reviewed and changes have been made based on the comments and UAC R315-309 and UAC R315-310 are now ready for approval from the Board to proceed with formal rulemaking and public comment.

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Mr. Ball stated that the purpose of this rulemaking is to bring the rules up-to-date and fix errors in the rules and reviewed the proposed changes to UAC R315-309 and UAC R315-310 that included the following: UAC R315-309(1) is being amended to clarify which facilities are required to have financial assurance; A rule reference in UAC R315-309-9(6)(a)(ii) to UAC R315-309-3(6)(b) and (c) is being corrected to UAC R315-309-9(6)(b) and (c); UAC R315-310-1 is being amended to clarify which types of solid waste facilities are subject to the permit requirements; The requirement for submitting two copies of a permit application for review found in UAC R315-310-2(2) is being deleted because the Division has an online electronic permit application process; UAC R315-310-3(1)(b) is being amended to clarify which facilities are exempt from having plans and drawings signed and sealed by a professional engineer; New requirements are being added in UAC R315-310-3(1)(l) in accordance with House Bill 357 passed by the Utah State Legislature in 2013; Language is being added in UAC R315-310-3(3)(a) to clarify that permit applicants must meet the requirements of 19-6-108(11) of the Utah Code; The word "commercial" is being added in UAC R315-310-3(c) to clarify that the rule applies to commercial solid waste disposal facilities; A new requirement is being added as UAC R315-310-3(e) as required by Senate Bill 68 passed by the Utah State Legislature in 2011; The rule language added under UAC R315-310-10(1) does not add any new requirements (language added to assist permit applicants by directing them to requirements found in other parts of the rules that they must include in their permit applications); and, the Division is fixing typographical and formatting errors found in the rules as requested by the Governor's Office.

The Director of the Division recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the May 1, 2024, Utah State Bulletin the proposed changes to UAC R315-309 and UAC R315-310 and conducting a public comment period from May 1, 2024 to May 31, 2024.

Nathan Rich commented that he appreciated the Division staff's patience with meeting with him and their thoroughness in spending time with him in walking through the regulations and addressing and clarifying how changes could or could not be made. Mr. Rich stated that although some changes were made, he would have liked some additional changes to be made, but he understands the reasoning for the outcomes and appreciated the staff's responses and their willingness to consider his comments and is confident in making the motion for the Board to approve the formal rulemaking of the proposed changes to UAC R315-309 and UAC R315-310.

There were no additional comments or questions.

It was moved by Nathan Rich and seconded by Mark Franc and UNANIMOUSLY CARRIED to approve to proceed with formal rulemaking and public comment by publishing in the May 1, 2024, Utah State Bulletin and conducting a 30-day public comment period from May 1, 2024 to May 31, 2024, the proposed changes to UAC R315-309 and UAC R315-310.

B. Approval from the Board to proceed with final adoption of proposed changes to the Utah Solid Waste Rules R315-320 of the Utah Administrative Code to correct rule and statutory references and language, clarify rule language, remove requirements that are no longer necessary, add some new requirements to the rules, and add language and requirements to rules as required by legislation passed by the Utah State Legislature (**Board Action Item**).

Tom Ball, X-Ray and Technical Support Manger in the Division of Waste Management and Radiation Control (Division), reviewed the request for approval from the Board to approve final adoption of proposed changes to the Utah Solid Waste Rules R315-320 of the Utah Administrative Code to correct rule and statutory references and language, clarify rule language, remove requirements that are no longer necessary, add some new requirements to the rules, and add language and requirements to rules as required by legislation passed by the Utah State Legislature.

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Mr. Ball reminded the Board that at their Board meeting on February 8, 2024, the Board approved the proposed changes to UAC R315-320 to be filed with the Office of Administrative Rules for publication in the Utah State Bulletin. The proposed changes were published in the March 1, 2024, issue of the Utah State Bulletin.

The public comment period for this rulemaking ended on April 1, 2024. No comments were received.

This is a Board Action item and the Director of the Division recommends the Board approve final adoption of the changes to UAC R315-320 as published in the March 1, 2024, issue of the Utah State Bulletin and set an effective date of April 15, 2024.

There were no additional comments or questions.

It was moved by Jeremy Hawk and seconded by Dr. Codell and UNANIMOUSLY CARRIED to approve for final adoption the proposed changes to the UAC R315-320 as publishing in the March 1, 2024, Utah State Bulletin and set an effective date of April 15, 2024.

IX. X-Ray Program.

A. Approval from the Board to procced with formal rulemaking and public comment on proposed changes to Radiation Control Rule R313-28 of the Utah Administrative Code to add the definition of "Healing Arts" (**Board Action Item**).

Tom Ball, X-Ray and Technical Support Manager in the Division of Waste Management and Radiation Control (Division), reviewed the request for approval from the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Administrative Code (UAC) R313-28-20 of the Radiation Control Rules to add the definition of the term "Healing Arts".

Mr. Ball stated that during a recent discussion with an X-ray registrant, it was suggested that a definition of the term "Healing Arts" was needed in the X-ray rules to assist the regulated community in understanding what is covered under the rules for use of X-rays in the healing arts. Division staff researched the issue and found several states that have definitions of the term in their rules. The definition being proposed for the Utah rules is essentially identical to those contained in the rules of other states.

Additionally, the Division is fixing typographical and formatting errors found in the rules as requested by the Governor's Office.

This is a Board action item and the Director recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the May 1, 2024, Utah State Bulletin the proposed changes to UAC R313-28-20 and conducting a public comment period from May 1, 2024 to May 31, 2024.

Jeremy Hawk asked for clarification of the term "Healing Art". Mr. Ball stated that "'Healing arts" means any system, treatment, operation, diagnosis, prescription, or practice for ascertaining cure, relief, palliation, adjustment, or correction of any health indications, human disease, ailment, deformity, injury, or unhealthy or abnormal physical or mental condition".

There were no additional comments or questions.
It was moved by Dr. McIff and seconded by Shane Whitney and UNANIMOUSLY CARRIED to approve to proceed with formal rulemaking and public comment by publishing in the May 1, 2024, Utah State Bulletin and conducting a 30-day public comment period from May 1, 2024 to May 31, 2024, the proposed changes to Radiation Control Rule UAC R313-28.

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X. Director's Report.

Director Hansen reviewed the following bills that passed during the 2024 Utah State Legislative session.

Director Hansen reported that House Bill 107, Recycling Facility Transparency Amendments, sponsored by Representative Welton passed and was signed by the Governor. Director Hansen reminded the Board that this bill requires that facilities that recycle and are paid for this work through a municipality, to report recycling data to the Division of Waste Management and Radiation Control (Division). Municipalities are then required to provide a report to their constituents twice a year to inform them of these recycling efforts.

Director Hansen reported that House Bill 335, State Grant Process Amendments, sponsored by Representative Peterson passed. This bill enacts provisions governing the administration of state grants. Director Hansen reported that this bill impacts the Used Oil (UO) Program in the Division in relationship to grants provided to the local health departments (LHDs) and other entities that apply. Director Hansen stated in the original bill language that this bill may have created some issues, however, a substitute bill was presented and approved, and allows for the UO Program to effectively continue issuing grants for the Used Oil Program.

Director Hansen reported that House Bill 470, Federal Agency Regulatory Review Amendments, sponsored by Representative Snider passed. This bill relates to what is known as the Chevron deference or Chevron doctrine. This bill addresses state agency review of federal regulations. "Chevron deference" is given to a federal agency to interpret federal statute. The Supreme Court previously determined that, based on certain conditions, agencies are the subject matter experts and should be provided the opportunity to apply the law within the context of that expertise. Director Hansen stated that this bill essentially says if the Supreme Court completely overturns the Chevron doctrine, the state agencies that enforce federal law then have the responsibility to review any federal rules they implement to determine if the Chevron Doctrine was relied on by the federal counterpart to develop the rule. There are a couple of cases before the Supreme Court this year that could trigger the requirement for review. Director Hansen stated that at this time it is unclear of the impacts of the passage of this bill.

Director Hansen reported that House Bill 300, Court Amendments 2024, Sponsored by Senate Cullimore passed. This bill amends provisions related to courts. Director Hansen stated that this bill may affect the way the Division conducts its work from a legal perspective as this bill changes the court jurisdiction on some matters for appeals to a new Court to be established, causing a change in venue for some of the appeal actions moving forward.

Director Hansen commented on Senate Bill 57, Utah Constitutional Sovereignty Act, sponsored by Senator Sandall, previously addressed by Director Everett. This bill establishes a framework for the Legislature to prohibit the enforcement of a federal directive within the state by government officers if the Legislature determines the federal directive violates the principles of state sovereignty and sets up the Federalism Commission and that is the commission the Division will be reporting to as a result of House Bill 373.

Director Hansen reminded the Board that with the passage of House Bill 373, Environmental Quality Amendments, sponsored by Representative Snider and Senator Sandall, requires meetings to occur between the Federalism Commission and UDEQ. The adopted version of the bill acknowledges the importance of having a working body for the UDEQ in moving toward establishing relationships with legislature and communicating with them.

Director Hansen stated that the 2024 Utah State Legislative Session was a busy one, and anticipates based on his review of the past three years, the same for the 2025 session.

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Director Hansen informed the Board of two rulemaking matters that will come before the Board in the near future, Exploration and Production Waste Draft Regulations and Environmental Assessment for Uranium Recovery Program Draft Regulations and provided the following information regarding them.

Exploration and Production Waste Draft Regulations (Rules). Director Hansen reported that the development of the creation of these Rules was required by the Division. These rules specifically involve wastes generated under exploration and production activities primarily in the Uintah Basin area of the state and that have fallen outside of the Division's solid waste regulations. Director Hansen stated that legislation was passed that brought these Rules to be administered by the Division of Waste Management and Radiation Control, Utah Department of Environmental Quality, instead of the Division of Oil, Gas and Mining, Utah Department of Natural Resources. Director Hansen commented that moving an entire industry from one regulatory framework into another has taken a great deal of effort, time, and coordination between the two agencies. Director Hansen informed the Board that the Division is finally at the point where Rules have been developed and will be presented at a public meeting on Wednesday, April 17, 2024, and invited all Board members interested to attend. Director Hansen stated that the Division will be presenting the Rules and seeking feedback on the Rules. Director Hansen stated that a lot of outreach in process in drafting the Rules has occurred. However, the Division will continue targeted outreach efforts by having a one-on-one meeting with any stakeholder(s) effected by the Rules.

Environmental Assessment for Uranium Recovery Program Draft Regulations (EA Rules) have been updated. Director Hansen informed the Board that various stakeholders have been included in the efforts of drafting the EA Rules. Director Hansen reported that the Division has submitted the Rules to the Nuclear Regulatory Commission (NRC) for their review and feedback and the NRC has responded indicating the proposed rules are an improvement over the current ones. Director Hansen informed that Board that this matter will be brought before the Board in the near future.

Dennis Riding asked the name of the lead Division staff member responsible for the Exploration and Production Waste Draft Rules efforts. Director Hansen informed Mr. Riding that Brian Speer, Solid Waste Section Manger, and the Assistant Division Director, Jalynn Knudsen, are taking lead on this matter.

There were no additional comments or questions.

XI. Election of Board Chairman and Vice Chairman (**Board Action Item**).

Chairman Mickelson informed the Board that each year (April timeframe) a Board Chairman and Vice-Chairman must be elected. Chairman Mickelson conducted the elections.

Chairman Mickelson requested nominees to serve as Board Chairman.

Mark Franc nominated Brett Mickelson to serve as Board Chairman. No other nominees were presented.

It was moved by Marc Franc and seconded by Shane Whitney and UNANIMOUSLY CARRIED for Brett Mickelson to serve as Board Chairman. (Chairman Mickelson abstained from voting.)

Chairman Mickelson requested nominees to serve as Board Vice-Chairman.

Mark Franc nominated Dennis Riding to serve as Board Vice-Chairman. No other nominees were presented.

It was moved by Mark Franc and seconded by Vern Rogers and UNANIMOUSLY CARRIED for Dennis Riding to serve as Board Vice-Chairman.

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XII. Other Business.

A. Miscellaneous Information Items.

Kim Shelley, Executive Director of UDEQ, informed the Board that the Division of Air Quality is considering amendments to the existing statute UAC R307-328, also known as gasoline transfer and storage rule. These amendments would further reduce volatile organic compound emissions from gasoline dispensing stations. There will be an opportunity to provide feedback before it is presented for formal rulemaking to the Air Quality Board, and additional information can be found on Air Quality's website.

B. Scheduling of next Board meeting (May 9, 2024).

The next meeting is scheduled for May 9, 2024, at the Utah Department of Environmental Quality, Multi-Agency State Office Building.

Interested parties can join via the Internet: meet.google.com/gad-sxsd-uvs
Or by phone: (US) +1 978-593-3748 PIN: 902 672 356#

XIII. Adjourn.

The meeting adjourned at 3:00 p.m.

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PST STATISTICAL SUMMARY
April 1, 2023 -- March 31, 2024

PROGRAM

	April	May	June	July	August	September	October	November	December	January	February	March	(+/-) OR Total
Regulated Tanks	4,198	4,210	4,211	4,218	4,241	4,236	4,238	4,225	4,222	4,832	4,854	4,858	**660**
Tanks with Certificate of Compliance	4,103	4,105	4,110	4,122	4,117	4,111	4,117	4,116	4,126	4,507	4,529	4,547	**444**
Tanks without COC	95	105	101	96	124	125	121	109	96	325	325	311	**216**
Cumulative Facilitlies with Registered A Operators	1,279	1,279	1,282	1,289	1,288	1,282	1,283	1,278	1,282	1,280	1,280	1,284	**84.42%**
Cumulative Facilitlies with Registered B Operators	1,280	1,279	1,281	1,288	1,288	1,282	1,283	1,282	1,284	1,281	1,281	1,286	**84.55%**
New LUST Sites	2	9	6	5	5	13	5	4	4	5	6	6	**70**
Closed LUST Sites	6	11	4	7	8	14	6	9	7	3	9	6	**90**
Cumulative Closed LUST Sites	5539	5542	5549	5556	5571	5578	5586	5592	5598	5635	5642	5648	**109**

FINANCIAL

	April	May	June	July	August	September	October	November	December	January	February	March	(+/-)
Tanks on PST Fund	2,619	2,617	2,618	2,621	2,617	2,611	2,618	2,625	2,638	2,954	2,967	2,985	**366**
PST Claims (Cumulative)	711	713	723	724	724	725	725	725	724	726	726	727	**16**
Equity Balance	$1,689,965	$1,933,855	$2,514,097	$3,265,812	$4,455,502	$3,271,204	$3,527,017	$3,623,404	$3,538,013	$4,280,066	$4,638,541	$4,512,702	**$2,822,737**
Cash Balance	$29,861,615	$30,105,505	$30,685,747	$31,437,462	$32,627,152	$32,491,241	$32,747,054	$32,843,441	$32,758,050	$33,500,103	$33,858,578	$33,732,739	**$3,871,124**
Loans	0	0	0	1	0	0	0	0	0	0	0	0	**0**
Cumulative Loans	128	128	128	129	129	129	129	129	129	129	129	129	**1**
Cumulative Amount	$6,014,420	$6,014,420	$6,014,420	$6,213,705	$6,213,705	$6,213,705	$6,213,705	$6,213,705	$6,213,705	$6,213,705	$6,213,705	$6,213,705	**$199,285**
Defaults/Amount	0	0	0	0	0	0	0	0	0	0	0	3	**3**

	April	May	June	July	August	September	October	November	December	January	February	March	TOTAL
Speed Memos	40	61	102	62	103	69	122	105	38	82	65	84	**933**
Compliance Letters	27	5	17	4	7	7	16	9	5	9	5	7	**118**
Notice of Intent to Revoke	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Orders	1	0	0	0	0	1	1	0	2	1	0	5	**11**

Summary of Proposed changes to R311, Petroleum Storage Tank Rules (2024)

Proposed changes would require the same leak detection and testing requirements for all Aboveground Petroleum Storage Tanks (APSTs) whether they are participating in the Environmental Assurance Program (EAP) or have financial assurance by another method. Companies offering an alternate form of financial assurance may have their own Leak Detection and Testing requirements for APSTs but DERR wants to ensure that all APSTs meet certain requirements at a minimum. This has always been the case for USTs. A change is proposed to rule to simplify the complexity of requiring spill prevention testing that works for USTs but doesn't always fit for APSTs. This requires spill prevention equipment on APSTs to meet fire code only and not require integrity testing. Another change would allow a delivery prohibition tag to be placed on a PST that fails a tightness test or has evidence of a leak. Other changes are proposed to fix minor errors and to clarify certain rules.

Summary of the Proposed Changes:

R311-201. Petroleum Storage Tanks: Certification Programs and UST Operator Training (Nonsubstantive Change)

- R311-201-2(1): Fix an error by changing 19-6-402(7)(b) to the correct reference 19-6-402(7)(a).
  R311-201-2. Requirement for Certification
  (1) a certified PST consultant is required as specified in Subsection 19-6-402(7)(a[~~b~~]).

R311-203. Petroleum Storage Tanks: Technical Standards.

- R311-203-2(6): Change "not in service" to "out of service" for clarity.
  (6) The owner or operator of an APST that was [~~is~~] out of[~~not in~~] service before May 5, 2021,

- R311-203-2(6)(f): Move to its own section R311-203-2(8) where it fits better in context.
  [~~(f) must notify local emergency responders of a spill or overfill exceeding 25 gallons within 24 hours.~~]
  (8) The owner or operator of an APST must notify within 24 hours local emergency responders of a spill or overfill exceeding 25 gallons.

- R311-203-5(10): Require the Leak Detection and Testing Requirements for all APSTs and not just those on the Environmental Assurance Program (EAP). Insurance companies may have their own requirement but DERR wants to ensure that all APSTs meet certain requirements at a minimum.
  (10) Leak Detection and Testing Requirements for APSTs[~~using the EAP for financial responsibility~~]:

- R311-203-5(10)(b): Change rule to simplify the complexity of requiring spill prevention testing that works for USTs but doesn't always fit for APSTs.
  (b) spill prevention equipment associated with an APST must meet the standards set forth in International Fire Code (IFC) 2306.6.2.6 referenced in the Utah State Fire Code adopted pursuant to Section 15A-5-103[~~and be double-walled and monitored monthly;~~

~~or have an integrity test performed every three years. The test must meet the requirements of Subsection R311-203-5(2)~~].

R311-204. Petroleum Storage Tanks: Closure and Remediation. (Nonsubstantive Change)

- R311-204-3(3) add STI SP001 inspection criteria for smaller APSTs where API 653 does not apply. The intent of this rule was always meant to apply to all APSTs.
  (3) Any removed APST that is to be reused as an APST must be recertified by the manufacturer of the tank or undergo a tank inspection, conducted by a qualified contractor, using a nationally recognized standard such as STI SP001 or API 653.

R311-206. Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.

- R311-206-3(1)(b)(i): Delete the requirement for only those on the EAP to meet certain leak detection requirements.
  ~~[(i) APSTs using the EAP for financial responsibility, the owner or operator may meet the requirements outlined in Subsection R311-206-4(6).]~~

- R311-206-4(6): Delete this subpart that lists the leak detection requirements for APSTs on the EAP because they can already be found in R311-203-5(10).
  ~~(6) For a facility with an APST using the EAP for financial responsibility, the director shall issue a certificate of compliance to an owner or operator for individual APSTs, if:~~
  ~~(a) before July 1, 2026, the owner or operator:~~
  ~~(i) documents compliance with spill prevention equipment requirements and submits a spill prevention equipment test; and~~
  ~~(ii) documents compliance with applicable leak detection and testing requirements outlined in Section R311-203-5.~~
  ~~(b) on or after July 1, 2026, the owner or operator:~~
  ~~(i) if applicable, documents compliance with cathodic protection requirements and submits a cathodic protection test, if required by Subsection R311-203-5(10)(d) indicating that the cathodic protection system is functioning properly;~~
  ~~(ii) documents compliance with overfill prevention requirements and submits an overfill prevention equipment inspection per Subsection R311-203-5(10)(e);~~
  ~~(iii) documents compliance with automatic line leak detector and submits an automatic line leak detector test, if required by Subsection R311-203-5(10)(f), indicating that each individual automatic line leak detector is functioning properly; and~~
  ~~(iv) documents compliance with APST secondary containment requirements as outlined in International Fire Code 2306.5 & 5704.2.10 referenced in the Utah State Fire Code pursuant to Section 15A-5-103.~~

- R311-206-8(3) Change wording to clarify meaning
  (3) For APSTs not in service after May 5, 2021, the director shall authorize the placement of a delivery prohibition tag [~~to be placed on the APST~~] as soon as practicable[~~after the determination that the APST was not in service after May 5, 2021~~].

- R311-206-8(4): This change allows a delivery prohibition tag to be placed on a PST that fails a tightness test or has evidence of a leak.

  (4) For PSTs, the director shall authorize the placement of a delivery prohibition tag to be placed on the PST as soon as practicable after the determination that a release from a PST is ongoing. The determination may be made by:

  (a) failed tests as defined by “PST Testing” in R311-200-1(ss); or

  (b) visual presence, odors, inventory loss, or otherwise apparent contamination of environmental media.

State of Utah
Administrative Rule Analysis
Revised May 2023

NONSUBSTANTIVE CHANGE		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R311-201**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Environmental Quality	
Agency:	Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 84114-4840	
Contact persons:		
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Please address questions regarding information on this notice to the persons listed above.

General Information

2. Rule or section catchline:

Petroleum Storage Tanks: Certification Programs and UST Operator Training

3. Reason for the change:

This rule change fixes an incorrect reference to a statute in rule.

4. Summary of the change:

R311-201-2(1): Fix an error in this rule by changing 19-6-402(7)(b) to the correct reference 19-6-402(7)(a).

Agency Authorization Information

To the agency: The Office of Administrative Rules is responsible for setting the effective date of nonsubstantive changes (see Section R15-4-6). The agency does NOT file a notice of effective date.

Agency head or designee and title:	Brent Everett, Director	**Date:**	05/09/2024

R311. Environmental Quality, Environmental Response and Remediation.
R311-201. Petroleum Storage Tanks: Certification Programs and UST Operator Training.
R311-201-1. Definitions.

Definitions are found in Rule R311-200.

R311-201-2. Requirement for Certification.

(1) a certified PST consultant is required as specified in Subsection 19-6-402(7)([~~b~~]a).
(a) no person shall provide or contract to provide the following services without having certification to conduct these activities:
(i) provide information, opinions, or advice relating to PST release management;
(ii) abatement;
(iii) investigation;
(iv) corrective action; or
(v) evaluation for a fee, or in connection with the services for which a fee is charged.
(A) except as outlined in Subsection R311-204-5(2); and
(B) except for releases from a hazardous substance PST system, as defined in 40 CFR 280.10.
(b) a certified PST consultant must:
(i) make pertinent project management decisions;
(ii) ensure all aspects of work related to PSTs containing petroleum are performed in an appropriate manner; and

(iii) sign required documentation to be submitted to the director for work performed.

(c) any PST release abatement, investigation, or corrective action work performed by a person who is not certified or who is not working under the direct supervision of a certified PST consultant, and is performed for compliance with Utah PST rules, may be rejected by the director.

(2) UST inspector. No person shall conduct a PST inspection as authorized in Subsection 19-6-404(2)(c) without having certification to conduct such activities.

(a) the director may issue a limited certification restricting the type of PST inspections the applicant can perform.

(3) UST tester. No owner or operator shall allow PST testing to be conducted on a PST under their ownership or operation unless the person conducting the PST testing is certified according to Rule R311-201.

(a) except as outlined in Section R311-201-3, no person shall conduct PST testing without having certification to conduct such activities.

(b) an individual certified under Rule R311-201 as a UST installer may:

(i) perform a test of spill prevention equipment and containment sumps used for interstitial monitoring of piping, to meet the requirements of 40 CFR 280.35(a)(1)(ii), if no equipment that requires training by the manufacturer is used;

(ii) perform an overfill device inspection to meet the requirements of 40 CFR 280.35(a)(2);

(iii) perform a test for proper operation of release detection components to meet the requirements of 40 CFR 280.40(a)(3)(i), 280.40(a)(3)(ii), 280.40(a)(3)(iv), and 280.40(a)(3)(v); and

(iv) perform a test of a piping containment sump or under-dispenser containment to meet the requirements of 40 CFR 280.35(a), if no equipment that requires training by the manufacturer is used.

(c) a PST owner or operator may:

(i) perform a hydrostatic test of spill prevention equipment and containment sumps used for interstitial monitoring of piping, to meet the requirements of 40 CFR 280.35(a)(1)(ii), if no equipment that requires training by the manufacturer is used; and

(ii) perform a test of a piping containment sump or under-dispenser containment to meet the requirements of 40 CFR 280.35(a), if no equipment that requires training by the manufacturer is used.

(d) certification by the director under this rule applies only to the specific PST testing equipment and procedures for which the UST tester has been successfully trained by the manufacturer of the equipment, or by equivalent training as determined by the director, for the following types of testing:

(i) tank, line, and leak detector testing;

(ii) interstitial tests of tanks and piping; and

(iii) spill prevention device and containment sump testing, if equipment that requires training by the manufacturer is used.

(e) the director may issue a limited certification restricting the type of PST testing the applicant can perform.

(4) Certified sampler. No person shall conduct environmental media sampling for determining levels of contamination which may have occurred from regulated PSTs without having certification to conduct these activities.

(a) no owner or operator shall allow any environmental media sampling for determining levels of contamination which may have occurred from regulated PSTs to be conducted on a tank under their ownership or operation unless the person conducting the environmental media sampling is certified according to Rule R311-201.

(5) UST installer. No person shall install a PST without having certification or the on-site supervision of an individual having certification to conduct these activities.

(a) no owner or operator shall allow the installation of a PST, or any component thereof, under their ownership or operation unless the person installing the PST is certified according to Rule R311-201.

(b) the director may issue a limited certification restricting the type of PST installation the applicant can perform.

(6) UST remover. No person shall remove a PST without having certification or the on-site supervision of an individual having certification to conduct these activities.

(a) no owner or operator shall allow the removal of a PST, or any component thereof, under their ownership or operation unless the person conducting the PST removal is certified according to Rule R311-201.

R311-201-3. Eligibility for Certification.

(1) Certified PST consultant.

(a) training. For initial and renewal certification, an applicant must meet:

(i) Occupational Safety and Health Agency safety training requirements in accordance with 29 CFR 1910.120 and any other applicable safety training, as required by federal and state law; and

(ii) within a six-month period before application, complete an approved training course or equivalent in a program approved by the director to provide training to include the following areas:

(A) state and federal statutes;

(B) rules and regulations;

(C) environmental media sampling; and

(D) department policies.

(b) experience. Each applicant must provide with the application a signed statement or other evidence demonstrating:

(i) three years, within the past seven years, of appropriately related experience in PST release abatement, investigation, and corrective action; or

(ii) an equivalent combination of appropriate education and experience, as determined by the director.

(c) education. Each applicant must provide with the application college transcripts or other evidence demonstrating the following:

(i) a bachelor's or advanced degree from an accredited college or university with major study in environmental health, engineering, biological, chemical, environmental, or physical science, or a specialized or related scientific field, or equivalent education or experience as determined by the director;

(ii) a professional engineering certificate licensed under Title 58, Chapter 22, of the Professional Engineers and Land Surveyors Licensing Act, or equivalent certification as determined by the director; or

(iii) a professional geologist certificate licensed under Title 58, Chapter 76 of the Professional Geologist Licensing Act, or equivalent certification as determined by the director.

(d) initial certification examination. Each applicant who is not certified pursuant to Section R311-201-4 must successfully pass an initial certification examination or equivalent, administered under the direction of the director.

(i) the director shall determine the content of the initial examination based on the training requirements as outlined in Subsection R311-201-3(1)(a).

(e) renewal certification examination. Certified PST consultants seeking to renew their certification pursuant to Section R311-201-5 must successfully pass a renewal certification examination, or equivalent administered under the direction of the director.

(i) the director shall determine the content of the renewal examination based on the training requirements as outlined in Subsection R311-201-3(1)(a).

(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.

(f) examination for revoked or expired certification. Any applicant who is not a certified PST consultant on the date the renewal certification examination is given because the consultant's prior certification was revoked or expired before completing a renewal application, must successfully pass the initial certification examination administered under Subsection R311-201-3(1)(d).

(2) UST inspector.

(a) training. For initial certification, an applicant must have successfully completed a PST inspector training course or equivalent within the six-month period before application.

(i) the training course must be approved by the director and shall include instruction in the following areas:

(A) corrosion;

(B) geology;

(C) hydrology;

(D) tank handling;

(E) tank testing;

(F) product piping testing;

(G) disposal;

(H) safety;

(I) sampling methodology;

(J) state site inspection protocol;

(K) state and federal statutes; and

(L) Utah PST rules and regulations.

(ii) renewal certification training will be established by the director.

(iii) the applicant must provide documentation of training with the application.

(b) certification examination. An applicant must successfully pass a certification examination administered under the direction of the director.

(i) the director shall determine the content of the initial and renewal examinations, based on the training requirements as outlined in Subsection R311-201-3(2)(a), and the standards and criteria against which the applicant will be evaluated.

(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.

(3) UST tester.

(a) financial assurance. An applicant or applicant's employer must have insurance, surety bonds, liquid company assets or other appropriate kinds of financial assurance which covers PST testing and which, in combination, represent an unencumbered value of the largest PST testing contract performed by the applicant or the applicant's employer, as appropriate, during the previous two years, or $50,000, whichever is greater.

(i) an applicant who uses their employer's financial assurance must also provide evidence of their employer's approval of the certification application.

(b) training. For initial certification, an applicant must complete a PST tester's training course within the six-month period before application, in a program approved by the director, to provide training to include applicable and related areas of state and federal statutes, rules, and regulations.

(i) renewal certification training will be established by the director.

(A) the applicant must provide documentation of training with the application.

(ii) for initial certification to perform the types of testing specified in Subsection R311-201-2(3), an applicant must have successfully passed a training course conducted by the manufacturer of the PST testing equipment that they will be using, or a training course determined by the director to be equivalent to the manufacturer training, in the correct use of the equipment and testing procedures required to operate the PST test system.

(iii) an applicant for renewal of certification must have successfully passed an appropriate refresher training course conducted by the manufacturer of the PST testing equipment that they will be using, or training as determined by the director to be equivalent to the manufacturer training, in the correct use of the equipment and testing procedures required to operate the PST test system.

(A) for renewal certification, refresher training, or equivalent must be completed within one year before the expiration date of the certificate.

(iv) cathodic protection testing. For initial and renewal of certification, the applicant must provide documentation of training as a "Cathodic protection tester" as defined in 40 CFR 280.12 with the application.

(c) performance standards of equipment. An applicant must submit documentation that demonstrates the PST testing equipment used by the applicant meets the performance standards specified in Subsection R311-200-1(2)(ss)(v).

(i) this documentation shall be obtained through an independent lab, professional engineering firm, or other independent organization or individual approved by the director and submitted at the time of application for certification.

(d) certification examination. An applicant must successfully pass a certification examination administered under the direction of the director.

(i) the director shall determine the content of the initial and renewal examinations, based on the training requirements as outlined in Subsection R311-201-3(3)(b), and the standards and criteria against which the applicant will be evaluated.

(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.

(4) Certified sampler.

(a) training. For initial certification an applicant must successfully complete a petroleum storage tank environmental media sampler training course or equivalent within the six-month period before application.

(i) the training course must be approved by the director and shall include instruction in the following areas:

(A) chain of custody;
(B) decontamination;
(C) EPA testing methods;
(D) environmental media sampling protocol;
(E) preservation of samples during transportation;
(F) coordination with Utah certified laboratories; and
(G) state and federal statutes, rules, and regulations.
(ii) renewal certification training will be determined by the director.
(A) the applicant shall provide documentation of training with the application.
(b) certification examination. An applicant must successfully pass a certification examination administered under the direction of the director.
(i) the director shall determine the content of the initial and subsequent examinations, based on the training requirements as outlined in Subsection R311-201-3(4)(a), and the standards and criteria against which the applicant will be evaluated.
(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.
(5) UST installer.
(a) financial assurance. An applicant or the applicant's employer must have insurance, surety bonds, liquid company assets, or other appropriate kinds of financial assurance which covers PST installation and which, in combination, represents an unencumbered value of not less than the largest PST installation contract performed by the applicant or the applicant's employer, as appropriate, during the previous two years, or $250,000, whichever is greater.
(i) evidence of financial assurance shall be provided with the application.
(ii) an applicant who uses their employer's financial assurance must also provide evidence of their employer's approval of the application.
(b) training. For initial certification, an applicant must have successfully completed a PST installer training course or equivalent within the six-month period before the application.
(i) the training course must be approved by the director, and shall include instruction in the following areas:
(A) tank installation;
(B) pre-installation tank testing;
(C) product piping testing;
(D) excavation;
(E) anchoring;
(F) backfilling;
(G) secondary containment;
(H) leak detection methods;
(I) piping;
(J) electrical; and
(K) state and federal statutes, rules, and regulations.
(ii) the applicant must provide documentation of training with the application.
(c) experience. Each applicant must provide with their application a sworn statement or other evidence that they have actively participated in a minimum of three PST installations.
(d) certification examination. An applicant must successfully pass a certification examination administered under the direction of the director.
(i) the director shall determine the content of the initial and renewal examinations, based on the training requirements as outlined in Subsection R311-201-3(5)(b), and the standards and criteria against which the applicant will be evaluated.
(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.
(6) UST remover.
(a) financial assurance. An applicant or the applicant's employer must have insurance, surety bonds, liquid company assets or other appropriate kinds of financial assurance which covers PST removal and which, in combination, represents an unencumbered value of not less than the largest PST removal contract performed by the applicant or the applicant's employer, as appropriate, during the previous two years, or $250,000, whichever is greater.
(i) evidence of financial assurance shall be provided with the application.
(ii) an applicant who uses their employer's financial assurance must also provide evidence of their employer's approval of the application.
(b) training. For initial certification, an applicant must have successfully completed a PST remover approved training course or equivalent within the six-month period before the application.
(i) the training course must be approved by the director and shall include instruction in the following areas:
(A) tank removal;
(B) tank removal safety practices; and
(C) state and federal statutes, rules, and regulations.
(ii) the applicant must provide documentation of training with the application.
(c) experience. Each applicant must provide with their application a sworn statement or other evidence that they have actively participated in a minimum of three PST removals.
(d) certification examination. An applicant must successfully pass a certification examination administered under the direction of the director.
(i) the director shall determine the content of the initial and renewal examinations, based on the training requirements as outlined in Subsection R311-201-3(6)(b), and the standards and criteria against which the applicant will be evaluated.
(ii) the director may offer a renewal certification examination that is less comprehensive than the initial certification examination.

R311-201-4. Application for Certification.
(1) Any individual may apply for certification by paying any applicable fees and by submitting an application to the director to demonstrate that the applicant
(a) meets applicable eligibility requirements specified in Section R311-201-3; and

(b) will maintain the applicable performance standards specified in Section R311-201-6 after receiving a certificate.

(2) Applications submitted under Subsection R311-201-4(1) shall be reviewed by the director for determination of eligibility for certification.

(a) if the director determines that the applicant meets the applicable eligibility requirements described in Section R311-201-3 and meets the standards described in Section R311-201-6, the director shall issue to the applicant a certificate.

(3) Certification for certificate holders shall be effective for a period of two years from the date of issuance, unless revoked before the expiration date pursuant to Section R311-201-9 or inactivated pursuant to Section R311-201-8.

(a) certificates shall be subject to periodic renewal pursuant to Section R311-201-5.

R311-201-5. Renewal.

(1) A certificate holder may apply for certificate renewal not more than six months before the expiration date of the certificate by:

(a) submitting a completed application form to demonstrate that the applicant meets the applicable eligibility requirements described in Section R311-201-3 and meets the applicable performance standards specified in Section R311-201-6;

(b) paying any applicable fees; and

(c) passing a certification renewal examination.

(2) If the director determines that the applicant meets the applicable eligibility requirements of Section R311-201-3 and the applicable performance standards of Section R311-201-6, the director shall reissue the certificate to the applicant.

(3) Renewal certificates shall be issued for a period equal to the initial certification period and shall be:

(a) subject to inactivation under Section R311-201-8; and

(b) subject to revocation under Section R311-201-9.

(4) Any applicant who has a certification which has been revoked or expired for more than two years before submitting a renewal application must successfully satisfy the training and certification examination requirements for initial certification under Section R311-201-3 for the applicable certificate before receiving the renewal certification.

(a) except as provided in Subsection R311-201-3(1)(f) for certified PST consultants.

R311-201-6. Standards of Performance.

(1) Individuals who are certified in accordance with Rule R311-201 must:

(a) display the certificate upon request;

(b) comply with all local, state, and federal laws, rules, and regulations regarding the PST activity for which certification is granted;

(c) report the discovery of any release caused by or encountered in the course of performing the PST activity for which certification is granted to the director, the local health district, and the local public safety office within 24 hours.

(i) certified PST consultants and certified samplers must report the discovery of any release caused by or encountered in the course of performing environmental media sampling for compliance with Utah PST rules, or report the results indicating that a release may have occurred, to the director, the local health district, and the local public safety office within 24 hours.

(d) not participate in fraudulent, unethical, deceitful, or dishonest activity with respect to a certificate application or performance of work for which certification is granted; and

(e) not participate in any other regulated certification program activities without meeting all requirements of that certification program.

(2) The director may audit or commission an audit of records which support eligibility for certification, or performance of work for which certification is granted, at any time.

(a) audits may be determined by random selection or for specific reasons, including suspicion or discovery of inaccuracies on an application for certification or performance of substandard work for which certification is granted, or deficiencies in complying with regulations.

(3) Certified individuals must, in addition to meeting the performance standards in Subsection R311-201-6(1), comply with the following:

(a) certified PST consultant. An individual who provides PST consulting services in the state must:

(i) provide, or shall associate appropriate personnel to provide a high level of experience and expertise in release abatement, investigation, or corrective action;

(ii) perform, or take steps to ensure that work is performed with skill, care, and diligence consistent with a high level of experience and expertise in release abatement, investigation, or corrective action;

(iii) perform work and submit documentation in a timely manner;

(iv) review and certify by signature any documentation submitted to the director in accordance with PST release-related compliance; and

(v) ensure and certify by signature pertinent release abatement, investigation, and corrective action work performed under the direct supervision of a certified PST consultant.

(b) UST inspector. An individual who performs PST inspecting for the Division of Environmental Response and Remediation shall:

(i) conduct inspections of PSTs and records to determine compliance with this rule only as authorized by the director.

(c) UST tester. An individual who performs PST testing in the state must:

(i) perform work in a manner that does not cause a release of the contents of the tank;

(ii) assure that operations of PST testing which are critical to the integrity of the system and to the protection of the environment are supervised by a certified person; and

(iii) perform work in a manner that the integrity of the PST system is maintained.

(d) UST installer. An individual who performs PST installation or repair in Utah must:

(i) be certified to assure the proper installation of all elements of PST systems which are critical to the integrity of the system and to the protection of the environment, including:

(A) pre-installation tank testing;

(B) tank site preparation including anchoring, tank placement, and backfilling;

(C) cathodic protection installation, service, or repair;

(D) vent and product piping assembly;

(E) fill tube attachment;

(F) installation of tank manholes;

(H) secondary containment construction; and

(ii) notify the director as required by Subsection R311-203-3(1) before installing or upgrading an PST.

(e) UST remover. An individual who performs PST removal in the state must:

(i) assure that operations of tank removal which are critical to safety and to the protection of the environment which includes:

(A) removal of soil adjacent to the tank;

(B) disassembly of pipe;

(C) final removal of product and sludges from the tank, cleaning of the tank, purging or inerting of the tank, removal of the tank from the ground, and removal of the tank from the site must be supervised by a certified person; and

(ii) not proceed to close a regulated PST without an approved closure plan, except as outlined in Subsection R311-204-2(2).

R311-201-7. Denial of Certification and Appeal of Denial.

(1) Any individual whose application or renewal application for certification or certification renewal is denied will be provided with a written documentation by the director specifying the reason or reasons for denial.

(a) an applicant may appeal the determination using the procedures specified in Section 19-1-301.5, et seq., and Rule R305-7.

R311-201-8. Inactivation of Certification.

(1) If an applicant was certified based upon their employer's financial assurance, certification is contingent upon the applicant's continued employment by that employer.

(2) If the employer loses their financial assurance or the applicant leaves the employer, their certification will automatically be deemed inactive and they will no longer be certified for purposes of this rule.

(3) Inactive certificates may be reactivated by submitting a supplemental application with new financial assurances and payment of any applicable fees.

(4) Reactivated certificates shall be effective for the remainder of their original term unless subsequently revoked or inactivated before the end of that term.

R311-201-9. Revocation of Certification.

(1) Upon receipt of evidence that a certificate holder does not meet one or more of the eligibility requirements specified in Section R311-201-3 or does not meet one or more of the performance standards specified in Section R311-201-6, the individual's certification may be revoked.

(a) procedures for revocation are specified in Rule R305-7.

R311-201-10. Reciprocity.

(1) If the director determines that another state's certification program is equivalent to the certification program referred to in this rule, the applicant successfully passes the Utah certification examination, and payment of any fees associated with this rule are made, the director may issue a Utah certificate.

(a) The certificate will be valid until the expiration date of the previous state's certificate or the expiration of the certification period described in Subsection R311-201-4(3), whichever occurs first.

R311-201-12. UST Operator Training and Registration.

(1) To meet the operator training requirement 42 USC Section 6991i of the Solid Waste Disposal Act as amended by the Energy Policy Act of 2005, each UST facility must have UST facility operators that are trained and registered according to the requirements of this section.

(2) Each facility must have three classes of operators: A, B, and C.

(a) a facility may have more than one person designated for each operator class.

(b) an individual acting as a Class A or B operator may do so for more than one facility.

(3) The UST owner or operator must provide documentation to the director to identify the Class A, B, and C operators for each facility.

(a) if an owner or operator does not register and identify Class A, B, and C operators for a facility, the certificate of compliance for the facility may be revoked for failure to demonstrate substantial compliance with all applicable state and federal statutes, rules, and regulations.

(4) New Class A and B operators must be trained and registered within 30 days of assuming responsibility for an UST facility.

(5) New Class C operators must be trained before assuming the responsibilities of a Class C operator.

(6) The Class A operator shall be an owner, operator, employee, or individual designated under Subsection R311-201-12(6)(b).

(a) the Class A operator has primary responsibility for the broader aspects of the statutory and regulatory requirements and standards necessary to operate and maintain the UST system. The Class A operator must:

(i) have a general knowledge of UST systems;

(ii) ensure that UST records are properly maintained according to 40 CFR 280;

(iii) ensure that yearly UST fees are paid;

(iv) ensure proper response to and reporting of emergencies caused by releases or spills from USTs;

(v) make financial responsibility documents available to the director as required; and

(vi) ensure that Class B and Class C operators are trained and registered.

(b) an owner or operator may designate a third-party Class B operator as a Class A operator if:

(i) the UST owner or operator is a financial institution or person who acquired ownership of an UST facility solely to protect a security interest in that property and has not operated the USTs at the facility;

(ii) all USTs at the facility are properly temporarily closed in accordance with 40 CFR 280.70 and Section R311-204-4; and

(iii) all USTs at the facility are empty in accordance with 40 CFR 280.70(a).

(7) The Class B operator must implement routine daily aspects of operation, maintenance, and recordkeeping for UST systems.

(a) the Class B operator shall be an owner, operator, employee, or third-party Class B operator. The Class B operator must:

(i) ensure that on-site UST operator inspections are conducted according to the requirements of Section R311-203-7;

(ii) ensure that UST release detection is performed according to 40 CFR 280 subpart D;

(iii) ensure that the status of the UST system is monitored for alarms and unusual operating conditions that may indicate a release;

(iv) document the reason for an alarm or unusual operating condition identified in Subsection R311-201-12(7)(iii), if it is not reported as a suspected release according to 40 CFR 280.50;

(v) ensure that appropriate release detection and other records are kept according to 40 CFR 280.34 and 280.45, and are made available for inspection;

(vi) ensure that spill prevention, overfill prevention, and corrosion protection requirements are met;
(vii) be on site for facility compliance inspections, or designate another individual to be on site for inspections;
(viii) ensure that suspected releases are reported according to the requirements of 40 CFR 280.50; and
(ix) ensure that Class C operators are trained and registered, and are on site during operating hours.
(8) Any individual providing services as a third-party Class B operator must be trained and registered in accordance with Subsection R311-201-12(10) and must:
(a) be certified in accordance with Rule R311-201 as:
(i) a UST tester; or
(ii) a UST installer as either a general installer or a service or repair technician; or
(b) meet the training requirements of a certified UST inspector and document comprehensive or general liability insurance with limits of $250,000 minimum per occurrence.
(9) The Class C operator is an employee and is generally the first line of response to events indicating emergency conditions. A Class C operator must:
(a) be present at the facility at all times during normal operating hours;
(b) monitor product transfer operations according to 40 CFR 280.30(a), to ensure that spills and overfills do not occur;
(c) properly respond to alarms, spills, and overfills;
(d) notify Class A operators, Class B operators, or both, and appropriate emergency responders when necessary; and
(e) act in response to emergencies and other situations caused by spills or releases from an UST system that pose an immediate danger or threat to the public or to the environment, and that require immediate action.
(10) Operator training and registration.
(a) training and testing.
(i) applicants for Class A and B operator registration must successfully complete an approved operator training course within the six-month period before application.
(ii) the training course must be approved by the director, and shall include instruction in the following:
(A) notification;
(B) temporary and permanent closure;
(C) installation permitting;
(D) UST requirements of the 2005 Energy Policy Act;
(E) Class A, B, and C operator responsibilities;
(F) spill prevention;
(G) overfill prevention;
(H) UST release detection;
(I) corrosion protection;
(J) recordkeeping requirements;
(K) emergency response;
(L) product compatibility;
(M) Utah PST rules and regulations;
(N) UST financial responsibility; and
(O) delivery prohibition.
(iii) applicants for Class A and B operator registration must successfully pass a registration examination authorized by the director.
(A) the director shall determine the content of the examination.
(iv) an individual applying for Class A or B operator registration may be exempted from meeting the requirements of Subsections R311-201-12(10)(a)(i) and R311-201-12(10)(a)(iii) by completing the following within the six-month period before application:
(A) successfully passing a nationally recognized UST operator examination approved by the director; and
(B) successfully passing a Utah PST rules and regulations examination authorized by the director.
(v) the director shall determine the content of the examination.
(vi) Class C operators shall receive instruction in product transfer procedures, emergency response, and initial response to alarms and releases.
(b) registration application.
(i) applicants for Class A and B operator registration must:
(A) submit a registration application to the director;
(B) document proper training; and
(C) pay any applicable fees.
(ii) Class C operators shall be designated by a Class B operator.
(iii) the Class B operator must maintain a list identifying the Class C operators for each PST facility. The list must identify:
(A) each Class C operator;
(B) the date of training; and
(C) the trainer.
(iv) identification on the list serves as the operator registration for Class C operators.
(v) a registered Class A or B operator may act as a Class C operator by meeting the training and registration requirements for a Class C operator.
(vi) Class A and B registration shall be effective for a period of three years, and shall not lapse or become inactive if the registered operator leaves the employment of the company under which the registration was obtained.
(c) renewal of registration.
(i) Class A and B operators shall apply for renewal of registration not more than six months before the expiration of the registration by:
(A) submitting a completed application form;
(B) paying any applicable fees; and
(C) documenting successful completion of any re-training required by Subsection R311-201-12(10)(d).

(ii) if the director determines that the operator meets the requirements for registration, the director shall renew the applicant's registration for a period equal to the initial registration.

(iii) any applicant for renewal who has a registration that has been expired for more than two years before submitting a renewal application must successfully satisfy the training and examination requirements for initial registration under Subsection R311-201-12(10)(a) before receiving the renewal registration.

(d) re-training.

(i) a Class A operator is subject to re-training requirements if any facility for which the Class A operator has oversight is found to be out of compliance due to:

(A) lapsing of certificate of compliance;

(B) failure to provide acceptable financial responsibility; or

(C) failure to ensure that Class B and C operators are trained and registered.

(ii) a Class B operator is subject to re-training requirements if a facility for which the Class B operator has oversight is found to be out of compliance due to:

(A) failure to document compliance, as determined by the Technical Compliance Rate;

(I) Technical Compliance Rate is determined using the EPA "UST and LUST Performance Definitions as of October 2018" and incorporated by reference.

(B) failure to perform UST operator inspections required by Section R311-203-7; or

(C) failure to ensure that Class C operators are trained and registered, and are on site during operating hours.

(iii) to be re-trained, Class A and Class B operators must successfully complete the appropriate Class A or B operator training course and examination, or must complete an equivalent re-training course and examination approved by the director.

(iv) Class A and B operators must be re-trained within 90 days of the date of the determination of non-compliance, and shall submit documentation showing successful completion of the re-training to the director within 30 days of the re-training.

(A) if the documentation is not received by the director within 120 days of the date of the determination of non-compliance, the Class A or B operator's registration shall lapse.

(B) to re-register, the operator shall meet the requirements of Subsections R311-201-12(10)(a) and R311-201-12(10)(b).

(v) if a facility for which a Class A or B operator has oversight is found to be out of compliance under Subsection R311-201-12(10)(d)(i) or R311-201-12(10)(d)(ii), re-training is not required if the Class A or B operator successfully completes and documents re-training under Subsection R311-201-12(10)(d) for a prior determination of non-compliance that occurred during the previous nine months.

(11) Reciprocity.

(a) if the director determines that another state's operator training program is equivalent to the operator training program provided in this rule, the director may accept an applicant's Class A or Class B registration application, provided that the applicant:

(i) submits a completed application form;

(ii) passes the Utah PST rules and regulations examination referenced in Subsection R311-201-12(10)(a)(iv)(B); and

(iii) submits payment of any applicable registration fees.

(b) the Class A or Class B registration is valid until the Utah registration expiration described in Subsection R311-201-12(10)(b)(vi).

KEY: hazardous substances, administrative proceedings, underground storage tanks, petroleum storage tanks, revocation procedures
Date of Last Change: 2024[~~July 15, 2022~~]
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-1-301; 19-6-105; 19-6-402; 19-6-403; 63G-4-102; 63G-4-201 through 205; 63G-4-503

State of Utah
Administrative Rule Analysis
Revised May 2023

NOTICE OF PROPOSED RULE		
TYPE OF FILING: Amendment		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R311-203**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Environmental Quality	
Agency:	Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 54114-4840	
Contact persons:		
Name:	**Phone:**	**Email:**
David Wilson	385-245-9565	djwilson@utah.gov
Morgan Atkinson	801-979-2512	mpatkinson@utah.gov
Please address questions regarding information on this notice to the persons listed above.		

General Information

2. Rule or section catchline:

Petroleum Storage Tanks: Technical Standards.

3. Purpose of the new rule or reason for the change:

Clarifying wording in one subsection of the rule and moving a different subsection to where it fits better in context. Add requirements for Leak Detection and Testing for all Aboveground Petroleum Storage Tanks (APSTs) and not just those on the Environmental Assurance Program (EAP). This has always been the case for Underground Storage Tanks (USTs). Change rule to simplify the complexity of requiring spill prevention testing that works for USTs but doesn't always fit for APSTs. The spill prevention standard in International Fire Code is still applicable.

4. Summary of the new rule or change:

Clarifying R311-203-2(6) by changing "is not in service" to "was out of service". Moving R311-203-2(6)(f) to its own section R311-203-2(8) where it fits better in context. Removing the wording from R311-203-5(10) that requires certain Leak Detection and Testing for only APSTs using EAP as their financial responsibility mechanism and now will apply to all APSTs. Modify wording in R311-203-5(10)(b) to remove the periodic testing requirement for spill prevention equipment on APSTs. The spill prevention standard in International Fire Code is still applicable.

Fiscal Information

5. Provide an estimate and written explanation of the aggregate anticipated cost or savings to:

A) State budget:

R311-203-5(10): There is no anticipated cost or savings to the state budget because all state PST facilities are required by statute to be on the EAP and meet these leak detection standards.

R311-203-5(10)(b): There is a direct fiscal benefit to state owned facilities with APSTs which will not be required to test their spill buckets every 3 years. There are approximately 30 facilities with APSTs owned by state government that participate in the EAP. Each site has an average of 3 APSTs each that will be affected by this rule. The approximate total benefit for all these facilities combined is $9,000 every 3 years. This estimate was reached using the average contractor cost for a facility with 3 APSTs being $300 every 3 years.

Other changes will have no anticipated cost or savings to the state budget, because they just fix minor errors and clarify certain rules.

B) Local governments:

R311-203-5(10) This proposed rule change is not expected to have any fiscal impacts on local government revenues or expenditures because Insurance Companies offering an alternate form of Financial Assurance will likely required them to meet similar leak detection standards.

The fiscal cost to meet the requirements for July 1, 2026 is inestimable due to variation in type of APST facilities which may require upgrades to meet these standards that are already required to meet International Fire Code as adopted pursuant to Utah State Fire Code Section 15A-5-103.

R311-203-5(10)(b): There is a direct fiscal benefit to local government owned facilities with APSTs which will not be required to test their spill buckets every 3 years. There are approximately 22 facilities with APSTs owned by local governments that participate in the EAP. Each site has an average of 3 APSTs each that will be affected by this rule. The approximate total benefit for all these facilities combined is $6,600 every 3 years. This estimate was reached using the average contractor cost for a facility with 3 APSTs being $300 every 3 years.

Other changes will have no anticipated cost or savings to the local government's budget, because they just fix minor errors and clarify certain rules.

C) Small businesses ("small business" means a business employing 1-49 persons)**:**

R311-203-5(10) This proposed rule change is not expected to have any fiscal impacts on small businesses revenues or expenditures because Insurance Companies offering an alternate form of Financial Assurance will likely required them to meet similar leak detection standards.
The fiscal cost to meet the requirements for July 1, 2026 is inestimable due to variation in type of APST facilities which may require upgrades to meet these standards which are already required to meet International Fire Code as adopted pursuant to Utah State Fire Code Section 15A-5-103.

R311-203-5(10)(b): There is a direct fiscal benefit to small business owned facilities with APSTs which will not be required to test their spill buckets every 3 years. There are approximately 100 facilities with APSTs owned by small businesses that participate in the EAP. Each site has an average of 3 APSTs each that will be affected by this rule. The approximate total benefit for all these facilities combined is $30,000 every 3 years. This estimate was reached using the average contractor cost for a facility with 3 APSTs being $300 every 3 years.

Other changes will have no anticipated cost or savings to the small businesses budget, because they just fix minor errors and clarify certain rules.

D) Non-small businesses ("non-small business" means a business employing 50 or more persons)**:**

R311-203-5(10) This proposed rule change is not expected to have any fiscal impacts on non-small businesses revenues or expenditures because Insurance Companies offering an alternate form of Financial Assurance will likely required them to meet similar leak detection standards.
The fiscal cost to meet the requirements for July 1, 2026 is inestimable due to variation in type of APST facilities which may require upgrades to meet these standards which are already required to meet International Fire Code as adopted pursuant to Utah State Fire Code Section 15A-5-103.

R311-203-5(10)(b): There is a direct fiscal benefit to non-small business owned facilities with APSTs which will not be required to test their spill buckets every 3 years. There are approximately 80 facilities with APSTs owned by non-small business that participate in the EAP. Each site has an average of 3 APSTs each that will be affected by this rule. The approximate total benefit for all these facilities combined is $18,000 every 3 years. This estimate was reached using the average contractor cost for a facility with 3 APSTs being $300 every 3 years.

Other changes will have no anticipated cost or savings to the non-small businesses budget, because they just fix minor errors and clarify certain rules.

E) Persons other than small businesses, non-small businesses, state, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an ***agency***)**:**

These rule changes are not expected to have any fiscal impacts on other persons because the rule changes will not apply to these entities.

F) Compliance costs for affected persons (How much will it cost an impacted entity to adhere to this rule or its changes?)**:**

R311-203-5(10)(b)
Benefit to affected persons for not requiring spill Bucket (SB) tests is $100/SB every 3 years.

G) Regulatory Impact Summary Table (This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts will be included in narratives above.)

Regulatory Impact Table

Fiscal Cost	**FY2024**	**FY2025**	**FY2026**
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0

Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Cost	**$0**	**$0**	**$0**
Fiscal Benefits	**FY2024**	**FY2025**	**FY2026**
State Government	$0	$0	$9,000
Local Governments	$0	$0	$6,600
Small Businesses	$0	$0	$30,000
Non-Small Businesses	$0	$0	$18,000
Other Persons	$0	$0	$0
Total Fiscal Benefits	**$0**	**$0**	**$63,600**
Net Fiscal Benefits	**$0**	**$0**	**$63,600**

H) Department head comments on fiscal impact and approval of regulatory impact analysis:

The Executive Director of the Department of Environmental Quality, Kim Shelley, has reviewed and approved this regulatory impact analysis.

Citation Information

6. Provide citations to the statutory authority for the rule. If there is also a federal requirement for the rule, provide a citation to that requirement:

Section 19-6-105	Section 19-6-403	Section 19-6-408

Incorporations by Reference Information

7. Incorporations by Reference (if this rule incorporates more than two items by reference, please include additional tables)**:**

A) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**

Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

B) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**

Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

Public Notice Information

8. The public may submit written or oral comments to the agency identified in box 1. (The public may also request a hearing by submitting a written request to the agency. See Section 63G-3-302 and Rule R15-1 for more information.)

A) Comments will be accepted until: July 1, 2024.

B) A public hearing (optional) will be held:

Date (mm/dd/yyyy)**:**	**Time** (hh:mm AM/PM)**:**	**Place** (physical address or URL)**:**
06/12/2024	02:00 PM	Multi Agency State Office Building 195 N. 1950 W. Salt Lake City, Utah 84116 Room 1015

To the agency: If more space is needed for a physical address or URL, refer readers to Box 4 in General Information. If more than two hearings will take place, continue to add rows.

9. This rule change MAY become effective on:	07/12/2024

NOTE: The date above is the date the agency anticipates making the rule or its changes effective. It is NOT the effective date.

Agency Authorization Information

To the agency: Information requested on this form is required by Sections 63G-3-301, 63G-3-302, 63G-3-303, and 63G-3-402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the *Utah State Bulletin* and delaying the first possible effective date.			
Agency head or designee and title:	Brent Everett, Director	**Date:**	05/09/2025

R311. Environmental Quality, Environmental Response and Remediation.
R311-203. Petroleum Storage Tanks: Technical Standards.
R311-203-1. Definitions.

Definitions are found in Rule R311-200.

R311-203-2. Notification.

(1) The owner or operator of an UST must notify the director when:
(a) new USTs are brought into use;
(b) the owner or operator changes;
(c) changes are made to the tank or piping system; and
(d) release detection, corrosion protection, or spill or overfill prevention systems are installed, changed, or upgraded.
(2) Notifications must be submitted on the current approved notification form.
(3) Notifications submitted to meet the requirements of Subsection R311-203-2(1) shall be submitted within 30 days of the completion of the work or the change of ownership.
(4) To satisfy the requirement of Section 19-6-407 the certified installer shall:
(a) complete the appropriate section of the form to be submitted by the owner or operator, and ensure that the notification form is submitted by the owner or operator within 30 days of completion of the installation; or
(b) provide separate notification to the director within 60 days of the completion of the installation.
(5) The owner or operator of an APST that is in service on or after May 5, 2021, must notify the director according to the requirements of Subsection 19-6-407(2).
(6) The owner or operator of an APST that [~~is~~]was [~~not in~~]out of service before May 5, 2021,
(a) must notify the director according to the requirements of Subsection 19-6-407(2)(a)(i);
(b) is subject to delivery prohibition requirements in Section R311-206-8;
(c) is subject to closure requirements under Subsections 19-6-407(2)(a)(iii) and (iv) and Section R311-204-2;
(d) must demonstrate the tank has been emptied of any regulated substance to the lowest discharge point on the tank;
(e) is subject to release reporting requirements as outlined in Subsection 19-6-407(2)(a)(iv); and
[~~(f) must notify local emergency responders of a spill or overfill exceeding 25 gallons within 24 hours.~~]
(7) The owner or operator of an APST that is not in service before May 5, 2021, is not subject to the requirements of Subsection 19-6-407(2)(c) and Section 19-6-412 unless the owner or operator elects to bring the APST back in service.
(8) The owner or operator of an APST must notify within 24 hours local emergency responders of a spill or overfill exceeding 25 gallons.

R311-203-3. New Installations, Permits.

(1) Certified UST installers must notify the director at least ten business days, or another time period approved by the director, before commencing any of the following activities:
(a) the installation of a full UST system or tank only;
(b) the installation of underground product piping for one or more tanks at a facility, separate from the installation of one or more tanks at a facility;
(c) the internal lining of a previously-existing tank;
(d) the installation of a cathodic protection system on one or more previously-existing tanks at a facility;
(e) the installation of a bladder in a tank;
(f) any retro-fit, replacement, or installation that requires the cutting of a manway into the tank;
(g) the installation of a spill prevention or overfill prevention device;
(h) the installation of a leak detection monitoring system; or
(i) the installation of a containment sump or under-dispenser containment.
(2) The UST installation company must submit to the director an UST installation permit fee of $200 when any of the activities listed in Subsections R311-203-3(1)(a) through R311-203-3(1)(f) is performed on an UST system that has not qualified for a certificate of compliance before the commencement of the work.
(3) The fees assessed under Subsection 19-6-411(2)(a)(i) will be determined based on the number of full UST installations performed by the installation company in the 12 months previous to the fee due date.
(a) installations for which the fee assessed under Subsections 19-6-411(2)(a)(ii) and R311-203-3(3) is charged shall count toward the total installations for the 12-month period.
(4) For the purposes of Subsections 19-6-411(2)(a)(ii), 19-6-407(1)(c), and R311-203-2(4), an installation is considered complete when:
(a) in the case of installation of a new UST system, tank only, or product piping only, the new installation first holds a regulated substance; or
(b) in the case of installation of the components listed in Subsections R311-203-3(1)(d) through R311-203-3(1)(f), the new installation is functional and the UST holds a regulated substance and is operational.
(5) If, before completion of an installation for which an UST installation permit fee is required, the owner or operator decides to install additional UST system components, the installer shall notify the director of the change.
(a) when additions are made, the UST installation permit fee shall be increased based on the additional number of tanks to be installed in accordance with Subsection 19-6-411(2)(a)(i) and the Department of Environmental Quality Fee Schedule, as approved annually by the Legislature.

(6) The number of UST installation companies performing work on a particular installation will not be a factor in determining the UST installation permit fee for that installation.

(a) each installation company must be identified on the UST installation permit.

(7) When a new UST system, tank only, product piping only, or new cathodic protection system is installed, the owner or operator must submit to the director an as-built drawing that meets the requirements of Subsection R311-200-1(2)(b).

R311-203-4. Petroleum Storage Tank Registration Fee.

(1) Registration fees will be assessed by the Department against tanks which are not permanently closed for the entire fiscal year, and will be billed per facility.

(2) Registration fees are due on July 1 of the fiscal year for which the assessment is made, or, for PSTs brought into use after the beginning of the fiscal year, registration fees are due when the tanks are brought into use, as a requirement for receiving a certificate of compliance.

(3) The director may waive all or part of the penalty assessed under Subsection 19-6-408(5) if no fuel has been dispensed from the tank on or after July 1, 1991 and if the tank has been properly closed according to Rules R311-204 and R311-205, or in other circumstances as approved by the director.

(4) The director shall issue a certificate of registration to owners or operators for individual PSTs at a facility if:

(a) the tanks are in use or are temporarily closed as outlined in 40 CFR Part 280 Subpart G; and

(b) the PST registration fee has been paid.

(5) Pursuant to Subsection 19-6-408(5)(c), past due PST registration fees, late payment penalties and interest must be paid before the director may issue or re-issue a certificate of compliance regardless of whether there is a new owner or operator at the facility.

(a) the director may decline active collection of past due registration fees, late payment penalties and interest if a certificate of compliance is not issued and the new owner or new operator properly closes the PSTs within one year of becoming the new owner or operator of the facility.

(6) A UST will be assessed the higher registration fee established under Section 63J-1-504 if it is found to be out of compliance with the EPA Technical Compliance Rate during an inspection, and remains out of compliance for six months or greater following the initial inspection.

(a) the higher registration fee is due July 1 following the documented six-month period of non-compliance.

(7) When the director is notified of the existence of a previously unregistered regulated PST, the director shall assess the applicable notification fee and PST registration fee for the current fiscal year.

(a) if the PST is properly permanently closed within 90 days of the notification of the existence of the PST, the director may decline active collection of pastdue registration fees, late payment penalties, and interest for previous fiscal years.

R311-203-5. PST Testing Requirements.

(1) Tank tightness testing. The testing method must be able to test the PST system at the maximum level that could contain regulated substances.

(a) tanks with overfill prevention devices that prevent product from entering the upper portion of the tank may be tested at the maximum level allowed by the overfill device.

(2) Spill prevention equipment. An individual who conducts a test of spill prevention equipment to meet the requirements of 40 CFR 280.35(a)(1)(ii) must report the test results using:

(a) the form "Utah Spill Prevention Test"; or

(b) the form "Appendix C-3 Spill Bucket Integrity Testing Hydrostatic Test Method Single and Double-Walled Vacuum Test Method," found in PEI RP1200, "Recommended Practices for the Testing and Verification of Spill, Overfill, Leak Detection and Secondary Containment Equipment at UST Facilities;" or

(c) another form approved by the director.

(3) Containment sump testing. An individual who conducts a test of a containment sump used for interstitial monitoring to meet the requirements of 40 CFR 280.35(a)(1)(ii) or a test of a piping containment sump or under-dispenser containment to meet the requirements of Section R311-206-11 must report the test results using:

(a) the form "Utah Containment Sump Test"; or

(b) the form "Appendix C-4 Containment Sump Integrity Testing Hydrostatic Testing Method," found in PEI RP1200; or

(c) another form approved by the director.

(4) When a sump sensor is used as an automatic line leak detector, the secondary containment sump must be tested for tightness annually according to the manufacturer's guidelines or standards, or by another method approved by the director.

(a) the sensor shall be located as close as is practicable to the lowest portion of the sump.

(5) Cathodic protection testing. Cathodic protection tests must meet the inspection criteria outlined in 40 CFR 280.31(b), or other criteria approved by the director. The tester who performs the test must provide the following information:

(a) location of at least three test points per tank;

(b) location of one remote test point for galvanic systems;

(c) test results in volts or millivolts;

(d) pass or fail determination for each tank, line, flex connector, or other UST system component tested;

(e) the criteria by which the pass or fail determination is made;

(f) a site plat showing locations of test points; and

(g) a re-test of any cathodic protection system is required within six months of any below-grade work that may harm the integrity of the system.

(6) UST testers performing tank and line tightness testing must include the following as part of the test report:

(a) pass or fail determination for each tank or line tested;

(b) measured leak rate;

(c) test duration;

(d) product level for tank tests;

(e) pressure used for pressure tests;

(f) type of test; and

(g) test equipment used.

(7) overfill prevention equipment inspection. An individual who conducts an inspection of overfill prevention equipment to meet the requirements of 40 CFR 280.35(a)(2) must report the results using:

(a) the form "Appendix C-5 UST Overfill Equipment Inspection Automatic Shutoff Device and Ball Float Valve," found in PEI RP1200, when the overfill prevention is provided by either an automatic shutoff device or a ball float valve;

(b) the form "Appendix C-6 Overfill Alarm Operation Inspection," found in PEI RP1200, when overfill prevention is provided by an overfill alarm; or

(c) another form approved by the director.

(8) Automatic tank gauge inspection. An individual who conducts an inspection of automatic tank gauges to meet the requirements of 40 CFR 280.40(a)(3) must report the results using:

(a) the form "Appendix C-7 Automatic Tank Gauge Operation Inspection," found in PEI RP1200, and if the PST system or any portion thereof is interstitially monitored, "Appendix C-8: Liquid Sensor Functionality Testing," found in PEI RP1200; or

(b) another form approved by the director.

(9) Automatic line leak detector testing. An individual who conducts a test of automatic line leak detectors to meet the requirements of 40 CFR 280.40(a)(3) must report the results using:

(a) the form "Appendix C-9 Mechanical and Electronic Line Leak Detector Performance Tests," found in PEI RP1200; or

(b) another form approved by the director.

(10) Leak Detection and Testing Requirements for APSTs[~~ using the EAP for financial responsibility~~]:

(a) line tightness testing or monthly monitoring is required for underground piping associated with APSTs.

(i) an individual who conducts a tightness test of product lines must perform the test as set forth in 40 CFR 280.44(b).

(ii) when pressurized underground product piping is connected to an APST that is not double-walled, sensor equipped, and monitored monthly, the product piping must be tested for tightness annually. The test must meet the requirements of Subsection R311-203-5(6).

(b) spill prevention equipment associated with an APST must meet the standards set forth in International Fire Code (IFC) 2306.6.2.6 referenced in the Utah State Fire Code adopted pursuant to Section 15A-5-103[~~and be double-walled and monitored monthly; or have an integrity test performed every three years. The test must meet the requirements of Subsection R311-203-5(2)~~].

(c) beginning July 1, 2026, an APST resting on the ground must perform monthly interstitial monitoring, a monthly 0.2 gallon per hour release detection test, or a tank tightness test every 5 years. The test must meet the requirements of Subsection R311-203-5(1).

(d) beginning July 1, 2026, if applicable, APSTs and associated piping are required to have cathodic protection that meets the standards set forth in IFC 5704.2.7.9 and National Fire Protection Agency (NFPA) 30.23.3.5 and must have a passing cathodic protection test every 3 years. The test must meet the requirements of Subsection R311-203-5(5).

(e) beginning July 1, 2026, an APST shall have an overfill prevention device that meets the standards set forth in IFC 2306.6.2.3, 5704.2.7.5.8 and 5704.2.927.5 and must have an overfill prevention equipment inspection performed every three years. The overfill prevention equipment inspection must meet the requirements of Subsection R311-203-5(7).

(f) beginning July 1, 2026, an APST with pressurized underground product piping shall have an automatic line leak detector that meets the standards set forth in IFC 2306.7.7.1 and must have an automatic line leak detector test performed annually. The test must meet the requirements of Subsection R311-203-5(9).

R311-203-6. Secondary Containment and Under-Dispenser Containment.

(1) Secondary containment for tanks and piping.

(a) to meet the requirements of Subsection 42 USC 6991b(i) of the Solid Waste Disposal Act, tanks and product piping that are installed as part of an UST system after October 1, 2008 and before January 1, 2017 must have secondary containment if the installation is located 1,000 feet or less from an existing community water system or an existing potable drinking water well.

(b) the secondary containment installed under Subsection R311-203-6(1) must meet the requirements of 40 CFR 280.42(b), and shall be monitored monthly for releases from the tank and piping.

(i) monthly monitoring must meet the requirements of 40 CFR 280.43(g).

(c) containment sumps for piping installed under Subsection R311-203-6(1) are required:

(i) at the submersible pump or other location where the piping connects to the tank;

(ii) where the piping connects to a dispenser, or otherwise goes aboveground; and

(iii) where double-walled piping that is required under Subsection R311-203-6(1) connects with existing piping.

(d) containment sumps for piping that is installed under Subsection R311-203-6(1) must:

(i) contain submersible pumps, check valves, unburied risers, flexible connectors, and other transitional components that connect the piping to the tank, dispenser, or existing piping; and

(ii) meet the requirements of Subsection R311-203-6(2)(b).

(e) in the case of a replacement of tank or piping, only the portion of the UST system being replaced is subject to the requirements of Subsection R311-203-6(1).

(i) if less than 100% of the piping from a tank to a dispenser is replaced, the requirements of Subsection R311-203-6(1) applies to new product piping that is installed.

(ii) the closure requirements of Rule R311-205 apply to product piping that is taken out of service.

(iii) when new piping is connected to existing piping that is not taken out of service, the connection between the new and existing piping must be secondarily contained, and monitored for releases according to 40 CFR 280.43(g).

(f) the requirements of Subsection R311-203-6(1) do not apply to:

(i) piping that meets the requirements for "safe suction" piping in 40 CFR 280.41(b)(2); or

(ii) piping that connects two or more tanks to create a siphon system.

(g) the requirements of Subsection R311-203-6(1) apply to emergency generator USTs installed after October 1, 2008.

(2) Under-dispenser containment.

(a) to meet the requirements of Subsection 42 USC 6991b(i) of the Solid Waste Disposal Act, new motor fuel dispenser systems installed after October 1, 2008 and before January 1, 2017, and connected to an UST, must have under-dispenser containment if the installation is located 1,000 feet or less from an existing community water system or an existing potable drinking water well.

(b) the under-dispenser containment must:

(i) be liquid-tight on its sides, bottom, and at penetrations;

(ii) be compatible with the substance conveyed by the piping; and

(iii) allow for visual inspection and access to the components in the containment system, or be continuously monitored for the presence of liquids.

(c) if an existing dispenser is replaced, the requirements of Subsection R311-203-6(2) apply to the new dispenser if any equipment used to connect the dispenser to the PST system is replaced.

(i) this equipment includes unburied flexible connectors, risers, and other transitional components that are beneath the dispenser and connect the dispenser to the product piping.

(3) The requirements of Subsections R311-203-6(1) and R311-203-6(2) do not apply if the installation is located more than 1,000 feet from an existing community water system or an existing potable drinking water well.

(a) the PST owner or operator must provide to the director documentation to show that the requirements of Subsections R311-203-6(1) and R311-203-6(2) do not apply to the installation.

(b) the documentation shall be provided at least 60 days before the beginning of the installation, and shall include:

(i) a detailed to-scale map of the proposed installation that demonstrates that no part of the installation is within 1,000 feet of any community water system, potable drinking water well, or any well the owner or operator plans to install at the facility; and

(ii) a certified statement by the owner or operator explaining who researched the existence of a community water system or potable drinking water well, how the research was conducted, and how the proposed installation qualifies for an exemption from the requirements of Subsections R311-203-6(1) and R311-203-6(2).

(4) To determine whether the requirements of Subsections R311-203-6(1) and R311-203-6(2) apply, the distance from the UST installation to an existing community water system or existing potable drinking water well shall be measured from the closest part of the new UST, piping, or motor fuel dispenser system to:

(a) the closest part of the nearest community water system, including:

(i) the location of the wellheads for groundwater and the location of the intake points for surface water;

(ii) water lines, processing tanks, and water storage tanks; and

(iii) water distribution/ and service lines under the control of the community water system operator, or

(b) the wellhead of the nearest existing potable drinking water well.

(5) If a new UST facility is installed, and is not within 1,000 feet of an existing community water system or an existing potable drinking water well, the requirements of Subsections R311-203-6(1) and R311-203-6(2) apply if the owner or operator installs a potable drinking water well at the facility that is within 1,000 feet of the UST, piping, or motor fuel dispenser system, regardless of the sequence of installation of the UST system, dispenser system, and well.

(6) To meet the requirements of 40 CFR 280.20, tanks and product piping that are installed or replaced as part of an UST system on or after January 1, 2017 must be secondarily contained and use interstitial monitoring in accordance with 40 CFR 280.43(g).

R311-203-7. Operator Inspections.

(1) Owners and operators must perform periodic inspections in accordance with 40 CFR 280.36.

(a) inspections must be conducted by or under the direction of the designated Class B operator.

(b) the Class B operator must ensure that documentation of each inspection is kept and made available for review by the director.

(2) The individual who conducts inspections to meet the requirements of 40 CFR 280.36(a)(1) or 208.36(a)(3) shall use the form "UST Operator Inspection- Utah" or another form approved by the director.

(3) An UST facility whose tanks are properly temporarily closed according to 40 CFR 280.70 and Section R311-204-4 must have an annual operator inspection.

(4) An owner or operator who conducts visual checks of tank top containment sumps and under-dispenser containment sumps for compliance with piping leak detection in accordance with 40 CFR 280.43(g) must conduct the visual checks monthly and report the results on the operator inspection form.

R311-203-8. Unattended Facilities.

(1) An UST facility that:

(a) normally has no employee on site or is open to dispense fuel at times when no employee or trained operator is on site must have:

(i) a sign posted in a conspicuous place, giving the name and telephone number of the facility owner, operator, or local emergency responders; and

(ii) an emergency shutoff device in a readily accessible location, if the facility dispenses fuel.

KEY: fees, hazardous substances, petroleum, underground storage tanks
Date of Last Change: 2024[~~September 27, 2022~~]
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-403; 19-6-408

State of Utah
Administrative Rule Analysis
Revised May 2023

NONSUBSTANTIVE CHANGE		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R311-204**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Environmental Quality	
Agency:	Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 84114-4840	
Contact persons:		
Name:	**Phone:**	**Email:**
David Wilson	385-245-9565	djwilson@utah.gov
Morgan Atkinson	801-979-2512	mpatkinson@utah.gov
Please address questions regarding information on this notice to the persons listed above.		

General Information

2. Rule or section catchline:
Petroleum Storage Tanks: Closure and Remediation.
3. Reason for the change:
Added an additional standard for inspecting APSTs since the referenced standards apply to only larger APSTs. The intent of this rule was always meant to apply to all APSTs.
4. Summary of the change:
R311-204-3(3) add STI SP001 inspection criteria for smaller APSTs where API 653 does not apply.

Agency Authorization Information

To the agency: The Office of Administrative Rules is responsible for setting the effective date of nonsubstantive changes (see Section R15-4-6). The agency does NOT file a notice of effective date.			
Agency head or designee and title:	Brent Everett, Director	**Date:**	05/09/2024.

R311. Environmental Quality, Environmental Response and Remediation.
R311-204. Petroleum Storage Tanks: Closure and Remediation.
R311-204-1. Definitions.

Definitions are found in Rule R311-200.

R311-204-2. Petroleum Storage Tank Closure Plan.

(1) Owners or operators of PSTs or any portion thereof which are to be permanently closed or undergo change-in-service must submit a permanent closure plan to the director.

(a) the permanent closure plan shall be submitted by the owner or operator as fulfillment of the 30-day permanent closure notification requirement in accordance with Subsection 19-6-407(2)(a)(iii) for APSTs and 40 CFR 280 Subpart G for USTs.

(2) If a tank is to be removed as part of corrective action as allowed by 40 CFR 280 Subpart G, the owner or operator is not required to submit a closure plan, but must meet the requirements of 40 CFR 280.66(d) before any removal activity takes place, and must submit a corrective action plan as required by 40 CFR 280.66.

(3) The closure plan shall address applicable issues involved with permanent closure, change-in-service, or reuse of APSTs, including:

(a) product removal;
(b) sludge disposal;
(c) vapor purging or inerting;
(d) removing or securing and capping product piping;
(e) removing vent lines or securing vent lines open;
(f) tank cleaning;

(g) environmental sampling;
(h) contaminated soil and water management;
(i) in-place tank disposal or tank removal;
(j) transportation of tank;
(k) permanent disposal; and
(l) other disposal activities which may affect human health, human safety, or the environment.

(4) No PST shall be permanently closed or undergo change-in-service before the owner or operator receiving final approval of the submitted permanent tank closure plan by the director, except as outlined in Subsection R311-204-2(2).

(a) closure plan approval is effective for a period of one year.

(b) if the PST has not been permanently closed or undergone change-in-service as proposed within one year following approval from the director, the plan must be re-submitted for approval, unless otherwise approved by the director.

(5) Permanent closure plans shall be prepared using the current approved form according to guidance furnished by the director.

(6) The owner or operator shall ensure that the approved permanent closure plan and approval letter are on site during closure activities.

(7) Any deviation from or modification to an approved closure plan must be approved by the director before implementation, and must be submitted in writing to the director.

(8) The director must be notified at least three business days before the start of closure activities.

R311-204-3. Disposal.

(1) Tank labeling. Immediately after being removed, tanks which are permanently closed by removal must be labeled with the following in letters at least two inches high:

(a) the facility identification number;
(b) the substance contained; and
(c) the date removed: "month/day/year."

(2) Removed tanks shall be expeditiously disposed of as regulated PSTs by the following methods:

(a) the tank may be cut up after the interior atmosphere is first purged or inerted.
(b) the tank may be crushed after the interior atmosphere is first purged or inerted.
(c) the tank may not be used to store food or liquid intended for human or animal consumption.
(d) the tank may be disposed of in a manner approved by the director.

(3) Any removed APST that is to be reused as an APST must be recertified by the manufacturer of the tank or undergo a tank inspection, conducted by a qualified contractor, using a nationally recognized standard such as STI SP001 or API 653.

(4) Tank transportation. Used tanks which are transported on roads of the state must be cleaned inside the tank before transportation, and be free of product, free of vapors, or made inert during transport.

R311-204-4. Closure Notice.

(1) Owners or operators of USTs which were permanently closed or had a change-in-service before December 22, 1988 must submit a completed closure notice, unless the tanks were properly closed on or before January 1, 1974.

(2) Owners or operators of USTs which are permanently closed after December 22, 1988, and APSTs closed or having a change-in-service as defined in 40 CFR 280 Subpart G after May 5, 2021 must submit a completed closure notice form and the following information within 90 days after tank closure:

(a) results from the closure site assessment conducted in accordance with Rule R311-205, including analytical laboratory results and chain of custody forms; and

(b) a site plat displaying depths and distances such that the sample locations can be determined solely from the site plat. The site plat shall include:

(i) scale;
(ii) north arrow;
(iii) streets;
(iv) property boundaries;
(v) building structures;
(vi) utilities;
(vii) PST system location;
(viii) location of any contamination observed or suspected during sampling;
(ix) location and volume of any stockpiled soil;
(x) the extent of the excavation zone; and
(xi) any other relevant features.

(c) sample identification numbers used on the site plat shall correspond to the chain of custody form and the lab analysis report.

(3) Owners and operators of PSTs that are temporarily closed for a period greater than three months must submit a completed temporary closure notice within 120 days after the beginning of the temporary closure.

(4) Closure notices for permanent and temporary closure shall be submitted on the current approved forms.

R311-204-5. Remediation.

(1) Any PST release management, abatement, investigation, corrective action or evaluation activities performed for a fee, or in connection with services for which a fee is charged, must be performed under the supervision of a certified PST consultant, except as outlined in Subsections 19-6-402(6)(b), R311-201-2(1), and R311-204-5(2).

(2) At the time of PST closure, a certified UST remover may over-excavate and properly dispose of up to 50 cubic yards of contaminated soil per facility, or another volume approved by the director, in addition to the minimum amount required for closure of the PST.

(a) this over-excavation may be performed without the supervision of a certified PST consultant.

(b) appropriate confirmation samples must be taken by a certified sampler in accordance with Rule R311-201 to determine the extent and degree of contamination.

KEY: hazardous substances, petroleum, underground storage tanks
Date of Last Change: 2024[~~July 15, 2022~~]
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-402; 19-6-403

State of Utah
Administrative Rule Analysis
Revised May 2023

NOTICE OF PROPOSED RULE		
TYPE OF FILING: Amendment		
Title No. - Rule No. - Section No.		
Rule or Section Number:	**R311-206**	**Filing ID: Office Use Only**

Agency Information

1. Department:	Environmental Quality	
Agency:	Environmental Response and Remediation	
Room number:		
Building:	Multi Agency State Office Building	
Street address:	195 North 1950 West	
City, state and zip:	Salt Lake City, Utah 84116	
Mailing address:	P.O. Box 144840	
City, state and zip:	Salt Lake City, Utah 84114-4840	
Contact persons:		
Name:	**Phone:**	**Email:**
David Wilson	385-245-9565	djwilson@utah.gov
Morgan Atkinson	801-979-2512	mpatkinson@utah.gov
Please address questions regarding information on this notice to the persons listed above.		

General Information

2. Rule or section catchline:

Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.

3. Purpose of the new rule or reason for the change:

Delete the requirement that only those Aboveground Petroleum Storage Tanks (APSTs) on the Environmental Assurance Program (EAP) need to meet certain leak detection standards. This has always been the case for Underground Storage Tanks (USTs). Add delivery prohibition authorization for DERR to take Petroleum Storage Tanks (PSTs) out of operation (Red Tag) that have shown to have an ongoing release. Change the wording of R311-206-8(3) to clarify meaning.

4. Summary of the new rule or change:

R311-206-3(1)(b)(i): Expands the leak detection requirement to all APST facilities and not only those on the Environmental Assurance Program (EAP). R311-206-4(6): Delete the subpart that lists the leak detection requirements for APSTs on the EAP because they can already be found in R311-203-5(10). Add a subpart R311-206-8(4) authorizing the placement of a delivery prohibition tag on PSTs that fail a PST Test or show physical evidence of a release of product. Simplify the confusing wording of R311-206-8(3).

Fiscal Information

5. Provide an estimate and written explanation of the aggregate anticipated cost or savings to:

A) State budget:

R311-206-3(1)(b)(i) and R311-206-4(6): This rule change is not expected to have any fiscal impacts on state revenues or expenditures because all state PST facilities are required by statute to participate in the Environmental Assurance Program (EAP).

R311-206-8(4): The cost to state budget is inestimable because the likelihood or frequency of a release from PSTs is unknown.

Other changes will have no anticipated cost or savings to the state budget because they just fix minor errors and clarify certain rules.

B) Local governments:

R311-206-3(1)(b)(i) and R311-206-4(6): This rule change is expected to have an inestimable fiscal cost to local government owned facilities with APSTs that do not participate in the EAP. Insurance companies who provide financial Assurance (FA) will likely require these facilities to meet certain leak detection standards that are similar or stricter than those set forth in rule.

R311-206-8(4): The cost to local governments is inestimable because the likelihood or frequency of a release from PSTs is unknown

Other changes will have no anticipated cost or savings to local governments because they just fix minor errors and clarify certain rules.

C) Small businesses ("small business" means a business employing 1-49 persons)**:**

R311-206-3(1)(b)(i) and R311-206-4(6): This rule change is expected to have an inestimable fiscal cost to small businesses owned facilities with APSTs that do not participate in the EAP. Insurance companies who provide financial Assurance (FA) will likely require these facilities to meet certain leak detection standards that are similar or stricter than those set forth in rule.

R311-206-8(4): The cost to small businesses budget is inestimable because the likelihood or frequency of a release from PSTs is unknown

Other changes will have no anticipated cost or savings to small business because they just fix minor errors and clarify certain rules.

D) Non-small businesses ("non-small business" means a business employing 50 or more persons)**:**

R311-206-3(1)(b)(i) and R311-206-4(6): This rule change is expected to have an inestimable fiscal cost to non-small businesses owned facilities with APSTs that do not participate in the EAP. Insurance companies who provide financial Assurance (FA) will likely require these facilities to meet certain leak detection standards that are similar or stricter than those set forth in rule.

R311-206-8(4): The cost to non-small businesses is inestimable because the likelihood or frequency of a release from PSTs is unknown

Other changes will have no anticipated cost or savings to non-small businesses because they just fix minor errors and clarify certain rules.

E) Persons other than small businesses, non-small businesses, state, or local government entities ("person" means any individual, partnership, corporation, association, governmental entity, or public or private organization of any character other than an ***agency***)**:**

These rule changes are not expected to have any fiscal impacts on other persons because the rule changes will not apply to these entities.

F) Compliance costs for affected persons (How much will it cost an impacted entity to adhere to this rule or its changes?)**:**

Any costs to affected persons that choose to not participate in the EAP is inestimable. Insurance companies providing FA will likely require these facilities to meet certain leak detection standards that are similar or stricter than those set forth in rule. The cost to affected person for delivery prohibition of a PST because of an ongoing release is unknown because the likelihood or frequency of a release from PSTs is unknown.

G) Regulatory Impact Summary Table (This table only includes fiscal impacts that could be measured. If there are inestimable fiscal impacts, they will not be included in this table. Inestimable impacts will be included in narratives above.)

Regulatory Impact Table

Fiscal Cost	**FY2024**	**FY2025**	**FY2026**
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Cost	**$0**	**$0**	**$0**
Fiscal Benefits	**FY2024**	**FY2025**	**FY2026**
State Government	$0	$0	$0
Local Governments	$0	$0	$0
Small Businesses	$0	$0	$0
Non-Small Businesses	$0	$0	$0
Other Persons	$0	$0	$0
Total Fiscal Benefits	**$0**	**$0**	**$0**
Net Fiscal Benefits	**$0**	**$0**	**$0**

H) Department head comments on fiscal impact and approval of regulatory impact analysis:

The Executive Director of the Department of Environmental Quality, Kim Shelley, has reviewed and approved this regulatory impact analysis.

Citation Information

6. Provide citations to the statutory authority for the rule. If there is also a federal requirement for the rule, provide a citation to that requirement:		
19-6-105	19-6-403	19-6-410.5
19-6-428		

Incorporations by Reference Information

7. Incorporations by Reference (if this rule incorporates more than two items by reference, please include additional tables)**:**	
A) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**	
Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

B) This rule adds, updates, or removes the following title of materials incorporated by references (a copy of materials incorporated by reference must be submitted to the Office of Administrative Rules; *if none, leave blank*)**:**	
Official Title of Materials Incorporated (from title page)	
Publisher	
Issue Date	
Issue or Version	

Public Notice Information

8. The public may submit written or oral comments to the agency identified in box 1. (The public may also request a hearing by submitting a written request to the agency. See Section 63G-3-302 and Rule R15-1 for more information.)		
A) Comments will be accepted until:		July 1, 2024
B) A public hearing (optional) will be held:		
Date (mm/dd/yyyy)**:**	**Time** (hh:mm AM/PM)**:**	**Place** (physical address or URL)**:**
06/12/2024	2:00 PM	Multi Agency State Office Building 195 N. 1950 W. Salt Lake City, Utah 84116 Room 1015
To the agency: If more space is needed for a physical address or URL, refer readers to Box 4 in General Information. If more than two hearings will take place, continue to add rows.		

9. This rule change MAY become effective on:	07/12/2024
NOTE: The date above is the date the agency anticipates making the rule or its changes effective. It is NOT the effective date.	

Agency Authorization Information

To the agency: Information requested on this form is required by Sections 63G-3-301, 63G-3-302, 63G-3-303, and 63G-3-402. Incomplete forms will be returned to the agency for completion, possibly delaying publication in the *Utah State Bulletin* and delaying the first possible effective date.			
Agency head or designee and title:	Brent Everett, Director	**Date:**	05/09/2024.

R311. Environmental Quality, Environmental Response and Remediation.
R311-206. Petroleum Storage Tanks: Certificate of Compliance and Financial Assurance Mechanisms.
R311-206-1. Definitions.

Definitions are found in Rule R311-200.

R311-206-2. Declaration of Financial Assurance Mechanism.

(1) To demonstrate financial assurance, as required by Section 19-6-412 and Subsection 19-6-407(2)(c), owners or operators of petroleum storage tanks must:

(a) declare they will participate in the EAP and meet the requirements for participation in the EAP under Sections 19-6-410.5, 19-6-428 and R311-206-4; or

(b) demonstrate financial assurance that meets the coverage amounts specified in 40 CFR 280.93, by an allowable method specified in Section R311-206-5.

(2) For the purposes of Subsection 19-6-412(6), tanks at a facility must be covered by the same financial assurance mechanism, and must be considered to be in one area, unless the director determines there is sufficient information so that releases from different tanks at the facility could be accurately differentiated.

R311-206-3. Requirements for Issuance of Certificates of Compliance.

(1) The director shall issue a certificate of compliance to an owner or operator for individual petroleum storage tanks at a facility if:

(a) the owner or operator has a certificate of registration;

(b) the owner or operator must certify that the PST is in substantial compliance with state and federal statutes, rules, and regulations applicable to PST systems;

[~~(i) APSTs using the EAP for financial responsibility, the owner or operator may meet the requirements outlined in Subsection R311-206-4(6).~~]

(c) the tank tightness test, as required by Section 19-6-413 conducted within six months before the tank was registered or within 60 days after the date the tank was registered, indicates that each individual PST is not leaking;

(d) the owner or operator has submitted a letter to the director stating that based on customary business inventory practices standards there has been no release from the tank;

(e) the owner or operator has submitted a completed application according to a form provided and approved by the director, and participates in the EAP or demonstrates that the financial assurance that will be used meets the requirements of Subsection R311-206-2(1)(b) and Section R311-206-5;

(f) the owner or operator has met the requirements for the financial assurance mechanism chosen, including payment of applicable fees;

(g) the owner or operator has submitted an as-built drawing, for newly-installed systems, that meets the requirements of Subsection R311-200-1(2)(d) or a site plat, for existing systems, that meets the requirements of Subsection R311-200-1(2)(ccc); and

(h) the owner or operator has, for newly-installed tanks, submitted the completed tank manufacturer's installation checklist.

R311-206-4. Requirements for Environmental Assurance Program Participants.

(1) In accordance with Subsection 19-6-411(1)(a), the annual facility throughput rate, if reported, shall be reported to the director as a specific number of gallons, based on the throughput for the previous calendar year.

(2) In accordance with Subsection 19-6-411(1)(b), when a petroleum storage tank is initially registered with the director, any petroleum storage tank fee for that tank for the current fiscal year is due when the tank is brought into use, as a requirement for receiving a certificate of compliance.

(3) In accordance with Subsection 19-6-411(2)(a)(i), if an installation company receives its annual permit after the beginning of the fiscal year, the annual fee must be paid for the entire year.

(4) Auditing of PST facility throughput records.

(a) owners and operators must retain for seven years the monthly tank throughput records of the facility.

(b) tank throughput records shall include financial and product documentation for receipts, deliveries, transfers, and inventories.

(c) the director may audit or commission an audit, by an independent auditor, of records which support the amount of throughput, for each tank at a participant's facility.

(i) records must be made available at the department for inspection within 30 calendar days after receiving notice from the director.

(ii) audits may be determined by random selection or for particular reasons, including suspicion or discovery of inaccuracies in throughput reports, aggregating throughput reports, having a release, or filing a claim.

(iii) auditing tank throughput may be accomplished by any method approved by the director.

(iv) costs of an independent audit shall be paid by the owner or operator.

(5) Owners or operators eligible for participation in the EAP must demonstrate financial assurance for the difference between coverage provided by the EAP and coverage amounts required by 40 CFR 280 Subpart H.

(a) if the owner or operator chooses self-insurance as the mechanism for demonstrating financial assurance for the difference, they must document a tangible net worth of $10,000 upon request and to the satisfaction of the director.

(i) the director may require the owner or operator to submit an independent audit to demonstrate new worth for self-insurance.

(A) the owner or operator will bear the expense for the audit.

(B) the criteria for an audit are the same as set forth in Subsection R311-206-4(4)(b).

(b) an owner or operator may also select and document another mechanism specified in 40 CFR 280.94 to demonstrate financial assurance for the difference.

(c) the processing fee requirement referenced in Subsection R311-206-5(2) is not applicable because the administrative cost is covered by the EAP fee.

[~~(6) For a facility with an APST using the EAP for financial responsibility, the director shall issue a certificate of compliance to an owner or operator for individual APSTs, if:~~

~~(a) before July 1, 2026, the owner or operator:~~

~~(i) documents compliance with spill prevention equipment requirements and submits a spill prevention equipment test; and~~

~~(ii) documents compliance with applicable leak detection and testing requirements outlined in Section R311-203-5.~~

~~(b) on or after July 1, 2026, the owner or operator:~~

~~(i) if applicable, documents compliance with cathodic protection requirements and submits a cathodic protection test, if required by Subsection R311-203-5(10)(d) indicating that the cathodic protection system is functioning properly;~~

~~(ii) documents compliance with overfill prevention requirements and submits an overfill prevention equipment inspection per Subsection R311-203-5(10)(e);~~

~~(iii) documents compliance with automatic line leak detector and submits an automatic line leak detector test, if required by Subsection R311-203-5(10)(f), indicating that each individual automatic line leak detector is functioning properly; and~~

~~(iv) documents compliance with APST secondary containment requirements as outlined in International Fire Code 2306.5 & 5704.2.10 referenced in the Utah State Fire Code pursuant to Section 15A-5-103.~~]

R311-206-5. Requirements for Owners and Operators Demonstrating Financial Assurance by Other Methods.

(1) Owners and operators who elect to utilize an alternate form of financial assurance must meet the minimum coverage amounts using one or a combination of mechanisms as outlined in 40 CFR 280.94.

(a) owners and operators must submit to the director the documents required by 40 CFR 280.111 to be kept and maintained for the mechanism used.

(b) formats, calculations, letters, reporting, and record keeping shall be done in accordance with each applicable financial assurance mechanism specified in 40 CFR 280 subpart H.

(c) if the financial assurance documentation submitted to the director is not in accordance with 40 CFR 280 subpart H, it shall be rejected and shall be invalid.

(2) The processing fee established in Subsection 19-6-408(2) for each new or changed financial assurance document submitted for approval shall be included with the financial assurance document and shall be payable to the Department.

(a) processing fees for subsequent reviews of financial assurance documents are due on July 1 of the fiscal year for which the review is required.

(b) pursuant to 40 CFR 280.97, if the financial assurance mechanism is an insurance policy, the insurer is liable for payment of amounts within any deductible applicable to the policy to the provider of corrective action or a damaged third party, with right of reimbursement by the insured for such payment made by the insurer.

(i) this provision does not apply with respect to that amount of any deductible for which coverage is demonstrated under another mechanism or combination of mechanisms as specified in 40 CFR 280.95 through 280.102 and 280.104 through 280.107.

(ii) a showing of financial assurance for the deductible, if such a showing is made, shall be treated as a separate financial assurance mechanism subject to the processing fee requirement referenced in Subsection R311-206-5(2).

(c) if an owner or operator desires to make any material change to the financial assurance document, the change shall be approved by the director, and an additional processing fee shall be paid in circumstances as determined by the director.

(3) Evidence of a current and approved financial assurance mechanism must be reported to the director as follows:

(a) owners and operators using the financial test of self-insurance must submit the "Letter from Chief Financial Officer" to the director within the maximum 120-day period specified in 40 CFR 280.95.

(b) owners and operators using insurance and risk retention group coverage for financial assurance must submit the coverage policy in its entirety, with the current Certificate of Insurance or Endorsement specified in 40 CFR 280.97(b), to the director within 30 days of acceptance of such policy by the insurer or risk retention group.

(i) if the insurance policy or risk retention group coverage is canceled, the insurer or risk retention group shall provide written notice of cancellation or other termination of coverage required by 40 CFR 280.97(b)(1)2.d. and 280.97(b)(2)2.d. to the director as well as the insured.

(ii) the insurer must have a rating of A- or greater by A.M. Best Co.

(c) owners and operators using an irrevocable letter of credit must submit proof of the letter of credit, standby trust fund, and formal certification of acknowledgement to the director within 30 days of issuance from the issuing institution.

(d) owners and operators using a fully funded trust fund for financial assurance must submit proof of the trust fund and formal certification of acknowledgement to the director within 30 days after implementation of the trust fund.

(e) owners and operators using a guarantee for financial assurance shall submit the Guarantee document, standby trust fund, and certification of acknowledgement to the director within 30 days of issuance.

(i) the owner or operator must also submit the guarantor's letter from the chief financial officer within the 120-day period specified in 40 CFR 280.95.

(f) owners and operators using a surety bond for financial assurance must submit the surety bond document, standby trust fund, and certification of acknowledgement to the director within 30 days of issuance.

(g) guarantees and surety bonds may be used as financial assurance mechanisms in Utah only if the requirement of 40 CFR Part 280.94(b) is met.

(h) owners and operators using one of the local government methods specified in 40 CFR 280.104 through 280.107 must submit the letter from the chief financial officer and associated documents to the director within 120 days of the end of the owner, operator, or guarantor's fiscal year.

(4) The director may require reports of financial condition or any other information relative to justification of the financial assurance mechanism from the owner or operator at any time.

(a) information requested must be reported to the director within 30 calendar days after receiving the request.

(b) owners and operators must maintain evidence of all financial assurance mechanisms as specified in 40 CFR 280.111.

(c) owners and operators must keep records of all financial assurance mechanisms in accordance with 40 CFR 280.111 and 280.113.

(d) the director may audit or commission an audit of records supporting the financial assurance mechanism at any time.

(i) audits may be determined by random selection or for specific reasons, including the occurrence of a release or suspected release, deficiencies in complying with regulations or orders, or the suspicion or discovery of inaccuracies.

(ii) auditing of financial assurance methods may be accomplished by any method approved by the director.

(5) Any costs of securing a selected financial assurance mechanism and generating and providing the necessary reporting evidence of an assurance mechanism to the director is the sole responsibility of the owner or operator.

(6) Processing of the alternate financial assurance mechanism documents may be accomplished utilizing any method approved by the director.

R311-206-6. Voluntary Admission of Eligible Exempt Underground Petroleum Storage Tanks and Eligible Exempt Aboveground Storage Tanks Containing Petroleum to the Environmental Assurance Program.

(1) Owners or operators of eligible exempt USTs specified in Subsection 19-6-415(1)(a) may voluntarily participate in the EAP by:

(a) performing a site check in accordance with Rule R311-205;

(b) meeting the requirements of Subsections 19-6-428(3)(a), 19-6-415(1) and R311-206-3(1);

(c) properly performing release detection according to the requirements of 40 CFR Part 280 Subpart D; and

(d) meeting the upgrade requirements in 40 CFR 280.21 or the new tank requirements in 40 CFR 280.20, as applicable.

(2) Owners or operators of eligible exempt aboveground storage tanks containing petroleum may voluntarily participate in the EAP by

(a) performing a site check in accordance with Rule R311-205; and

(b) meeting the requirements of Subsections 19-6-415(2) and 19-6-428(3)(a), and Sections R311-206-3 and R311-206-4.

R311-206-7. Revocation and Lapsing of Certificates.

(1) The director shall revoke a certificate of compliance or registration if the director determines that the owner or operator has willfully submitted a fraudulent application or is not in compliance with any requirement pertaining to the certificate.

(2) A PST owner or operator who has had a certificate of compliance revoked under Section 19-6-414 or Subsection R311-206-7(1) may have the certificate reissued by the director after the owner or operator demonstrates compliance with Subsections 19-6-412(2), 19-6-428(3), and Section R311-206-3.

(3) A PST owner or operator who has had a certificate of compliance lapse under Subsection 19-6-408(5)(c) may have the certificate reissued by the director after the owner or operator demonstrates compliance with Sections 19-6-412 and R311-206-3.

(4) A PST owner or operator who has had eligibility to receive payments for claims against the fund lapse under Subsection 19-6-411(3)(c)(ii) must:

(a) meet the requirements of Subsection 19-6-428(3); and

(b) pay fees, interest, and penalties due to reinstate eligibility.

(5) Upon permanent closure of a tank which is covered by the Petroleum Storage Tank Fund, the eligibility to make a claim against the Petroleum Storage Tank Fund will terminate as specified in Section R311-207-2.

(a) permanently closed tanks are not eligible to be reissued a certificate of compliance.

(6) In accordance with Section 19-6-414, the director may revoke a certificate of compliance for the owner's or operator's failure to comply with the following requirements as outlined in 40 CFR 280:

(a) release reporting;

(b) abatement;

(c) investigation;

(d) corrective action; or

(e) other measures to bring the release site under control.

R311-206-8. Delivery Prohibition.

(1) In accordance with Subsections 19-6-411(7) and 19-6-407(2)(d)(ii), the director shall authorize the placement of a delivery prohibition tag identifying a tank:

(a) for which the certificate of compliance has been revoked in accordance with Section 19-6-414;

(b) for which the certificate of compliance has lapsed for non-payment of fees in accordance with Subsection 19-6-408(5);

(c) that has never qualified for a certificate of compliance, and is not a new installation under Subsection R311-206-8(1)(d); or

(d) that is a new installation, and has not been issued a certificate of compliance.

(2) For USTs, in accordance with Subsection 19-6-403(1)(b)(i), the director shall authorize the placement of a delivery prohibition tag to be placed on the UST as soon as practicable after the determination is made that a tank does not have:

(a) spill prevention equipment required under 40 CFR 280.20(c) or 280.21(d);

(b) overfill prevention equipment required under 40 CFR 280.20(c) or 280.21(d);

(c) equipment required for tank or piping leak detection in accordance with 40 CFR 280 Subpart D; or

(d) equipment required for tank or piping corrosion protection in accordance with 40 CFR 280 Subpart B or C.

(3) For APSTs, out of service after May 5, 2021, the director shall authorize the placement of a delivery prohibition tag [~~to be placed on the APST~~] as soon as practicable[~~after the determination that the APST was not in service after May 5, 2021~~].

(4) For PSTs, the director shall authorize the placement of a delivery prohibition tag to be placed on the PST as soon as practicable after the determination that a release from a PST is ongoing. The determination may be made by:

(a) failed tests as defined by "PST Testing" in R311-200-1(ss); or

(b) visual presence, odors, inventory loss, or otherwise apparent contamination of environmental media.

([~~4~~]5) The delivery prohibition tag shall be placed on the tank fill or in a visible location near the tank fill.

([~~5~~]6) A person who delivers or accepts delivery of a regulated substance or petroleum into a tank marked with a delivery prohibition tag shall be subject to the penalties outlined in Section 19-6-416, unless authorized under Subsection R311-206-8([~~5~~]8).

([~~6~~]7) The director may issue written approval for a delivery of petroleum to:

(a) provide ballast for a new tank during installation, or

(b) allow for the tank tightness test required under Section 19-6-413.

([~~7~~]8) The delivery prohibition tag must remain in place until the director issues:

(a) for tanks that have a tag in place in accordance with Subsection R311-206-8(1):

(i) a new certificate of compliance for the tank; and

(ii) written authorization to remove the delivery prohibition tag; or

(b) for tanks that have a tag in place in accordance with Subsection R311-206-8(2):

(i) written authorization to remove the delivery prohibition tag.

([~~8~~]9) If a delivery prohibition tag is removed without the authorization specified in Subsection R311-206-8([~~6~~]8)(a)(ii) or R311-206-8([~~6~~]8)(b)(i), the PST owner or operator is subject to:

(a) a re-inspection and any applicable fees; and

(b) placement of a new delivery prohibition tag on the tank.

R311-206-9. Removing Participating Tanks from the Environmental Assurance Program.

(1) Owners and operators of PSTs who have voluntarily elected to participate in the EAP may cease participation in the EAP and be exempted from the requirements described in Section R311-206-4 by:

(a) permanently closing tanks as outlined in 40 CFR 280, subpart G and Rules R311-204 and R311-205; or

(b) meeting the following requirements:

(i) demonstrating compliance with Section R311-206-5; and

(ii) notifying the director in writing at least 30 days before the date of cessation of participation in the EAP, and specifying the date of cessation.

(A) the director may waive the 30-day requirement if the owner or operator has already documented current financial assurance under Section R311-206-5 for other petroleum storage tanks owned or operated by the owner or operator.

(B) the date of cessation of participation in the EAP may occur after the date designated in Subsection R311-206-9(1)(b)(ii) if the owner or operator does not document compliance with Section R311-206-5 by the date originally designated.

(2) prorata refunds will not be given.

(3) For tanks being removed voluntarily from the EAP, the date of cessation of participation in the EAP shall be the date on which coverage under the EAP ends.

(a) subsequent claims for payments from the Petroleum Storage Tank Fund must be made in accordance with Sections 19-6-424 and R311-207-2.

(4) For any facility that participates in the EAP and is sold to a company with facilities that do not participate in the EAP, the date of termination of coverage is the closing date for the real estate transaction.

(a) the purchaser shall provide documentation of the closing date to the director within 30 days of closing.

R311-206-10. Participation in the Environmental Assurance Program After a Period of Non-participation.

(1) Owners and operators not participating in the EAP must, before any subsequent participation in the EAP, meet the following requirements:

(a) notify the director of the intent to participate in the EAP;

(b) comply with the requirements of Subsection 19-6-428(3); and

(c) meet the requirements of Section R311-206-3 to qualify for a new certificate of compliance.

R311-206-11. Environmental Assurance Fee Rebate.

(1) To meet the requirements of Subsection 19-6-410.5(5)(d), for each UST Facility participating in the EAP, a risk value will be calculated according to the "Environmental Assurance Program Risk Factor Table and Calculation," which is incorporated by reference.

(a) the table, dated June 2, 2014, contains risk factors and the formula for risk value calculation.

(2) The risk value for each facility participating in the EAP shall be:

(a) calculated on a facility basis;

(b) valid for the calendar year;

(c) based on the facility characteristics as of December 15 of the prior calendar year; and

(d) determined, at sites with mixed equipment, by considering the highest risk-valued petroleum storage tank system component for each risk factor.

(3) To qualify as secondarily contained for purposes of risk calculation, tanks shall:

(a) meet the requirements for secondary containment in 40 CFR 280.20; and

(b) meet one of the following:

(i) use an interstitial sensor and documentation of monthly interstitial monitoring; or

(ii) documentation of monthly visual checks of a brine-filled interstitial space.

(4) To qualify as secondarily contained for purposes of risk calculation, piping shall:

(a) meet the requirements for secondary containment outlined in 40 CFR 280.20; and

(b) meet one of the following:

(i) maintain monthly records of monitoring of the interstice by vacuum, pressure, or liquid filled interstitial space, or

(ii) use an interstitial monitoring method not listed in Subsection R311-206-11(4)(b)(i).

(5) To qualify as secondarily contained for purposes of risk calculation, piping containment sumps, and under-dispenser containment shall be double-walled with monthly documentation of monitoring of the space between the walls.

(6) Each facility that participates in the EAP may be eligible for a rebate of a portion of the Environmental Assurance Fee according to the rebate schedule in "Environmental Assurance Fee Rebate Table," dated June 2, 2014, which is incorporated by reference.

(7) A facility that begins participation in the EAP after January 1 of a calendar year shall have its risk value calculated for that year based on the risk factors in place at the facility on the date the facility begins participation in the EAP.

(8) The Environmental Assurance Fee rebate does not apply to APSTs until July 1, 2026 as per Subsections 19-6-410.5(5)(d) and 19-6-410.5(5)(e).

KEY: petroleum, underground storage tanks
Date of Last Change: 2024[~~April 14, 2023~~]
Notice of Continuation: March 8, 2022
Authorizing, and Implemented or Interpreted Law: 19-6-105; 19-6-403; 19-6-410.5; 19-6-428

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions*, LLC
May 9, 2024

What is the issue before the Board?	On April 16, 2024, Energy*Solutions,* LLC submitted a request to the Director of the Division of Waste Management and Radiation Control for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption from the treatment standards described in Utah Administrative Code (UAC) R315-268-40(a)(2) for uranium extraction process residuals encased in cement for macroencapsulation.
What is the historical background or context for this issue?	Energy*Solutions* requests approval to receive an exemption from the treatment standards described in UAC R315-268-40(a)(2) for uranium extraction process residuals encased in cement that retain hazardous waste codes D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium) D008 (Lead); D010 (Selenium); D011 (Silver); D030 (2,4-dinitrotolunene); D032 (hexachlorobenzene); D033 (hexachlorobutadiene) and F001, F002, and F005 (spent solvents) for macroencapsulation. All other required treatment standards associated with the waste will be met prior to disposal. This variance is being requested for approximately 2,000 cubic feet of cemented uranium extraction process residuals as part of uranium recovery processes at the generator's facility. The residual waste from each of these processes is collected in small cans (~ 2 ½ gallons each) and stored at the generator's facility. The process residuals within the cans have been characterized through a random sampling and analysis process. At the beginning of this campaign, approximately 2,000 cans of process residues were collected and stored by the generator. The process is ongoing and additional cans are being generated every year. Furthermore, due to safety concerns, some of the cans are being split prior to the repackaging process described below; thereby generating more total material for disposal. The generator has three distinct points of generation for this material including (1) an enriched uranium contaminated ash that has been thermally processed and the recovered through an organic solvent extraction process; (2) oxide powders and dried sludges associated with this enriched uranium-thorium fuels; and (3) sludge residue from the bottom of salt baths used in the processing of the uranium.

	F-listed solvent codes within this waste are derived from rags that are burned in a furnace in order to recover the uranium present within them. None of the F-listed constituents were present above their respective treatment standard concentrations within the random characterization samples of the process residues. The random characterization samples were also analyzed for metals using the Toxicity Characteristic Leaching Procedure (TCLP). These samples detected elevated concentrations of barium (up to 6,740 mg/L TCLP), cadmium (up to 16.4 mg/L TCLP), chromium (up to 15.2 mg/L TCLP), and lead (up to 10.5 mg/L TCLP). Based on these elevated metal concentrations, the characteristic waste codes D005, D006, D007, and D008 were applied to the process residues. Slightly elevated concentrations of arsenic (D004), selenium (D010), silver (D011), 2,4-dinitrotoluene (D030), hexachlorobenzene (D032) and hexachlorobutadiene (D033) were also detected in separate analyses. The residue may potentially contain these codes also. The uranium content within the process residues is enriched. From a health and safety standpoint, the enrichment makes the waste more hazardous to employees managing the waste. Further, the enriched material has increased security concerns and must be managed appropriately. To ensure the enriched uranium concentration limits required for worker safety, security, and transportation of this waste are met, appropriate packaging procedures were created and are currently being utilized at the generator's facility. These packaging procedures include repackaging the cans into 16-gallon drums and filling the void spaces with cement; formal treatment for the elevated metals concentrations is not performed during this process. The generator has assessed other options, including treatment for the hazardous constituents; however, additional processing introduced unacceptable hazards from a health and safety and security viewpoint. Additionally, the waste within the cans is inherently safe from a criticality aspect and the generator concluded that it is unwise to perform extra processing that could potentially change this aspect. Furthermore, encasing enriched uranium within concrete is the preferred method of stabilization as recommended by the Nuclear Regulatory Commission (NRC). The waste material packaged in these 16-gallon monolithic forms is inherently safe and is the form that will be shipped and received at the Energy*Solutions* Clive facility. The characteristic hazardous waste codes associated with the process residues have numerical concentration-based treatment standards based upon the leachability of the contaminants. Treatment of the monolithic form for these concentration-based treatment standards would entail a process that includes shredding of the monolith followed by mixing with a stabilizing reagent in a permitted mixer. Both steps could mobilize the enriched uranium and possibly cause airborne contamination, increasing the potential for releases to the environment as well as the potential for personnel exposure; thereby

	violating radiation protection (ALARA – As Low as Reasonably Achievable) principles. Also, the shredding of the solidified uranium ash results in a more accessible form of enriched uranium with potential security ramifications. Energy*Solutions*' proposes to macroencapsulate the waste, thereby isolating the waste from potential leaching media. Macroencapsulation is a permitted process utilized at the Clive facility that significantly reduces the potential for migration (leaching) of waste. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment. Macroencapsulation also adds a further level of security restricting access to the enriched uranium. Energy*Solutions* will manage this waste as debris and final disposal of the waste will occur in the Mixed Waste Disposal Cell at the Energy*Solutions* Mixed Waste Facility. A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News* and the *Tooele Transcript-Bulletin* on May 1, 2024. The comment period began May 2, 2024 and will end May 31, 2024. Energy*Solutions* requested this same variance a total of 15 times in letters dating back to 2007. The Board has reviewed and approved this variance all 15 times.
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by UAC R315-268-44.
Is Board action required?	No. This is an informational item before the Board.
What is the Division/Director's recommendation?	The Director will provide a recommendation following the public comment period at the next Board meeting.
Where can more information be obtained?	For technical questions, please contact Tyler Hegburg 385 622-1875. For legal questions, please contact Bret Randall at 385-414-0891.

RECEIVED
By Division of Waste Managment and Radiation Control at 4:45 pm, Apr 17, 2024

ENERGYSOLUTIONS

DSHW-2024-005904

April 16, 2024 CD-2024-086

Mr. Doug Hansen
Director
Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, UT 84114-4880

Subject: EPA ID Number UTD982598898 - Request for a Site-Specific Treatment Variance for Cemented Uranium Extraction Process Residues

Dear Mr. Hansen,

Energy*Solutions* herein requests from the Waste Management and Radiation Control board an exemption from the treatment standards described in Utah Administrative Code (UAC) R315-40(a)(2) for uranium extraction process residuals encased in cement that retain the hazardous waste codes D004 (arsenic); D005 (barium); D006 (cadmium); D007 (chromium); D008 (lead); D010 (selenium); D011 (silver); D030 (2,4-dinitrotoluene); D032 (hexachlorobenzene); D033 (hexachlorobutadiene) and F001, F002, and F005 (spent solvents). This exemption is requested for the purposes of safety, security, and transportation of the radioactive waste. This request is submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided the following condition is met:

> *UAC R315-268-44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard, or by the method specified as the treatment standard, even though such treatment is technically possible.*

This variance is being requested for approximately 2,000 cubic feet of cemented uranium extraction process residuals from Energy*Solutions* generator 9061-06. The waste is generated as part of uranium recovery processes at the generator's facility. The generator has three different points of generation for this waste: (1) an enriched uranium contaminated ash that has been thermally processed and then recovered through an organic solvent extraction process; (2) oxide powders and dried sludges associated with highly enriched uranium-thorium fuels; and (3) residue (sludge) from the bottom of salt

baths used in the processing of uranium. The residual waste from each of these processes is collected in small cans (~ 2 ½ gallons each) and stored at the generator's facility. The process residuals within the cans have been characterized through a random sampling and analysis process. At the beginning of this campaign, approximately 2,000 cans of process residues were collected and stored by the generator. The process is ongoing and additional cans are being generated every year. Further, due to safety concerns, some of the cans are being split prior to the repackaging process described below; thereby generating more total material for disposal.

F-listed solvent codes within this waste are derived from rags that are burned in a furnace in order to recover the uranium present within them. None of the F-listed constituents were present above their respective treatment standard concentrations within the random characterization samples of the process residues. The random characterization samples were also analyzed for metals using the Toxicity Characteristic Leaching Procedure (TCLP). These samples detected elevated concentrations of barium (up to 6,740 mg/L TCLP), cadmium (up to 16.4 mg/L TCLP), chromium (up to 15.2 mg/L TCLP), and lead (up to 10.5 mg/L TCLP). Based on these elevated metal concentrations, the characteristic waste codes D005, D006, D007, and D008 were applied to the process residues. Slightly elevated concentrations of arsenic (D004), selenium (D010), silver (D011), 2,4-dinitrotoluene (D030), hexachlorobenzene (D032) and hexachlorobutadiene (D033) were also detected in separate analyses. The residue may potentially contain these codes also.

The uranium content within the process residues is enriched. From a health and safety standpoint, the enrichment makes the waste more hazardous to employees managing the waste. Further, enriched material has increased security concerns and must be managed appropriately. To ensure the enriched uranium concentration limits required for worker safety, security, and transportation of this waste are met, appropriate packaging procedures were created and are currently being utilized at the generator's facility. These packaging procedures include repackaging the cans into 16-gallon drums and filling the void spaces with cement; formal treatment for the elevated metals concentrations is not performed during this process. The generator has assessed other options, including treatment for the hazardous constituents; however, additional processing introduced unacceptable hazards from a health and safety and security viewpoint. Additionally, the waste within the cans is inherently safe from a criticality aspect and the generator concluded that it is unwise to perform extra processing that could potentially change this aspect. Furthermore, encasing enriched uranium within concrete is the preferred method of stabilization as recommended by the Nuclear Regulatory Commission (NRC). The waste material packaged in these 16-gallon monolithic forms is inherently safe and is the form that will be shipped and received at the Energy*Solutions* Clive facility.

The characteristic hazardous waste codes associated with the process residues has numerical concentration-based treatment standards based upon the leachability of the contaminants. Treatment of the monolithic form for these concentration-based treatment standards would entail a process that includes shredding of the monolith followed by mixing with a stabilizing reagent in a permitted mixer. Both of these steps could mobilize the enriched uranium and possibly cause airborne contamination, increasing the potential for releases to the environment as well as the potential for personnel exposure; thereby violating radiation protection (ALARA – As Low As Reasonably Achievable) principles. Also, the shredding of the solidified uranium ash results in a more accessible form of enriched uranium with potential security ramifications.

Energy*Solutions* proposes to macroencapsulate the waste, thereby isolating the waste from potential leaching media. Macroencapsulation is a permitted process utilized at the Clive facility that significantly reduces the potential for migration (leaching) of waste. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment. Macroencapsulation also adds a further level of security restricting access to the enriched uranium.

In summary, a variance should be granted based upon three considerations:

1. for both health and security reasons, the enriched uranium concentration within the waste precludes actual treatment of the waste;

2. processing this waste in preparation for stabilization treatment would increase worker exposures and the potential for releases to the environment; and

3. the leachability of the waste would be significantly reduced through macroencapsulation, thereby protecting human health and the environment.

Energy*Solutions* requested this same variance for this generator in letters dated July 20, 2007; July 28, 2008; July 15, 2009; July 15, 2010; July 28, 2011; August 13, 2012; July 15, 2013; July 25, 2015; November 4, 2015; October 27, 2016; November 20, 2018; December 9, 2019; January 11, 2021; March 22, 2022; and April 18, 2023. These previous requests were approved on September 13, 2007; September 13, 2008; September 10, 2009; September 9, 2010; September 8, 2011; September 13, 2012; September 12, 2013; August 14, 2014; December 10, 2015; November 9, 2017; January 10, 2019; March 12, 2020; April 8, 2021; June 9, 2022; and June 8, 2023, respectively.

Shipments began in April 2008 and have been relatively continuous since that time. Since the last variance was approved, Energy*Solutions* has received approximately 1,793 cubic feet of this waste (the 16-gallon monoliths). Energy*Solutions* has received approximately 17,000 cubic feet of this waste since the first variance approval in 2008. This variance request is for the ongoing processing and disposal of additional uranium extraction process residues created by the generator.

Energy*Solutions* requests that a variance be granted to allow the receipt, macroencapsulation treatment and disposal of approximately 2,000 cubic feet of cemented uranium extraction process residuals that retain hazardous waste codes. Upon approval of this variance, the monolithic waste will be managed as debris.

The name, phone number, and address of the person who should be contacted to notify Energy*Solutions* of decisions by the Director is:

Mr. Vern C. Rogers
Director of Regulatory Affairs
Energy*Solutions* LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
(801) 649-2000

Should there be any questions to this request, please contact me at 801-649-2043.

Sincerely,

Digitally signed
by Steve D. Gurr
Date: 2024.04.16
14:35:17 -06'00'

Steve D. Gurr
Environmental Engineer and Manager

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
Energy*Solutions*, LLC
May 9, 2024

What is the issue before the Board?	On April 16, 2024, Energy*Solutions*, LLC submitted a request to the Director of the Division of Waste Management and Radiation Control for a one-time site-specific treatment variance from the Utah Hazardous Waste Management Rules. Energy*Solutions* seeks authorization to receive an exemption from Utah Administrative Code (UAC) R315-268-40 and R315-268-45 for the direct macroencapsulation treatment of approximately 1000 lbs. of lithium and lithium-ion batteries.
What is the historical background or context for this issue?	Lithium and lithium-ion batteries typically exhibit the hazardous characteristics of ignitability (D001) and reactivity (D003). Regulations in UAC R315-268-40 (40 CFR 268.40, 2015 Edition, incorporated by reference) require that these characteristic hazards be deactivated to remove the characteristic prior to land disposal. As an alternative, UAC R315-268-45 allows hazardous debris to be treated using an immobilization technology (e.g., macroencapsulation). However, the Environmental Protection Agency (EPA) has ruled that intact batteries are containers and not considered debris. Furthermore, the definition of macroencapsulation in R315-268-42 states that "Macroencapsulation specifically does not include any material that would be classified as a tank or container." For Energy*Solutions* to meet the regulatory standards described above, lithium and lithium-ion batteries would need to be shredded and mixed with chemicals to deactivate them; or punctured (and then considered debris) to macroencapsulate them. Both activities (shredding and puncturing) severely agitate the waste and would expose the reactive portion of the waste to open air which could cause an adverse reaction or explosion. Although this type of waste management is possible, from a safety and health standpoint, it is inappropriate. Energy*Solutions* proposes to manage this waste by directly macroencapsulating the intact batteries. Macroencapsulation is a permitted treatment technology that isolates hazardous waste from the environment, eliminating the potential for harmful reactions from exposure to the environment. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment. Final disposal of the waste will occur in the Mixed Waste Disposal Cell at the Energy*Solutions* Mixed Waste Facility.

	A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News* and the *Tooele Transcript-Bulletin* on May 1, 2024. The comment period began May 2, 2024 and will end on May 31, 2024. Energy*Solutions* has requested this same variance three times previously dating back to 2021. Over the years all the requests have been reviewed and approved by the Board.
What is the governing statutory or regulatory citation?	Variances are provided for in 19-6-111 of the Utah Solid and Hazardous Waste Act. This is a one-time site-specific variance from an applicable treatment standard as allowed by UAC R315-268-44.
Is Board action required?	No. This is an informational item before the Board.
What is the Division/Director's recommendation?	The Director will provide a recommendation following the public comment period at a future Board meeting.
Where can more information be obtained?	For technical questions, please contact Tyler Hegburg 385-622-1875. For legal questions, please contact Bret Randall at 385-414-0891.

RECEIVED
By Division of Waste Managment and Radiation Control at 11:45 am, Apr 17, 2024

ENERGYSOLUTIONS

DSHW-2024-005902

April 16, 2024 CD-2024-085

Mr. Doug Hansen
Director
Division of Waste Management and Radiation Control
195 North 1950 West
Salt Lake City, UT 84114-4880

Subject: EPA ID Number UTD982598898
Request for a Site-Specific Treatment Variance for the Macroencapsulation of Lithium and Lithium-Ion Batteries

Dear Mr. Hansen:

Energy*Solutions* herein requests an exemption from Utah Administrative Code (UAC) R315-268-40 and R315-268-45 for the direct macroencapsulation treatment of lithium and lithium-ion batteries. This request is being submitted in accordance with the requirements of UAC R315-260-19.

The regulatory requirement authorizing this request is found in UAC R315-268-44 which allows a site-specific variance from an applicable treatment standard provided that the following condition is met:

> *UAC R315-268-44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.*

Lithium and lithium-ion batteries typically exhibit the hazardous characteristics of ignitability (D001) and reactivity (D003). Regulations in UAC R315-268-40 (40 CFR 268.40, 2015 Edition, incorporated by reference) require that these characteristic hazards be deactivated to remove the characteristic prior to land disposal. As an alternative, UAC R315-268-45 allows hazardous debris to be treated using an immobilization technology (e.g., macroencapsulation). However, the Environmental Protection Agency (EPA) has ruled that intact batteries are containers and not considered debris (see attached letter dated November 10, 1993). Furthermore, the definition of macroencapsulation in R315-268-42 states that "[M]acroencapsulation specifically does not include any material that would be classified as a tank or container."

In order to meet the regulatory standards described above, lithium and lithium-ion batteries would need to be shredded and mixed with chemicals to deactivate them; or punctured (and then considered debris) to macroencapsulate them. Both of these activities (shredding and puncturing) severely agitate the waste and would expose the reactive portion of the waste to open air which could cause an adverse reaction or explosion. Although this type of waste management is possible, from a safety and health standpoint, it is inappropriate.

Energy*Solutions* proposes to manage this waste by directly macroencapsulating the intact batteries. Macroencapsulation is a permitted treatment technology that isolates hazardous waste from the environment, eliminating the potential for harmful reactions from exposure to the environment. Macroencapsulation requires less handling of the waste and creates a waste form for disposal that is protective of human health and the environment.

Energy*Solutions* requested this same variance previously in letters dated March 17, 2021 (CD-2021-039), March 22, 2022 (CD-2022-062), and April 11, 2023 (CD-2023-081). These requests were approved on May 13, 2021 (DSHW-2021-007602), June 9, 2022 (DSHW-2022-015603), and June 8, 2023 (DSHW-2023-205003). Energy*Solutions* has received approximately 650 lbs. of this waste since the variance was approved in 2023. This variance request is for the ongoing processing and disposal of additional lithium and lithium-ion batteries.

Energy*Solutions* requests that a variance be granted to allow the receipt, macroencapsulation treatment and disposal of approximately 1000 lbs. of lithium and lithium-ion batteries.

The name, phone number, and address of the person who should be contacted to notify Energy*Solutions* of decisions by the Director is

Mr. Vern Rogers
Director of Regulatory Affairs
Energy*Solutions* LLC
299 South Main Street, Suite 1700
Salt Lake City, UT 84111
(801) 649-2000

Should there be any questions to this request, please contact me at (801) 649-2043.

Sincerely,

Digitally signed
by Steve D. Gurr
Date: 2024.04.16
14:07:04 -06'00'

Steve D. Gurr
Environmental Engineer and Manager

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Proposed Stipulation and Consent Order
Big West Oil LLC

April 11, 2024What is the issue before the Board?	The Division of Waste Management and Radiation Control (Division) is proposing to enter into a Stipulation and Consent Order No. 2207085 (SCO) with Big West Oil LLC (BWO) to resolve Notice of Violation and Order for Compliance (NOV/OC) No. 2107073 issued on January 5, 2022.
What is the historical background or context for this issue?	The NOV/OC was based on information documented during an inspection at the refinery on July 7, 2021. The violations noted in the NOV/OC have been resolved. The SCO includes a total penalty of $47,934.00, of which half ($23,967.00) will be deferred and waived by the Director if BWO complies with the terms in paragraphs 19 through 24 in the SCO which include training for emergency response personnel, management of API separator wastes, waste streams and waste determinations, decontamination of the heat exchanger bundle wash pad, and operator control of satellite accumulation areas. A notice for public comment was published in the Salt Lake Tribune on April 28, 2024, the Deseret News on April 24, 2024, and the Davis Journal on April 25, 2024. The 30-day public comment period began on April 29, 2024 and will end on May 28, 2024.
What is the governing statutory or regulatory citation?	§19-6-104 of the Utah Solid and Hazardous Waste Act authorizes the Board to issue orders and approve or disapprove settlements negotiated by the Director with a civil penalty over $25,000.
Is Board action required?	No. This is an informational item only.
What is the Division Director's recommendation?	The Director will provide a recommendation following the public comment period at a future meeting.
Where can more information be obtained?	For technical information, please contact Judy Moran at 385-499-0184. For legal information, please contact Haley Sousa at 385-977-4857.

DSHW-2024-005473
Attachments: Notice of Violation and Order for Compliance (NOV/OC) No. 2107073 (DSHW-2021-016762)
Stipulation and Consent Order No. 2207085 (DSHW-2024-004547)
Penalty Narrative (DSHW-2024-004548)

State of Utah

SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL

Douglas J. Hansen
Director

January 5, 2022

Big West Oil LLC
c/o Corporation Service Company,
Registered Agent
15 West South Temple, Suite 600
Salt Lake City, UT 84101

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7003 2260 0003 2353 4893

RE: Notice of Violation No. 2107073
UTD045267127

To Whom It May Concern:

Enclosed is a **NOTICE OF VIOLATION and ORDER FOR COMPLIANCE (NOV/OC)** Number **2107073**, based on findings documented by Division of Waste Management and Radiation Control inspectors during a compliance inspection on July 7, 2021.

You are hereby required to submit to the Director within 30 days of issuance of this Order, written verification that the violations documented in the NOV have been corrected. Please include a description of the corrective actions implemented to ensure these violations do not recur. Your response to this request will not constitute an administrative contest to the attached NOV.

You have 30 days from the date of the attached NOV/OC to contest it in the manner and within the time period prescribed by R305-7-303, Utah Administrative Code.

If you have any questions, please call Judy Moran at (801) 536-0255.

Sincerely,

Douglas J. Hansen, Director
Division of Waste Management and Radiation Control

(Over)

DSHW-2021-016762

DJH/JAM/kd

Enclosure: Notice of Violation No. 2107073

c: Brian Hatch, Health Officer, Davis County Health Department
David W. Spence, Deputy Director, Davis County Health Department
Rachelle Blackham, Environmental Health Director, Davis County Health Department
Annette Maxwell, U.S. EPA, Region VIII, ENF-R
Sally Kaiser, Sr. Environmental Engineer, Big West Oil
Beau Stander, Lead Environmental Engineer, Big West Oil
Jon Finch, Operations Manager, Big West Oil
Stevie Norcross, PhD, Assist. Director, Div. of Waste Management & Radiation Control, UDEQ

---oo0oo---

In the Matter of:	:	**NOTICE OF VIOLATION and**
	:	**ORDER FOR COMPLIANCE**
Big West Oil LLC	:	**No. 2107073**
UTD045267127	:	

---oo0oo---

This **NOTICE OF VIOLATION and ORDER FOR COMPLIANCE (NOV/OC)** is issued by the Director of the Division of Waste Management and Radiation Control (Director) pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq*, and the Utah Used Oil Management Act (the Used Oil Act), Utah Code § 19-6-701, *et seq.* The Director has authority to issue such NOTICES in accordance with Utah Code § 19-6-112.

FINDINGS

1. Big West Oil LLC (BWO) is a limited liability company registered to conduct business in the State of Utah. BWO is a wholly owned subsidiary of FJ Management Inc.

2. The BWO facility is a petroleum refinery located at 333 West Center Street, North Salt Lake in Davis County, Utah.

3. BWO is a "person" as defined in Utah Code § 19-1-103(4) and may operate the facility subject to all applicable provisions of the Act, and the Utah Administrative Code (Rules).

4. BWO operates a refinery that generates listed and characteristic hazardous wastes as defined in the Act and the Rules including: Crude oil/clarified slurry oil tank sediment (EPA Codes K169, K170); Centrifuged American Petroleum Institute (API) separator solids and waste water storage tank sludge (F037, F038, K048, K050, K051); Spent catalyst waste (D018, K171); Potassium hydroxide with absorbent material (D002); Tank cleaning scale and sandblast media (D018, K169, K170); contaminated soil and absorbent (D005, D018, F003, F005); API separator sludge cleanout of API separators TK1A DAF Material and waste water storage tanks (F037, F038, K048, K051, K169, K170); and expired warehouse chemicals (D001, D002, D018, U220).

5. Pursuant to Utah Code § 19-6-109, on July 7, 2021, authorized representatives of the Director (inspectors) conducted a compliance evaluation inspection at BWO.

6. R315-262-11 of the UAC requires a person who generates a solid waste, as defined in Section R315-261-2 UAC, to make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable regulations.

    a. On July 7, 2021, inspectors observed an open container labeled “Oil Waste” containing debris, absorbents, and personal protective equipment (PPE) contaminated with wastewater treatment sludge, and a partially crushed bucket with oily, viscous liquid and waxy, solid material. The waste container’s label, “Oil Waste” did not properly identify the contents observed in the container by the inspectors. A lid, hazardous waste label, and indication of the hazard was placed on the drum during the inspection. BWO identified the “Oil Waste” as hazardous waste when it shipped the waste as hazardous waste on manifest #015242613FLE on October 6, 2021.

b. On July 7, 2021, inspectors observed debris left unattended in several locations: a small dumpster, front-end loader bucket, a pipe containment structure on the west side of the Crude Sump wash pad, and a used spill absorbent boom lying on stained soil near the Crude Sump. At the time of inspection, BWO representatives indicated they did not know the identity of the material or if a waste determination had been made. Subsequently, BWO identified the debris as hazardous waste when it shipped the contaminated soil, used absorbent boom, and debris offsite for disposal as hazardous waste on manifest #015242613FLE on October 6, 2021.

c. On July 7, 2021, inspectors observed two open, unlabeled 5-gallon buckets next to the Crude Sump. As indicated at the time of the inspection and during subsequent discussions with BWO representatives, BWO had not performed a waste determination and not properly managed the waste. Subsequently, BWO identified the contents in the unlabeled 5-gallon buckets as hazardous waste when it shipped the waste offsite for disposal as hazardous waste on manifest #015242613FLE on October 6, 2021.

d. On July 7, 2021, inspectors observed debris and solid residue in the Heat Exchanger Bundle Cleaning Pad sump. At the time of the inspection, BWO representatives indicated that they did not know the identity of the contents or if a waste determination had been made for the contents. Subsequently, BWO identified the debris as hazardous waste when it shipped the waste offsite for disposal as hazardous waste on manifest #015242613FLE on October 6, 2021.

e. On July 7, 2021, inspectors observed a black, steel 55-gallon drum labeled "Oily Rags/PPE", instead of "Hazardous Waste." BWO identified the "Oily Rags/PPE" as hazardous waste when it shipped the waste offsite for disposal as hazardous waste on manifest #015242613FLE on October 6, 2021.

f. On July 7, 2021, inspectors observed abandoned leaking containers behind the East Barn with spilled material visible on the outside of the containers. Four of the containers were missing the manufacturer labels and the label on one of the containers was illegible. The container pallet was wet and heavily stained, and absorbent pads underneath the containers were stained and deteriorated by the corrosive material in the containers. BWO had not performed a waste determination. BWO identified and disposed of the containers as hazardous waste on August 16, 2021, on manifests 016346113FLE and 016346114FLE.

7. R315-262-15(a) UAC, allows a generator to accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near the point of generation where wastes initially accumulate and are under the control of the operator of the process generating the waste, without a permit or interim status and without complying with the requirements of Rules R315-124, R315-264 through R315-266, and R315-270, provided that all of the conditions for exemption in Section R315-262-15 are met. A container holding hazardous waste must be closed at all times during accumulation, except: (i) When adding, removing, or consolidating waste; or (ii) When temporary venting of a container is necessary: (A) For the proper operation of equipment, or (B) To prevent dangerous situations, such as build-up of extreme pressure.

   a. On July 7, 2021, inspectors observed unattended, uncontained listed hazardous waste solids and debris contaminated with listed hazardous waste from heat exchanger bundle cleaning that were not under the control of an operator accumulating in the Heat Exchanger Bundle Wash Pad sump.

b. On July 7, 2021, inspectors observed unattended, uncontained listed hazardous waste from the API separator cleanup project that was not under the control of an operator accumulating in a front-end loader bucket, and in a pipe run containment.

c. On July 7, 2021, inspectors observed an unattended, open drum containing debris contaminated with API separator sludge, a listed hazardous waste, generated from the previous day's activities. BWO failed to ensure the drum was under the control of the operator of the process that generated the waste.

d. On July 7, 2021, inspectors observed two open, unattended 5-gallon buckets next to the Crude Sump containing hazardous waste.

e. On July 7, 2021, inspectors observed an open, unattended dumpster west of the Crude Sump containing hazardous waste debris.

f. On July 7, 2021, inspectors observed an unattended black, steel 55-gallon drum marked "Oily Rags/PPE" that was not closed and not under the control of the operator. Subsequently, BWO shipped the waste offsite for disposal as hazardous waste on manifest #015242613FLE.

8. R315-262-15(a)(5) UAC requires a generator to mark or label each container of hazardous waste with the following: (i) The words "Hazardous Waste" and (ii) An indication of the hazards of the contents.

a. On July 7, 2021, inspectors observed a 55-gallon drum containing hazardous waste debris contaminated with listed API separator sludge that was not labeled "Hazardous Waste" and was not marked with an indication of the hazards.

b. On July 7, 2021, inspectors observed two 5-gallon buckets next to the Crude Sump containing listed hazardous waste that were not labeled "Hazardous Waste" and were not marked with an indication of the hazards.

c. On July 7, 2021, inspectors observed a dumpster west of the Crude Sump containing hazardous waste debris that was not labeled "Hazardous Waste" and was not marked with an indication of the hazards.

d. On July 7, 2021, inspectors observed a black, steel 55-gallon drum marked "Oily Rag/PPE" that was not labeled "Hazardous Waste" and was not marked with an indication of the hazards. Subsequently, BWO shipped the waste offsite for disposal as hazardous waste on manifest #015242613FLE on October 6, 2021.

e. Containers of abandoned Hydroxyacetic Acid - KLEEN MCT103 and hydrochloric acid behind the East Barn were not labeled "Hazardous Waste" and not marked with an indication of the hazard.

9. R315-262-17(a)(1)(ii) UAC requires if a container holding hazardous waste is not in good condition, or if it begins to leak, the large quantity generator shall immediately transfer the hazardous waste from this container to a container that is in good condition, or immediately manage the waste in some other way that complies with the conditions for exemption of this section.

a. On July 7, 2021, inspectors observed a leaking container (container CHHP 21557) for which BWO had failed to immediately transfer the hazardous waste to a container in good condition

or immediately manage the waste in some other way that complies with the conditions for exemption after BWO inspected the container on July 6, 2021.

10. R315-262-17(a)(1)(v) UAC requires, at least weekly, the large quantity generator to inspect central accumulation areas. The large quantity generator shall look for leaking containers and for deterioration of containers caused by corrosion or other factors.

    a. On October 15, 2021, inspectors requested inspection logs from June 1 through July 31, 2021. BWO provided inspection logs for 6/1/21, 6/11/21, 6/14/21, 6/25/21, 7/1/21, 7/6/21, and 7/27/21 via e-mail on October 20, 2021. Based on the records provided, BWO did not inspect their containers at least weekly.

    b. BWO failed to document it inspected containers of abandoned Hydroxyacetic Acid - KLEEN MCT103 and hydrochloric acid behind the East Barn on the inspection log or to label the containers with the words “Hazardous Waste” and an indication of the hazard.

11. R315-262-17(a)(7) UAC requires facility personnel successfully complete a program of classroom instruction, online training, e.g., computer-based or electronic, or on-the-job training that teaches them to perform their duties in a way that ensures compliance with this part. The large quantity generator shall ensure that this program includes all the elements described in the document required under Subsection R315-262-17(a)(7)(iv) UAC. This program shall be directed by a person trained in hazardous waste management procedures and shall include instruction that teaches facility personnel hazardous waste management procedures, including contingency plan implementation, relevant to the positions in which they are employed. At a minimum, the training program shall be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems.

    a. On July 7, 2021, inspectors documented that B. Stander and L. Warren signed manifest # 015863136FLE but did not have DOT training [49 CFR 172.704(a)] as required for individuals who offer hazardous materials or waste for transportation in accordance with BWO contingency plan.

    b. According to the records provided by BWO after the inspection, on October 28, 2021, four members of the Emergency Response Team (ERT) (T. Kenny, S. Thurgood, C. Sanders, and C. Johnson) have not been trained on the SPCC Plan, HAZWOPER Operations, and RCRA computer-based training. The following members of the ERT have not taken the refresher "RCRA Emergency Response" training in the last year (A. Collier, J. Bisseger, D. Donahoe, R. Christensen, J. Harward, B. Ray, R. "Butch" Bills, D. Gift, D. Cox, A. Larson, J. Brown, J. Main, JR McCandless, A. Morris, K. Apgood, W. Hunt, T. Hart, M. Wade, D. Szykowny, N. Skabelund, and J. Elmadhoun).

    c. On July 7, 2021, inspectors documented that L. Warren and H. Delker performed CAA inspections. On October 13, 2021, BWO representatives informed inspectors that L. Warren and H. Delker are contractors employed by Trihydro Corporation and have not received the RCRA training BWO employees receive. BWO could not locate records documenting BWO site-specific training.

12. R315-262-17(a)(7)(iv) UAC requires that a large quantity generator maintain the following documents and records at the facility: The job title for each position at the facility related to hazardous waste management; the name of the employee filling each job; a written job description for each position; a written description of the type and amount of both introductory and continuing

training that will be given to each person; records that document that the training or job experience has been given to, and completed by facility personnel.

a. On July 7, 2021, BWO failed to provide inspectors, as requested, job titles, descriptions, required training, name of the employees filling each role, and records of the required training.

13. R315-262-251 UAC requires that a large quantity generator maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

a. On July 7, 2021, inspectors observed stained soil underneath a boom that was used to absorb listed hazardous waste near the Crude Sump. The stained soil contained listed hazardous waste.

b. On July 7, 2021, inspectors observed soil contaminated with a listed hazardous waste from leaking container CHHP 21557.

c. On July 7, 2021, inspectors observed stained soil and asphalt in an area where commercial chemical products were stored. On or about August 17, 2021, BWO removed the impacted asphalt, excavated the contaminated soil, and on 11/15/2021 disposed of three 55-gallon drums of contaminated soil and asphalt as D018 and D039 hazardous waste on manifest #015406021FLE.

14. R315-262-261(a) UAC requires that the contingency plan describe the actions facility personnel shall take to comply with Sections R315-262-260 and 265 UAC in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

a. On July 7, 2021, BWO representatives provided an Emergency Response Action Plan (ERAP) and an Integrated Contingency Plan (ICP), neither of which specifically addressed the actions facility personnel would take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

15. R315-262-262(b) UAC requires a large quantity generator that first becomes subject to these provisions after May 30, 2017 or a large quantity generator that is otherwise amending its contingency plan shall at that time submit a quick reference guide of the contingency plan to the local emergency responders identified at Subsection R315-262-262(a) or, as appropriate, the Local Emergency Planning Committee.

a. On July 7, 2021, BWO did not have a quick reference guide of the contingency plan for inspectors to review.

16. R315-262-263 UAC requires that the contingency plan be reviewed, and immediately amended, if necessary, whenever: (a) Applicable regulations are revised; (b) The plan fails in an emergency; (c) The generator facility changes--in its design, construction, operation, maintenance, or other circumstances--in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency; (d) The list of emergency coordinators changes; or (e) The list of emergency equipment changes.

a. On July 7, 2021, BWO representatives informed inspectors that the provided ERAP and ICP were not up to date with respect to the names and contact information for employees with emergency response roles. BWO had last updated its ERAP in June 2012. Additionally, BWO added a new hazardous waste central accumulation area (CAA) in May 2021 and the new CAA was not reflected in the provided documents.

17. R315-273-13(c)(1) UAC requires a small quantity handler of universal waste to place in a container any universal waste mercury-containing equipment with non-contained elemental mercury or that shows evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The container shall be closed, structurally sound, compatible with the contents of the device, shall lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions, and shall be reasonably designed to prevent the escape of mercury into the environment by volatilization or any other means.

    a. On July 7, 2021, inspectors observed a broken mercury-containing thermometer stored in a container which did not prevent the escape of mercury vapors into the environment. Also, at the time of inspection, BWO failed to have mercury spill cleanup materials available onsite.

18. R315-273-13(d)(1) UAC requires a small quantity handler of universal waste to contain any lamp in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. Such containers and packages shall remain closed and shall lack evidence of leakage, spillage or damage that could cause leakage under reasonably foreseeable conditions.

    a. On July 7, 2021, inspectors observed universal waste lamps stored in boxes that were not adequate to prevent breakage and were not closed.

19. R315-15-2.3(b)(3) UAC requires tanks and containers for storage of used oil to be closed during storage except when adding or removing used oil.

    a. On July 7, 2021, inspectors observed a container of used oil in the maintenance shop which was not closed.

20. R315-15-2.3(c)(1) UAC requires containers and aboveground tanks used to store used oil at generator facilities to be labeled or marked clearly with the words "Used Oil".

    a. On July 7, 2021, inspectors observed a container of used oil in the maintenance shop which was not labeled or marked clearly with the words “Used Oil”.

DETERMINATION OF VIOLATIONS

In accordance with Utah Code § 19-6-101, *et seq.*, and Utah Code § 19-6-701, *et seq.*, and based on the foregoing FINDINGS, Big West Oil LLC has violated provisions of the Rules, the Act, and the Used Oil Act applicable to its facility. Specifically, Big West Oil LLC has violated the following:

1. R315-262-11 Utah Administrative Code by failing to make an accurate determination as to whether its solid waste is a hazardous waste. *See* finding 6.

2. R315-262-15(a) UAC by failing to accumulate hazardous waste in satellite accumulation areas in containers, failing to keep it under the control of the operator, and failing to keep containers in a

satellite accumulation area closed except when adding, removing, or consolidating waste, or when necessary for temporary venting. *See* finding 7.

3. R315-262-15(a)(5) UAC by failing to mark containers in a satellite accumulation area with the words "Hazardous Waste" and an indication of the hazards. *See* finding 8.

4. R315-262-17(a)(1)(ii) UAC by failing to immediately transfer the hazardous waste from a leaking container to a container that is in good condition. *See* finding 9.

5. R315-262-17(a)(1)(v) UAC by failing to inspect at least weekly and identify leaking or deteriorated containers, leaks, and spills on the central accumulation area weekly inspection reports and take remedial action. *See* finding 10.

6. R315-262-17(a)(7) UAC by failing to provide personnel with training to perform their duties related to hazardous waste management and contingency plan implementation. *See* finding 11.

7. R315-262-17(a)(7)(iv) UAC by failing to maintain training records for employees with hazardous waste management duties and failing to maintain a written description of duties performed by contractors, and of the training required to perform these duties. *See* finding 12.

8. R315-262-251 UAC by failing to maintain and operate the facility to prevent a release of hazardous waste into the soil. *See* finding 13.

9. R315-262-261(a) UAC by failing to have a contingency plan for the facility which describes the actions facility personnel shall take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. *See* finding 14.

10. R315-262-262(b) UAC by failing to submit a quick reference guide of the contingency plan to the local emergency responders identified at Subsection R315-262-262(a) or, as appropriate, the Local Emergency Planning Committee. *See* finding 15.

11. R315-262-263 UAC by failing to amend the contingency plan when the list of emergency coordinators changed and when the facility changed in a way that materially increased the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changed the response necessary in an emergency. *See* finding 16.

12. R315-273-13(c)(1) UAC by failing to contain damaged mercury containing equipment in a container which would prevent the escape of mercury into the environment by volatilization. *See* finding 17.

13. R315-273-13(d)(1) UAC by failing to contain universal waste lamps in containers adequate to prevent breaking and failing to keep containers closed. *See* finding 18.

14. R315-15-2.3(b)(3) UAC by failing to keep containers of used oil closed when not actively adding or removing oil. *See* finding 19.

15. R315-15-2.3(c)(1) UAC by failing to label containers used to store used oil with the words "Used Oil". *See* finding 20.

ORDER FOR COMPLIANCE

Correction of these Violations is mandatory. Within 30 days of the date of issuance of this NOV, BWO shall provide the Director with the following information and analyses:

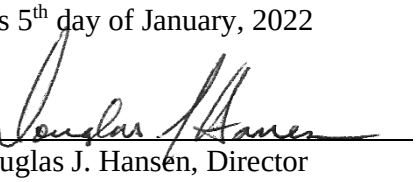
a. the root cause of the Violations;
b. the specific corrective actions planned or taken and the results achieved or expected in the future;
c. the date(s) the Violations were resolved or shall be resolved, as applicable; and
d. how these corrective actions shall prevent similar violations from recurring.

OPPORTUNITY FOR HEARING

This NOTICE OF VIOLATION is effective immediately and shall become final unless Big West Oil LLC administratively contests it. Failure to contest this NOTICE OF VIOLATION in the manner and within the time period prescribed by Utah Admin. Code R305-7-303 constitutes a waiver of any right of administrative contest, reconsideration, review, or judicial appeal.

Utah Code § 19-6-113(2) provides that violation of any order, plan, rule, or other requirement issued or adopted under Title 19, Ch. 6, Pt. 1 may be subject to a civil penalty of up to $13,000 per day for each day of violation.

Dated this 5th day of January, 2022

By: 

Douglas J. Hansen, Director
Division of Waste Management and Radiation Control

CERTIFICATE OF MAILING

I HEREBY CERTIFY that I mailed a true and correct copy of the foregoing NOTICE OF VIOLATION AND ORDER FOR COMPLIANCE on the 5th day of January, 2022 by US Certified Mail, Return receipt Requested, to:

Big West Oil LLC
c/o Corporation Service Company,
7003 2260 0003 2353 4893
Registered Agent
15 West South Temple, Suite 600
Salt Lake City, UT 84101

CERTIFIED MAIL
7003 2260 0003 2353 4893

Klaudia Drazetic

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Big West Oil LLC
c/o Corporation Service Company,
Registered Agent
15 West South Temple, Suite 600
Salt Lake City, UT 84101

9590 9402 6090 0125 6273 38

2. Article Number *(Transfer from service label)*

7003 2260 0003 2353 4893

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X CorpServ. ☐ Agent ☐ Addressee

B. Received by *(Printed Name)*

C. Date of Delivery 8-22

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 DSHW-2021-016762 KD Domestic Return Receipt

USPS TRACKING #



9590 9402 6090 0125 6273 38

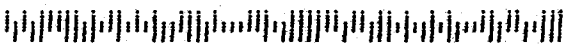
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United States Postal Service

• Sender: Please print your name, address, and ZIP+4® in this box•

Division of Waste Management and
Radiation Control
PO Box 144880
Salt Lake City, UT 84114-4880

Return Service Requested



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In the Matter of:	:	
	:	**STIPULATION AND CONSENT ORDER**
Big West Oil LLC	:	**NO. 2207085**
Notice of Violation and Order for Compliance	:	
No. 2107073	:	
UTD045267127		

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This **STIPULATION AND CONSENT ORDER (**CONSENT ORDER) is issued by the Director of the Division Waste Management and Radiation Control (Director) pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq,* Utah Administrative Code (UAC) R315 (the Rules), and the Utah Used Oil Management Act (the Used Oil Act), Utah Code § 19-6-112, *et seq*.

JURISDICTION

1. The Director has jurisdiction over the subject matter of this CONSENT ORDER pursuant to Utah Code §§ 19-6-107 and 19-6-112 and jurisdiction over the Big West Oil LLC (Big West) facility located in North Salt Lake City, Utah. Big West consents to and will not challenge issuance of the CONSENT ORDER or the Director's jurisdiction to enter and enforce the CONSENT ORDER. Big West and the Director are the parties to this agreement.

2. The Waste Management and Radiation Control Board has authority to review and approve or disapprove this CONSENT ORDER pursuant to Utah Code § 19-6-104(1)(e).

FINDINGS

3. Big West is a limited liability company registered to conduct business in the State of Utah. Big West is a wholly owned subsidiary of FJ Management Inc.

4. Big West is a "person" as defined in Utah Code § 19-1-103(4) and may operate the facility subject to all applicable provisions of the Act and the Rules.

5. Big West operates a refinery that generates listed and characteristic hazardous wastes as defined in the Act and the Rules including: crude oil/clarified slurry oil tank sediment (EPA Codes K169, K170); centrifuged American Petroleum Institute (API) separator solids and wastewater storage tank sludge (F037, F038, K048, K050, K051); spent catalyst waste (D018, K171); potassium hydroxide with absorbent material (D002); tank cleaning scale and sandblast media (D018, K169, K170); contaminated soil and absorbent (D005, D018, F003, F005); API separator sludge cleanout of API separators TK1A DAF Material and waste water storage tanks (F037, F038, K048, K051, K169,K170); and expired warehouse chemicals (D001, D002, D018, U220).

6. Pursuant to Utah Code Section 19-6-109, authorized representatives of the Director (inspectors) conducted a compliance evaluation inspection at Big West on July 7, 2021. After the inspection, inspectors continued the compliance evaluation inspection by reviewing various Big West records.

Proposed SCO

7. Based on findings documented during the inspection and record review, on January 5, 2022, the Director issued Notice of Violation and Order for Compliance No. 2107073 (NOV/OC) (DSHW-2021-016762) to Big West alleging violations of the Act and the Rules.

8. On March 25, 2022, Big West submitted a response to the NOV/OC (DSHW-2022-004190).

9. On May 19, 2022, the Director requested additional information (DSHW-2022-006142) from Big West regarding its March 25, 2022, response to the NOV/OC.

10. On June 27, 2022, Big West submitted a second response (DSHW-2022-018104) to the NOV/OC and the Director's May 19, 2022, request for additional information.

11. On September 1, 2022, the Director transmitted a second request for additional information (DSHW-2022-022326) to Big West regarding its June 27, 2022, response to the NOV/OC.

12. On October 3, 2022, the Director and Big West representatives met to discuss the Director's September 1, 2022, second request for additional information.

13. On October 7, 2022, based on the October 3, 2022, meeting, the Director transmitted a third request for additional information (DSHW-2022-024703) to Big West.

14. On November 17, 2022, Big West submitted a third response (DSHW-2022-026890) to the NOV/OC and the Director's October 7, 2022, request for additional information.

15. The Director will not pursue a penalty for Findings 7(b), 8(d), 11(b), 13(c), 14 and Violation 9 to reach a settlement with Big West.

    a. Finding 7(b) – Based on the contractor logs that were provided, it is plausible that the material in the front-end loader bucket and the pipe run containment was part of ongoing work (in-process) at the time inspectors observed the unattended material.
    b. Finding 8(d) – The intent of the labeling was compliant, but Big West did not maintain operator control which they were cited for in finding 7(f) (Violation 2).
    c. Finding 11(b) – Big West assured the Director that personnel responding to hazardous waste emergencies will be fully trained.
    d. Finding 13(c) – Analytical results provided by Big West show the impacted soil was not hazardous.
    e. Finding 14 (Violation 9) – The portions of the Emergency Response Action Plan (ERAP) and Integrated Contingency Plan (ICP) provided as Exhibit 7 (DSHW-2022-004190, March 25, 2022) meet the regulatory requirements. If these sections had been provided during the inspection, or shortly after the inspection when inspectors were requesting follow-up information, finding 14 (Violation 9) would not have been included in the NOV/OC.

16. In accordance with the Civil Penalty Policy, Utah Administrative Code R315-102, which considers such factors as the gravity of the violations, the extent of deviation from the Rules, the potential for harm to human health and the environment, good faith efforts to comply, and other factors, the Director calculated and proposed a penalty based on the violations alleged in NOV/OC No. 2107073.

ProposedSCO

17. This CONSENT ORDER has been negotiated in good faith and the parties now wish to fully resolve Notice of Violation and Order for Compliance (NOV/OC) No. 2107073 without further administrative or judicial proceedings.

18. In full settlement of the violations alleged in NOV/OC No. 2107073, Big West shall pay a penalty of **$47,934.00.** Payment shall be made to the State of Utah, Department of Environmental Quality, c/o Douglas J. Hansen, Director, Division of Waste Management and Radiation Control, P.O. Box 144880, Salt Lake City, Utah 84114-4880, as follows:

    a. A cash payment of **$23,967.00** (twenty-three thousand, nine hundred sixty-seven dollars) shall be made within **thirty (30) days from the effective date of this SCO**.

    b. An amount of **$23,967.00** (twenty-three thousand, nine hundred sixty-seven dollars) shall be deferred and waived by the Director if Big West complies with terms in paragraphs 19 through 24 below within the specified time frames.

    c. If Big West fails to pay the amount specified in paragraph 18.a within the allotted time, the Director will not defer or waive the amount specified in paragraph 18.b.

19. On or before **120 days from the effective date of this SCO,** Big West shall provide the Director records documenting that the specific employees on the Emergency Response Team (ERT) who are expected to respond to hazardous waste emergencies have received the training identified in the training plan submitted by Big West.

20. On or before **120 days from the effective date of this SCO,** Big West shall provide a written statement to the Director explaining how API separator wastes are managed at Big West. EPA clarified in RCRA Online (RO) number 14677 that any residuals that may result from the oil-bearing secondary material reclamation process that are not returned to the refinery process retain the hazardous waste listing and must be managed as hazardous wastes. Big West must manage all hazardous residuals that are not returned to the refinery process as hazardous waste, including proper containerization and labeling.

21. On or before **120 days from the effective date of this SCO,** Big West shall provide the Director with a list of solid and hazardous waste streams and how each was determined to be hazardous or non-hazardous (supported generator knowledge, analytical data, or both). Big West shall describe in detail the knowledge basis when generator knowledge is used to make a hazardous or non-hazardous waste determination. Big West shall maintain generator knowledge documentation in accordance with UAC R315-262-11(f).

22. On or before **120 days from the effective date of this SCO,** Big West shall provide the Director with a procedure describing how the heat exchanger bundle wash pad is decontaminated after being used for processes in which listed hazardous waste is generated. Big West Oil shall maintain documentation of wash pad decontamination.

23. On or before **120 days from the effective date of this SCO,** Big West shall provide to the Director a standard operating procedure (SOP) that describes each satellite accumulation area and how operator control is ensured. Big West shall follow all requirements of UAC R315-262-15: Satellite Accumulation Area Regulations for Small and Large Quantity Generators.

Proposed SCO

24. On or before **120 days from the effective date of this SCO,** Big West shall provide the Director with a plan for oversight of contractors doing work that either generates hazardous waste or that involves managing or inspecting hazardous waste. This plan may include environmental compliance training, employing an environmental inspector to oversee contractors, or some other equally effective means of ensuring Big West's contractors are in compliance with environmental requirements.

EFFECT OF CONSENT ORDER

25. For the purpose of this CONSENT ORDER, the parties agree and stipulate to the above stated facts. The obligations in the CONSENT ORDER apply to and are binding upon the Division and upon Big West and any of Big West's successors, assigns, or other entities or persons otherwise bound by law.

26. The stipulations contained herein are for the purposes of settlement and shall not be considered admissions by any party and shall not be used by any person related or unrelated to this CONSENT ORDER for purposes other than determining the basis of this CONSENT ORDER. Nothing contained herein shall be deemed to constitute a waiver by the State of Utah of its right to initiate enforcement action, including civil penalties, against Big West in the event of future non-compliance with this CONSENT ORDER, with the Act, with the Rules, or with the Permit; nor shall the State of Utah be precluded in any way from taking appropriate action should such a situation arise again at the Big West facility. However, entry into this CONSENT ORDER shall relieve Big West of all liability for violations which did arise or could have arisen with respect to the allegations contained in NOV/OC No. 2107073.

EFFECTIVE DATE

27. This CONSENT ORDER shall become effective upon the date of execution by the Director.

PUBLIC PARTICIPATION

28. This CONSENT ORDER shall be subject to public notice and comment for a period of at least 30 days (Comment Period) in accordance with Utah Administrative Code R315-124-34. The Director reserves the right to withdraw or withhold its consent if any comment received during the Comment Period disclose facts or consideration indicating this CONSENT ORDER is inappropriate, improper, or inadequate.

29. The Waste Management and Radiation Control Board has authority to review and approve or disapprove this CONSENT ORDER pursuant to Utah Code Section 19-6-104(1)(e).

Proposed SCO

SIGNATORY

30. The undersigned representative of Big West certifies they are authorized to enter into this CONSENT ORDER and to execute and legally bind Big West.

    Pursuant to the Utah Solid and Hazardous Waste Act (the Act), Utah Code § 19-6-101, *et seq*., *in the Matter of Big West Oil LLC Notice of Violation and Order for Compliance No.* 2107073 the parties hereto mutually agree and consent to the STIPULATION AND CONSENT ORDER as evidenced below:

BIG WEST OIL LLC
REFINERY DIVISION

_____
Mike Swanson, President

Date:_____

THE STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL

_____
Douglas J. Hansen, Director

Date:_____

Proposed SCO

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 1

Violation Description: **Failure to make an accurate determination as to whether its solid waste is a hazardous waste.**

1. Gravity Based Penalty: **$4,160.00**

(a) Potential for Harm – **MODERATE**

Failure to make an accurate and timely hazardous waste determination led to containers of hazardous waste being open, posing a risk of exposure to workers and the environment, and could have led to hazardous waste being improperly handled and stored had the waste characterization issues not been identified during the inspection. Also, mismanagement of hazardous waste risks exposure to both transportation workers and workers at disposal facilities and poses a risk to the environment due to the disposal of untreated waste.

Big West's failure to make an accurate and timely hazardous waste determination has a moderate impact on the foundational regulatory purpose of the hazardous waste program, which starts with accurate waste determinations for proper waste management of a generator's wastes.

(b) Extent of Deviation – **MODERATE**
Inspectors observed six instances where Big West failed to make an accurate hazardous waste determination:

1. Drum labeled "oil waste",
2. Dumpster containing debris and listed hazardous waste,
3. Two 5-gallon buckets containing listed hazardous waste and debris,
4. Debris contaminated with listed hazardous waste in the heat exchanger cleaning pad sump,
5. Drum labeled "Oily Rags/PPE", and
6. Abandoned chemicals behind the east barn.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit - The economic benefit of not sampling and analyzing the contents of the "Oily Rags" drum was estimated to be **$130.00**, the cost of running TCLP volatiles. Generator knowledge could have been used to make waste determinations on the listed wastes identified in the NOV.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $4,290.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 2

Violation Description**: Failure to accumulate hazardous waste in satellite accumulation areas in containers, failure to keep waste under the control of the operator, and failure to keep containers in a satellite accumulation area closed except when adding, removing, or consolidating waste, or when necessary for temporary venting.**

1. Gravity Based Penalty: **$10,400.00**

(a) Potential for Harm – **MAJOR**
Failure to accumulate hazardous waste in containers and under the control of an operator could lead to improper and unauthorized handling of waste and release of hazardous waste and hazardous waste constituents to workers, the public, and the environment, thus negatively impacting human health and the environment.

(b) Extent of Deviation – **MAJOR**
Inspectors observed five instances where hazardous waste was being stored in an uncontained manner or was not kept under the control of the operator:

1. Debris contaminated with listed hazardous waste in the heat exchanger bundle wash pad sump,
2. Open drum containing listed hazardous API separator waste,
3. Two open, unlabeled buckets containing listed hazardous waste and debris,
4. Open, unlabeled dumpster containing listed hazardous waste and debris, and
5. Open drum containing listed hazardous waste and debris.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to not be a factor since the waste was placed into containers and shipped by Big West for disposal.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $10,400.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 3

Violation Description: **Failure to mark containers in a satellite accumulation area with the words "Hazardous Waste" and an indication of the hazards.**

1. Gravity Based Penalty: **$2,600.00**

(a) Potential for Harm – **MODERATE**
Failure to label hazardous waste containers with the words "Hazardous Waste" and an indication of the hazards could lead to mismanagement and improper handling of the waste, and thus exposure and risk to human health or the environment.

Lack of labeling to identify hazardous waste as such interferes with the Division's ability to properly inspect the facility, which has a moderate impact on implementation of the hazardous waste program.

(b) Extent of Deviation – **MODERATE**
Inspectors observed four instances where hazardous waste containers were not labeled:

1. A 55-gallon drum of hazardous waste debris,
2. Two 5-gallon buckets of hazardous waste,
3. A dumpster containing listed hazardous waste debris, and
4. Abandoned chemicals behind the east barn.

None of the containers were labeled with the words "Hazardous Waste." The labels on at least two of the abandoned chemicals were illegible, so the manufacturer hazard warning was not present.

(c) Multiple Events/Multi-day – Could not determine based on the evidence gathered during the inspection.

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – NA.

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit - The economic benefit was evaluated and determined to be negligible, as labeling materials were available.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $2,600.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 4

Violation Description: **Failure to immediately transfer the hazardous waste from a leaking container to a container that is in good condition.**

1. Gravity Based Penalty: **$1,560.00**

(a) Potential for Harm – **MODERATE**
Failure to take remedial action for leaking containers of hazardous materials can lead to exposure of hazardous waste to employees, contractors, visitors, and the environment.

(b) Extent of Deviation – **MINOR**
Inspectors observed one container leaking hazardous waste, though two other roll-offs in the accumulation area containing non-hazardous waste were observed with significant leaks and impacted soil.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be negligible because Big West had contracted with a company to conduct inspections and had a process in place to remediate issues identified in inspections.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $1,560.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 5

Violation Description: **Failure to inspect at least weekly and identify leaking or deteriorated containers, leaks, and spills on the central accumulation area weekly inspection reports and take remedial action.**

1. Gravity Based Penalty: **$5,720.00**

(a) Potential for Harm – **MAJOR**
Failure to perform thorough weekly inspections of central accumulation areas leads to lack of remediation of leaking containers, allowing exposure of hazardous waste to workers, the public, and the environment.

Failure to document inspections interferes with the Division's ability to perform the oversight function of verifying compliance.

(b) Extent of Deviation – **MINOR**
Big West failed to perform weekly inspections for two out of five weeks in July 2021.

(c) Multiple Events/Multi-day: Increase of **$290.00** for one additional event. Two weekly inspections were not performed in the month of July 2021.

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence: – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be **$200.00**, the amount estimated that would have been paid to the contractor engaged to conduct inspections for Big West. *($50/hr. x 2 hours per inspection x 2 inspections)*

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $6,210.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation number: 6

Violation Description: **Failure to provide personnel with training to perform their duties related to hazardous waste management.**

1. Gravity Based Penalty: **$4,160.00**

(a) Potential for Harm – **MODERATE**
Allowing an employee without approved DOT training sign a hazardous waste manifest could lead to improper treatment or disposal of waste if the manifest is incorrect and could lead to a transportation accident if hazardous waste is improperly packaged and/or described on the shipping papers. Allowing employees without RCRA training to inspect central accumulation areas (CAAs) could lead to inadequate inspections and unremedied spills or leaks.

Reviewing and verifying that employees are trained is a fundamental part of inspections, so the failure to maintain training documentation interferes with implementation of the hazardous waste program.

(b) Extent of Deviation – **MODERATE**
Employees without DOT training signed two manifests in the past three years. No records were provided showing that two contractors who perform weekly CAA inspections have received RCRA training.

(c) Multiple Events/Multi-day: Increase of **$130.00** for one additional event. Two manifests (015863136FLE on 4/21/2021 and 019517271JJK on 4/27/2021) were signed by employees without DOT training.

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be **$499.00**, the cost of the LION Technology, Inc. Hazmat & Waste Ground Shipper Certification (DOT) Online Course. The economic benefit for failure to document in-house training of contractors was determined to be negligible.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $4,789.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 7

Violation Description: **Failure to maintain training records for employees with hazardous waste management duties and failing to maintain a written description of duties performed by contractors, and of the training required to perform these duties.**

1. Gravity Based Penalty: **$2,600.00**

(a) Potential for Harm – **MODERATE**
Failing to maintain records of employee's job titles, job description, and the type and amount of introductory and continuing education led to personnel performing duties they are not qualified for and mismanagement of hazardous waste as described in other findings in this NOV.

Reviewing job titles, descriptions, and required training is an essential part of inspecting, without which the Division cannot perform its regulatory oversight function of verifying that employees are trained to do their jobs in compliance with the rules.

(b) Extent of Deviation – **MODERATE**
Big West could not provide any of the documentation required by Utah Administrative Code R315-262-17(a)(7)(iv) at the time of the inspection. Big West created the required training plan documentation in their draft hazardous waste contingency plan on September 16, 2021, in response to the inspection performed on July 7, 2021. According to Big West representatives, it did not exist at the time of the inspection.

(c) Multiple Events/Multi-day: N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – NA

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit - The economic benefit was evaluated and determined to be negligible. Personnel on staff were available to create a training plan and maintain records. The required documents were created a little over two months after the inspection.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $2,600.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 8

Violation Description: **Failure to maintain and operate the facility to prevent a release of hazardous waste into the soil.**

1. Gravity Based Penalty: **$2,600.00**

(a) Potential for Harm – **MODERATE**
Allowing a release of hazardous waste threatens human health and the environment.

(b) Extent of Deviation – **MINOR**
Inspectors observed soil impacted with hazardous waste in two locations onsite:
1. Underneath a boom used to absorb listed hazardous waste, and
2. Underneath a leaking roll-off container.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be negligible. It would not have required additional contracted labor hours to prevent the releases cited in the NOV.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $2,600.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 9

Violation Description: **Failure to have a contingency plan for the facility which describes the actions facility personnel shall take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.**

1. Gravity Based Penalty: $0

(a) Potential for Harm – **N/A**
In response to the NOV, Big West provided evidence that they had a hazardous waste contingency plan in place at the time of the inspection.

(b) Extent of Deviation – **N/A**
In response to the NOV, Big West provided evidence that they had a hazardous waste contingency plan in place at the time of the inspection.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – N/A

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $0

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 10

Violation Description: **Failure to submit a quick reference guide of the contingency plan to the local emergency responders.**

1. Gravity Based Penalty: **$4,160.00**

(a) Potential for Harm – **MODERATE**
Failure to have a Quick Reference Guide (QRG) could lead to delayed or improper emergency response by emergency response personnel, threatening human health and the environment.

(b) Extent of Deviation – **MAJOR**
There was no quick reference guide for the facility. Big West did not have a QRG on the day of the inspection, July 7, 2021. A draft QRG was provided on August 6, 2021.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The cost to hire a consultant to draft a quick reference guide ranges from $3,500-$5,000. However, because Big West stated they would perform this work internally, the economic benefit was determined to be negligible.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $4,160.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 11

Violation Description: **Failure to amend the contingency plan when the list of emergency coordinators changed and when the facility changed in a way that materially increased the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changed the response necessary in an emergency.**

1. Gravity Based Penalty: $**4,160.00**

(a) Potential for Harm – **MODERATE**
Failure to update the contingency plan can lead to improper emergency response, threatening human health and the environment.

(b) Extent of Deviation – **MODERATE**
The contingency plan was not updated when the emergency coordinators changed or when the new central accumulation area for roll-off containers was added.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The cost to hire a consultant to review and revise the contingency plan ranges from $3,500-$5,000. However, because Big West stated they would perform this work internally, the economic benefit was determined to be negligible.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $4,160.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 12

Violation Description: **Failure to contain damaged mercury containing equipment in a container which would prevent the escape of mercury into the environment by volatilization.**

1. Gravity Based Penalty: **$1,560.00**

(a) Potential for Harm – **MODERATE**
Improper storage of a broken mercury-containing device leads to the release of mercury into the environment which could cause harm to human health and the environment. The inhalation of mercury vapor can produce harmful effects on the nervous, digestive and immune systems, lungs and kidneys, and may be fatal. The inorganic salts of mercury are corrosive to the skin, eyes and gastrointestinal tract, and may induce kidney toxicity if ingested.

(b) Extent of Deviation – **MINOR**
Inspectors observed one broken mercury thermometer stored improperly in a container which was not reasonably designed to prevent the escape of mercury.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated based on the material costs. The cost of a 5-gallon mercury container is approximately $5.00 and the cost for mercury spill cleanup material is approximately $30.00. The economic benefit was determined to be **$35.00.**

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $1,595.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 13

Violation Description: **Failure to contain universal waste lamps in containers adequate to prevent breaking and failing to keep containers closed.**

1. Gravity Based Penalty: **$2,600.00**

(a) Potential for Harm – **MODERATE**
If lamps were broken mercury vapors would be released which could harm human health and the environment. The inhalation of mercury vapor can produce harmful effects on the nervous, digestive and immune systems, lungs and kidneys, and may be fatal.

(b) Extent of Deviation – **MODERATE**
Out of six boxes of universal waste lamps, two boxes were too small to fully contain the lamps, three boxes contained the lamps but were not closed, and one box contained the lamps and was closed.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence- 5% increase for negligence = **$130.00.** Big West personnel knew based on the inspection checklist that universal waste lamp containers needed to be closed and had been marking that the containers were closed on weekly inspection checklists, despite the fact that some containers were incapable of being closed because the lamps were longer than the containers.

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be negligible as carboard boxes can be sourced at a negligible cost.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $2,730.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 14

Violation Description: **Failure to keep containers of used oil closed when not actively adding or removing oil.**

1. Gravity Based Penalty: **$120.00**

(a) Potential for Harm – **MINOR**
An open container of used oil could be knocked over causing a spill, however the open container was in a mechanic shop. Spilled oil could not reach groundwater in this location.

(b) Extent of Deviation – **MINOR**
Inspectors observed one open container of used oil.

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be negligible as container lids were available.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $120.00

NARRATIVE EXPLANATION TO SUPPORT
PENALTY AMOUNT FOR PROPOSED STIPULATION AND CONSENT ORDER

NOV # 2107073 Violation Number: 15

Violation Description: **Failure to label containers used to store used oil with the words "Used Oil."**

1. Gravity Based Penalty: **$120.00**

(a) Potential for Harm – **MINOR**
A container not properly labeled with the words "Used Oil" could be mistaken for product oil and stored and handled improperly.

(b) Extent of Deviation – **MINOR**
Inspectors observed one container that was not labelled "Used Oil."

(c) Multiple Events/Multi-day – N/A

2. Adjustment Factors (if applicable)

(a) Good faith – N/A

(b) Willfulness/Negligence – N/A

(c) History of Compliance or Noncompliance – N/A

(d) Ability to pay – N/A

(e) Other Unique Factors – N/A

3. Economic Benefit – The economic benefit was evaluated and determined to be negligible as labeling materials were available.

4. Recalculation of Penalty based on New Information – N/A

TOTAL: $120.00

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
REQUEST FOR A SITE-SPECIFIC TREATMENT VARIANCE
FOR HIGH SUBCATEGORY MERCURY
Clean Harbors Grassy Mountain, LLC
May 9, 2024

What is the issue before the Board?	On October 4, 2023, Clean Harbors Grassy Mountain, LLC (CHGM) submitted a request to the Director of the Division of Waste Management and Radiation Control for a site-specific treatment variance from Utah Hazardous Waste Management Rule R315-260-19. The Division requested additional information, which CHGM submitted March 6, 2024. CHGM proposes to treat baghouse dust containing High Subcategory Mercury by stabilization instead of retort and recovery. Waste will be stabilized to meet the Universal Treatment Standard (UTS) of 0.025 mg/L TCLP. CHGM has conducted treatability studies to demonstrate that they can meet the UTS and will dispose of the treated waste in a hazardous waste disposal cell at the facility.
What is the historical background or context for this issue?	CHGM proposes to treat, using stabilization technologies, High-Mercury Subcategory residue wastes (baghouse dust) from the Clean Harbors Aragonite, LLC (CHA) incinerator instead of sending it for retort and recovery. The listed treatment technology for the D009 High Mercury-Inorganic Subcategory is RMERC. The need and justification for this action are as follows: The intent of the RMERC treatment process is to recover elemental mercury for recycling. However, this waste stream carries numerous EPA codes the mercury retort facilities are not permitted to accept and does not meet their variance under the Boiler and Industrial Furnace exemption. CHGM provided the Division with correspondence from the retort facilities that document the unacceptability of the waste for retorting. CHGM conducted stabilization treatability studies on this waste stream and demonstrated to the Division that this waste can be successfully treated to the 0.025 mg/L TCLP standard in Utah Admin. Code R315-268-48. CHGM will confirm that the treated waste meets LDR standards prior to its final disposal in the landfill. The Board previously granted CHGM granted a treatment variance for the same waste stream, profile AGGM912669HIHGB (now called GM91-2669HIHGBB), on 3/12/2009, 11/23/2010, 6/20/2013, 2/18/2015, and 10/18/2017.

DSHW-2024-005837
Attachments: Clean Harbors Site-Specific Treatment Variance Request w/supporting documentation (DSHW-2023-210005)

What is the governing statutory or regulatory citation?	Variances are provided for in Utah Code 19-6-111 and Utah Admin. Code R315-260-19.
Is Board action required?	No. This is an informational item before the Board.
What is the Division Director's recommendation?	The Director will provide a recommendation following the public comment period at the next Board meeting. A notice for public comment was published in the *Salt Lake Tribune*, the *Deseret News,* and the *Tooele Transcript-Bulletin* on May 1, 2024. The comment period began May 2, 2024, and will end May 31, 2024.
Where can more information be obtained?	For technical questions, please contact Kari Lundeen (385) 499-4923. For legal questions, please contact Raymond Wixom (385) 414-0664.

DSHW-2024-005837
Attachments: Clean Harbors Site-Specific Treatment Variance Request w/supporting documentation (DSHW-2023-210005)

RECEIVED
By Division of Waste Managment and Radiation Control at 5:07 pm, Oct 04, 2023
DSHW-2023-210005

Clean Harbors Grassy Mountain, LLC.
P.O. Box 22750
Salt Lake City, UT 84122
Tel: 435.884.8900
Fax: 435.884.8990
www.cleanharbors.com

September 28, 2023

Mr. Doug Hansen, Director
Utah Division of Waste Management and Radiation Control
Department of Environmental Quality
195 North 1950 West
P.O. Box 144880
Salt Lake City, UT 84114-4880

RE: Request for Renewal of the Site-Specific Treatment Variance from Technology-Based Requirements for D009 (High Mercury-Inorganic Subcategory) Clean Harbors Aragonite Bag House Waste
Clean Harbors Grassy Mountain, LLC., EPA ID No. UTD991301748

Dear Mr. Hansen:

In accordance with Utah Administrative Code R315-2-13, Clean Harbors Grassy Mountain, LLC. (CHGM) is requesting a Site-Specific Treatment Variance seeking authorization to stabilize one waste stream carrying the waste code D009 (High Mercury-Inorganic Subcategory). The waste identified in this request is characterized by the enclosed Waste Material Profile Sheet AGGM912669HIHGB. The treatment technology code for this subcategory is RMERC. The RMERC technology is described as: Retorting or roasting in a thermal processing unit capable of volatilizing mercury and condensing the volatilized mercury for recovery. The RMERC process generates secondary waste streams that require further stabilization.

This request is submitted in accordance with R315-268-44, which may allow a site-specific variance from an applicable treatment standard provided that the following condition is met:

> R315-268-44(h)(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible.

This request is submitted in accordance with the requirements of R-315-260-20(b).

R315-260-20(b)(1): This petition is being submitted by

Clean Harbors Grassy Mountain, LLC.
3 Miles East, 7 Miles North of Knolls
Exit 41, Off 1-80
Knolls, Utah 84029

R315-260-20(b)(2): CHGM requests approval of a variance from the R315-268-40-Treatment Standards for Hazardous Wastes and R315-268-42-Treatment Standards Expressed as Specific Technologies for the EPA waste code D009 (High Mercury-Inorganic Subcategory). CHGM proposes to treat, using stabilization technologies, High-Mercury Subcategory residue wastes from the Clean Harbors Aragonite, LLC incinerator. All actions will be performed in accordance with the Clean Harbors Grassy Mountain State-issued Part B Permit.

R315-260-20(b)(3): CHGM is proposing to dispose of treated High Mercury Subcategory hazardous waste that has been treated below a mercury concentration of 0.025mg/l using the Toxicity Characteristic Leaching Procedure (TCLP). Stabilization is the standard treatment method for waste containing D009 (Low Mercury Subcategory) and CHGM is permitted to perform stabilization processes. CHGM has recently conducted the enclosed stabilization treatability studies on this waste stream and determined that this waste can be successfully treated to the applicable treatment standard of 0.025 mg/l TCLP specified for D009 (Low Mercury Subcategory) in R315-268-40. Prior to final disposal of the waste in the landfill, CHGM will confirm that the treatment process is successful in meeting the land disposal restriction treatment standards.

R315-260-20(b)(4): The D009 High Mercury-Inorganic Subcategory is described in the R315-268-40 "Treatment Standards for Hazardous Wastes" table. The description is as follows:

> "Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)."

The listed treatment technology in R315-268-40 for D009 High Mercury-Inorganic Subcategory waste is RMERC.

The need and justification for this action is as follows:

- The intent of the RMERC treatment process is to retort or roast materials in a thermal processing unit in order to recover elemental mercury for recycling. However, the waste stream carries numerous EPA codes which the mercury retorter is not permitted to accept and does not meet their variance under the Boiler and Industrial Furnace (BIF) exemption. Attached with this variance request are correspondences, dated June 14, 2016, and March 10, 2017, from Mercury Waste Solutions, LLC (MWS), and Veolia Environmental Services documenting the unacceptability of this waste for retorting.

- Grassy Mountain was previously granted a treatment variance for the same waste stream by the Board on March 12, 2009, November 23, 2010, June 20, 2013, and February 18, 2015 for D009 High Mercury-Inorganic Subcategory residue waste streams from the Aragonite facility. Grassy Mountain was able to successfully stabilize the waste to meet the land disposal treatment standards.

- Analyses for the current containers of bag house dust indicate that the levels of mercury are within the parameters of waste that was previously stabilized to meet land disposal treatment standards. Copies of the current associated analytical data for the waste to be treated are included with this request. Additionally, copies of the current mercury treatability study demonstrating CHGM's ability to successfully treat the waste are included with this submittal.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

If you have any questions, please contact me at (435) 884-8900.

Sincerely,

Shane B. Whitney

Shane B. Whitney
General Manager
Grassy Mountain Facility

cc: Kari Lundeen, UDEQ/DWMRC
Jeff Coombs, EHS, MPA Health Officer, Tooele County Health Department
Grassy Mountain File

8/24/23

Bryan Lunt
Clean Harbors Aragonite, LLC
11600 North Aptus Road
Aragonite, Utah 84029

Re: Profile # GM91-2669HIHGBB Codes not accepted

Mr. Lunt,

Per our previous discussions regarding the profile number GM91-2669HIHGBB (Baghouse Dust with High Mercury) that you currently have at your location in Grassy Mountain, Utah. This letter is to inform you that we are unable to accept and process this material with these listed RCRA codes and because they are considered organic.

This is due to our onsite permits at each Veolia ERD location.

Unaccepted codes:
F001 – F012
F019

Please let me know if you have any questions.

Sincerely,

Holli A Bechard
Operations Manager
Veolia ES Technical Solutions
5736 W Jefferson Street
Phoenix, Az. 95043

Sample ID	%Water	%KD	%CPS	Identifiers	
R3017RT-1	60	50	3	R1	*Preferred Recipe*

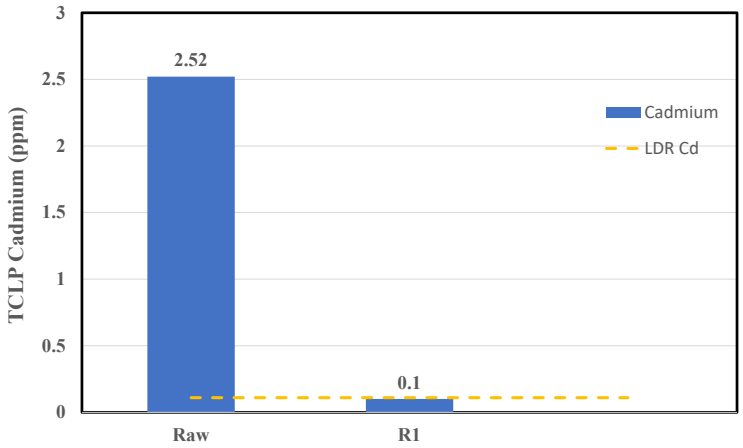
LDR Cd	0.11	0.11	0.11
LDR Pb	0.75	0.75	0.75
LDR Hg	0.025	0.025	0.025

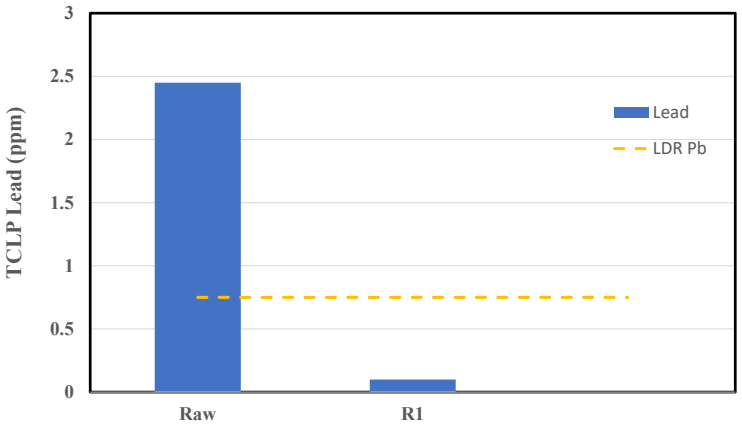
TCLP (ppm)

Cadmium	
Raw	R1
2.52	0.1

Lead	
Raw	R1
2.45	0.1

Mercury	
Raw	R1
0.0139	0.01





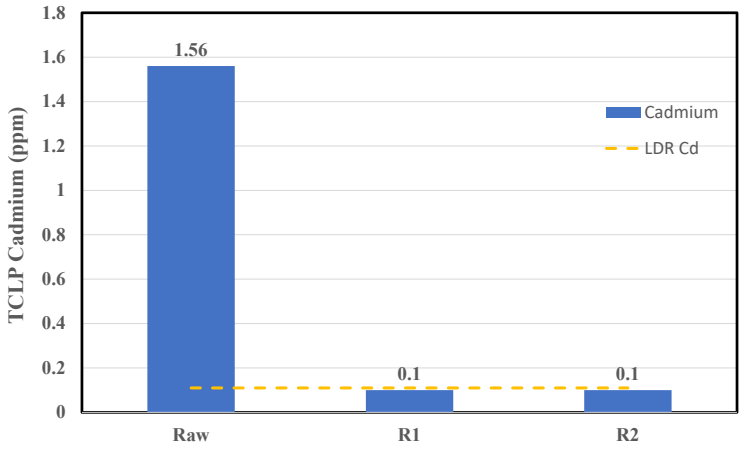
Sample ID	%Water	%KD	%CPS	Identifiers	
320082-1	60	50	3	R1	
320082-2	60	50	6	R2	*Preferred Recipe*

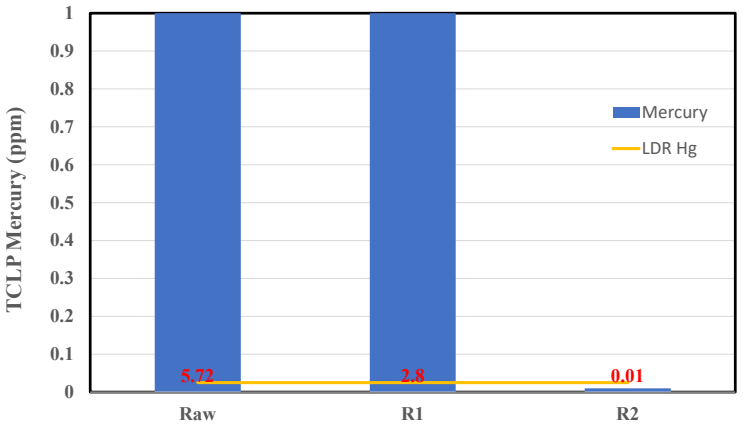
LDR Cd	0.11	0.11	0.11
LDR Hg	0.025	0.025	0.025

TCLP (ppm)

Cadmium		
Raw	R1	R2
1.56	0.1	0.1

Mercury		
Raw	R1	R2
5.72	2.8	0.01





Sample ID	%Water	%KD	%DTC40	%ENVB	Identifiers	
A30781-1	48	20	2	1	R1	
A30781-2	49	20	2	2	R2	
A30781-5	49	20	2	5	R3	*Preferred Recipe*

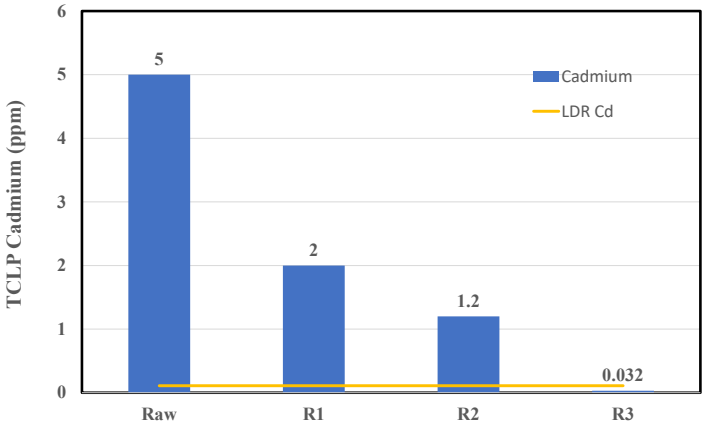
LDR Cd	0.11	0.11	0.11	0.11
LDR Hg	0.025	0.025	0.025	0.025
LDR Pb	0.75	0.75	0.75	0.75

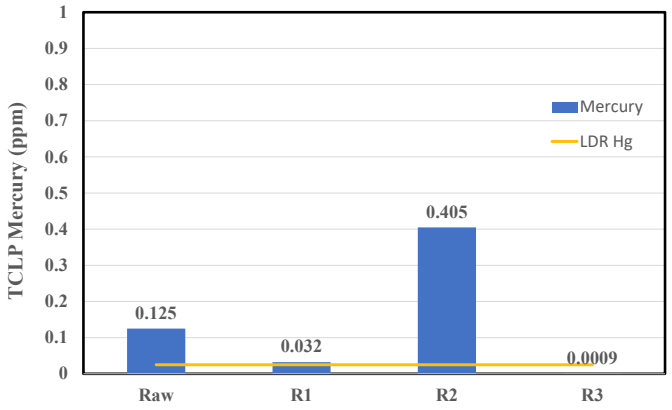
TCLP (ppm)

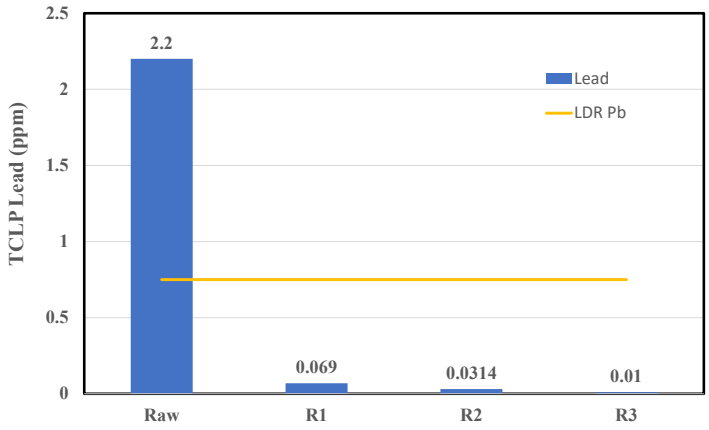
Cadmium			
Raw	R1	R2	R3
5	2	1.2	0.032

Mercury			
Raw	R1	R2	R3
0.125	0.032	0.405	0.0009

Lead			
Raw	R1	R2	R3
2.2	0.069	0.0314	0.01







WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. GM91-2669HIHGBB

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # ***MV7817925000*** GENERATOR NAME: ***Clean Harbors Environmental Services, Inc.***

GENERATOR CODE (Assigned by Clean Harbors) ***CO*** CITY ***Norwell*** STATE/PROVINCE ***MA*** ZIP/POSTAL CODE ***02061***

ADDRESS ***42 Longwater Drive*** PHONE: **(770) 448-8876**

CUSTOMER CODE (Assigned by Clean Harbors) ***CO*** CUSTOMER NAME: ***Clean Harbors Environmental Services, Inc.***

ADDRESS ***42 Longwater Drive*** CITY ***Norwell*** STATE/PROVINCE ***MA*** ZIP/POSTAL CODE ***02061***

B. WASTE DESCRIPTION

WASTE DESCRIPTION: ***48288 BAGHOUSE DUST HIGH MERCURY - BULK SHIPMENT***

PROCESS GENERATING WASTE: **AIR POLLUTION CONTROL**

IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER ? **No**

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE

- [x] SOLID WITHOUT FREE LIQUID POWDER
- [ ] MONOLITHIC SOLID
- [ ] LIQUID WITH NO SOLIDS
- [ ] LIQUID/SOLID MIXTURE
- [ ] % FREE LIQUID
- [ ] % SETTLED SOLID
- [ ] % TOTAL SUSPENDED SOLID
- [ ] SLUDGE
- [ ] GAS/AEROSOL

NUMBER OF PHASES/LAYERS

1 2 3 % BY VOLUME (Approx.)

TOP ***0.00***

MIDDLE ***0.00***

BOTTOM ***0.00***

VISCOSITY (If liquid present)

- 1 - 100 (e.g. Water)
- 101 - 500 (e.g. Motor Oil)
- 501 - 10,000 (e.g. Molasses)
- > 10,000

COLOR

varies

ODOR

- [x] NONE
- [ ] MILD
- [ ] STRONG

Describe:

BOILING POINT °F (°C)

- <= 95 (<=35)
- 95 - 100 (35-38)
- 101 - 129 (38-54)
- >= 130 (>54)

MELTING POINT °F (°C)

- < 140 (<60)
- 140-200 (60-93)
- [x] > 200 (>93)

TOTAL ORGANIC CARBON

- [x] <= 1%
- 1-9%
- >= 10%

FLASH POINT °F (°C)

- < 73 (<23)
- 73 - 100 (23-38)
- 101 -140 (38-60)
- 141 -200 (60-93)
- > 200 (>93)

pH

- <= 2
- 2.1 - 6.9
- [x] 7 (Neutral)
- 7.1 - 12.4
- >= 12.5

SPECIFIC GRAVITY

- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- [x] > 1.2 (e.g. Methylene Chloride)

ASH

- < 0.1
- 0.1 - 1.0
- 1.1 - 5.0
- 5.1 - 20.0
- > 20
- [x] Unknown

BTU/LB (MJ/kg)

- [x] < 2,000 (<4.6)
- 2,000-5,000 (4.6-11.6)
- 5,000-10,000 (11.6-23.2)
- > 10,000 (>23.2)

Actual:

D. COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	--	MAX	UOM
ALUMINUM OXIDE (AL2O3) (9CI)		--		Trace
ANTIMONY OXIDE		--		Trace
ARSENIC OXIDE (AS2O3)		--		Trace
BAG HOUSE DUST	95.0000000	--	100.0000000	%
BARIUM OXIDE		--		Trace
BENZYL CHLORIDE		--		Trace
BERYLLIUM OXIDE		--		Trace
CADMIUM OXIDE		--		Trace
CARBON TETRACHLORIDE		--		Trace
CHLOROFORM		--		Trace

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? YES [x] NO

If yes, describe, including dimensions:

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES [x] NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES [x] NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. ***G09*** SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. ***W304***

E. CONSTITUENTS

Are these values based on testing or knowledge? ☑ Knowledge ☐ Testing

If based on knowledge, please describe in detail, the rationale applied to identify and characterize the waste material. Please include reference to Material Safety Data Sheets (MSDS) when applicable. Include the chemical or trade-name represented by the MSDS, and or detailed process or operating procedures which generate the waste.

.

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0	*100.0000*	*100.0000000*	*PPM*	
D005	BARIUM	100.0	*100.0000*	*100.0000000*	*PPM*	
D006	CADMIUM	1.0	*100.0000*	*100.0000000*	*PPM*	
D007	CHROMIUM	5.0	*100.0000*	*100.0000000*	*PPM*	
D008	LEAD	5.0	*100.0000*	*100.0000000*	*PPM*	
D009	MERCURY	0.2	*100.0000*	*2470.0000000*	*PPM*	
D010	SELENIUM	1.0	*100.0000*	*100.0000000*	*PPM*	
D011	SILVER	5.0	*100.0000*	*100.0000000*	*PPM*	

	VOLATILE COMPOUNDS	
D018	BENZENE	0.5
D019	CARBON TETRACHLORIDE	0.5
D021	CHLOROBENZENE	100.0
D022	CHLOROFORM	6.0
D028	1,2-DICHLOROETHANE	0.5
D029	1,1-DICHLOROETHYLENE	0.7
D035	METHYL ETHYL KETONE	200.0
D039	TETRACHLOROETHYLENE	0.7
D040	TRICHLOROETHYLENE	0.5
D043	VINYL CHLORIDE	0.2
	SEMI-VOLATILE COMPOUNDS	
D023	o-CRESOL	200.0
D024	m-CRESOL	200.0
D025	p-CRESOL	200.0
D026	CRESOL (TOTAL)	200.0
D027	1,4-DICHLOROBENZENE	7.5
D030	2,4-DINITROTOLUENE	0.13
D032	HEXACHLOROBENZENE	0.13
D033	HEXACHLOROBUTADIENE	0.5
D034	HEXACHLOROETHANE	3.0
D036	NITROBENZENE	2.0
D037	PENTACHLOROPHENOL	100.0
D038	PYRIDINE	5.0
D041	2,4,5-TRICHLOROPHENOL	400.0
D042	2,4,6-TRICHLOROPHENOL	2.0
	PESTICIDES AND HERBICIDES	
D012	ENDRIN	0.02
D013	LINDANE	0.4
D014	METHOXYCHLOR	10.0
D015	TOXAPHENE	0.5
D016	2,4-D	10.0
D017	2,4,5-TP (SILVEX)	1.0
D020	CHLORDANE	0.03
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008

OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
BROMINE			☑
CHLORINE			☑
FLUORINE			☑
IODINE			☑
SULFUR			☑
POTASSIUM			☑
SODIUM			☑
AMMONIA			☑
CYANIDE AMENABLE			☑
CYANIDE REACTIVE			☑
CYANIDE TOTAL			☑
SULFIDE REACTIVE			☑

HOCs

☑ NONE
☐ < 1000 PPM
☐ >= 1000 PPM

PCBs

☑ NONE
☐ < 50 PPM
☐ >=50 PPM

IF PCBS ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?

YES ☑ NO

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES ☑ NO (If yes, explain)

CHOOSE ALL THAT APPLY

DEA REGULATED SUBSTANCES EXPLOSIVE FUMING OSHA REGULATED CARCINOGENS

POLYMERIZABLE	RADIOACTIVE	REACTIVE MATERIAL	☑ NONE OF THE ABOVE

F. REGULATORY STATUS

- [x] YES [ ] NO USEPA HAZARDOUS WASTE?
  D004 D005 D006 D007 D008 D009 D010 D011 F001 F002 F003 F004 F005 F006 F007 F008 F009 F010 F011 F012 F019
- [ ] YES [x] NO DO ANY STATE WASTE CODES APPLY?
  Texas Waste Code
- [ ] YES [x] NO DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?
- [x] YES [ ] NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?
  LDR CATEGORY: ***Partially meets LDR standards***
  VARIANCE INFO:
- [ ] YES [x] NO IS THIS A UNIVERSAL WASTE?
- [ ] YES [ ] NO IS THE GENERATOR OF THE WASTE CLASSIFIED AS A VERY SMALL QUANTITY GENERATOR (VSQG) OR A STATE EQUIVALENT DESIGNATION?
- [ ] YES [ ] NO IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?
- [ ] YES [x] NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?
- [ ] YES [x] NO IS THIS WASTE STREAM PROHIBITED FROM INCINERATION BASED ON THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268.3(C)?
- [ ] YES [ ] NO IS THIS WASTE STREAM "USED OIL" WHICH IS TO BE MANAGED UNDER 40 CFR PART 279 - STANDARDS FOR THE MANAGEMENT OF USED OIL?
- [ ] YES [x] NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?
- [ ] YES [ ] NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?
- [ ] YES [x] NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 76.6 KPA (11.1 PSIA)?
- [ ] YES [x] NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?
- [ ] YES [x] NO IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?
  Hazardous Organic NESHAP (HON) rule (subpart G) Pharmaceuticals production (subpart GGG)
- [ ] YES [x] NO IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?

YES NO Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?

YES NO Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?

What is the TAB quantity for your facility? Megagram/year (1 Mg = 2,200 lbs)

The basis for this determination is: Knowledge of the Waste Or Test Data Knowledge Testing

Describe the knowledge :

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:

NA3077, HAZARDOUS WASTE, SOLID, N.O.S., (BAGHOUSE), 9, PG III

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY ONE TIME WEEKLY [x] MONTHLY QUARTERLY YEARLY OTHER ***Other***

CONTAINERIZED

0-0 CONTAINERS/SHIPMENT

STORAGE CAPACITY:

CONTAINER TYPE:

PORTABLE TOTE TANK BOX|CARTON|CASE

CUBIC YARD BOX DRUM

OTHER: DRUM SIZE:

BULK LIQUID

GALLONS/SHIPMENT: ***0 Min -0 Max*** GAL.

[x] **BULK SOLID**

SHIPMENT UOM: [x] TON YARD

TONS/YARDS/SHIPMENT: ***15.00 Min - 18.00 Max***

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

GENERATOR'S CERTIFICATION

I certify that I am authorized to execute this document as an authorized agent. I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge.I also certify that any samples submitted are representative of the actual waste.If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE	NAME (PRINT)	TITLE	DATE
pearson.lucas@cleanharbors.com	pearson.lucas@cleanharbors.com		10/23/2017 12:00 AM

Addendum

D. COMPOSITION

CHEMICAL	MIN	--	MAX	UOM
CHROMIUM OXIDE		--		Trace
COPPER COMPOUNDS		--		Trace
FE O.		--		Trace
FIBERGLASS BAGS	0.000000	--	5.0000000	%
LEAD COMPOUNDS		--		Trace
MERCURY	260.0000	--	2470.0000000	PPM
MERCURY OXIDE		--		Trace
MIBK		--		Trace
NICKEL OXIDE		--		Trace
SELENIUM OXIDE		--		Trace
SI O2.		--		Trace
SILVER COMPOUNDS		--		Trace
SODIUM CHLORIDE		--		Trace
TETRACHLOROETHENE		--		Trace
THALLIUM OXIDE (TH2O3)		--		Trace
TRICHLOROETHENE		--		Trace
VANADIUM OXIDE		--		Trace
ZINC OXIDE (ZNO)		--		Trace
ZINC OXIDE (ZNO).		--		Trace

F. REGULATORY STATUS

USEPA HAZARDOUS WASTE?

F024 F025 F032 F034 F035 F037 F038 F039 K001 K009 K010 K011 K013 K014 K015 K016 K017 K018 K019 K020 K021 K022 K023 K024 K025 K026 K027 K028 K029 K030 K031 K032 K033 K034 K035 K036 K037 K038 K039 K040 K041 K042 K046 K048 K049 K050 K051 K052 K060 K061 K062 K069 K071 K073 K083 K084 K085 K086 K087 K093 K094 K095 K096 K097 K098 K100 K101 K102 K103 K104 K105 K106 K107 K108 K109 K110 K111 K112 K113 K114 K115 K116 K117 K118 K123 K124 K125 K126 K136 K156 K169 K170 K171 K172 P001 P002 P003 P004 P005 P006 P007 P008 P009 P010 P011 P012 P013 P014 P015 P016 P017 P018 P020 P021 P022 P023 P024 P026 P027 P028 P029 P030 P031 P033 P034 P036 P037 P038 P039 P040 P041 P042 P043 P044 P045 P046 P047 P048 P049 P050 P051 P054 P056 P057 P058 P059 P060 P062 P063 P064 P066 P067 P068 P069 P070 P071 P072 P073 P074 P075 P077 P082 P084 P085 P087 P088 P089 P092 P093 P094 P095 P096 P097 P098 P099 P101 P102 P103 P104 P105 P106 P108 P109 P110 P111 P113 P114 P115 P116 P118 P119 P120 P121 P122 P123 P185 P188 P189 P191 P192 P197 U001 U002 U003 U004 U005 U006 U007 U008 U009 U010 U011 U012 U014 U015 U016 U017 U018 U019 U020 U021 U022 U024 U025 U026 U027 U028 U029 U030 U031 U032 U034 U035 U036 U037 U038 U039 U041 U042 U043 U044 U045 U046 U047 U048 U049 U050 U051 U052 U053 U055 U056 U057 U058 U059 U060 U061 U062 U063 U064 U066 U067 U068 U069 U070 U071 U072 U073 U074 U075 U076 U077 U078 U079 U080 U081 U082 U083 U084 U085 U086 U087 U088 U089 U090 U091 U092 U093 U094 U095 U097 U098 U099 U101 U102 U103 U105 U106 U107 U108 U109 U110 U111 U112 U113 U114 U115 U116 U117 U118 U119 U120 U121 U122 U123 U124 U125 U126 U127 U128 U129 U130 U131 U132 U134 U135 U136 U137 U138 U140 U141 U142 U143 U144 U145 U146 U147 U148 U149 U150 U152 U153 U154 U155 U156 U157 U158 U159 U161 U162 U163 U164 U165 U166 U167 U168 U169 U170 U171 U172 U173 U174 U176 U177 U178 U179 U180 U181 U182 U183 U184 U185 U186 U187 U188 U190 U191 U192 U193 U194 U196 U197 U200 U201 U203 U204 U205 U206 U207 U208 U209 U210 U211 U213 U214 U215 U216 U217 U218 U219 U220 U221 U222 U223 U225 U226 U227 U228 U235 U236 U237 U238 U239 U240 U243 U244 U246 U247 U248 U249 U328 U353 U359 U364 U367 U394 U395 U404



Kari Lundeen <klundeen@utah.gov>

RE: Clean Harbors Grassy Mountain Site-Specific Treatment Variance

5 messages

Torstenson, Jared <Torstenson.Jared@cleanharbors.com> Wed, Mar 6, 2024 at 12:27 PM
To: Kari Lundeen <klundeen@utah.gov>
Cc: "WHITNEY, SHANE" <WHITNEY.SHANE@cleanharbors.com>, "Bhide, Ravindra" <bhide.ravindra@cleanharbors.com>

Hi Kari,

1. Correspondence attached.
2. I've attached an Excel file and some .pdfs with the Treatability Study Data. I will need to send more .pdfs in multiple emails due to the size of the files.
3. The complete list of boxes covered under the variance request is as follows:
    a. CHRT24804
    b. CHRT25401
    c. AGA12-013
    d. A30781
    e. R3017RT
    f. PT4109
    g. CHIU252016
    h. N33987

We had also discussed the different profile numbers between the last request and this one. As I understand it, it is the same profile but we changed the number internally by dropping the AG and GM from the front of the number. The rest of the number is the same.

Thank you and let me know if you need anything else!

Jared

From: Kari Lundeen <klundeen@utah.gov>
Sent: Tuesday, October 24, 2023 9:04 AM
To: Torstenson, Jared <Torstenson.Jared@cleanharbors.com>
Subject: Re: Clean Harbors Grassy Mountain Site-Specific Treatment Variance

Hi Jared,

Sorry for all the emails! I would like some additional information that was supplied last time - Deb said we denied it until the additional information was submitted.

1) Letters or emails from other facilities saying they can't take the waste (I know you are working on this)

2) I like the graphs for the treatability studies, and would like a bit more detail. Last time they sent in lab results, and we had information on when the studies were completed.

3) A list of boxes/containers that will need the variance for mercury. They also included the analytical results from each box.

I attached the application from 2017 for your reference - I didn't know if you had a copy of the entire submittal.

Thanks!

Kari

WASTE MANAGEMENT & RADIATION CONTROL

Kari Lundeen

Environmental Scientist | Hazardous Waste Section

She/Her

Phone: (385) 499-4923

Front Desk: (801) 536-0200

Electronic Document Submittal Portal: dwmrcsubmit@utah.gov

wasteandradiation.utah.gov

Emails to and from this email address may be considered public records and thus subject to Utah GRAMA requirements.

Statements made in this email do not constitute the official position of the Director of the Division of Waste Management and Radiation Control. If you desire a statement of the Division Director's position, please submit a written request to the Director, including copies of documents relevant to your request.

On Mon, Oct 23, 2023 at 2:56 PM Kari Lundeen <klundeen@utah.gov> wrote:

> Hi Jared,
>
> Is this profile meant to be the same profile as in the 2017 variance? The numbers are slightly different.
>
> Thanks,
>
> Kari

Kari Lundeen

Environmental Scientist | Hazardous Waste Section

She/Her

Phone: (385) 499-4923

Front Desk: (801) 536-0200

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On Wed, Oct 4, 2023 at 4:33 PM Torstenson, Jared <Torstenson.Jared@cleanharbors.com> wrote:

> Mr. Hansen,
>
> Please see the attached Site-Specific Treatment Variance request and supporting documentation pertaining to mercury waste treatment and disposal at Clean Harbors Grassy Mountain. If you have any questions, please let me know.
>
> Thank you,
>
> ***Safety Starts with Me: Live It 3-6-5***
>
> _____
> **Jared Torstenson, P.E.**
> Director, Environmental Compliance
> Clean Harbors, Safety-Kleen and Thermo Fluids
>
> (c) 719.760.2526

torstenson.jared@cleanharbors.com
www.cleanharbors.com

7 attachments

Bethlehem Apparatus Letter..pdf
207K

Veolia Letter 8-25-23.pdf
101K

TreatStudy-AGBoxes.xlsx
52K

CHIU252016 Mercury Variance 1-21-24.pdf
1274K

CHRT24804 BH 11-16-22.pdf
1114K

N33987 Mercury Variance 1-22-24.pdf
2230K

PT4109 BH 7-8-22.pdf
1011K

Torstenson, Jared <Torstenson.Jared@cleanharbors.com> Wed, Mar 6, 2024 at 12:29 PM
To: Kari Lundeen <klundeen@utah.gov>
Cc: "WHITNEY, SHANE" <WHITNEY.SHANE@cleanharbors.com>, "Bhide, Ravindra" <bhide.ravindra@cleanharbors.com>

More data.

[Quoted text hidden]

A30781_data.pdf
21034K

Torstenson, Jared <Torstenson.Jared@cleanharbors.com> Wed, Mar 6, 2024 at 12:30 PM
To: Kari Lundeen <klundeen@utah.gov>
Cc: "WHITNEY, SHANE" <WHITNEY.SHANE@cleanharbors.com>, "Bhide, Ravindra" <bhide.ravindra@cleanharbors.com>

More data (2).

[Quoted text hidden]

CLHA320082_data.pdf
22860K

Torstenson, Jared <Torstenson.Jared@cleanharbors.com> Wed, Mar 6, 2024 at 12:32 PM
To: Kari Lundeen <klundeen@utah.gov>
Cc: "WHITNEY, SHANE" <WHITNEY.SHANE@cleanharbors.com>, "Bhide, Ravindra" <bhide.ravindra@cleanharbors.com>

More data (3). Last one.

[Quoted text hidden]

R3017RT_data.pdf
21639K

Kari Lundeen <klundeen@utah.gov> Wed, Mar 6, 2024 at 1:24 PM
To: "Torstenson, Jared" <Torstenson.Jared@cleanharbors.com>

Thanks, Jared.
Kari

WASTE MANAGEMENT & RADIATION CONTROL

Kari Lundeen

Environmental Scientist | Hazardous Waste Section
She/Her

Phone: (385) 499-4923
Front Desk: (801) 536-0200
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[Quoted text hidden]

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **A30781**

IN SERVICE DATE
From: 11/21/2021
To: 11/22/2021

	YES	NO
Dioxin Campaign:	[X]	[ ]
K061 Campaign:	[X]	[ ]
OK TO SHIP	[ ]	[ ]

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	6.87	mg/L
Hg	D009	0.2	0.545	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	0.545	mg/L
Zn	K061 UTS	4.3	122	mg/L

TOTAL MERCURY: 1500mg/Kg

Reviewed by:_____

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202201131418
Thursday, January 13, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID A3781 | Baghouse | Lab Sample ID KE2185293 | SDG 3238

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-010722

Data Entered By: DickersonD | Sampling Date: 11/22/2021 | Cleanup Batch ID:
Peer Reviewed By: RoylanceR | Analysis Date: 1/9/2022 | Analysis Batch ID: E0701-010922

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	ND		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	ND		1.00	1.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

LABORATORY SUMMARY REPORT for Daily HSWA

Client

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111024** Sample Fraction **01**

Sample Date: 11/22/2021 Sample Fraction ID **SL211121S01-S24**

HSWA Date: 11/21/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	TZ/AS	12/3/2021	1.15
Arsenic	7440-38-2	**0.17**	mg/L	0.1			5.0
Barium	7440-39-3	**ND**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**0.19**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.20**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.16**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**9.84**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/2/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/23/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		125%					
DCB (surrogate)		125%					

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LIMS ID 2111024 Sample Fraction 02

Sample Date 11/22/2021 Sample Fraction ID RD211120S06-211121S05

HSWA Date: 11/21/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.24**	mg/L	0.1	TZ/AS	12/3/2021	1.15
Arsenic	7440-38-2	**1.44**	mg/L	0.1			5.0
Barium	7440-39-3	**0.14**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**1.16**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.60**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.16**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**52.0**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/2/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/23/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		15%					
DCB (surrogate)		105%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111024 Sample Fraction 03

Sample Date 11/22/2021 Sample Fraction ID RD211120S06-211121S05

HSWA Date: 11/21/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		837	mg/Kg	0.06	JM	12/2/2021	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111025** Sample Fraction **01**

Sample Date: 11/23/2021 Sample Fraction ID **SL211122S01-211123S03**

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	TZ/AS	12/3/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.42**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**0.18**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.13**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**2.50**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/2/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/23/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		60%					
DCB (surrogate)		85%					

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LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111025 Sample Fraction 02

Sample Date 11/23/2021 Sample Fraction ID RD211121S06-211122S05

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.13**	mg/L	0.1	TZ/AS	12/3/2021	1.15
Arsenic	7440-38-2	**0.80**	mg/L	0.1			5.0
Barium	7440-39-3	**0.42**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**6.87**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.24**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.53**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**122**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.545**	mg/L	0.025	JM	12/2/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/23/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		15%					
DCB (surrogate)		105%					

LIMS ID 2111025 **Sample Fraction** 03

Sample Date 11/23/2021 **Sample Fraction ID** RD211121S06-211122S05

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		1520	mg/Kg	0.06	JM	12/2/2021	260

LIMS ID 2111025 **Sample Fraction** 04

LABORATORY SUMMARY REPORT for Daily HSWA

Sample Date 11/23/2021 Sample Fraction ID **25576**

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		47.9	mg/Kg	0.06	JM	12/2/2021	260

LIMS ID 2111025 Sample Fraction **05**

Sample Date 11/23/2021 Sample Fraction ID **A30781**

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		1500	mg/Kg	0.06	JM	12/2/2021	260

LIMS ID 2111025 Sample Fraction **06**

Sample Date 11/23/2021 Sample Fraction ID **CHIU250260**

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		1030	mg/Kg	0.06	JM	12/2/2021	260

LIMS ID 2111025 Sample Fraction **07**

Sample Date 11/23/2021 Sample Fraction ID **CHRT20317**

HSWA Date: 11/22/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		27.1	mg/Kg	0.06	JM	12/2/2021	260

Memo To File

Semi-volatile analyses for the Residue weekly composite (11/16/21 – 11/22/21) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg.

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

For ***Methanol*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111026**

Sample Fraction **01**

Sample Date 11/23/2021

Sample Fraction ID **SL211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

LIMS ID **2111026**

Sample Fraction **02**

Sample Date 11/23/2021

Sample Fraction ID **RD211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-113021
Cleanup Batch ID:
Analysis Batch ID: E0701-120121

Data Entered By: DickersonD
Peer Reviewed By: RoylanceR
Sampling Date: 11/23/2021
Analysis Date: 12/1/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	**0.901**		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	**4.68**		1.00	2.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	**1.55**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	**2.48**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	**2.28**		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	**6.40**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	**2.14**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	**4.17**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	**1.78**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1144
Cleanup Batch ID:
Analysis Batch ID: H211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	0.83	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		0.83	0.83	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	0.83	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1140	833	0	1930	ug/kg

Narrative:

8151

MS and MSD recoveries for 2,4-D was above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Nonhaloginated GC Organics NWW UTS
Analytical Method: EPA 8015C
Prep Method: EPA 8015C

TCLP Batch ID: NA
Prep Batch ID: E0923-308
Cleanup Batch ID:
Analysis Batch ID: A211126E

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methanol	67-56-1	1.0	ND		1.75	1.75	mg/kg	0.75 mg/L TCLP

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
1-Propanol	Surrogate	0.418	5.0	3.00	12.0	*mg/kg*

Narrative: Surrogate recovery was below established QC limits due to sample matrix interference.

8015

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221
Cleanup Batch ID:
Analysis Batch ID: P211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Cleanup Batch ID:
Analysis Batch ID: P211126D

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	1.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	41.2	50.0	0	124	*ug/kg*
TCMX	Surrogate	11.9	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

MS and MSD recoveries for 4,4'-DDE and Methoxychlor were above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.20	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.20	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.20	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.20	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.20	mg/kg	1.8 mg/kg

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.20	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.20	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.20	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.20	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.20	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.20	mg/kg	0.10 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	35.4	40.0	18.2	60.9	*mg/kg*
2-Fluorobiphenyl	Surrogate	18.4	40.0	13.4	34.3	*mg/kg*
2-Fluorophenol	Surrogate	21.3	40.0	8.3	51.2	*mg/kg*
Nitrobenzene-d5	Surrogate	19.8	40.0	7.9	36.3	*mg/kg*
Phenol-d6	Surrogate	23.7	40.0	18.9	57.4	*mg/kg*
Terphenyl-d14	Surrogate	1.27	40.0	14.9	41.1	*mg/kg*

Narrative: Surrogate recovery for Terphenyl-d14 is below laboratory derived control limits. *3550*

Surrogate recovery (see sample comments for details) is below laboratory derived control limits due to matrix interference. All surrogate recoveries are within control limits in Method Blank. Batch QC Smp: KE2185857
Several RPDs are above 20%.
All LCS/MS/MSD spiking standards are expired (not including Surrogate spike or Internal Standard spike) CCV and LOD standards are also expired. New standards were ordered in August, were supposed to ship at the end of November but, it is unknown now, when they will ship to us. All results are reported as estimated due to expired standards.
There was contamination of Di-n-butylphthalate in the Method Blank.

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	0.965	B	0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	0.844	B	0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	0.606	B	0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: L1525405 WG1911489
Pace Project No.: 10621484

Sample: A30781-RAW **Lab ID: 10621484008** Collected: 08/12/22 17:00 Received: 08/16/22 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 08/19/22 08:26 Pace Analytical Services - Minneapolis								
Arsenic	**1.6**	mg/L	0.50	0.017	1	08/19/22 11:05	08/21/22 10:49	7440-38-2	
Barium	**5.6**	mg/L	1.0	0.00096	1	08/19/22 11:05	08/21/22 10:49	7440-39-3	
Cadmium	**5.0**	mg/L	0.050	0.0014	1	08/19/22 11:05	08/21/22 10:49	7440-43-9	
Chromium	**0.082J**	mg/L	0.50	0.0020	1	08/19/22 11:05	08/21/22 10:49	7440-47-3	
Lead	**2.2**	mg/L	0.50	0.013	1	08/19/22 11:05	08/21/22 10:49	7439-92-1	
Selenium	**0.15**	mg/L	0.10	0.029	1	08/19/22 11:05	08/21/22 10:49	7782-49-2	
Silver	**<0.0025**	mg/L	0.10	0.0025	1	08/19/22 11:05	08/21/22 10:49	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 08/19/22 08:26 Pace Analytical Services - Minneapolis								
Mercury	**125**	ug/L	6.0	2.9	10	08/19/22 13:01	08/23/22 14:10	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1525405 WG1911489
Pace Project No.: 10621484

Sample: A30781-1 **Lab ID: 10621484009** Collected: 08/12/22 17:00 Received: 08/16/22 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Arsenic	**0.29J**	mg/L	0.50	0.017	1	08/19/22 12:58	08/21/22 12:39	7440-38-2	
Barium	**0.23J**	mg/L	1.0	0.00096	1	08/19/22 12:58	08/21/22 12:39	7440-39-3	
Cadmium	**2.0**	mg/L	0.050	0.0014	1	08/19/22 12:58	08/21/22 12:39	7440-43-9	
Chromium	**<0.0020**	mg/L	0.50	0.0020	1	08/19/22 12:58	08/21/22 12:39	7440-47-3	
Lead	**0.069J**	mg/L	0.50	0.013	1	08/19/22 12:58	08/21/22 12:39	7439-92-1	
Selenium	**0.11**	mg/L	0.10	0.029	1	08/19/22 12:58	08/21/22 12:39	7782-49-2	
Silver	**<0.0025**	mg/L	0.10	0.0025	1	08/19/22 12:58	08/21/22 12:39	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Mercury	**3.2**	ug/L	0.60	0.29	1	08/19/22 13:00	08/23/22 12:35	7439-97-6	

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ANALYTICAL RESULTS

Project: L1525405 WG1911489
Pace Project No.: 10621484

Sample: A30781-2 **Lab ID: 10621484010** Collected: 08/12/22 17:00 Received: 08/16/22 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Arsenic	**0.13J**	mg/L	0.50	0.017	1	08/19/22 12:58	08/21/22 12:41	7440-38-2	
Barium	**0.24J**	mg/L	1.0	0.00096	1	08/19/22 12:58	08/21/22 12:41	7440-39-3	
Cadmium	**1.2**	mg/L	0.050	0.0014	1	08/19/22 12:58	08/21/22 12:41	7440-43-9	
Chromium	**0.0056J**	mg/L	0.50	0.0020	1	08/19/22 12:58	08/21/22 12:41	7440-47-3	B
Lead	**0.034J**	mg/L	0.50	0.013	1	08/19/22 12:58	08/21/22 12:41	7439-92-1	
Selenium	**0.052J**	mg/L	0.10	0.029	1	08/19/22 12:58	08/21/22 12:41	7782-49-2	
Silver	**<0.0025**	mg/L	0.10	0.0025	1	08/19/22 12:58	08/21/22 12:41	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Mercury	**405**	ug/L	12.0	5.7	20	08/19/22 13:00	08/23/22 14:18	7439-97-6	

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ANALYTICAL RESULTS

Project: L1525405 WG1911489
Pace Project No.: 10621484

Sample: A30781-5 **Lab ID: 10621484011** Collected: 08/12/22 17:00 Received: 08/16/22 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
6010D MET ICP, TCLP	Analytical Method: EPA 6010D Preparation Method: EPA 3010A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Arsenic	**<0.017**	mg/L	0.50	0.017	1	08/19/22 12:58	08/21/22 12:43	7440-38-2	
Barium	**0.31J**	mg/L	1.0	0.00096	1	08/19/22 12:58	08/21/22 12:43	7440-39-3	
Cadmium	**0.032J**	mg/L	0.050	0.0014	1	08/19/22 12:58	08/21/22 12:43	7440-43-9	
Chromium	**0.017J**	mg/L	0.50	0.0020	1	08/19/22 12:58	08/21/22 12:43	7440-47-3	B
Lead	**<0.013**	mg/L	0.50	0.013	1	08/19/22 12:58	08/21/22 12:43	7439-92-1	
Selenium	**0.045J**	mg/L	0.10	0.029	1	08/19/22 12:58	08/21/22 12:43	7782-49-2	
Silver	**<0.0025**	mg/L	0.10	0.0025	1	08/19/22 12:58	08/21/22 12:43	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 08/18/22 14:36 Pace Analytical Services - Minneapolis								
Mercury	**0.90**	ug/L	0.60	0.29	1	08/19/22 13:00	08/23/22 12:51	7439-97-6	

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Bethlehem Apparatus Company, Inc.

890 Front St., P.O. Box Y, Hellertown, PA 18055 • 610-838-7034 • FAX 610-838-6333

November 21, 2023

To Whom It May Concern,

Bethlehem Apparatus Company, Inc. must comply with all terms and conditions set forth in PA DEP Hazardous Waste Recycling Permit Number: PA0000453084 and PA DEP Hazardous Waste Recycling Permit Number: PAD002390961. Both permits authorize only the management of hazardous waste from generators that are composed primarily of D009 or U151 waste. Some wastes also have secondary characteristic waste codes other than D009 (typically D001-D011) because of the composition of the material. Additional mercury bearing wastes include waste codes K071 and K076. Bethlehem Apparatus Company, Inc will not accept hazardous waste that contain F-listed waste codes.

Furthermore, Bethlehem Apparatus Company does not process any materials that are suspected to have the potential of causing damage to its processing equipment (i.e. retorts, chemical processes), contaminating or adversely affecting the environment or causing injury to any person arising out of the placement of the materials into the processing equipment. Materials, which are not acceptable for processing at Bethlehem Apparatus include but are not limited to:

- Explosive
- Infectious or biologically active
- Pyrophoric
- Radioactive
- Shock or heat sensitive

If you have any questions, please do not hesitate to contact our office.

Regards,

Eve Metzger
President
610-838-7034

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HSWA Analytical Review

Matrix **Baghouse**

BOX ID **CHIU252016**

IN SERVICE DATE
From: 1/21/2024
To: 1/22/2024

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	2.93	mg/L
Pb	F006-009 F011-012 F039 K001 K046 K062 K069 K086-087 K100 P110 U051 U144-146 UTS	0.75	0.8	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	0.129	mg/L
Ag	D011 F006-009 F011-12 F039 P099 P104 UTS	0.14	0.27	mg/L
Tl	K061 UTS	0.2		mg/L
Zn	K061 UTS	4.3	141	mg/L

TOTAL MERCURY: 473mg/Kg

Reviewed by:_____

Clean Harbors Aragonite Dioxin/Furan Summary Report

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

Lab Sample ID: CHIU252016

Sample Description: Baghouse
Tracking # A00E38SK

HSWA Date: 1/21 - 1/22/24

Sample Date: 1/23/2024

Analysis Date: 2/2/2024

Analytical Method EPA 8280B

Prep Batch ID: 240130-01

Analysis Batch ID DF20240202A

Data Entered by CH

Final Review by

Parameter	CAS #	Result	Units	Report Limit	Flag	Dilution Factor	Project Limits
Total TCDF	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total TCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total PeCDF	n/a	0.87	ug/kg	0.5		1	1.0ug/kg
Total PeCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total HxCDF	n/a	0.53	ug/kg	0.5		1	1.0ug/kg
Total HxCDD	n/a	0.56	ug/kg	0.5		1	1.0ug/kg
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	ug/kg	0.5		1	2.5ug/kg
OCDF	39001-02-0	ND	ug/kg	1.0		1	5.0ug/kg
OCDD	3268-87-9	0.71	ug/kg	1.0		1	5.0ug/kg

System Monitoring Compounds

		Value	Expected	Lower Limit	UpperLimit	Units
2,3,7,8-TCDF-13C12	Internal Std	347	500	125	750	ng/ml
2,3,7,8-TCDD-13C12	Internal Std	342	500	125	750	ng/ml
1,2,3,6,7,8-HxCDD-13C12	Internal Std	401	500	125	750	ng/ml
1,2,3,4,6,7,8-HpCDF-13C12	Internal Std	755	1000	250	1500	ng/ml
OCDD-13C12	Internal Std	795	1000	250	1500	ng/ml
2,3,7,8-TCDD-37Cl35	Cleanup Std	213	250			ng/ml

Data Flags

David Lunt
Lab Manager

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID 2401024 Sample Fraction 01

Sample Date: 1/22/2024 Sample Fraction ID **SL240121S01-S18**

HSWA Date: 1/21/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**2.52**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.581**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.217**	mg/L	0.1			1.60
Zinc	7440-66-6	**1.1**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		35%					
DCB (surrogate)		105%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2401024** Sample Fraction 02

Sample Date 1/22/2024 Sample Fraction ID RD240120S06-RD240121S05

HSWA Date: **1/21/2024**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.562**	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	**3.16**	mg/L	0.1			5.0
Barium	7440-39-3	**0.284**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**2.93**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.802**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.45**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.621**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.982**	mg/L	0.1			1.60
Zinc	7440-66-6	**141**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.025**	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		100%					
DCB (surrogate)		120%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2401024

Sample Fraction 03

Sample Date 1/22/2024

Sample Fraction ID RD240120S06-RD240121S05

HSWA Date: 1/21/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**225**	mg/Kg	0.06	ts	1/24/2024	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2401025**

Sample Fraction: 01

Sample Date: 1/23/2024

Sample Fraction ID: SL240121S19-SL240123S01

HSWA Date: **1/22/2024**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	ND	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	ND	mg/L	0.1			5.0
Barium	7440-39-3	1.46	mg/L	0.1			21.0
Beryllium	7440-41-7	ND	mg/L	0.1			1.22
Cadmium	7440-43-9	ND	mg/L	0.1			0.11
Chromium	7440-47-3	ND	mg/L	0.1			0.60
Lead	7440-92-1	0.303	mg/L	0.1			0.75
Nickel	7440-02-0	1.09	mg/L	0.1			11.0
Selenium	7782-49-2	ND	mg/L	0.1			5.7
Silver	7440-22-4	ND	mg/L	0.1			0.14
Thallium	7440-28-0	ND	mg/L	0.1			0.20
Vanadium	7440-62-2	0.123	mg/L	0.1			1.60
Zinc	7440-66-6	4.9	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	0.054	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		ND	mg/Kg	0.4			
TCMX (surrogate)		75%					
DCB (surrogate)		130%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2401025** Sample Fraction 02

Sample Date 1/23/2024 Sample Fraction ID RD240121S06-RD240122S05

HSWA Date: **1/22/2024**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.468**	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	**3.48**	mg/L	0.1			5.0
Barium	7440-39-3	**0.384**	mg/L	0.1			21.0
Beryllium	7440-41-7	**0.137**	mg/L	0.1			1.22
Cadmium	7440-43-9	**2.5**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.693**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.813**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.482**	mg/L	0.1			5.7
Silver	7440-22-4	**0.266**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.433**	mg/L	0.1			1.60
Zinc	7440-66-6	**93.9**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.129**	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		80%					
DCB (surrogate)		105%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2401025

Sample Date 1/23/2024

Sample Fraction 03

Sample Fraction ID RD240121S06-RD240122S05

HSWA Date: 1/22/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		317	mg/Kg	0.06	ts	1/24/2024	260

LABORATORY SUMMARY REPORT

Client

Clean Harbors Aragonite
11600 North Aptus Road
Dugway, UT 84022

David Lunt
Lab Manager

LIMS ID **2401025**

Sample Date 1/23/2024

Sample Fraction **04**

Sample Fraction ID **N33987**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**342**	**mg/Kg**	0.06	JM	1/31/2024

LIMS ID **2401025**

Sample Date 1/23/2024

Sample Fraction **05**

Sample Fraction ID **CHIU252016**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**473**	**mg/Kg**	0.06	JM	1/31/2024

LIMS ID **2401025**

Sample Date 1/23/2024

Sample Fraction **06**

Sample Fraction ID **CHRT27084**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**52.7**	**mg/Kg**	0.06	JM	1/31/2024

Memo To File

Semi-volatile analyses for the Residue weekly composite (01/16/2024 – 01/22/2024) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg,

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg, an elevated reporting limit for ***Methanol*** of 50mg/Kg versus treatment standard of 15.0mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID: **2401026**

Sample Date: 1/23/2024

Weekly Date: 01/16/24 - 01/22/24

Sample Fraction: **01**

Sample Fraction ID: **SL240116 - SL240122**

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/24/2024

LIMS ID: **2401026**

Sample Date: 1/23/2024

Weekly Date: 01/16/24 - 01/22/24

Sample Fraction: **02**

Sample Fraction ID: **RD240116 - RD240122**

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/24/2024

Clean Harbors Aragonite Dioxin/Furan Summary Report

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

Lab Sample ID: 2401026-02

Sample Description: Residue Weekly Composite
Tracking # n/a

HSWA Date: 1/16 - 1/22/24

Sample Date: 1/23/2024

Analysis Date: 1/27/2024

Analytical Method EPA 8280B

Prep Batch ID: 240124-01

Analysis Batch ID DF20240126A

Data Entered by CH

Final Review by

Parameter	CAS #	Result	Units	Report Limit	Flag	Dilution Factor	Project Limits
Total TCDF	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total TCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total PeCDF	n/a	1.54	ug/kg	0.6		1	1.0ug/kg
Total PeCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total HxCDF	n/a	1.64	ug/kg	0.5		1	1.0ug/kg
Total HxCDD	n/a	0.88	ug/kg	0.5		1	1.0ug/kg
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.78	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,6,7,8-HpCDF	67562-39-4	1.89	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	ug/kg	0.5		1	2.5ug/kg
OCDF	39001-02-0	0.77	ug/kg	0.5		1	5.0ug/kg
OCDD	3268-87-9	3.93	ug/kg	0.5		1	5.0ug/kg

System Monitoring Compounds

		Value	Expected	Lower Limit	UpperLimit	Units
2,3,7,8-TCDF-13C12	Internal Std	350	500	125	750	ng/ml
2,3,7,8-TCDD-13C12	Internal Std	381	500	125	750	ng/ml
1,2,3,6,7,8-HxCDD-13C12	Internal Std	412	500	125	750	ng/ml
1,2,3,4,6,7,8-HpCDF-13C12	Internal Std	788	1000	250	1500	ng/ml
OCDD-13C12	Internal Std	749	1000	250	1500	ng/ml
2,3,7,8-TCDD-37Cl35	Cleanup Std	194	250			ng/ml

Data Flags

David Lunt
Lab Manager

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1362
Cleanup Batch ID:
Analysis Batch ID: H240125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	5.00	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1100	833	0	1930	*ug/kg*

Narrative:

8151

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
***Project Limits** are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.*

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

TCLP Batch ID: NA
Prep Batch ID: E0558-1439
Cleanup Batch ID:
Analysis Batch ID: P240125D

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 | 2401026-02 | Lab Sample ID KE2487976 | SDG 3731

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1439
Cleanup Batch ID:
Analysis Batch ID: P240125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	16.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	61.5	50.0	0	124	*ug/kg*
TCMX	Surrogate	26.0	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

Data Entered By: EveryP
Peer Reviewed By: WaiteR

Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.80	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.80	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.80	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.80	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.80	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.80	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.80	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.80	mg/kg	1.8 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.80	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.80	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.80	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.80	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.80	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.80	mg/kg	0.10 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 | 2401026-02 | Lab Sample ID KE2487976 | SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	27.4	40.0	12.8	64.8	*mg/kg*
2-Fluorobiphenyl	Surrogate	25.0	40.0	16.1	47.7	*mg/kg*
2-Fluorophenol	Surrogate	23.9	40.0	7.5	53.4	*mg/kg*
Nitrobenzene-d5	Surrogate	24.7	40.0	17.1	42.8	*mg/kg*
Phenol-d6	Surrogate	26.3	40.0	17.8	52.3	*mg/kg*
Terphenyl-d14	Surrogate	14.7	40.0	18.1	50.3	*mg/kg*

Narrative: Surrogate recovery for terphenyl-d14 was below laboratory control limits. All surrogate recoveries for the method blank were within these same limits. *3550*

Matrix spike recoveries and RPD's were outside of control limits. Spiked compounds in the LCS were recovered within acceptable limits, and with good precision compared to other LCS. (The only exception was pyrene which recovered above normal limits.) Batch QC Smp: KE2487975

Matrix interferences in the parent sample are highly likely.

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 | 2401026-02 | Lab Sample ID KE2487976 | SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	ND		0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

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Certificate of Analysis

Clean Harbors - Aragonite Facility
David Lunt
PO Box 1339
Grantsville, UT 84029-1339

PO#:
Receipt: **1/23/24 13:00 @ 11.0** °C
Date Reported: 1/29/2024
Project Name: **[none]**

Sample ID: **RD24016-240122 2401026-02**
Matrix: **Solid**
System No.: **UTAH23066**
Date Sampled: **1/23/24 9:30**

Lab ID: **24A1511-02**

Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Total Solids	94.7	%	0.1	CTF8000	1/24/24	1/24/24	
Miscellaneous Organics							
Methanol	ND	mg/kg	50	EPA 8015M	1/25/24	1/25/24	

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **CHRT24804**

IN SERVICE DATE
From: 11/16/2022
To: 11/17/2022

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	9.8	mg/L
Hg	D009	0.2	2.59	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	2.59	mg/L
Ag	D011 F006-009 F011-12 F039 P099 P104 UTS	0.14	0.17	mg/L
Zn	K061 UTS	4.3	143	mg/L

TOTAL MERCURY: 527mg/Kg

Reviewed by:_____

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202305161456
Tuesday, May 16, 2023

All results are reported on a wet-weight basis unless otherwise noted.

Client ID CHRT24804 Baghouse **Lab Sample ID** KE2286621 **SDG** 3481

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-051223
Cleanup Batch ID:
Analysis Batch ID: E0701-051423

Data Entered By: DickersonD **Sampling Date:** 11/17/2022
Peer Reviewed By: RoylanceR **Analysis Date:** 5/14/2023

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	ND		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	ND		1.00	1.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2211018** **Sample Fraction** **01**

Sample Date: 11/17/2022 **Sample Fraction ID** **SL1116S04-SL221117S02**

HSWA Date: **11/16/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	TZ	11/30/2022	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.708**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**4.09**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**39.6**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TS	11/30/2022	0.025
PCB Aroclor: 3550B/8082A					HS	11/17/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		95%					
DCB (surrogate)		105%					

LIMS ID **2211018** **Sample Fraction** **02**

Sample Date 11/17/2022 **Sample Fraction ID** **RD221115S06-RD221116S05**

HSWA Date: **11/16/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.359**	mg/L	0.1	TZ	11/30/2022	1.15
Arsenic	7440-38-2	**2.15**	mg/L	0.1			5.0
Barium	7440-39-3	**0.282**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**9.8**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.104**	mg/L	0.1			0.75
Nickel	7440-02-0	**6.19**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.267**	mg/L	0.1			5.7
Silver	7440-22-4	**0.173**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**143**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**2.59**	mg/L	0.025	TS	11/30/2022	0.025
PCB Aroclor: 3550B/8082A					HS	11/17/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		30%					
DCB (surrogate)		110%					

LIMS ID 2211018 **Sample Fraction** 03

Sample Date 11/17/2022 **Sample Fraction ID** RD221115S06-RD221116S05

HSWA Date: 11/16/2022

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		527	mg/Kg	0.06	pb/sn	11/23/2022	260

LIMS ID 2211018 **Sample Fraction** 04

Sample Date #N/A **Sample Fraction ID** CHTB25169

HSWA Date: 11/13/22 - 11/18/22

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		9.36	mg/Kg	0.06	SB	5/22/2023	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2211019** **Sample Fraction** **01**

Sample Date: 11/18/2022 **Sample Fraction ID** **SL221117S03-S17, SL221118S01-S03**

HSWA Date: **11/17/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	TZ	11/30/2022	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**1.51**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.16**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**3.2**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TS	11/30/2022	0.025
PCB Aroclor: 3550B/8082A					HS	11/18/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		55%					
DCB (surrogate)		95%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2211019** **Sample Fraction** **02**

Sample Date 11/18/2022 **Sample Fraction ID** **RD221116S06-RD221117S05**

HSWA Date: **11/17/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.357**	mg/L	0.1	TZ	11/30/2022	1.15
Arsenic	7440-38-2	**1.32**	mg/L	0.1			5.0
Barium	7440-39-3	**ND**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**7.87**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.136**	mg/L	0.1			0.75
Nickel	7440-02-0	**4.86**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.209**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**128**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.445**	mg/L	0.025	TS	11/30/2022	0.025
PCB Aroclor: 3550B/8082A					HS	11/18/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		30%					
DCB (surrogate)		100%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2211019 **Sample Fraction** 03

Sample Date 11/18/2022 **Sample Fraction ID** RD221116S06-RD221117S05

HSWA Date: 11/17/2022

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		303	mg/Kg	0.06	pb/sn	11/23/2022	260

LIMS ID 2211019 **Sample Fraction** 04

Sample Date #N/A **Sample Fraction ID** RBR251406

HSWA Date: 11/17/22 - 11/18/22

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		237	mg/Kg	0.06	SB	5/22/2023	260

Memo To File

Semi-volatile analyses for the Residue weekly composite (11/15/2022 – 11/22/2022) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg.

The volatile analyses for the Slag weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg, , an elevated reporting limit for ***Methanol*** of 50mg/Kg versus treatment standard of 15.0mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

For ***Methanol*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2211024**

Sample Fraction **01**

Sample Date 11/22/2022

Sample Fraction ID **SL221115- SL221121**

Weekly Date 11/15/22 - 11/21/22

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	CH	11/22/2022

LIMS ID **2211024**

Sample Fraction **02**

Sample Date 11/22/2022

Sample Fraction ID **RD221115 - RD221121**

Weekly Date 11/15/22 - 11/21/22

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	CH	11/22/2022

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1244
Cleanup Batch ID:
Analysis Batch ID: H221125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/25/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	0.83	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		0.83	0.83	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	0.83	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	630	833	0	1930	*ug/kg*

Narrative: *8151*

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1320
Cleanup Batch ID:
Analysis Batch ID: P221123D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/23/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 **Lab Sample ID** KE2286617 **SDG** 3480

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1320
Cleanup Batch ID:
Analysis Batch ID: P221123D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/23/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	1.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	52.0	50.0	0	124	*ug/kg*
TCMX	Surrogate	50.5	50.0	18.5	85.0	*ug/kg*

Narrative: *3550*

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 221024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.20	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.20	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.20	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.20	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.20	mg/kg	1.8 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.20	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.20	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.20	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.20	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.20	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.20	mg/kg	0.10 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112722
Cleanup Batch ID:
Analysis Batch ID: E0990-112822

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/22/2022
Analysis Date: 11/28/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	21.7	40.0	12.8	64.8	*mg/kg*
2-Fluorobiphenyl	Surrogate	17.8	40.0	16.1	47.7	*mg/kg*
2-Fluorophenol	Surrogate	14.8	40.0	7.5	53.4	*mg/kg*
Nitrobenzene-d5	Surrogate	17.1	40.0	17.1	42.8	*mg/kg*
Phenol-d6	Surrogate	15.0	40.0	17.8	52.3	*mg/kg*
Terphenyl-d14	Surrogate	2.72	40.0	18.1	50.3	*mg/kg*

Narrative: Surrogate recoveries for Phenol-d6 and Terphenyl-d14 are below laboratory derived control limits due to matrix interference.
Recoveries for Phenol, 2-Chlorophenol, 1,4-Dichlorobenzene, 4-Nitrophenol, 2,4-Dinitrotoluene, Pentachlorophenol and Pyrene are below laboratory derived control limits in MS/MSD due to matrix interference. They are within control limits in LCS.
Surrogate recoveries (see sample comments for details) are below laboratory derived control limits due to matrix interference. All surrogates are within control limits in Method Blank.
Several RPDs are above 20%.

3550

Batch QC Smp: KE2286616

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-3
Cleanup Batch ID:
Analysis Batch ID: E0388-112922

Data Entered By: DickersonD
Peer Reviewed By: RoylanceR
Sampling Date: 11/22/2022
Analysis Date: 11/29/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	ND		0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg

CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 Lab Sample ID KE2286617 SDG 3480

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-3
Cleanup Batch ID:
Analysis Batch ID: E0388-112922

Data Entered By: DickersonD
Peer Reviewed By: RoylanceR
Sampling Date: 11/22/2022
Analysis Date: 11/29/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202212011416
Thursday, December 1, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD221115-221121 2211024-02 **Lab Sample ID** KE2286617 **SDG** 3480

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-3
Cleanup Batch ID:
Analysis Batch ID: E0388-112922

Data Entered By: DickersonD **Sampling Date:** 11/22/2022
Peer Reviewed By: RoylanceR **Analysis Date:** 11/29/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

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Certificate of Analysis

Clean Harbors - Aragonite Facility
David Lunt
PO Box 1339
Grantsville, UT 84029-1339

PO#:
Receipt: **11/23/22 11:35 @ 9.2** °C
Date Reported: 11/30/2022
Project Name: **[none]**

Sample ID: **2211024-02**
Matrix: **Solid**
Comment: **RD221115-221121**
System No.: **UTAH23066**
Date Sampled: **11/22/22 9:00**

Lab ID: **22K1884-02**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Miscellaneous Organics							
Methanol	ND	mg/kg	50	EPA 8015M	11/30/22	11/30/22	

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **CLHA320082**

IN SERVICE DATE
From: 11/24/2021
To: 11/26/2021

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	1.55	mg/L
Hg	D009	0.2	1.86	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	1.86	mg/L
Zn	K061 UTS	4.3	99.4	mg/L

TOTAL MERCURY: 1077mg/Kg

Reviewed by:_____

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112091349
Thursday, December 9, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID CLHA320082 Baghouse Lab Sample ID KE2185321 SDG 3243

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 8280A

TCLP Batch ID: NA
Prep Batch ID: E0986-120621

Data Entered By: RoylanceR
Peer Reviewed By: DickersonD

Sampling Date: 11/26/2021
Analysis Date: 12/7/2021

Cleanup Batch ID:
Analysis Batch ID: E0701-120721

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	ND		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	ND		2.00	1.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

LABORATORY SUMMARY REPORT for Daily HSWA

Client

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111028** **Sample Fraction** **01**

Sample Date: 11/25/2021 **Sample Fraction ID** **SL211124S01-211125S03**

HSWA Date: **11/24/2021**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.50**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.74**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**1.42**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		60%					
DCB (surrogate)		85%					

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**36.7**	mg/Kg	28.7	RC	12/3/2021
Amenable Cyanide	ND	mg/Kg	28.7	RC	12/3/2021

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LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111028 **Sample Fraction** 02

Sample Date 11/25/2021 **Sample Fraction ID** RD211123S06-211124S05

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.63**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**0.60**	mg/L	0.1			5.0
Barium	7440-39-3	**0.30**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**1.55**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.12**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.88**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**36.3**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.332**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		10%					
DCB (surrogate)		95%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111028 **Sample Fraction** 03

Sample Date 11/25/2021 **Sample Fraction ID** RD211123S06-211124S05

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**923**	**mg/Kg**	0.06	JM	12/2/2021	260

LIMS ID 2111028 **Sample Fraction** 04

LABORATORY SUMMARY REPORT for Daily HSWA

Sample Date 11/25/2021 **Sample Fraction ID** **CLHA320082**

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**1077**	**mg/Kg**	0.06	JM	12/9/2021	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111029** Sample Fraction **01**

Sample Date: 11/26/2021 Sample Fraction ID **SL211125S04-211126S03**

HSWA Date: 11/25/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**1.38**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.98**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**2.54**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	RC	11/26/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		75%					
DCB (surrogate)		85%					

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**36.7**	mg/Kg	28.7	RC	12/3/2021

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Amenable Cyanide		ND	mg/Kg	28.7	RC	12/3/2021

LIMS ID 2111029 Sample Fraction 02

Sample Date 11/26/2021 Sample Fraction ID RD211124S06-211125S05

HSWA Date: 11/25/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.21**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**0.57**	mg/L	0.1			5.0
Barium	7440-39-3	**0.26**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**1.34**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.32**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.71**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.10**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**99.4**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.162**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	RC	11/26/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		20%					
DCB (surrogate)		90%					

LIMS ID 2111029 Sample Fraction 03

Sample Date 11/26/2021 Sample Fraction ID RD211124S06-211125S05

HSWA Date: 11/25/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		457	mg/Kg	0.06	TZ	12/1/2021	260

LIMS ID 2111029 Sample Fraction 04

Sample Date 11/26/2021 Sample Fraction ID SDAG-15-3

HSWA Date: 11/25/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		124	mg/Kg	0.06	JM	12/22/2021	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111030** Sample Fraction **01**

Sample Date: 11/29/2021 Sample Fraction ID **SL211126S04-S15**

HSWA Date: 11/26/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.69**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**0.16**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**ND**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**ND**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/29/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		60%					
DCB (surrogate)		85%					

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**36.7**	mg/Kg	28.7	RC	12/3/2021
Amenable Cyanide	ND	mg/Kg	28.7	RC	12/3/2021

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111030 Sample Fraction 02

Sample Date 11/29/2021 Sample Fraction ID RD211125S06-211126S05

HSWA Date: 11/26/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.17**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**1.46**	mg/L	0.1			5.0
Barium	7440-39-3	**0.52**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**0.86**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.33**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.12**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**15.7**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**1.86**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/29/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		5%					
DCB (surrogate)		95%					

LIMS ID **2111030** Sample Fraction **03**

Sample Date 11/29/2021 Sample Fraction ID **RD211125S06-211126S05**

HSWA Date: 11/26/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B Mercury		586	mg/Kg	0.06	TZ	12/1/2021	260

LIMS ID **2111030** Sample Fraction **04**

LABORATORY SUMMARY REPORT for Daily HSWA

Sample Date 11/29/2021 Sample Fraction ID **CHRT25116**

HSWA Date: 11/26/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury			mg/Kg	0.06	JM		260

Memo To File

Semi-volatile analyses for the Residue weekly composite (11/16/21 – 11/22/21) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg.

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

For ***Methanol*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111026**

Sample Fraction **01**

Sample Date 11/23/2021

Sample Fraction ID **SL211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

LIMS ID **2111026**

Sample Fraction **02**

Sample Date 11/23/2021

Sample Fraction ID **RD211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-113021
Cleanup Batch ID:
Analysis Batch ID: E0701-120121

Data Entered By: DickersonD
Peer Reviewed By: RoylanceR
Sampling Date: 11/23/2021
Analysis Date: 12/1/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	**0.901**		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	**4.68**		1.00	2.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	**1.55**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	**2.48**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	**2.28**		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	**6.40**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	**2.14**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	**4.17**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	**1.78**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1144
Cleanup Batch ID:
Analysis Batch ID: H211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	0.83	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		0.83	0.83	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	0.83	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1140	833	0	1930	ug/kg

Narrative:

8151

MS and MSD recoveries for 2,4-D was above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

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** END OF TEST GROUP **

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Nonhaloginated GC Organics NWW UTS
Analytical Method: EPA 8015C
Prep Method: EPA 8015C

TCLP Batch ID: NA
Prep Batch ID: E0923-308

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Cleanup Batch ID:
Analysis Batch ID: A211126E

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methanol	67-56-1	1.0	ND		1.75	1.75	mg/kg	0.75 mg/L TCLP

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
1-Propanol	Surrogate	0.418	5.0	3.00	12.0	*mg/kg*

Narrative: Surrogate recovery was below established QC limits due to sample matrix interference. *8015*

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Cleanup Batch ID:
Analysis Batch ID: P211126D

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221
Cleanup Batch ID:
Analysis Batch ID: P211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	1.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	41.2	50.0	0	124	*ug/kg*
TCMX	Surrogate	11.9	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

MS and MSD recoveries for 4,4'-DDE and Methoxychlor were above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

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** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

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Clean Harbors, Inc.

Laboratory Test Report

Report ID
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All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.20	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.20	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.20	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.20	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.20	mg/kg	1.8 mg/kg

Clean Harbors, Inc.

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Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.20	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.20	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

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Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
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Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.20	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.20	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.20	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.20	mg/kg	0.10 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
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All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	35.4	40.0	18.2	60.9	*mg/kg*
2-Fluorobiphenyl	Surrogate	18.4	40.0	13.4	34.3	*mg/kg*
2-Fluorophenol	Surrogate	21.3	40.0	8.3	51.2	*mg/kg*
Nitrobenzene-d5	Surrogate	19.8	40.0	7.9	36.3	*mg/kg*
Phenol-d6	Surrogate	23.7	40.0	18.9	57.4	*mg/kg*
Terphenyl-d14	Surrogate	1.27	40.0	14.9	41.1	*mg/kg*

Narrative:

Surrogate recovery for Terphenyl-d14 is below laboratory derived control limits. *3550*

Surrogate recovery (see sample comments for details) is below laboratory derived control limits due to matrix interference. All surrogate recoveries are within control limits in Method Blank.
Several RPDs are above 20%.
All LCS/MS/MSD spiking standards are expired (not including Surrogate spike or Internal Standard spike) CCV and LOD standards are also expired. New standards were ordered in August, were supposed to ship at the end of November but, it is unknown now, when they will ship to us. All results are reported as estimated due to expired standards.
There was contamination of Di-n-butylphthalate in the Method Blank

Batch QC Smp: KE2185857

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** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	0.965	B	0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	0.844	B	0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	0.606	B	0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		5/17/2023 11:01:40 AM	WG2061231
Initial pH	12.33		5/17/2023 11:01:40 AM	WG2061231
Final pH	12.04		5/17/2023 11:01:40 AM	WG2061231

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.0100	0.20	1	05/18/2023 22:26	WG2062192

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	05/18/2023 12:31	WG2062242
Barium	0.447		0.100	100	1	05/18/2023 12:31	WG2062242
Cadmium	ND		0.100	1	1	05/18/2023 12:31	WG2062242
Chromium	ND		0.100	5	1	05/18/2023 12:31	WG2062242
Lead	0.208	B	0.100	5	1	05/18/2023 12:31	WG2062242
Selenium	ND		0.100	1	1	05/18/2023 12:31	WG2062242
Silver	ND		0.100	5	1	05/18/2023 12:31	WG2062242

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		4/13/2023 12:04:02 PM	WG2041085
Fluid	2		4/13/2023 12:04:02 PM	WG2041085
Initial pH	12.51		4/13/2023 12:04:02 PM	WG2041085
Final pH	10.80		4/13/2023 12:04:02 PM	WG2041085

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	2.80		0.500	0.20	50	04/16/2023 20:00	WG2042297

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	04/17/2023 00:56	WG2042515
Barium	0.523		0.100	100	1	04/17/2023 00:56	WG2042515
Cadmium	ND		0.100	1	1	04/17/2023 00:56	WG2042515
Chromium	ND		0.100	5	1	04/17/2023 00:56	WG2042515
Lead	ND		0.100	5	1	04/17/2023 00:56	WG2042515
Selenium	ND		0.100	1	1	04/17/2023 00:56	WG2042515
Silver	1.08		0.100	5	1	04/17/2023 00:56	WG2042515

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		3/23/2023 2:55:26 PM	WG2028473
Fluid	1		3/23/2023 2:55:26 PM	WG2028473
Initial pH	7.25		3/23/2023 2:55:26 PM	WG2028473
Final pH	6.00		3/23/2023 2:55:26 PM	WG2028473

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	5.72		1.00	0.20	100	03/27/2023 12:03	WG2029556

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Antimony	0.241		0.100		1	03/27/2023 21:39	WG2029647
Arsenic	1.33		0.100	5	1	03/27/2023 21:39	WG2029647
Barium	0.795		0.100	100	1	03/27/2023 21:39	WG2029647
Beryllium	ND		0.0200		1	03/27/2023 21:39	WG2029647
Cadmium	1.56		0.100	1	1	03/27/2023 21:39	WG2029647
Chromium	ND		0.100	5	1	03/27/2023 21:39	WG2029647
Lead	0.300		0.100	5	1	03/27/2023 21:39	WG2029647
Nickel	0.611		0.100		1	03/27/2023 21:39	WG2029647
Selenium	0.261		0.100	1	1	03/27/2023 21:39	WG2029647
Silver	ND		0.100	5	1	03/27/2023 21:39	WG2029647
Thallium	ND		0.100		1	03/27/2023 21:39	WG2029647
Vanadium	ND		0.200		1	03/27/2023 21:39	WG2029647
Zinc	49.4		0.500		1	03/27/2023 21:39	WG2029647

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **N33987**

IN SERVICE DATE
From: 1/22/2024
To: 1/23/2024

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	2.5	mg/L
Pb	F006-009 F011-012 F039 K001 K046 K062 K069 K086-087 K100 P110 U051 U144-146 UTS	0.75	1.27	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	0.129	mg/L
Ag	D011 F006-009 F011-12 F039 P099 P104 UTS	0.14	0.27	mg/L
Tl	K061 UTS	0.2	0.36	mg/L
Zn	K061 UTS	4.3	102	mg/L

TOTAL MERCURY: 342mg/Kg

Reviewed by:_____

Clean Harbors Aragonite Dioxin/Furan Summary Report

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

Lab Sample ID: N33987

Sample Description: Baghouse
Tracking # A00E3945

HSWA Date: 1/22 - 1/23/24

Sample Date: 1/24/2024

Analysis Date: 1/27/2024

Analytical Method EPA 8280B

Prep Batch ID: 240124-01

Analysis Batch ID DF20240126A

Data Entered by CH

Final Review by

Parameter	CAS #	Result	Units	Report Limit	Flag	Dilution Factor	Project Limits
Total TCDF	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total TCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total PeCDF	n/a	0.90	ug/kg	0.6		1	1.0ug/kg
Total PeCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total HxCDF	n/a	0.57	ug/kg	0.5		1	1.0ug/kg
Total HxCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,6,7,8-HpCDF	67562-39-4	0.72	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	ug/kg	0.5		1	2.5ug/kg
OCDF	39001-02-0	ND	ug/kg	0.5		1	5.0ug/kg
OCDD	3268-87-9	0.58	ug/kg	0.5		1	5.0ug/kg

System Monitoring Compounds

		Value	Expected	Lower Limit	UpperLimit	Units
2,3,7,8-TCDF-13C12	Internal Std	344	500	125	750	ng/ml
2,3,7,8-TCDD-13C12	Internal Std	388	500	125	750	ng/ml
1,2,3,6,7,8-HxCDD-13C12	Internal Std	398	500	125	750	ng/ml
1,2,3,4,6,7,8-HpCDF-13C12	Internal Std	754	1000	250	1500	ng/ml
OCDD-13C12	Internal Std	836	1000	250	1500	ng/ml
2,3,7,8-TCDD-37Cl35	Cleanup Std	227	250			ng/ml

Data Flags

David Lunt
Lab Manager

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2401025**

Sample Fraction: 01

Sample Date: 1/23/2024

Sample Fraction ID: **SL240121S19-SL240123S01**

HSWA Date: **1/22/2024**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**1.46**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.303**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.09**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.123**	mg/L	0.1			1.60
Zinc	7440-66-6	**4.9**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.054**	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		75%					
DCB (surrogate)		130%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2401025**

Sample Fraction **02**

Sample Date 1/23/2024

Sample Fraction ID **RD240121S06-RD240122S05**

HSWA Date: 1/22/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.468**	mg/L	0.1	SB	1/27/2024	1.15
Arsenic	7440-38-2	**3.48**	mg/L	0.1			5.0
Barium	7440-39-3	**0.384**	mg/L	0.1			21.0
Beryllium	7440-41-7	**0.137**	mg/L	0.1			1.22
Cadmium	7440-43-9	**2.5**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.693**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.813**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.482**	mg/L	0.1			5.7
Silver	7440-22-4	**0.266**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.433**	mg/L	0.1			1.60
Zinc	7440-66-6	**93.9**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.129**	mg/L	0.025	SB	1/27/2024	0.025
PCB Aroclor: 3550B/8082A					tz/sb	1/24/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		80%					
DCB (surrogate)		105%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2401025**

Sample Date 1/23/2024

Sample Fraction 03

Sample Fraction ID RD240121S06-RD240122S05

HSWA Date: **1/22/2024**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		317	mg/Kg	0.06	ts	1/24/2024	260

LABORATORY SUMMARY REPORT

Client

Clean Harbors Aragonite
11600 North Aptus Road
Dugway, UT 84022

David Lunt
Lab Manager

LIMS ID **2401025** **Sample Fraction** **04**

Sample Date 1/23/2024 **Sample Fraction ID** **N33987**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**342**	**mg/Kg**	0.06	JM	1/31/2024

LIMS ID **2401025** **Sample Fraction** **05**

Sample Date 1/23/2024 **Sample Fraction ID** **CHIU252016**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**473**	**mg/Kg**	0.06	JM	1/31/2024

LIMS ID **2401025** **Sample Fraction** **06**

Sample Date 1/23/2024 **Sample Fraction ID** **CHRT27084**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date
Method 7471B						
Mercury		**52.7**	**mg/Kg**	0.06	JM	1/31/2024

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2401027**

Sample Fraction: 01

Sample Date: 1/24/2024

Sample Fraction ID: SL240123S02-S12, SL240124SS01

HSWA Date: 1/23/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.314**	mg/L	0.1	TS	2/8/2024	1.15
Arsenic	7440-38-2	**0.409**	mg/L	0.1			5.0
Barium	7440-39-3	**0.788**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**0.334**	mg/L	0.1			0.11
Chromium	7440-47-3	**0.452**	mg/L	0.1			0.60
Lead	7440-92-1	**0.227**	mg/L	0.1			0.75
Nickel	7440-02-0	**3.81**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.451**	mg/L	0.1			5.7
Silver	7440-22-4	**0.173**	mg/L	0.1			0.14
Thallium	7440-28-0	**0.298**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.282**	mg/L	0.1			1.60
Zinc	7440-66-6	**13.8**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TS	2/8/2024	0.025
PCB Aroclor: 3550B/8082A					tz	1/25/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		75%					
DCB (surrogate)		140%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2401027** Sample Fraction 02

Sample Date 1/24/2024 Sample Fraction ID **RD240122S06-RD240123S05**

HSWA Date: 1/23/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.808**	mg/L	0.1	TS	2/8/2024	1.15
Arsenic	7440-38-2	**3.95**	mg/L	0.1			5.0
Barium	7440-39-3	**0.456**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**2.2**	mg/L	0.1			0.11
Chromium	7440-47-3	**0.486**	mg/L	0.1			0.60
Lead	7440-92-1	**1.27**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.01**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.87**	mg/L	0.1			5.7
Silver	7440-22-4	**0.206**	mg/L	0.1			0.14
Thallium	7440-28-0	**0.365**	mg/L	0.1			0.20
Vanadium	7440-62-2	**0.471**	mg/L	0.1			1.60
Zinc	7440-66-6	**102**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TS	2/8/2024	0.025
PCB Aroclor: 3550B/8082A					tz	1/25/2024	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		125%					
DCB (surrogate)		155%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2401027 **Sample Fraction** 03

Sample Date 1/24/2024 **Sample Fraction ID** RD240122S06-RD240123S05

HSWA Date: 1/23/2024

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**207**	mg/Kg	0.06	ts	2/3/2024	260

Memo To File

Semi-volatile analyses for the Residue weekly composite (01/16/2024 – 01/22/2024) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg,

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg, an elevated reporting limit for ***Methanol*** of 50mg/Kg versus treatment standard of 15.0mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2401026**

Sample Fraction **01**

Sample Date 1/23/2024

Sample Fraction ID **SL240116 - SL240122**

Weekly Date 01/16/24 - 01/22/24

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/24/2024

LIMS ID **2401026**

Sample Fraction **02**

Sample Date 1/23/2024

Sample Fraction ID **RD240116 - RD240122**

Weekly Date 01/16/24 - 01/22/24

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/24/2024

Clean Harbors Aragonite Dioxin/Furan Summary Report

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

Lab Sample ID: 2401026-02

Sample Description: Residue Weekly Composite
Tracking # n/a

HSWA Date: 1/16 - 1/22/24

Sample Date: 1/23/2024

Analysis Date: 1/27/2024

Analytical Method EPA 8280B

Prep Batch ID: 240124-01

Analysis Batch ID DF20240126A

Data Entered by CH

Final Review by

Parameter	CAS #	Result	Units	Report Limit	Flag	Dilution Factor	Project Limits
Total TCDF	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total TCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total PeCDF	n/a	1.54	ug/kg	0.6		1	1.0ug/kg
Total PeCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total HxCDF	n/a	1.64	ug/kg	0.5		1	1.0ug/kg
Total HxCDD	n/a	0.88	ug/kg	0.5		1	1.0ug/kg
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.78	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,6,7,8-HpCDF	67562-39-4	1.89	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	ug/kg	0.5		1	2.5ug/kg
OCDF	39001-02-0	0.77	ug/kg	0.5		1	5.0ug/kg
OCDD	3268-87-9	3.93	ug/kg	0.5		1	5.0ug/kg

System Monitoring Compounds

		Value	Expected	Lower Limit	UpperLimit	Units
2,3,7,8-TCDF-13C12	Internal Std	350	500	125	750	ng/ml
2,3,7,8-TCDD-13C12	Internal Std	381	500	125	750	ng/ml
1,2,3,6,7,8-HxCDD-13C12	Internal Std	412	500	125	750	ng/ml
1,2,3,4,6,7,8-HpCDF-13C12	Internal Std	788	1000	250	1500	ng/ml
OCDD-13C12	Internal Std	749	1000	250	1500	ng/ml
2,3,7,8-TCDD-37Cl35	Cleanup Std	194	250			ng/ml

Data Flags

David Lunt
Lab Manager

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1362
Cleanup Batch ID:
Analysis Batch ID: H240125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	5.00	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1100	833	0	1930	*ug/kg*

Narrative:

8151

Batch QC Smp:

*Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. **Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.***

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 240126-02 Lab Sample ID KE2487976 SDG 3731

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1439
Cleanup Batch ID:
Analysis Batch ID: P240125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1439
Cleanup Batch ID:
Analysis Batch ID: P240125D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	16.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	61.5	50.0	0	124	*ug/kg*
TCMX	Surrogate	26.0	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.80	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.80	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.80	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.80	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.80	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.80	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.80	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.80	mg/kg	1.8 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.80	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.80	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.80	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.80	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.80	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.80	mg/kg	0.10 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID:
Prep Batch ID: E0613-012424
Cleanup Batch ID:
Analysis Batch ID: E0990-012524

Data Entered By: EveryP
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/25/2024

Sample QC Spiking Results

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Parameter		Test Value	Expected	Lower Limit	Upper Limit			
2,4,6-Tribromophenol	Surrogate	27.4	40.0	12.8	64.8		*mg/kg*	
2-Fluorobiphenyl	Surrogate	25.0	40.0	16.1	47.7		*mg/kg*	
2-Fluorophenol	Surrogate	23.9	40.0	7.5	53.4		*mg/kg*	
Nitrobenzene-d5	Surrogate	24.7	40.0	17.1	42.8		*mg/kg*	
Phenol-d6	Surrogate	26.3	40.0	17.8	52.3		*mg/kg*	
Terphenyl-d14	Surrogate	14.7	40.0	18.1	50.3		*mg/kg*	

Narrative: Surrogate recovery for terphenyl-d14 was below laboratory control limits. All surrogate recoveries for the method blank were within these same limits.

3550

Matrix spike recoveries and RPD's were outside of control limits. Spiked compounds in the LCS were recovered within acceptable limits, and with good precision compared to other LCS. (The only exception was pyrene which recovered above normal limits.)
Matrix interferences in the parent sample are highly likely.

Batch QC Smp: KE2487975

*Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. **Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.***

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	ND		0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 2401026-02 Lab Sample ID KE2487976 SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

Data Entered By: DickersonD
Peer Reviewed By: WaiteR

Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402021000
Friday, February 2, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240116-240122 | 2401026-02 | Lab Sample ID KE2487976 | SDG 3731

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-55
Cleanup Batch ID:
Analysis Batch ID: E0388-012424

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/23/2024
Analysis Date: 1/24/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

CHEMTECH-FORD LABORATORIES

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Certificate of Analysis

Clean Harbors - Aragonite Facility
David Lunt
PO Box 1339
Grantsville, UT 84029-1339

PO#:
Receipt: **1/23/24 13:00 @ 11.0 °C**
Date Reported: 1/29/2024
Project Name: **[none]**

Sample ID: **RD24016-240122 2401026-02**
Matrix: **Solid**
System No.: **UTAH23066**
Lab ID: **24A1511-02**
Date Sampled: **1/23/24 9:30**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Total Solids	94.7	%	0.1	CTF8000	1/24/24	1/24/24	
Miscellaneous Organics							
Methanol	ND	mg/kg	50	EPA 8015M	1/25/24	1/25/24	

Memo To File

Semi-volatile analyses for the Residue weekly composite (01/23/2024 – 01/29/2024) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg,

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg, an elevated reporting limit for ***Methanol*** of 50mg/Kg versus treatment standard of 15.0mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2401034**

Sample Date 1/30/2024

Weekly Date 01/23/24 - 01/29/24

Sample Fraction **01**

Sample Fraction ID **SL240123 - SL240129**

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/31/2024

LIMS ID **2401034**

Sample Date 1/30/2024

Weekly Date 01/23/24 - 01/29/24

Sample Fraction **02**

Sample Fraction ID **RD240123 - RD240129**

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	ND	mg/Kg	28.7	CE	1/31/2024

Clean Harbors Aragonite Dioxin/Furan Summary Report

Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

Lab Sample ID: 2401034-02

Sample Description: Residue Weekly Composite
Tracking # n/a

HSWA Date: 1/23 - 1/29/24

Sample Date: 1/30/2024

Analysis Date: 2/2/2024

Analytical Method EPA 8280B

Prep Batch ID: 240130-01

Analysis Batch ID DF20240202A

Data Entered by CH

Final Review by

Parameter	CAS #	Result	Units	Report Limit	Flag	Dilution Factor	Project Limits
Total TCDF	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total TCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total PeCDF	n/a	0.78	ug/kg	0.5		1	1.0ug/kg
Total PeCDD	n/a	ND	ug/kg	0.5		1	1.0ug/kg
Total HxCDF	n/a	0.82	ug/kg	0.5		1	1.0ug/kg
Total HxCDD	n/a	0.71	ug/kg	0.5		1	1.0ug/kg
1,2,3,4,6,7,8-HpCDD	35822-46-9	0.57	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,6,7,8-HpCDF	67562-39-4	1.09	ug/kg	0.5		1	2.5ug/kg
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	ug/kg	0.5		1	2.5ug/kg
OCDF	39001-02-0	ND	ug/kg	1.0		1	5.0ug/kg
OCDD	3268-87-9	3.14	ug/kg	1.0		1	5.0ug/kg

System Monitoring Compounds		Value	Expected	Lower Limit	UpperLimit	Units
2,3,7,8-TCDF-13C12	Internal Std	397	500	125	750	ng/ml
2,3,7,8-TCDD-13C12	Internal Std	444	500	125	750	ng/ml
1,2,3,6,7,8-HxCDD-13C12	Internal Std	496	500	125	750	ng/ml
1,2,3,4,6,7,8-HpCDF-13C12	Internal Std	922	1000	250	1500	ng/ml
OCDD-13C12	Internal Std	973	1000	250	1500	ng/ml
2,3,7,8-TCDD-37Cl35	Cleanup Std	220	250			ng/ml

Data Flags

David Lunt
Lab Manager

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1364
Cleanup Batch ID:
Analysis Batch ID: H240202D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		5.00	5.00	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	5.00	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1620	833	0	1930	*ug/kg*

Narrative:

8151

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1441
Cleanup Batch ID:
Analysis Batch ID: P240202D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	16.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	16.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	16.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
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All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1441
Cleanup Batch ID:
Analysis Batch ID: P240202D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	16.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	65.2	50.0	0	124	*ug/kg*
TCMX	Surrogate	28.2	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

Batch QC Smp:

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Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
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Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Data Entered By: EveryP
Peer Reviewed By: McCloudJ
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.80	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.80	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.80	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.80	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.80	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

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All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Data Entered By: EveryP
Peer Reviewed By: McCloudJ
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.80	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.80	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.80	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.80	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.80	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.80	mg/kg	1.8 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

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Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

Data Entered By: EveryP
Peer Reviewed By: McCloudJ

Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.80	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.80	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.80	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.80	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.80	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Lab Manager
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Clean Harbors, Inc.
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All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Data Entered By: EveryP
Peer Reviewed By: McCloudJ
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.80	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.80	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.80	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Lab Manager
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Laboratory Test Report

Report ID
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All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Data Entered By: EveryP
Peer Reviewed By: McCloudJ
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.80	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.80	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.80	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.80	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.80	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.80	mg/kg	0.10 mg/kg

Clean Harbors, Inc.
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Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E1233-020124
Cleanup Batch ID:
Analysis Batch ID: E0990-020224

Data Entered By: EveryP
Peer Reviewed By: McCloudJ
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	70.4	40.0	12.8	64.8	*mg/kg*
2-Fluorobiphenyl	Surrogate	60.2	40.0	16.1	47.7	*mg/kg*
2-Fluorophenol	Surrogate	46.1	40.0	7.5	53.4	*mg/kg*
Nitrobenzene-d5	Surrogate	45.7	40.0	17.1	42.8	*mg/kg*
Phenol-d6	Surrogate	60.1	40.0	17.8	52.3	*mg/kg*
Terphenyl-d14	Surrogate	13.3	40.0	18.1	50.3	*mg/kg*

Narrative: Surrogate recovery for terphenyl-d14 was below laboratory control limits in this sample, but not in the method blank. *3550*

Matrix spike percent recovery and RPD was outside of acceptable limits for several spiked compounds. Additionally, surrogate recovery of two compounds was below limits (see sample comments for details) However, all compounds mentioned above had acceptable recoveries and low RPD's in the laboratory control sample. Interference from the parent matricies may be present. Batch QC Smp: KE2487983

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wetweight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-56
Cleanup Batch ID:
Analysis Batch ID: E0388-020224

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	ND		0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-56
Cleanup Batch ID:
Analysis Batch ID: E0388-020224

Data Entered By: DickersonD
Peer Reviewed By: WaiteR

Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg

Lab Manager
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2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202402091013
Friday, February 9, 2024

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD240123-240129 2401034-02 Lab Sample ID KE2487984 SDG 3733

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1169-56
Cleanup Batch ID:
Analysis Batch ID: E0388-020224

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 1/30/2024
Analysis Date: 2/2/2024

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

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Kimball Laboratory
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Certificate of Analysis

Clean Harbors - Aragonite Facility
David Lunt
PO Box 1339
Grantsville, UT 84029-1339

PO#:
Receipt: **1/30/24 13:21 @ 5.3** °C
Date Reported: 2/6/2024
Project Name: **[none]**

Sample ID: **RD240123-240129 2401034-02**
Matrix: **Solid**
System No.: **UTAH23066**
Date Sampled: **1/30/24 9:30**

Lab ID: **24A2029-02**
Sampled By: **Client**

	Result	Units	Minimum Reporting Limit	Method	Preparation Date/Time	Analysis Date/Time	Flag(s)
Inorganic							
Total Solids	96.4	%	0.1	CTF8000	1/31/24	2/1/24	
Miscellaneous Organics							
Methanol	ND	mg/kg	50	EPA 8015M	2/5/24	2/5/24	

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **PT4109**

IN SERVICE DATE
From: 7/8/2022
To: 7/9/2022

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	3.37	mg/L
Hg	D009	0.2	6.76	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	6.76	mg/L
Zn	K061 UTS	4.3	22.8	mg/L

TOTAL MERCURY: 1068mg/Kg

Reviewed by:_____

Clean Harbors, Inc.

Laboratory Test Report

Report ID
20230504741
Thursday, May 4, 2023

All results are reported on a wetweight basis unless otherwise noted.

Client ID PT4109 Baghouse **Lab Sample ID** KE2286118 **SDG** 3394

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-042423
Cleanup Batch ID:
Analysis Batch ID: E0701-042623

Data Entered By: DickersonD **Sampling Date:** 7/9/2022
Peer Reviewed By: RoylanceR **Analysis Date:** 4/26/2023

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	ND		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	**2.55**		1.00	1.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID 2207009 **Sample Fraction** 01

Sample Date: 7/11/2022 **Sample Fraction ID** SL220707S24,SL220708S01-S33, SL

HSWA Date: 7/8/2022

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.32**	mg/L	0.1	SN	7/21/2022	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.7**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.1**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**0.99**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TZ	7/22/2022	0.025
PCB Aroclor: 3550B/8082A					CH	7/11/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		525%					
DCB (surrogate)		85%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2207009 Sample Fraction 02

Sample Date 7/11/2022 Sample Fraction ID RD220707S06-RD220708S05

HSWA Date: 7/8/2022

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.36**	mg/L	0.1	SN	7/21/2022	1.15
Arsenic	7440-38-2	**0.5**	mg/L	0.1			5.0
Barium	7440-39-3	**0.16**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**1.2**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.41**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.13**	mg/L	0.1			11.0
Selenium	7782-49-2	**0.13**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**22.8**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TZ	7/22/2022	0.025
PCB Aroclor: 3550B/8082A					HS	1/0/1900	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		35%					
DCB (surrogate)		95%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2207009 Sample Fraction 03

Sample Date 7/11/2022 Sample Fraction ID RD220707S06-RD220708S05

HSWA Date: 7/8/2022

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		#N/A	mg/Kg	0.06	#N/A	#N/A	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2207010** **Sample Fraction** **01**

Sample Date: 7/11/2022 **Sample Fraction ID** **SL220709S03-S27**

HSWA Date: **7/9/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	SN	7/21/2022	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.85**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**13.5**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**1.4**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	TZ	7/22/2022	0.025
PCB Aroclor: 3550B/8082A					HS	7/11/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		45%					
DCB (surrogate)		85%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2207010** **Sample Fraction** **02**

Sample Date 7/11/2022 **Sample Fraction ID** **RD220708S06-RD220709S05**

HSWA Date: **7/9/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.59**	mg/L	0.1	SN	7/21/2022	1.15
Arsenic	7440-38-2	**1.36**	mg/L	0.1			5.0
Barium	7440-39-3	**0.11**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**3.37**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.04**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**7.84**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**6.76**	mg/L	0.025	TZ	7/22/2022	0.025
PCB Aroclor: 3550B/8082A					HS	7/11/2022	
A-1016	12674-11-2	ND	mg/Kg	0.2			
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	mg/Kg	0.4			
TCMX (surrogate)		40%					
DCB (surrogate)		110%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID **2207010** **Sample Fraction** **03**

Sample Date 7/11/2022 **Sample Fraction ID** **RD220708S06-RD220709S05**

HSWA Date: **7/9/2022**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**1068**	mg/Kg	0.06	TZ	8/1/2022	260

Memo To File

Semi-volatile analyses for the Residue weekly composite (07/05/22 – 07/11/22) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg.

The volatile analyses for the Slag weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

For ***Methanol*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2207013**

Sample Fraction **01**

Sample Date 7/12/2022

Sample Fraction ID **SL220705- 220707,220709-220711**

Weekly Date 7/05/22 - 7/11/22

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	CH	7/12/2022

LIMS ID **2207013**

Sample Fraction **02**

Sample Date 7/12/2022

Sample Fraction ID **RD220705 - 220711**

Weekly Date 7/05/22 - 7/11/22

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	CH	7/12/2022

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1207
Cleanup Batch ID:
Analysis Batch ID: H220717D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 7/12/2022
Analysis Date: 7/17/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	0.83	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		0.83	0.83	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	0.83	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	833	833	0	1930	*ng/kg*

Narrative: *8151*

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Nonhaloginated GC Organics NWW UTS
Analytical Method: EPA 8015C
Prep Method: EPA 8015C

TCLP Batch ID: NA
Prep Batch ID: E0923-336
Cleanup Batch ID:
Analysis Batch ID: A220714E

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methanol	67-56-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
1-Propanol	Surrogate	2.19	50.0	30.00	120.0	*mg/kg*

Narrative: Surrogate recovery was below established QC limits due to sample matrix interference. *8015*

Batch QC Smp: KE228608

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1283
Cleanup Batch ID:
Analysis Batch ID: P220714D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1283
Cleanup Batch ID:
Analysis Batch ID: P220714D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	1.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	42.2	50.0	0	124	ug/kg
TCMX	Surrogate	2.96	50.0	18.5	85.0	ug/kg

Narrative:

3550

Batch QC Smp:

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use.
Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR

Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.20	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.20	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.20	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.20	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.20	mg/kg	1.8 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR

Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.20	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.20	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR

Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.20	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.20	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.20	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.20	mg/kg	0.10 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-071322
Cleanup Batch ID:
Analysis Batch ID: E0990-071422

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/14/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	31.3	40.0	18.2	60.9	*mg/kg*
2-Fluorobiphenyl	Surrogate	20.0	40.0	13.4	34.3	*mg/kg*
2-Fluorophenol	Surrogate	18.7	40.0	8.3	51.2	*mg/kg*
Nitrobenzene-d5	Surrogate	19.6	40.0	7.9	36.3	*mg/kg*
Phenol-d6	Surrogate	22.7	40.0	18.9	57.4	*mg/kg*
Terphenyl-d14	Surrogate	2.10	40.0	14.9	41.1	*mg/kg*

Narrative: Surrogate recovery for Terphenyl-d14 is below laboratory derived control limits. *3550*

Batch QC Smp: KE2286107

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-63
Cleanup Batch ID:
Analysis Batch ID: E0388-071322

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/13/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	0.617	B	0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	1.67	B	10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-63
Cleanup Batch ID:
Analysis Batch ID: E0388-071322

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/13/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	1.06	B	0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202207211420
Thursday, July 21, 2022

All results are reported on a wet-weight basis unless otherwise noted.

Client ID RD220705-220711 2207013-02 Lab Sample ID KE2286108 SDG 3393

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-63
Cleanup Batch ID:
Analysis Batch ID: E0388-071322

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 7/12/2022
Analysis Date: 7/13/2022

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	0.677	B	0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

HSWA Analytical Review

Matrix **Baghouse**

BOX ID **R3071RT**

IN SERVICE DATE
From: 11/23/2021
To: 11/24/2021

	YES	NO
Dioxin Campaign:	X	
K061 Campaign:	X	
OK TO SHIP		

FAILED TREATMENT STANDARDS

TCLP Metals
Daily Composite

Analyte	Waste Codes	Treatment Standard (mg/L)	Result	Units
Sb	F039 K021 K172 UTS	1.15	2.11	mg/L
Cd	D006 F006-009 F011-12 F039 K028 K069 K100 UTS	0.11	4.61	mg/L
Hg	D009	0.2	2.18	mg/L
Hg	F039 K071 K106 P092 UTS	0.025	2.18	mg/L
Zn	K061 UTS	4.3	67.8	mg/L

TOTAL MERCURY: 462mg/Kg

Reviewed by:_____

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112091347
Thursday, December 9, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID R3017RT | Baghouse | Lab Sample ID KE2185319 | SDG 3243

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 8280A

TCLP Batch ID: NA
Prep Batch ID: E0986-120621
Cleanup Batch ID:
Analysis Batch ID: E0701-120721

Data Entered By: RoylanceR
Peer Reviewed By: DickersonD
Sampling Date: 11/24/2021
Analysis Date: 12/7/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	ND		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	ND		2.00	1.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	**0.752**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	**0.990**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111027** **Sample Fraction** **01**

Sample Date: 11/24/2021 **Sample Fraction ID** **SL211123S04-S21**

HSWA Date: **11/23/2021**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**0.11**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.23**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.04**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**1.87**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		55%					
DCB (surrogate)		85%					

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	12/3/2021

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111027 **Sample Fraction** 02

Sample Date 11/24/2021 **Sample Fraction ID** RD211122S06-211123S05

HSWA Date: 11/23/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**2.11**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**0.67**	mg/L	0.1			5.0
Barium	7440-39-3	**0.12**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**4.61**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.58**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**67.8**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**2.18**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		5%					
DCB (surrogate)		90%					

LIMS ID 2111027 **Sample Fraction** 03

Sample Date 11/24/2021 **Sample Fraction ID** RD211122S06-211123S05

HSWA Date: 11/23/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		1410	mg/Kg	0.06	JM	12/2/2021	260

LIMS ID 2111027 **Sample Fraction** 04

LABORATORY SUMMARY REPORT for Daily HSWA

Sample Date 11/24/2021 **Sample Fraction ID** **R3017RT**

HSWA Date: **11/23/2021**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**462**	**mg/Kg**	0.06	JM	12/9/2021	260

LABORATORY SUMMARY REPORT for Daily HSWA

Client: Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111028** **Sample Fraction** **01**

Sample Date: 11/25/2021 **Sample Fraction ID** **SL211124S01-211125S03**

HSWA Date: **11/24/2021**

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals: 1311/3510A/6010D							
Antimony	7440-36-0	**ND**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**ND**	mg/L	0.1			5.0
Barium	7440-39-3	**0.50**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**ND**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**ND**	mg/L	0.1			0.75
Nickel	7440-02-0	**1.74**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**1.42**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**ND**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		60%					
DCB (surrogate)		85%					

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**36.7**	mg/Kg	28.7	RC	12/3/2021
Amenable Cyanide	ND	mg/Kg	28.7	RC	12/3/2021

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111028 **Sample Fraction** 02

Sample Date 11/25/2021 **Sample Fraction ID** RD211123S06-211124S05

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	LDR Limits (mg/L)
TCLP Metals:							
1311/3510A/6010D							
Antimony	7440-36-0	**0.63**	mg/L	0.1	JM	12/9/2021	1.15
Arsenic	7440-38-2	**0.60**	mg/L	0.1			5.0
Barium	7440-39-3	**0.30**	mg/L	0.1			21.0
Beryllium	7440-41-7	**ND**	mg/L	0.1			1.22
Cadmium	7440-43-9	**1.55**	mg/L	0.1			0.11
Chromium	7440-47-3	**ND**	mg/L	0.1			0.60
Lead	7440-92-1	**0.12**	mg/L	0.1			0.75
Nickel	7440-02-0	**0.88**	mg/L	0.1			11.0
Selenium	7782-49-2	**ND**	mg/L	0.1			5.7
Silver	7440-22-4	**ND**	mg/L	0.1			0.14
Thallium	7440-28-0	**ND**	mg/L	0.1			0.20
Vanadium	7440-62-2	**ND**	mg/L	0.1			1.60
Zinc	7440-66-6	**36.3**	mg/L	0.1			4.3
Method 7470A							
Mercury	7439-97-6	**0.332**	mg/L	0.025	JM	12/9/2021	0.025
PCB Aroclor: 3550B/8082A							
A-1016	12674-11-2	ND	mg/Kg	0.2	CH	11/25/2021	
A-1221	11104-28-2	ND	mg/Kg	0.2			
A-1232	11141-16-5	ND	mg/Kg	0.2			
A-1242	53469-21-9	ND	mg/Kg	0.2			
A-1248	12672-29-6	ND	mg/Kg	0.2			
A-1254	11097-69-1	ND	mg/Kg	0.2			
A-1260	11096-82-5	ND	mg/Kg	0.2			
A-1268	11100-14-4	ND	mg/Kg	0.2			
Total PCB Aroclor		**ND**	**mg/Kg**	0.4			
TCMX (surrogate)		10%					
DCB (surrogate)		95%					

LABORATORY SUMMARY REPORT for Daily HSWA

LIMS ID 2111028 **Sample Fraction** 03

Sample Date 11/25/2021 **Sample Fraction ID** RD211123S06-211124S05

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**923**	**mg/Kg**	0.06	JM	12/2/2021	260

LIMS ID 2111028 **Sample Fraction** 04

LABORATORY SUMMARY REPORT for Daily HSWA

Sample Date 11/25/2021 **Sample Fraction ID** **CLHA320082**

HSWA Date: 11/24/2021

Parameter/Method	CAS Number	Result	Units	Report Limit	Analyst	Analysis Date	Project Limits (mg/Kg)
Method 7471B							
Mercury		**1077**	**mg/Kg**	0.06	JM	12/9/2021	260

Memo To File

Semi-volatile analyses for the Residue weekly composite (11/16/21 – 11/22/21) has an elevated reporting limit for ***Tris(2,3-dibromopropyl)phosphate*** of 0.80mg/Kg versus treatment standard of 0.1mg/Kg, an elevated reporting limit for ***Methapyrilene*** of 2.0mg/Kg versus treatment standard of 1.5mg/Kg, an elevated reporting limit for ***1,3-Phenylenediamine*** of 0.80mg/Kg versus treatment standard of 0.66mg/Kg, an elevated reporting limit for ***Kepone*** of 0.134mg/Kg versus treatment standard of 0.130mg/Kg, an elevated reporting limit for ***Isodrin*** of 0.20mg/Kg versus treatment standard of 0.066mg/Kg.

The volatile analyses for the Residue weekly composite has an elevated reporting limit for ***n-butyl alcohol*** of 10.0mg/Kg versus treatment standard of 2.6mg/Kg, and elevated reporting limit for ***2-Chloro-1,3-butadiene*** of 0.50mg/Kg versus treatment standard of 0.28mg/Kg.

The semi-volatile, volatile and pesticide result(s) are considered valid and not detected based on language in 40 CFR 268.40(d) which states that for incinerated wastes. . ."the treatment or disposal facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude."

The following compounds: ***Carbon disulfide, Cyclohexanone and Methanol*** have treatment standards listed in mg/L TCLP, these compounds are reported here in units of mg/Kg based on the extraction of the constituent from a solid matrix as opposed to reporting in units of mg/L from a TCLP leachate. The TCLP method calls for 100 grams of sample to be leached in 2 liter of TCLP extract this represents a twenty fold dilution of the original matrix. Therefore the treatment standards in mg/L will be multiplied twenty fold to achieve an equivalent standard to be applied in mg/Kg:

For ***Carbon disulfide*** the treatment standard is 4.8mg/L TCLP, this report uses 96mg/Kg to meet treatment standard.

For ***Cyclohexanone*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

For ***Methanol*** the treatment standard is 0.75mg/L TCLP, this report uses 15.0mg/Kg to meet treatment standard.

Client Clean Harbors
11600 North Aptus Road
Aragonite, UT 84029

David Lunt
Lab Manager

LIMS ID **2111026**

Sample Fraction **01**

Sample Date 11/23/2021

Sample Fraction ID **SL211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

LIMS ID **2111026**

Sample Fraction **02**

Sample Date 11/23/2021

Sample Fraction ID **RD211116-211122**

Weekly Date 11/16/21 - 11/22/21

	Result	Units	Report Limit	Analyst	Analysis Date
Total Cyanide	**ND**	mg/Kg	28.7	RC	11/23/2021

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Dioxins/Furans NWW UTS (solids)
Analytical Method: EPA 8280A
Prep Method: EPA 3545A

TCLP Batch ID:
Prep Batch ID: E0986-113021

Data Entered By: DickersonD
Peer Reviewed By: RoylanceR

Sampling Date: 11/23/2021
Analysis Date: 12/1/2021

Cleanup Batch ID:
Analysis Batch ID: E0701-120121

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	1.0	**0.901**		0.50	0.50	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	1.0	**4.68**		1.00	2.00	ug/kg	0.005 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	1.0	**1.55**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	1.0	**2.48**		0.50	0.50	ug/kg	0.0025 mg/kg
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	1.0	ND		0.50	0.50	ug/kg	0.0025 mg/Kg
Total Hexachlorodibenzofuran (HxCDF)	n/a	1.0	**2.28**		0.50	0.50	ug/kg	0.001 mg/kg
Total Hexachlorodibenzo-p-dioxin (HxCDD)	n/a	1.0	**6.40**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzofuran (PeCDF)	n/a	1.0	**2.14**		0.50	0.50	ug/kg	0.001 mg/kg
Total Pentachlorodibenzo-p-dioxin (PeCDD)	n/a	1.0	**4.17**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzofuran (TCDF)	n/a	1.0	**1.78**		0.50	0.50	ug/kg	0.001 mg/kg
Total Tetrachlorodibenzo-p-dioxin (TCDD)	n/a	1.0	ND		0.50	0.50	ug/kg	0.001 mg/kg

Lab Manager
Richard Roylance
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2247 South Highway 71 * Kimball * NE 69145 US

CleanHarbors

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Herbicides NWW UTS (solids)
Analytical Method: EPA 8151A
Prep Method: EPA 8151A

TCLP Batch ID: NA
Prep Batch ID: E0559-1144
Cleanup Batch ID:
Analysis Batch ID: H211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4,5-T	93-76-5	10.0	ND		5.00	0.83	mg/kg	7.9 mg/Kg
2,4,5-TP (Silvex)	93-72-1	10.0	ND		0.83	0.83	mg/kg	7.9 mg/Kg
2,4-D	94-75-7	10.0	ND		5.00	0.83	mg/kg	10 mg/Kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCAA	Surrogate	1140	833	0	1930	*ug/kg*

Narrative:

8151

MS and MSD recoveries for 2,4-D was above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

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Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Nonhaloginated GC Organics NWW UTS
Analytical Method: EPA 8015C
Prep Method: EPA 8015C

TCLP Batch ID: NA
Prep Batch ID: E0923-308

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Cleanup Batch ID:
Analysis Batch ID: A211126E

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methanol	67-56-1	1.0	ND		1.75	1.75	mg/kg	0.75 mg/L TCLP

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
1-Propanol	Surrogate	0.418	5.0	3.00	12.0	*mg/kg*

Narrative: Surrogate recovery was below established QC limits due to sample matrix interference. *8015*

Batch QC Smp:

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** END OF TEST GROUP **

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Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221
Cleanup Batch ID:
Analysis Batch ID: P211126D

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
2,4'-DDD	53-19-0	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDE	3424-82-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
2,4'-DDT	789-02-6	2.0	ND		3.34	3.34	ug/kg	0.087 mg/kg
4,4'-DDD	72-54-8	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDE	72-55-9	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
4,4'-DDT	50-29-3	2.0	ND		16.66	1.66	ug/kg	0.087 mg/kg
Aldrin	309-00-2	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
alpha-BHC	319-84-6	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
beta-BHC	319-85-7	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Chlordane (alpha and gamma isomers)	57-74-9	2.0	ND		60.00	60.00	ug/kg	0.26 mg/kg
delta-BHC	319-86-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Dieldrin	60-57-1	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan I	959-98-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Endosulfan II	33213-65-9	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endosulfan sulfate	1031-07-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin	72-20-8	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Endrin aldehyde	7421-93-4	2.0	ND		16.66	1.66	ug/kg	0.13 mg/kg
Famphur	52-85-7	2.0	ND		134.00	134.00	ug/kg	15 mg/kg
gamma-BHC (Lindane)	58-89-9	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor	76-44-8	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Heptachlor epoxide	1024-57-3	2.0	ND		16.66	1.66	ug/kg	0.066 mg/kg
Kepone	143-50-0	2.0	ND		134.00	134.00	ug/kg	0.13 mg/kg

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Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Pesticides NWW UTS (solids)
Analytical Method: EPA 8081B
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0558-1221

Data Entered By: OpalinskiD
Peer Reviewed By: WaiteR

Sampling Date: 11/23/2021
Analysis Date: 11/26/2021

Cleanup Batch ID:
Analysis Batch ID: P211126D

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methoxychlor	72-43-5	2.0	ND		16.66	1.66	ug/kg	0.18 mg/kg
Toxaphene	8001-35-2	2.0	ND		334.00	334.00	ug/kg	2.6 mg/kg

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
DCBP	Surrogate	41.2	50.0	0	124	*ug/kg*
TCMX	Surrogate	11.9	50.0	18.5	85.0	*ug/kg*

Narrative:

3550

MS and MSD recoveries for 4,4'-DDE and Methoxychlor were above established QC limits due to sample matrix interference. Batch QC Smp: KE2185287

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

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Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Lab Manager
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Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,2,4,5-Tetrachlorobenzene	95-94-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
1,2,4-Trichlorobenzene	120-82-1	1.0	ND		0.80	0.20	mg/kg	19 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,3-Phenylenediamine	108-45-2	1.0	ND		0.80	0.20	mk/kg	0.66 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg
1,4-Dinitrobenzene	100-25-4	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
2,3,4,6-Tetrachlorophenol	58-90-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,5-Trichlorophenol	95-95-4	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4,6-Trichlorophenol	88-06-2	1.0	ND		0.80	0.20	mg/kg	7.4 mg/kg
2,4-Dichlorophenol	120-83-2	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2,4-Dimethylaniline (2,4-xylidine)	95-68-1	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
2,4-Dimethylphenol	105-67-9	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
2,4-Dinitrophenol	51-28-5	1.0	ND		0.80	0.20	mg/kg	160 mg/kg
2,4-Dinitrotoluene	121-14-2	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2,6-Dichlorophenol	87-65-0	1.0	ND		0 80	0.20	mg/kg	14 mg/kg
2,6-Dinitrotoluene	606-20-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
2-Acetylaminofluorene	53-96-3	1.0	ND		0.80	0.20	mg/kg	140 mg/kg
2-Chloronaphthalene	91-58-7	1 0	ND		0.80	0.20	mg/kg	5.6 mg/kg
2-Chlorophenol	95-57-8	1.0	ND		0.20	0.20	mg/kg	5.7 mg/kg
2-Nitroaniline	88-74-4	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
2-Nitrophenol	88-75-5	1.0	ND		0.20	0.20	mg/kg	13 mg/kg

Lab Manager
Richard Roylance
(308) 235-8222

Kimball Laboratory
2247 South Highway 71 * Kimball * NE 69145 US

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
3-Methylchloranthrene	56-49-5	1.0	ND		0.20	0.20	mg/kg	15 mg/kg
4,4-Methylene bis(2-chloroaniline)	101-14-4	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
4,6-Dinitro-o-cresol	534-52-1	1.0	ND		0.20	0.20	mg/kg	160 mg/kg
4-Bromophenyl-phenylether	101-55-3	1.0	ND		0.80	0.20	mg/kg	15 mg/kg
4-Chloro-3-methylphenol	59-50-7	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
4-Chloroaniline	106-47-8	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
4-Nitroaniline	100-01-6	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
4-Nitrophenol	100-02-7	1.0	ND		0.80	0.20	mg/kg	29 mg/kg
5-Nitro-o-toluidine	99-55-8	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Acenaphthene	83-32-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acenaphthylene	208-96-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Acetophenone	98-86-2	1.0	ND		0.80	0.20	mg/kg	9.7 mg/kg
Acrylamide	79-06-1	1.0	ND		0.80	0.20	mg/kg	23 mg/kg
Aniline	62-53-3	1.0	ND		0.80	0.20	mg/kg	14 mg/kg
Anisidine (o-)	90-04-0	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Anthracene	120-12-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Armite I	140-57-8	1.0	ND		0.20	0.20	mg/kg	NA mg/kg
Benzal Chloride	98-87-3	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
Benzo[a]anthracene	56-55-3	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[a]pyrene	50-32-8	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Benzo[b]fluoranthene	205-99-2	1.0	ND		0.20	0.20	mg/kg	6.8 mg/kg
Benzo[g,h,i]perylene	191-24-2	1.0	ND		0.80	0.20	mg/kg	1.8 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzo[k]fluoranthene	207-08-9	1.0	ND		0.80	0.20	mg/kg	6.8 mg/kg
bis(2-Chloroethoxy)methane	111-91-1	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Chloroethyl)ether	111-44-4	1.0	ND		0.80	0.20	mg/kg	6.0 mg/kg
bis(2-Chloroisopropyl)ether	39638-32-9	1.0	ND		0.80	0.20	mg/kg	7.2 mg/kg
bis(2-Ethylhexyl)phthalate	117-81-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Butyl benzyl phthalate	85-68-7	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Chrysene	218-01-9	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Cresol (m- and p-)	108-39-4/106-4	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Cresol (o-)	95-48-7	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg
Dibenzo[a,h]anthracene	53-70-3	1.0	ND		0.80	0.20	mg/kg	8.2 mg/kg
Diethyl phthalate	84-66-2	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Dimethyl phthalate	131-11-3	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
Di-n-butyl phthalate	84-74-2	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Di-n-octyl phthalate	117-84-0	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Dinoseb	88-85-7	1.0	ND		0.20	0.20	mg/kg	2.5 mg/kg
Diphenylamine and N-Nitrosodiphenylamine (sum of)	86-30-6 / 22-39	1.0	ND		0.20	0.20	mg/kg	13 mg/kg
Disulfaton	298-04-4	1.0	ND		0.20	0.20	mg/kg	6.2 mg/kg
Ethyl cyanide / Propanenitrile	107-12-0	1.0	ND		0.20	0.20	mg/kg	360 mg/kg
Fluoranthene	206-44-0	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Fluorene	86-73-7	1.0	ND		0.80	0.20	mg/kg	3.4 mg/kg
Hexachlorobenzene	118-74-1	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Hexachlorobutadiene	87-68-3	1.0	ND		0.20	0.20	mg/kg	5.6 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Hexachlorocyclopentadiene	77-47-4	1.0	ND		0.20	0.20	mg/kg	2.4 mg/kg
Hexachloroethane	67-72-1	1.0	ND		0.20	0.20	mg/kg	30 mg/kg
Hexachloropropene	1888-71-7	1.0	ND		0.80	0.20	mg/kg	30 mg/kg
Indeno[1,2,3-cd]pyrene	193-39-5	1.0	ND		0.20	0.20	mg/kg	3.4 mg/kg
Isodrin	465-73-6	1.0	ND		0.20	0.20	mg/kg	0.066 mg/kg
Isosafrole	120-58-1	1.0	ND		0.20	0.20	mg/kg	2.6 mg/kg
Methapyrilene	91-80-5	1.0	ND		2.00	2.00	mg/kg	1.5 mg/kg
Methyl parathion	298-00-0	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Naphthalene	91-20-3	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Nitrobenzene	98-95-3	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
Nitrosopyrrolidine	930-55-2	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
N-Nitrosodiethylamine	55-18-5	1.0	ND		0.80	0.20	mg/kg	28 mg/kg
N-Nitrosodimethylamine	62-75-9	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitroso-di-n-butylamine	924-16-3	1.0	ND		0.20	0.20	mg/kg	17 mg/kg
n-Nitroso-di-n-propylamine	621-64-7	1.0	ND		0.20	0.20	mg/kg	14 mg/kg
N-Nitrosomethylethylamine	10595-95-6	1.0	ND		0.80	0.20	mg/kg	2.3 mg/kg
N-Nitrosomorpholine	59-89-2	1.0	ND		0.20	0.20	mg/kg	2.3 mg/kg
N-Nitrosopiperidine	100-75-4	1.0	ND		0.20	0.20	mg/kg	35 mg/kg
Parathion	56-38-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
p-Cresidine	120-71-8	1.0	ND		0.20	0.20	mg/kg	0.66 mg/kg
Pentachlorobenzene	608-93-5	1.0	ND		0.80	0.20	mg/kg	10 mg/kg
Pentachloroethane	76-01-1	1.0	ND		0.20	0.20	mg/kg	6.0 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Pentachloronitrobenzene	82-68-8	1.0	ND		0.80	0.20	mg/kg	4.8 mg/kg
Pentachlorophenol	87-86-5	1.0	ND		0.20	0.20	mg/kg	7.4 mg/kg
Phenacetin	62-44-2	1.0	ND		0.80	0.20	mg/kg	16 mg/kg
Phenanthrene	85-01-8	1.0	ND		0.80	0.20	mg/kg	5.6 mg/kg
Phenol	108-95-2	1.0	ND		0.80	0.20	mg/kg	6.2 mg/kg
Phorate	298-02-2	1.0	ND		0.20	0.20	mg/kg	4.6 mg/kg
Phthalic acid	100-21-0	1.0	ND		0.80	0.80	mg/kg	28 mg/kg
Phthalic Anhydride	85-44-9	1.0	ND		0.20	0.20	mg/kg	28 mg/kg
Pronamide	23950-58-5	1.0	ND		0.20	0.20	mg/kg	1.5 mg/kg
Pyrene	129-00-0	1.0	ND		0.20	0.20	mg/kg	8.2 mg/kg
Pyridine	110-86-1	1.0	ND		0.20	0.20	mg/kg	16 mg/kg
Safrole	94-59-7	1.0	ND		0.80	0.20	mg/kg	22 mg/kg
tris(2,3-dibromopropyl)phosphate	126-72-7	1.0	ND		0.80	0.20	mg/kg	0.10 mg/kg

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Semivolatiles NWW UTS (solids)
Analytical Method: EPA 8270D
Prep Method: EPA 3550C

TCLP Batch ID: NA
Prep Batch ID: E0613-112921
Cleanup Batch ID:
Analysis Batch ID: E0990-112921

Data Entered By: McCloudJ
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 11/29/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits

Sample QC Spiking Results

Parameter		Test Value	Expected	Lower Limit	Upper Limit	
2,4,6-Tribromophenol	Surrogate	35.4	40.0	18.2	60.9	*mg/kg*
2-Fluorobiphenyl	Surrogate	18.4	40.0	13.4	34.3	*mg/kg*
2-Fluorophenol	Surrogate	21.3	40.0	8.3	51.2	*mg/kg*
Nitrobenzene-d5	Surrogate	19.8	40.0	7.9	36.3	*mg/kg*
Phenol-d6	Surrogate	23.7	40.0	18.9	57.4	*mg/kg*
Terphenyl-d14	Surrogate	1.27	40.0	14.9	41.1	*mg/kg*

Narrative: Surrogate recovery for Terphenyl-d14 is below laboratory derived control limits. *3550*

Surrogate recovery (see sample comments for details) is below laboratory derived control limits due to matrix interference. All surrogate recoveries are within control limits in Method Blank.
Several RPDs are above 20%.
All LCS/MS/MSD spiking standards are expired (not including Surrogate spike or Internal Standard spike) CCV and LOD standards are also expired. New standards were ordered in August, were supposed to ship at the end of November but, it is unknown now, when they will ship to us. All results are reported as estimated due to expired standards.
There was contamination of Di-n-butylphthalate in the Method Blank.

Batch QC Smp: KE2185857

Projects differ from one another in their requirments. The client must ensure that all analytes needed are present and that the reporting limits are appropiate for the data's use. Project Limits are provided as a best-faith effort courtesy. The Client is solely responsible for ensuring that these limits are correct for their project.

** END OF TEST GROUP **

Clean Harbors, Inc.
Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wetweight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
1,1,1,2-Tetrachloroethane	630-20-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,1-Trichloroethane	71-55-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2,2-Tetrachloroethane	79-34-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,1,2-Trichloroethane	79-00-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethane	75-34-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,1-Dichloroethylene	75-35-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2,3-Trichloropropane	96-18-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
1,2-Dibromo-3-chloropropane	96-12-8	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dibromomethane (Ethylene dibromide)	106-93-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
1,2-Dichlorobenzene	541-73-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloroethane	107-06-2	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,2-Dichloropropane	78-87-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
1,3-Dichlorobenzene	95-50-1	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dichlorobenzene	106-46-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
1,4-Dioxane	123-91-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg
2-Butanone (Methyl Ethyl Ketone)	78-93-3	1.0	0.965	B	0.50	0.50	mg/kg	36 mg/kg
2-Chloro-1,3-butadiene (Chloroprene)	126-99-8	1.0	ND		0.50	0.50	mg/kg	0.28 mg/kg
Acetone	67-64-1	1.0	ND		10.00	10.00	mg/kg	160 mg/kg
Acetonitrile	75-05-8	1.0	ND		0.50	0.50	mg/kg	38 mg/kg
Acrylonitrile	107-31-1	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Allyl chloride (3-Chloropropylene)	107-05-1	1.0	ND		0.50	0.50	mg/kg	30 mg/kg

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Clean Harbors, Inc.
Laboratory Test Report

Report ID
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Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Benzene	71-43-2	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Benzyl chloride	100-44-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Bromodichloromethane	75-27-4	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromoform (Tribromomethane)	75-25-2	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Bromomethane (Methyl Bromide)	74-83-9	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Carbon disulfide	75-15-0	1.0	ND		0.50	0.50	mg/kg	4.8 mg/L TCLP
Carbon Tetrachloride	56-23-5	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorobenzene	108-90-7	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chlorodibromomethane	124-48-1	1.0	ND		0.50	0.50	mg/kg	15 mg/kg
Chloroethane	75-00-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Chloroform	67-66-3	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
cis-1,3-Dichloropropylene	10061-01-5	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Cyclohexanone	108-94-1	1.0	ND		5.00	5.00	mg/kg	0.75 mg/L TCLP
Dibromomethane	74-95-3	1.0	ND		0.75	0.75	mg/kg	15 mg/kg
Dichlorodifluoromethane	75-71-8	1.0	ND		0.50	0.50	mg/kg	7.2 mg/kg
Dichloromethane (Methylene Chloride)	75-09-2	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Ethyl acetate	141-78-6	1.0	0.844	B	0.50	0.50	mg/kg	33 mg/kg
Ethyl benzene	100-41-4	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
Ethyl ether	60-29-7	1.0	0.606	B	0.50	0.50	mg/kg	160 mg/kg
Ethyl methacrylate	97-63-2	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
Iodomethane	74-88-4	1.0	ND		0.50	0.50	mg/kg	65 mg/kg
Isobutyl alcohol	78-83-1	1.0	ND		10.00	10.00	mg/kg	170 mg/kg

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CleanHarbors

Clean Harbors, Inc.

Laboratory Test Report

Report ID
202112031118
Friday, December 3, 2021

All results are reported on a wet-weight basis unless otherwise noted.

Client ID 2111026-02 RD211118-211122 Lab Sample ID KE2185288 SDG 3237

Test *Volatiles NWW UTS (solids)
Analytical Method: EPA 8260C
Prep Method: EPA 5035

TCLP Batch ID:
Prep Batch ID: E1104-37
Cleanup Batch ID:
Analysis Batch ID: E0388-120221

Data Entered By: DickersonD
Peer Reviewed By: WaiteR
Sampling Date: 11/23/2021
Analysis Date: 12/2/2021

Parameter	CAS Nbr	DF	Result	Flag	LLOQ	RL	Test Units	Project Limits
Methacrylonitrile	126-98-7	1.0	ND		0.50	0.50	mg/kg	84 mg/kg
Methyl chloride (Chloromethane)	74-87-3	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Methyl isobutyl ketone	108-10-1	1.0	ND		0.50	0.50	mg/kg	33 mg/kg
Methyl methacrylate	80-62-6	1.0	ND		0.50	0.50	mg/kg	160 mg/kg
n-butyl alochol	71-36-3	1.0	ND		10.00	10.00	mg/kg	2.6 mg/kg
Tetrachloroethylene	127-18-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Toluene	108-88-3	1.0	ND		0.50	0.50	mg/kg	10 mg/kg
trans-1,2-Dichloroethylene	156-60-5	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
trans-1,3-Dichloropropylene	10061-02-6	1.0	ND		0.50	0.50	mg/kg	18 mg/kg
Trichloroethylene	79-01-6	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Trichlorofluoromethane	75-69-4	1.0	ND		0.50	0.50	mg/kg	30 mg/kg
Vinyl chloride	75-01-4	1.0	ND		0.50	0.50	mg/kg	6.0 mg/kg
Xylene, (o-)	1330-20-7	1.0	ND		0.50	0.50	mg/kg	30 mg/kg sum all
Xylene, (sum of m- and p-)	1330-20-7	1.0	ND		1.00	1.00	mg/kg	30 mg/kg sum all

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		3/23/2023 10:08:52 AM	WG2028475
Fluid	1		3/23/2023 10:08:52 AM	WG2028475
Initial pH	6.42		3/23/2023 10:08:52 AM	WG2028475
Final pH	4.94		3/23/2023 10:08:52 AM	WG2028475

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	0.0139	O1	0.0100	0.20	1	03/24/2023 14:03	WG2029446

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Antimony	0.417		0.100		1	03/24/2023 17:10	WG2029483
Arsenic	0.646		0.100	5	1	03/24/2023 17:10	WG2029483
Barium	0.362		0.100	100	1	03/24/2023 17:10	WG2029483
Beryllium	ND		0.0200		1	03/24/2023 17:10	WG2029483
Cadmium	2.52		0.100	1	1	03/24/2023 17:10	WG2029483
Chromium	ND		0.100	5	1	03/24/2023 17:10	WG2029483
Lead	2.45		0.100	5	1	03/24/2023 17:10	WG2029483
Nickel	1.00		0.100		1	03/24/2023 17:10	WG2029483
Selenium	0.157		0.100	1	1	03/24/2023 22:07	WG2029483
Silver	ND		0.100	5	1	03/24/2023 17:10	WG2029483
Thallium	0.201	B	0.100		1	03/24/2023 17:10	WG2029483
Vanadium	ND		0.200		1	03/24/2023 17:10	WG2029483
Zinc	135		0.500		1	03/24/2023 17:10	WG2029483

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		4/13/2023 12:04:02 PM	WG2041085
Fluid	1		4/13/2023 12:04:02 PM	WG2041085
Initial pH	12.20		4/13/2023 12:04:02 PM	WG2041085
Final pH	12.01		4/13/2023 12:04:02 PM	WG2041085

Mercury by Method 7470A

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Mercury	ND	J6	0.0100	0.20	1	04/16/2023 18:45	WG2042253

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Arsenic	ND		0.100	5	1	04/16/2023 14:57	WG2042516
Barium	0.472		0.100	100	1	04/16/2023 14:57	WG2042516
Cadmium	ND		0.100	1	1	04/16/2023 14:57	WG2042516
Chromium	ND		0.100	5	1	04/16/2023 14:57	WG2042516
Lead	ND		0.100	5	1	04/16/2023 14:57	WG2042516
Selenium	ND		0.100	1	1	04/16/2023 14:57	WG2042516
Silver	ND		0.100	5	1	04/16/2023 14:57	WG2042516

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Proposed Rule Changes
UAC R313-17 and R313-24
May 9, 2024

What is the issue before the Board?	Approval from the Board to proceed with formal rulemaking and public comment on proposed changes to Utah Administrative Code (UAC) R313-17 and UAC R313-24 to provide clarity around the environmental assessment process and make updates that are consistent with the Conference of Radiation Control Program Directors (CRCPD) Suggested State Regulations. Neither of these rules have equivalents in federal regulations.
What is the historical background or context for this issue?	As an Agreement State for the Uranium Mill Program, Utah is required to follow specific procedures for the Uranium Mill Program including requiring applicants and licensees to perform written analysis of the impacts of any proposed license action that would have a significant impact on the human health or the environment. When Utah became an Agreement State for the Uranium Mill Program in 2004, UAC R313-24 was adopted. The rule included the written analysis requirement as it existed at that time. In 2015, the CRCPD published an updated Suggested State Regulation (SSR) that includes many improvements compared to the 2004 rule. These improvements provide better procedural safeguards and better defined standards. After reviewing the updated SSR and consulting with the Utah Attorney General's Office it was determined that updating the Utah rules was appropriate. In addition to the changes made to UAC R313-24, changes are being proposed for UAC R313-17 to clarify the types of licensing actions that are major licensing actions and thus require an environmental assessment. The Division has done stakeholder outreach regarding these proposed rule changes. Draft rules were first made publicly available on January 20, 2023. Advance notice letters were sent with an invitation to meet to all facilities licensed to possess byproduct material from source material milling operations and associated stakeholders, including the Ute Mountain Ute Tribe, the Grand Canyon Trust, and Uranium Watch. Since initiating the advance notice process, the Division has hosted at least 10 separate stakeholder meetings and has incorporated appropriate comments into the proposed rules.

DSHW-2024-006066
Attachments: UAC R313-17 (DSHW-2024-006067)
UAC R313-24 (DSHW-2024-006069)

	In addition to the proposed changes detailed above, the Division, at the request of the Governor's Office, is correcting typographical and formatting errors found in the rules. Copies of the proposed changes to UAC R313-17 and UAC R313-24 follow this Executive Summary.
What is the governing statutory or regulatory citation?	The Board is authorized under Subsections 19-3-103.1 and 19-3-104 to make rules to meet the requirements of federal law relating to radiation control to ensure the radiation control program is qualified to maintain primacy from the federal government and that are necessary to implement the provisions of the Radiation Control Act. The rule changes also meet existing DEQ and state rulemaking procedures.
Is Board action required?	Yes. Board approval is necessary to begin the formal rulemaking process by filing the appropriate documents with the Office of Administrative Rules for publishing the proposed rule changes in the *Utah State Bulletin* and conducting a public comment period.
What is the Division Director's recommendation?	The Director recommends the Board approve proceeding with formal rulemaking and public comment by publishing in the June 1, 2024, *Utah State Bulletin* the proposed changes to UAC R313-17 and UAC R313-24 and conducting a public comment period from June 1, 2024, to July 1, 2024.
Where can more information be obtained?	Please contact Tom Ball by email at tball@utah.gov or by phone at 385-454-5574.

DSHW-2024-006066
Attachments: UAC R313-17 (DSHW-2024-006067)
UAC R313-24 (DSHW-2024-006069)

R313. Environmental Quality, Waste Management and Radiation Control, Radiation.
R313-17. Administrative Procedures.

R313-17-2. Public Notice and Public Comment Period.

(1) The [~~D~~]director shall give public notice of and provide an opportunity to comment on the following:

(a) A proposed major licensing action for license categories [~~2b~~](2)(b) and (c), [~~4a, b, c, d~~](4)(a) through (c) and (6) identified in Section R313-70-7[~~.~~];

(i) [~~M~~]major licensing actions include:

(A) [~~P~~]pending issuance of a new license[~~,~~];

(B) [~~P~~]pending issuance of a license renewal[~~,~~];

(C) [~~P~~]pending approval of a license termination[~~,~~];

(D) [~~A~~]an increase in process, storage, or disposal capacity[~~,~~];

(E) [~~A~~]a geographic expansion;[~~,~~]

(F) [~~A~~]a change in engineering design, construction, or process controls that [~~will more than~~]is likely to:

(I) significantly impact public health, public safety or the environment as compared to impacts previously evaluated; or

(II) cause an individual to receive a higher total effective dose equivalent; or

(III) increase the annual quantity of radioactive effluents released to the environment[~~,~~];

(G) [~~A~~]a decrease in environmental monitoring or sampling frequency[~~,~~];

(H) [~~P~~]pending approval of reclamation, decontamination or decommissioning plans[~~,~~];

(I) [~~P~~]pending approval of or changes to corrective actions to control or remediate existing radioactive material contamination[~~, not already~~] to the extent not already authorized by a license[~~,~~];

(J) a licensing action that would allow for possession or use of any matter, other than natural or native ore, that will be processed primarily for its source material content in a licensed uranium or thorium mill; or

(K) a[~~A~~] licensing issue the [~~D~~]director [~~deems is~~]considers to be of significant public interest.

(b) The initial proposed registration of an ionizing radiation producing machine [~~which~~]that operates at a kilovoltage potential (kVp) greater than 200 in an open beam configuration. Subsection R313-17-2(1)(b) does not apply to ionizing radiation producing machines used in the healing arts.

(c) Board activities that may have significant public interest and the [~~B~~]board requests the [~~D~~]director to take public comment on those proposed activities.

(2) The [~~D~~]director may elect to give public notice of and provide an opportunity to comment [~~on~~]for any licensing action[~~s~~] described in Section R313-70-7 that is not subject to[~~that do not include the actions in~~] Subsection R313-17-2(1)(a)(i)[~~, for all license categories identified in Section R313-70-7~~].

(3) Public notice shall allow at least 30 days for public comment. The director may extend the public comment period for good cause. Notice of extensions shall be provided as set forth in Subsection R313-17-2(5)(b).

(4) Public notice may [~~describe~~]include more than one action listed in Subsection R313-17-2(1) and may combine notice of a public hearing with notice of the proposed action. After considering public comments, however, the director may issue separate final permit orders as to any action that was combined for purposes of public notice, hearing, and comment.

(5) Public notice shall be given by one or more of the following methods:

(a) [~~P~~]publication in a newspaper of general circulation in the area affected by the proposed action[~~,~~]; or

(b) [~~P~~]publication on the Division of Waste Management and Radiation Control website[~~, or~~

(c) Distribution by an electronic mail server~~]~~.

R313-17-3. [~~Administrative Procedures~~]Review of Licensing and Permitting Actions.

[~~Administrative proceedings under the Radiation Control Act are~~]Except for actions involving permit or license terminations, the review of permit orders is governed by Section 19-1-301.5 and Rule R305-7.

KEY: administrative procedures, comment, hearings, adjudicative proceedings
Date of Enactment or Last Substantive Amendment: February 17, 2015
Notice of Continuation: April 8, 2021
Authorizing, and Implemented or Interpreted Law: 19-3-104(4); 19-1-301 and 19-1-301.5

R313. Environmental Quality, Waste Management and Radiation Control, Radiation.
R313-24. Uranium Mills and Source Material Mill Tailings Disposal Facility Requirements.

R313-24-3. [~~Environmental Analysis~~]Construction Requirements.

(1) [~~Each new license application, renewal, or major amendment shall contain an environmental report describing the proposed action, a statement of its purposes, and the environment affected. The environmental report shall present a discussion of the following:~~

~~(a) An assessment of the radiological and nonradiological impacts to the public health from the activities to be conducted pursuant to the license or amendment;~~

~~(b) An assessment of any impact on waterways and groundwater resulting from the activities conducted pursuant to the license or amendment;~~

~~(c) Consideration of alternatives, including alternative sites and engineering methods, to the activities to be conducted pursuant to the license or amendment; and~~

~~(d) Consideration of the long-term impacts including decommissioning, decontamination, and reclamation impacts, associated with activities to be conducted pursuant to the license or amendment.~~

~~(2) Commencement of construction prior to issuance of the license or amendment shall be grounds for denial of the license or amendment.~~

~~(3) The Director shall provide a written analysis of the environmental report which shall be available for public notice and comment pursuant to R313-17-2.~~] Any application for a new license, license renewal, or a major licensing action identified in Subsection R313-17-2(1)(a)(i) that involves construction shall be:

(a) filed with the director at least nine months before the anticipated beginning of construction of the plant or facility; and

(b) accompanied by the environmental report required by Section R313-24-4.

(2) Construction, as defined in Section R313-12-3, is prohibited unless the director has provided the necessary licensing and approvals for the construction.

R313-24-4. Applicant's Environmental Report.

(1) For each new license application, application for renewal, or major licensing action identified in Subsection R313-17-2(1)(a)(i), the applicant shall submit an environmental report. In the director's discretion, the director may require the submission of an environmental report for any other licensing action within the scope of Rule R313-24.

(2) The environmental report shall include specific information and data to assist the director in the identification and evaluation of the short-term and long-range environmental impacts of the proposed action, including impact mitigation measures, in sufficient detail for the director to prepare the environmental analysis described in Section R313-24-5. The environmental report shall contain the information the director considers necessary to prepare the environmental analysis.

(3) To the extent the director considers that the information is relevant to the proposed action, the environmental report shall include specific references to, and analysis of, existing environmental information, data, or analyses in the historical administrative record. The director may require the submission of supplemental information and analysis to update previous analyses and information.

(4) The environmental report shall provide an assessment of the following impacts on the environment:

(a) the radiological and non-radiological impacts to the public health and the environment from the activities to be conducted pursuant to the proposed action;

(b) any impact on waterways and groundwater resulting from the activities to be conducted pursuant to the proposed action;

(c) alternatives to the activities to be conducted pursuant to the proposed action; and

(d) the long-term impacts of the proposed action, such as decommissioning, decontamination, and reclamation impacts associated with activities to be conducted pursuant to the proposed action, specifically including the management of any byproduct material.

(5) Examples of specific types of proposed actions where the environmental report would be expected to include detailed supporting data and analysis include:

(a) the siting and construction of a new facility; or

(b) with respect to any existing licensed facility, any new, significant change to the applicant's operations, plans, safety modeling, and similar factors as compared to environmental impacts previously evaluated.

(6) Before accepting the applicant's environmental report submitted under Section R313-24-4 and performing environmental analysis under Section R313-24-5, the director may, in the director's discretion, conduct a preliminary public comment process regarding matters addressed in the environment report, as provided in Section R313-24-4.

(a) Formal publication via newspaper is not required. Notice of the opportunity to submit comments published on the public notice page of the Division of Waste Management and Radiation Control website shall be acceptable. However, the director shall make reasonable efforts to provide actual notice to identifiable stakeholders who may have an interest in the matters addressed in the environmental report, including Native American Tribes, businesses, local, state, and federal governmental agencies, citizen and community groups, or any other person who has requested a notice.

(b) The notice and comment opportunity shall be limited to the matters addressed in the environmental report available at that time.

(c) As part of the director's environmental analysis under Section R313-24-5, the director shall include a written response to any comments received during the preliminary public process regarding the environmental report.

(d) The submission of comments on the environmental report shall not be required. The failure to submit preliminary comments shall be without prejudice to any person's right to submit comments during the general public comment process described in Subsection R313-24-4(e).

(e) Any person shall have the right to submit comments regarding the proposed action, including the environmental report and the director's environmental analysis, in connection with the formal public notice, hearing, and comment process described in Subsection R313-24-5(4).

R313-24-5. Director's Environmental Analysis.

(1) For each new license application, application for renewal, or other licensing action for which an environmental report is required, the director shall perform an independent analysis and prepare a written environmental analysis that includes the following elements, including consideration of environmental impact mitigation measures, as applicable:

(a) an assessment of the radiological and non-radiological impacts to the public health and the environment from the activities to be conducted pursuant to the proposed action;

(b) an assessment of any impact on waterways and groundwater resulting from the activities to be conducted pursuant to the proposed action;

(c) consideration of alternatives to the activities to be conducted pursuant to the proposed action; and

(d) consideration of the long-term impacts such as decommissioning, decontamination, and reclamation impacts associated with activities to be conducted pursuant to the proposed action, specifically including the management of any byproduct material, as defined by 42 U.S.C. Section 2014(e)(2).

(2) In preparing the environmental analysis, the director may rely upon and incorporate by reference the environmental report prepared by the applicant as required by Section R313-24-4, and any previous Environmental Impact Statement (EIS) or other relevant environmental analysis prepared by the applicant, or by any federal, state, or local agencies, to the extent the agencies have jurisdiction over the matters.

(3) The environmental analysis, or any part of the environmental analysis, shall be prepared directly by or under supervision of the director.

(4) The director shall make available to the public, in connection with any public notice and comment period under Section R313-17-2, any information or analysis provided or prepared under Sections R313-24-4 and R313-24-5, including any environmental analysis that the director has relied upon or incorporated by reference under Subsection R313-24-5(2). If the proposed action is subject to a question and answer hearing under Section R313-17-4, the director shall make available to the public the information or analysis performed under Sections R313-24-4 and R313-24-5 at least 60 days before the date for the hearing.

(5) Following any public comment period and question and answer hearing associated with licensing actions subject to Rule R313-24, the director shall, after reviewing the public comments received, issue a written final decision.

R313-24-[4]6. Clarifications or Exceptions.

For the purposes of Rule R313-24, 10 CFR 40.2a through 40.4; 40.12; 40.20(a); 40.21; 40.26(a) through (c); 40.31(h); the introductory paragraph of 40.36 and 40.36(a),(b),(d) and (f); 40.41(c); the introduction to 40.42(k) and 40.42(k)(3)(i); 40.46; 40.61(a) and (b); 40.65; and Appendix A to Part 40 (2015) are incorporated by reference with the following clarifications or exceptions:

(1) The exclusion and substitution of the following:

(a) Exclude 10 CFR 40.26(c)(1) and replace with "(1) The provisions of Sections R313-12-51, R313-12-52, R313-12-53, R313-19-34, R313-19-50, R313-19-61, R313-24-1, Rules R313-14, R313-15, R313-18, and R313-24 (incorporating 10 CFR 40.2a, 40.3, 40.4, and 40.26 by reference)";

(b) In Appendix A to 10 CFR 40, exclude Criterion 5B(1) through 5H, Criterion 7A, Criterion 13, and replace the excluded Criterion with "Utah Administrative Code, R317-6, Ground Water Quality Protection"; and

(c) In Appendix A to 10 CFR 40, exclude Criterion 11A through 11F and Criterion 12[~~;~~].

(2) The substitution of the following:

(a) "10 CFR 40" for reference to "this part" as found throughout the incorporated text;

(b) "[~~D~~]director" for reference to "Commission" in the first and fourth references contained in 10 CFR 40.2a, in 10 CFR 40.3, 40.20(a), 40.26, 40.36(f), 40.41(c), 40.46 (a), 40.61, and 40.65; and "[~~D~~]director" for reference to "NRC" in 10 CFR 40.36(b);

(c) "Rules R313-19, R313-21, or R313-22" for "Section 62 of the Act" as found in 10 CFR 40.12(a);

(d) "[~~Rule~~]Section R313-15-402" for reference to "10 CFR 20.1402" and "[~~Rule~~]Section R313-15-403" for reference to "10 CFR 20.1403" in 10 CFR 40.36(d);

(e) "[~~Rule~~]Section R313-15-1109" for reference to "10 CFR 20.2108" in 10 CFR 40.36(f);

(f) "Rules R313-21 or R313-22" for reference to "the regulations in this part" in 10 CFR 40.41(c);

(g) "Section R313-19-100" for reference to "part 71 of this chapter" as found in 10 CFR 40.41(c);

(h) In 10 CFR 40.42(k)(3)(i), "Sections R313-15-401 through R313-15-406" for reference to "10 CFR part 20, subpart E";

(i) "source material milling" for reference to "uranium milling, in production of uranium hexafluoride, or in a uranium enrichment facility" as found in 10 CFR 40.65(a);

(j) "[~~D~~]director" for reference to "appropriate NRC Regional Office shown in Appendix D to 10 CFR part 20 of this chapter, with copies to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555," as stated in 10 CFR 65(a)(1);

(k) "require the licensee to" for reference to "require to" in 10 CFR 40.65(a)(1); and

(l) [~~I~~]in Appendix A to 10 CFR part 40, the following substitutions:

(i) "Section R313-12-3" for reference to "Sec. 20.1003 of this chapter" as found in 10 CFR 40.36(f) and in the first paragraph of the introduction to Appendix A;

(ii) "Utah Administrative Code, Rule R317-6, Ground Water Quality Protection" for ground water standards in "Environmental Protection Agency in 40 CFR part 192, subparts D and E" as found in the Introduction, paragraph 4; or "Environmental Protection Agency in 40 CFR part 192, subparts D and E (48 FR 45926; October 7, 1983)" as found in Criterion 5;

(iii) "[~~D~~]director as defined in Subsection 19-5-102(6)" for reference to "Commission" in the definition of "compliance period," in paragraph five of the introduction and in Criterion 5A(3);

(iv) "[~~D~~]director" for reference to "Commission" in the definition of "closure plan", in paragraph five of the introduction, and in Criterions 6(2), 6(4), 6(6), 6A(2), 6A(3), 9, and 10 of Appendix A;

(v) "license issued by the [~~D~~]director" for reference to "Commission license" in the definition of "licensed site," in the introduction to Appendix A;

(vi) "[~~D~~]director" for reference to "NRC" in Criterion 4D;

(vii) "representatives of the [~~D~~]director" for reference to "NRC staff" in Criterion 6(6);

(viii) "[~~D~~]director-approved" for reference to "Commission-approved" in Criterion 6A(1) and Criterion 9;

(ix) "[~~D~~]director" for reference to "appropriate NRC regional office as indicated in Criterion 8A" as found, Criterion 8, paragraph 2 or for reference to "appropriate NRC regional office as indicated in Appendix D to 10 CFR part 20 of this chapter, or the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555," as stated in Criterion 8A; and

(x) "[~~D~~]director" for reference to "the Commission or the State regulatory agency" in Criterion 9, paragraph 2.

KEY: environmental analysis, uranium mills, tailings, byproduct material
Date of Last Change: March 15, 2016
Notice of Continuation: October 19, 2021
Authorizing, and Implemented or Interpreted Law: 19-3-104; 19-6-107

WASTE MANAGEMENT AND RADIATION CONTROL BOARD
Executive Summary
Mammography Imaging Medical Physicist
Expiration Date Extension
May 9, 2024

What is the issue before the Board?	Approval from the Board for the Executive Secretary to extend the expiration date for certain Mammography Imaging Medical Physicists.
What is the historical background or context for this issue?	As part of the Divisions permit, licensing, and registration modernization, the Division has been moving the process for obtaining a Mammography Imaging Medical Physicist (MIMP) certification from a paper-based process to an online, electronic process. Due to some technical issues the Division was not able to complete the transition in time for several MIMPs whose certificates expire on May 31, 2024. Because the transition is not complete, these MIMPs were not able to complete the process and submit their documentation for review in time for the Division to bring them to the Board for approval in May. The Division anticipates being able to complete the transition within the next few weeks, but to prevent the certificates from expiring the Division would like approval from the Board for the Executive Secretary to extend the expiration date for those certificates that expire on May 31, 2024 to June 30, 2024, to allow time for the MIMPs to submit their applications and for the Division to review them prior to the June Board Meeting.
What is the governing statutory or regulatory citation?	The Board is authorized under Subsections 19-3-103.1 to review the qualifications of, and issue certificates of approval to individuals who survey mammography equipment or oversee quality assurance practices at mammography facilities.
Is Board action required?	Yes. Board approval is for the Executive Secretary to extend the expiration date of MIMP certificates.
What is the Division Director's recommendation?	The Director recommends the Board approve extending the expiration date for Mammography Imaging Medical Physicists certificates that expire on May 31, 2024, to June 30, 2024.
Where can more information be obtained?	Please contact Tom Ball by email at tball@utah.gov or by phone at (385) 454-5574.

DSHW-2024-006158