

May 2, 2019

The Honorable Patrick McDonnell
Secretary, Department of Environmental Protection
Chair, Environment Quality Board
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17101

**Re: F039 Delisting Petition – Treatment Plant Sludge
MAX Environmental Technologies, Inc.**

Dear Mr. McDonnell:

On behalf of MAX Environmental Technologies, Inc. (MAX), Key Environmental Inc. (KEY) is submitting for inclusion on the EQB agenda petitions for the delisting of two waste streams generated as a result of the MAX operations. The waste streams in question are considered listed wastes by the United States Environmental Protection Agency (USEPA). The submittals are for delisting of sludge generated from the treatment of disposal impoundment and landfill leachate and contact stormwater at MAX's Yukon (Westmoreland County) and Bulger (Washington County) facilities.

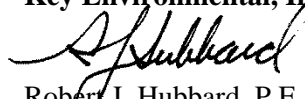
Although MAX's operations for the treatment of these wastewaters have not substantially changed over the years, the USEPA advised MAX and the Pennsylvania Department of Environmental Protection (PADEP) that the waste generated during these operations should no longer be classified as non-hazardous (as had been the case for almost 20 years) but should instead be classified as F039 hazardous waste, defined at 40 CFR 261.31(a) as "Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part." Subsequently, in 2018 MAX entered into Consent Order Agreements (COAs) with the DEP to manage the waste in accordance with this determination. As part of the COAs, MAX is submitting this petition to address the current USEPA and DEP regulatory interpretations.

Prior to entering into the COAs and to date, MAX's wastewater sludge has not exhibited any hazardous characteristic, created any environmental impact, or been managed in a manner inconsistent with any environmental regulations. Additionally, similar waste streams generated at other locations in Pennsylvania have been approved for delisting by the EQB.

We look forward to an approval from the EQB and ultimate regulatory approval of this submission.

Sincerely,

Key Environmental, Incorporated


Robert J. Hubbard, P.E.
Project Manager

cc: C. Spadaro (MAX)
H. Dao (PADEP)
T. Mellott (PADEP)

**APPENDIX IXa. WASTES EXCLUDED UNDER 25 Pa. Code § 260a.20 AND
40 CFR 260.20 AND 260.22**

Table Ia. Wastes Excluded from Nonspecific Sources

Facility	Address	Waste Description
MAX Environmental Bulger Facility	200 MAX Drive Bulger, PA 15109	Wastewater treatment sludge from former landfill operations (EPA Hazardous Waste No. F039), generated at an expected annual rate of 600 cubic yards, after <i>the effective date of this notice</i> , and disposed in the MAX Yukon Landfill or other approved Subtitle D landfill located in the state of Pennsylvania. MAX must meet the following conditions for the exclusion to be valid:

(1) *Delisting Levels*: All leachable concentrations for the following constituents measured using the SW-846 Method 1311 (the TCLP) must be below the following levels (mg/L):

<u>Constituent:</u>	<u>Maximum Allowable Leachate Concentration⁽¹⁾</u>
Arsenic.....	0.30
Barium.....	100
Cadmium.....	1.0
Chromium.....	5.0
Lead.....	5.0
Mercury.....	0.2
Selenium.....	1.0
Silver.....	5.0

1. The delisting levels are based on precedent for delisted PA F039 waste (arsenic), and Toxicity Criteria per 40 CFR 261.24.

(2) *Verification Testing Schedule*: MAX Environmental must analyze representative samples of the treatment sludge at a frequency of one sample per every 20 cubic yards of material to be shipped, using methods with appropriate detection levels and quality control procedures. Shipments shall not exceed 150 cubic yards per three month period.

(i) *Sample Collection*: Representative samples of the waste shall be collected. Composite samples shall be collected at a rate of one composite per every 20 cubic yards and shall be generated from four grab samples (one grab sample from each quadrant of the vessel). Sampling shall be completed in accordance with the approved Sampling and Analysis Plan (dated October 2017) used for the purposes of this delisting petition. Each sample collection event shall include all necessary QA/QC samples and a duplicate.

(ii) *Sample Analysis*: Each composite sample will be analyzed for all of the constituents listed in Paragraph (1). If the level of any constituent measured in the sample of the sludge equals or exceeds the levels set forth in Paragraph (1), then the waste is hazardous and must be managed in accordance with Subtitle C of RCRA. The

analytical data will be submitted to the Pennsylvania Department of Environmental Protection, Bureau of Waste Management, Rachel Carson State Office Building, P.O. Box 69170, Harrisburg, PA 17106-9170. All data must be accompanied by a signed copy of the statement set forth in 40 CFR 260.22(i)(12) to certify to the truth and accuracy of the data submitted. Records of operating conditions and analytical data must be compiled, summarized, and maintained on-site for a minimum of three (3) years and must be furnished upon request by any employee or representative of the DEP, and made available for inspection.

(iii) *Management of sludge pending verification analyses:* The treated, dewatered sludge shall be stored in containers that are to remain covered, except when sludge is being added or removed.

(3) *Changes in Operating Conditions:* If MAX significantly changes the treatment process described in the petition, the treatment sludge generated from the new process may not be managed under this exclusion until it has met the following conditions: (a) MAX must demonstrate that the new waste meets the delisting levels set forth in Paragraph (1); (b) MAX must demonstrate that no new hazardous constituents listed in appendix VIII of 40 CFR part 261 have been introduced into the treatment process; (c) MAX must obtain written approval from the DEP to manage the waste under this exclusion.

(4) *Reopener:*

(i) If MAX discovers that a condition at the facility or an assumption related to the disposal of the excluded waste that was modeled or predicted in the petition does not occur as modeled or predicted, then MAX must report any information relevant to that condition, in writing, to the DEP within 10 days of the discovery of that condition.

(ii) Upon receiving information described in subparagraph (i) of this Section, regardless of its source, the DEP will determine whether the reported condition requires further action. Further action may include repealing the exclusion, modifying the exclusion, or other appropriate response necessary to protect human health and the environment.

**COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL QUALITY BOARD**

PETITION FORM

I. PETITIONER INFORMATION

Name: MAX Environmental Technologies, Inc.

Mailing Address: Foster Plaza #5

651 Holiday Drive

Pittsburgh, PA 15220

Telephone Number: 412-343-4900

Date: October 5, 2018

II. PETITION INFORMATION

A. The petitioner requests the Environmental Quality Board to (check one of the following):

Adopt a regulation

Amend a regulation (Citation 25 Pa. Code Ch. 261a)

Repeal a regulation (Citation _____)

Please attach suggested regulatory language if request is to adopt or amend a regulation.

B. Why is the petitioner requesting this action from the Board? (Describe problems encountered under current regulations and the changes being recommended to address the problems. State factual and legal contentions and include supporting documentation that establishes a clear justification for the requested action.)

MAX Environmental Technologies, Inc. (MAX) has prepared and submitted this Delisting Petition pursuant to 25 Pa Code 260a.20 and the provisions of 40 CFR 260.20 and 260.22 (as adopted by cross-reference in the Pennsylvania Hazardous Waste Regulations), to exclude from the lists of hazardous waste in subpart D of 40 CFR Part 261 the sludge generated as a result of treatment of contact stormwater and leachate associated with various land disposal units located at its facility in Bulger, Washington County, Pennsylvania. As demonstrated in the attached petition, the sludge has been subjected to extensive sampling and analysis (in accordance with PADEP-approved Sampling and Analysis and Quality Assurance Project Plans and the concentrations of constituents of interest have been found to be below Universal Treatment Standards promulgated at 40 CFR 261.48 and below limits protective of human health and the environment as determined via simulation using the USEPA Delisting Risk Assessment System software. The sludge does not exhibit the characteristics of a hazardous waste (i.e., corrosivity, ignitability, reactivity, or toxicity) as defined under the Resource Conservation and Recovery Act. As indicated, the sludge does not pose a threat to human health or the environment when disposed in a RCRA Subtitle D/Pennsylvania Class I residual waste landfill. Delisting of the sludge based on its derivation from leachate identified by USEPA as F039 [Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous...] pursuant to the criteria presented in 40 CFR 260.22 is appropriate.

C. Describe the types of persons, businesses and organizations likely to be impacted by this proposal.
MAX will recognize economic benefit as a result of approval of the petition. Reductions in energy use and hydrocarbon emissions will be realized due to significantly decreased transportation requirements. Local businesses and residents will recognize benefit via the elimination of the potential need to transport the material on interstate roads to another more remote permitted facility.

D. Does the action requested in the petition concern a matter currently in litigation? If yes, please explain.
No.

E. For stream redesignation petitions, the following information must be included for the petition to be considered complete. Attach supporting material as necessary.

1. A clear delineation of the watershed or stream segment to be redesignated, both in narrative form and on a map.
2. The current designated use(s) of the watershed or segment.
3. The requested designated use(s) of the watershed or segment.
4. Available technical data on instream conditions for the following: water chemistry, the aquatic community (benthic macroinvertebrates and/or fishes), or instream habitat. If such data are not included, provide a description of the data sources investigated.
5. A description of existing and proposed point and nonpoint source discharges and their impact on water quality and/or the aquatic community. The names, locations, and permit numbers of point source discharges and a description of the types and locations of nonpoint source discharges should be listed.
6. Information regarding any of the qualifiers for designation as high quality waters (HQ) or exceptional value waters (EV) in §93.4b (relating to qualifying as High Quality or Exceptional Value waters) used as a basis for the requested designation.
7. A general description of land use and development patterns in the watershed. Examples include the amount or percentage of public lands (including ownership) and the amount or percentage of various land use types (such as residential, commercial, industrial, agricultural and the like).
8. The names of all municipalities through which the watershed or segment flows, including an official contact name and address.
9. Locational information relevant to items 4-8 (except for contact names and addresses) displayed on a map or maps, if possible.

: **All petitions should be submitted to the** :
: **Secretary of the Department of Environmental Protection** :
: **P.O. Box 2063** :
: **Harrisburg, PA 17105-2063** :

DELISTING PETITION

**LEACHATE TREATMENT SYSTEM SLUDGE
BULGER FACILITY**

**MAX ENVIRONMENTAL TECHNOLOGIES, INC.
BULGER, PENNSYLVANIA**

OCTOBER 2018

EXECUTIVE SUMMARY

This delisting petition has been prepared by Key Environmental, Inc. (KEY) on behalf of MAX Environmental Technologies, Inc. (MAX) and provides information to support a delisting determination for leachate treatment system sludge generated at the Bulger facility located in southwestern Pennsylvania. The facility is owned and operated by MAX. Sludge is generated as a result of treatment of contact stormwater and leachate from multiple land disposal units. Approximately 40 to 60 cubic yards of sludge are generated each month. This Executive Summary provides a brief overview of facility operations and summarizes data collected to support the delisting petition, including comparison to Universal Treatment Standards (UTS) and limits developed via multimedia exposure assessment modeling conducted using the USEPA's Delisting Risk Assessment System (DRAS) software. The main body of this petition has been prepared based on USEPA guidance and is formatted based on the outline presented in the guidance. This Executive Summary provides a means of summarizing the delisting petition investigation results in a readily understandable manner that is not accommodated by the outline provided in the guidance manual.

The Bulger facility is located approximately 18 miles west-southwest of Pittsburgh, Pennsylvania, in Smith Township, Washington County, Pennsylvania. Figure 1 (provided in the main body of this petition), depicts the facility location on a United States Geological Survey quadrangle. This facility operates as a beneficial use facility under a Pennsylvania Department of Environmental Protection (PADEP) Consent Order and Agreement. Select solids are managed at the facility to create a cap support zone for closure of an historical impoundment.

The facility is currently used for beneficial placement of a wide range of materials from the energy, construction, and manufacturing industries, as well as metal-impacted materials (e.g., soil, dredging wastes) from site remediation projects. Historically, the largest volume waste processed and managed at the facility was spent pickle liquor which was ultimately listed as K062. More recently, the largest volume wastes received at the facility for placement consist of metal-impacted soils from remediation projects and drill cuttings from the oil and gas industry.

The facility was formerly owned by Mill Service, Inc. (Mill Service) and began operations in 1958. The facility initially accepted waste pickle liquor from western Pennsylvania steel mills for treatment via neutralization with lime. The first unit, Impoundment 1/1A was constructed of earthen materials and was filled and out of service before 1980 prior to the Federal Resource Conservation and Recovery Act (RCRA) regulations. Impoundment 2, a lined unit, was operational between 1980 and 1987. This impoundment was closed pursuant to a 1985 Consent Order and in agreement with the regulations in effect at the time. This was subsequently modified in 1999 to allow MAX to place select soils and sludges on the impoundment to create a cap support zone. In 2006, MAX and the PADEP entered a consent order and agreement to re-close Impoundment 1/1A by rebuilding the settled grade with residual waste and then installing an engineered cap including synthetic liner. All of the incoming materials are subject to analytical testing and must meet stringent requirements prior to being accepted based primarily on PADEP's regulated fill criteria for low organic contamination. In 2009, MAX accepted their first waste from shale gas drilling, and by 2013, the majority of the materials for the cap support zone came from this industry.

As indicated, the primary materials received for placement at the facility consist of wastes generated in steel-making operations or other metal-related industries, including materials generated as a result of remediation of metal-impacted sites. Predominant managed materials are as follows:

- Waste pickle liquor as spent sulfuric, hydrochloric, and nitric/hydrofluoric acids (K062) – Impoundment 2 only;
- Emission control dust and sludge generated from electric arc furnace steel production (K061) – Impoundment 2 only;
- Wastewater treatment plant sludge generated from steelmaking operations;
- Foundry sands, slags, and soils accepted as non-hazardous wastes;
- Oil and gas industry drill cuttings since approximately 2009.

Perimeter drains collect runoff and leachate from Impoundments 1/1A and 2. Any leachate and contact stormwater is piped to the facility's leachate treatment system. Generally, leachate is treated with lime to precipitate metals, then with acid to ensure a neutral pH (i.e., between 6.0-9.0 SU) prior to discharge. Treatment of leachate via polymer addition and clarification is conducted for solids removal. Sludge from the clarifier is placed in thickener tanks and the thickened sludge is subsequently transferred to containers or a filter press from which the water drains for collection and recycle back into the treatment system. The treated effluent from the leachate treatment plant is discharged pursuant to a National Pollutant Discharge Elimination System (NPDES) permit (NPDES Permit No. PA0044326) and the discharge is regulated under the Clean Water Act and Clean Streams Law. The sludge is dewatered and has been land disposed as residual waste at MAX's Yukon facility (233 MAX Lane, Yukon, PA 15698), Landfill 6.

As a result of the derived-from rule, it has been determined that the sludge is a listed waste (F039). Based on inspections of MAX's Yukon facility, the United States Environmental Protection Agency (USEPA) concluded in 2012 that the facility does not qualify for exclusion from hazardous waste management requirements and should be classified as F039 listed waste. Pursuant to 40 CFR 261, F039 is defined as "Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous..." PADEP subsequently concluded that the Bulger sludge generated via treatment of the leachate is also a listed waste given its similarity to the Yukon facility.

Sampling and analysis of the sludge indicates that constituent concentrations do not exceed the Universal Treatment Standards (UTS) promulgated at 40 CFR 268.48 and are, in fact, one or more orders of magnitude below chemical-specific UTS. Samples have been obtained and analyzed in accordance with a PADEP-approved Sampling and Analysis Plan (SAP) and PADEP-approved Quality Assurance Project Plan (QAPP). Four samples (two of which were duplicates) have been collected over a period of a year to reflect potential variations in constituent concentrations over time under various seasonal conditions. Samples were generally collected as composites, with the exception of those obtained for volatile organic chemical analysis, which were obtained as grab samples. As expected, metals are the most commonly detected constituents as a result of the types of material accepted at the facility. Sporadic detections of volatile and semi-volatile organic compounds have also been observed.

Initial sampling and analysis conducted to characterize the leachate treatment system sludge generated at the Bulger facility consisted of one discrete sample (collected by qualified MAX employees and analyzed

by a PADEP-certified laboratory - Fairway Laboratories in Altoona, PA). This sample, collected on May 15, 2017 was analyzed for a comprehensive suite of parameters consisting of the following:

- Toxicity Characteristic Leaching Procedure (TCLP) metals (1311/6010B/7471B)
- Total Metals (6010B/7471B)
- Volatile Organics (8260B)
- Semi-Volatile Organics (8270D)
- Pesticides (3541/8081B)
- Chlorinated Herbicides (8151A)
- Polychlorinated Biphenyls (8082)
- Total Cyanide (9014)/Amenable Cyanide (4500)
- Fluoride (9056A)
- Sulfide (9030/9034)

Three supplemental rounds of sampling were subsequently conducted by experienced field personnel from Field and Technical Services, Inc. (FTS) of Carnegie, PA. The three additional samples (plus two duplicates) were collected on October 18, 2017, January 25, 2018 and March 23, 2018. The duplicate samples were obtained during the January and March sampling events. Together with the earlier sample, these samples are representative of potential seasonal variations (spring, summer, fall, and winter). The supplemental samples were also submitted to Fairway Laboratories for analysis. A slightly revised list of analytes was requested for the supplemental samples, as discussed in the SAP/QAPP prepared by KEY in October 2017 and the attendant QAPP prepared by KEY in February 2018. The following analyses were performed for the additional samples collected to support this delisting petition:

- TCLP Metals (1311/6010B/7471B)
- Total Metals (6010B/7471B)
- pH (9045D/1311)
- Volatile Organics (8260B)
- Semi-Volatile Organics (8270D)
- TCLP Semi-Volatile Organics (1311/3510C)
- PCBs (8082)
- Pesticides (3541/8081B)
- Chlorinated Herbicides (8151A)
- Total Cyanide (9014)/Amenable Cyanide (4500)
- Fluoride (9056A)
- Sulfide (9030/9034)
- Percent Solids (2540G)

The pH of the sludge samples (as reported by the SW-846 Test Method 9045D) covered a narrow range, from 8.51 to 8.87 standard units. These pH values are well within the range of 2 to 12.5 standard pH units, outside of which a material is defined as corrosive. The pH results exhibited very little variability over the course of the sampling period. Hence, it can be concluded that this sludge is not corrosive. The sludge is also non-reactive and non-ignitable based on the nature of the material and generator knowledge.

To support this delisting petition, the analytical results were evaluated via two mechanisms. The first mechanism is direct comparison of the concentrations to the UTS. As previously indicated, the measured concentrations (on a chemical-specific basis) are an order of magnitude or more below their respective UTS. The second is simulation of potential human health or ecological risks via the use of a conservative multi-media exposure model. Specifically, this petition was prepared using the USEPA’s Delisting Risk Assessment System (DRAS) to identify constituents that could pose a threat to human or ecological receptors.

DRAS was run assuming a target cancer risk level of 1×10^{-6} and a target hazard quotient of 1 (non-carcinogenic human health effects and ecological receptors). The output of the DRAS model are acceptable concentrations based on the target risk levels. DRAS also identifies constituents which exceed acceptable concentrations on a pathway-specific basis.

The sludge samples were analyzed for 19 metals, 18 of which may be simulated using DRAS (DRAS does not simulate aluminum as a result of its low toxicity). The analytical results (number of detections/number of samples, maximum, and average) and the corresponding DRAS-generated maximum allowable total concentration (DRAS Limit) for the 18 metals are summarized in the following table.

Measured Total Metal Concentrations - Leachate Treatment System Sludge

Metal	Detects/ No. of Samples	Sludge Total Concentration (mg/kg)		Benchmark Values (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Limit ⁽³⁾
Antimony	0/6	Not detected	10.8	-	> 1,000,000
Arsenic	3/6	13.1	8.21	-	2,140
Barium	6/6	9,140	5,520	-	> 1,000,000
Beryllium	6/6	12.4	8.68	-	60,900
Cadmium	6/6	6.02	4.76	-	80,600
Chromium	6/6	270	206	-	12,200
Cobalt	5/6	178	132	-	16,200
Copper	5/6	263	194	-	> 1,000,000
Iron	5/6	23,000	18,800	-	> 1,000,000
Lead	6/6	125	95.7	-	> 1,000,000
Manganese	5/5	16,700	13,600	-	> 1,000,000
Mercury ⁽⁴⁾	5/6	0.147	0.125	-	28.7
Nickel	6/6	1,050	798	-	609,000
Selenium	2/6	17.4	12.9	-	> 1,000,000
Silver	0/6	Not detected	1.30	-	> 1,000,000
Thallium	1/6	6.61	4.06	-	964
Vanadium	6/6	65.4	48.2	-	> 1,000,000
Zinc	6/6	2,380	1,650	-	> 1,000,000

1. To calculate the average, all non-detects were assigned a value of the detection limit divided by 2 and the average was taken of the resulting values. However, if the detection limit divided by 2 was greater than the highest measurement observed, this value was ignored when calculating the average. Duplicate sample results were averaged first before the overall average was determined.
2. Universal Treatment Standards as listed in 40 CFR 268.48. UTS for metals are based on concentrations in the waste extract (TCLP results).
3. The DRAS delisting limit is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
4. The DRAS delisting level for mercury is based on the fish ingestion pathway assuming that the mercury exists as methyl mercury.

As shown in the preceding table, the maximum and average concentrations of total metals in the sludge samples are well below the calculated DRAS limits, typically by multiple orders of magnitude. As expected given the types of materials treated and disposed at the facility, metals were consistently detected in the sludge samples. Antimony and silver were not detected in any samples.

TCLP analysis for metals was also completed to support the delisting process. UTS have been developed for metals based on concentrations in the waste extract and TCLP data are used to determine compliance with the UTS for metals. The DRAS software also relies on TCLP data as inputs to support analysis of potential exposure associated with groundwater pathways. The TCLP results for the 18 metals, as well as the corresponding UTS/DRAS limits are summarized in the following table:

Measured TCLP Metal Concentrations - Leachate Treatment System Sludge

Metal	Detects/ No. of Samples	Sludge TCLP Concentration (mg/L)		Benchmark Values (mg/L)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Limit ⁽³⁾
Antimony	3/6	0.0732	0.0347	1.15	1.31
Arsenic	0/6	Not detected	0.0121	5.0	0.0103
Barium	6/6	0.607	0.484	21	433
Beryllium	2/6	0.00408	0.00155	1.22	0.948
Cadmium	0/6	Not detected	0.00376	0.11	1.11
Chromium	5/6	0.0504	0.0237	0.60	22.3
Cobalt	4/5	0.119	0.0646	-	2.54
Copper	2/5	0.0192	0.0105	-	290
Iron	1/5	0.260	0.0708	-	> 1,000,000
Lead	1/6	0.0202	0.0131	0.75	6.64
Manganese	5/5	24.5	11.5	-	195
Mercury	1/6	0.000937	0.000456	0.025	0.83
Nickel	6/6	1.38	0.4955	11	160
Selenium	2/6	0.0190	0.0136	5.7	10.9
Silver	0/6	Not detected	0.00500	0.14	89.8
Thallium	0/6	Not detected	0.0193	0.20	0.445
Vanadium	0/6	Not detected	0.0927	1.6	40.3
Zinc	5/6	0.474	0.127	4.3	2,450

1. To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
2. Universal Treatment Standards as listed in 40 CFR 268.48.
3. The DRAS delisting limit is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/L this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.

As shown in the preceding table, the metals were generally detected less frequently in the TCLP extract than as a result of the total analysis. This is consistent with expectations given that the leachate is treated with lime which tends to chemically bind the metals. Arsenic, cadmium, silver, thallium and vanadium were not detected in any sample so the average of one half of the detection limits is presented in the “Average” column for these analytes. Except for arsenic, the laboratory detection limits or the measured concentrations are at least one order of magnitude lower than their respective delisting limits. Only one constituent, arsenic, yielded a result greater than its delisting limit. Specifically, the average of the TCLP detection limits was 0.0121 mg/L, slightly above the delisting level of 0.0103 mg/L. This apparent exceedance is considered purely artificial given that arsenic was not in fact detected in any of the TCLP

extracts analyzed. In conclusion, it is apparent that 1) the metals in the sludge are not particularly leachable, and 2) do not constitute a threat to any receptors via the potential groundwater pathway.

Two laboratory methods were used to quantitate 119 volatile and semi-volatile organic compound concentrations in the samples (some overlap exists – e.g., naphthalene is quantitated via both 8260B and 8270D). A total of 17 volatile and semi-volatile organic compounds were detected in the samples. The analytical results may be summarized as follows (complete data are provided elsewhere in this petition). Although, pyridine was not detected in the SVOC sludge analysis, its concentration is reported as it was detected in TCLP analysis.

Measured VOC and SVOC Total Concentrations - Leachate Treatment System Sludge

Organic Compound	Detects/ No. of Samples	Total concentration (mg/kg)		Benchmark values (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Level ⁽³⁾
Volatile Organic Compounds					
2-Butanone ⁽⁴⁾	3/6	0.182	0.0755	36	> 1,000,000
4-Methyl-2-pentanone ⁽⁵⁾	3/5	0.0973	0.0490	33	> 1,000,000
Benzene	3/6	0.0192	0.00788	10	87,100
Carbon disulfide	4/6	0.103	0.0335	-	> 1,000,000
Chloroform	1/6	0.00370	0.00204	6.0	15,100
Toluene	3/6	0.0170	0.00608	10	> 1,000,000
Semi-Volatile Organic Compounds					
Aniline	2/6	11.3	2.71	14	> 1,000,000
Benzo(a)anthracene	1/6	0.318	0.280	3.4	117
Benzyl alcohol	1/6	0.445	0.445	-	> 1,000,000
Bis(2-ethylhexyl)phthalate	2/6	7.67	3.60	28	> 1,000,000
Chrysene	1/6	0.191	0.191	3.4	11,500
Di-n-butyl phthalate	4/6	31	8.22	28	> 1,000,000
Fluoranthene	1/6	0.254	0.244	3.4	294,000
Isophorone	1/6	0.54	0.527	-	> 1,000,000
Phenanthrene	1/6	0.191	0.191	5.6	Not applicable
Phenol	1/6	0.572	0.572	6.2	> 1,000,000
Pyrene	1/6	0.254	0.254	8.2	527,000
Pyridine	0/6	Not detected	9.76	16	> 1,000,000

1. To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
2. Universal Treatment Standards as listed in 40 CFR 268.48.
3. The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
4. 2-Butanone - methyl ethyl ketone
5. 4-Methyl-2-pentanone - methyl isobutyl ketone

Several things are noteworthy regarding the detected organic constituents. The first is that organics are detected much less frequently than the metals: while many metals were detected in all of the total analysis samples, the organics were typically detected in less than 50% of the samples, many in only one of the samples. Second, a number of the detected analytes, such as methyl ethyl ketone (2-butanone), 4-methyl-2-butanone, bis(2-ethylhexyl)phthalate and di-n-butyl phthalate are considered common laboratory artifacts. Third, some of the constituents (i.e., the Polynuclear Aromatic Hydrocarbons such as benzo[a]anthracene, chrysene, fluoranthene, phenanthrene, and pyrene) are ubiquitous in the environment

and are often found in environmental samples at anthropogenic background levels simply as a result of atmospheric deposition.

Nonetheless, notwithstanding the potential source of the organics, the concentrations of most of the preceding volatile and semi-volatile organic compounds (VOCs and SVOCs) were reported at concentrations several orders of magnitude below the UTS and the maximum allowable concentration determined via the DRAS simulation (i.e., the DRAS Limit). The only exception is di-n-butyl phthalate which was quantitated in one sample at a concentration slightly above the UTS (i.e., 31 mg/kg versus 28 mg/kg) but more than four orders of magnitude lower than its DRAS limit. Consequently, it is concluded that organic compounds are not of concern for surface exposure pathways (i.e., pathways other than the groundwater pathway).

In accordance with the PADEP-approved SAP/QAPP, TCLP SVOC analysis was completed for the latter two supplemental sludge samples collected by FTS personnel. TCLP SVOC analysis was completed for the 13 SVOCs included on the TCLP list (i.e., Table CCWE in 40 CFR 268.41), although 3- and 4-methylphenol (i.e., m- and p-cresol) were reported together given that they co-elute. Pyridine was the only organic constituent detected on TCLP testing. However, given the detection of other non-TCLP VOCs and SVOCs, and given that the DRAS requires the entry of TCLP concentrations for any analytes of interest, conservative estimates of TCLP concentrations were calculated for those organic constituents that were detected via totals analysis. A worst-case procedure was used in this respect.

Specifically, the TCLP procedure relies on an extraction fluid mass/sample mass ratio of 20:1. Per Method 1311, “The solid phase is extracted with an amount of extraction fluid equal to 20 times the weight of the solid phase.” As a worst-case estimate, it may therefore be assumed that the extraction efficiency is 100% and that 100% of any constituent present in the solid sample will be present in the extract albeit at a concentration equal to 1/20th of that in the solid phase.

The following tables present summaries of the calculated TCLP VOC and SVOC extract concentrations for analytes detected in at least one of the samples subjected to totals analysis (the average concentrations for the totals analysis were first determined, as summarized in the preceding table, and the theoretical leachate concentration was then determined).

Calculated TCLP VOC and SVOC Concentrations – Leachate Treatment System Sludge

Organic Compound	Average Total Concentration (mg/kg) ⁽¹⁾	Calculated Leachate Concentration (mg/L) ⁽²⁾	Benchmark Value (mg/L)	
			UTS ⁽³⁾	DRAS Limit ⁽⁴⁾
Volatile Organic Compounds				
2-Butanone	0.0755	0.00378	-	4,220
4-Methyl-2-pentanone	0.0490	0.00245	-	562
Benzene	0.00788	0.000394	-	0.249
Carbon disulfide	0.0335	0.00167	4.8	686
Chloroform	0.00204	0.000102	4.8	0.0973
Toluene	0.00608	0.000304	-	184

Organic Compound	Average Total Concentration (mg/kg) ⁽¹⁾	Calculated Leachate Concentration (mg/L) ⁽²⁾	Benchmark Value (mg/L)	
			UTS ⁽³⁾	DRAS Limit ⁽⁴⁾
Semi-Volatile Organic Compounds				
Aniline	2.71	0.135	-	2.4
Benzo(a)anthracene	0.280	0.0140	-	0.0852
Benzyl alcohol	0.445	0.0223	-	3,520
Bis(2-ethylhexyl)phthalate	3.60	0.180	-	> 1,000,000
Chrysene	0.191	0.00955	-	8.52
Di-n-butyl phthalate	8.22	0.411	-	299
Fluoranthene	0.244	0.0122	-	29.9
Isophorone	0.527	0.0264	-	13.7
Phenanthrene	0.191	0.00955	-	Not applicable
Phenol	0.572	0.0286	-	2,110
Pyrene	0.254	0.0127	-	54.1
Pyridine ⁽⁵⁾	NA	0.0195	-	7.03

1. To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
2. To calculate a conservative leachate concentration, the contaminant concentration in the sludge was divided by 20. These were all assumed to be below the detection limit of the TCLP analysis.
3. Universal Treatment Standards as listed in 40 CFR 268.48.
4. The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/L this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
5. Unlike the other organic compounds, the pyridine concentration listed here is the average of one detected TCLP value and one half of the TCLP detection limits for the other non-detects. This compound was not detected in any of the sludge samples (total analysis).

As shown in the preceding table, the hypothetical (all analytes except pyridine) and measured (pyridine) TCLP concentrations are significantly lower than the DRAS limits. The concentrations are all at least and order of magnitude lower than their respective DRAS limits and in most cases are three orders of magnitude or more below the limits.

In accordance with the PADEP-approved SAP/QAPP, sludge samples were also analyzed for Polychlorinated Biphenyls (PCBs), pesticides, and chlorinated herbicides. These constituents were not expected to be present based on the nature of the materials treated/disposed at the facility. No PCBs, pesticides, or chlorinated herbicides were detected in any of the sludge samples collected and consequently these results are not summarized in this Executive Summary. Tabulation of the non-detect results for these classes of organic constituents is provided elsewhere in this delisting petition.

Finally, cyanide (total and amenable), fluoride, and sulfide analyses were completed in accordance with the PADEP-approved SAP/ QAPP. As before, because DRAS requires the entry of extract concentrations, the average extract concentrations were assumed to be equal to the average total concentration divided by 20.

Measured Anion Concentrations - Leachate Treatment System Sludge

Anion	Detects/ No. of Samples	Sludge Concentration (mg/kg)		Benchmark value (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS limit ⁽³⁾
Cyanide (Total)	3/6	3.42	1.17	590	> 1,000,000
Cyanide (Amenable)	3/6	3.42	1.17	30	> 1,000,000
Fluoride	6/6	1590	851	--	> 1,000,000
Sulfide	0/6	Not detected	9.53	--	--

1. To calculate the average, all non-detects were assigned a value of the detection limit divided by 2 and the average taken of the resulting values. However, if the detection limit divided by 2 was greater than the highest measurement observed, this value was ignored when calculating the average.
2. Universal Treatment Standards as listed in 40 CFR 268.48.
3. The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.

As shown, the anion concentrations are below their respective UTS as well as the limits calculated via DRAS simulation although UTS have not been established for fluoride or sulfide and DRAS does not include dose-response information for sulfide. The sulfide and cyanide concentrations are well below levels that might be considered indicative of reactive conditions (i.e., 500 mg/kg and 250 mg/kg, respectively).

The following table presents the theoretical worst-case extract concentrations for two of the anions of interest (sulfide was not subjected to DRAS extract simulation given that DRAS does not accommodate sulfide).

Calculated Anion Extract Concentrations – Leachate Treatment System Sludge

Anion	Average Total Concentration (mg/kg)	Calculated Leachate Concentration (mg/L)	Benchmark values (mg/L)	
			UTS	DRAS Level
Cyanide (Total)	1.17	0.0585	-	37.5
Cyanide (Amenable)	1.17	0.0585	-	37.5
Fluoride	851	42.6	-	479

Again, as shown in the preceding table, the theoretical worst-case extract concentrations are well below the DRAS limits. UTS have not been promulgated for anions in extraction fluids.

In conclusion, it is evident that the total concentrations and the extract concentrations for the Bulger leachate treatment system sludge are well below UTS and limits based on the most protective pathway as determined via the DRAS multi-media simulation software. Only one UTS exceedance was noted in one sample, suggesting a lab artifact. The only DRAS limit exceedance was for a compound in the TCLP extract that was not actually detected (i.e., the detection limit, although low, exceeded the very protective DRAS limit for arsenic). It is recommended that the sludge be delisted as F039 based on this assessment.

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A. ADMINISTRATIVE INFORMATION AND DATA SUMMARY

This section provides information about the petitioner, the relevant facility and the personnel to contact in the event that additional information is required. It supplies a summary of the proposed delisting action, as well as the petitioner's interest in, need for, and justification of the delisting. This section also contains the signed certification statement indicating that the information in this report is true, accurate, and complete.

A.1 NAME OF PETITIONER

MAX Environmental Technologies, Inc.
Bulger, PA

Mailing Address:

Foster Plaza #5, 651 Holiday Drive
Pittsburgh, PA 15220

A.2 CONTACTS

For additional information, contact:

Name	Title	Telephone Number
Carl Spadaro	Environmental General Manager MAX Environmental Technologies, Inc.	412-343-4900

A.3 FACILITY NAME AND LOCATION

Bulger Facility
200 MAX Drive
Bulger, PA 15109
GPS: 70 Bulger Candor Road
EPA ID Number: PAD059087072

A.4 LOCATION OF PETITIONED WASTE

Bulger Facility
200 MAX Drive
Bulger, PA 15109
EPA ID Number: PAD059087072

A.5 DESCRIPTION OF PROPOSED DELISTING ACTION

MAX Environmental Technologies, Inc. (MAX) has prepared this delisting petition to technically demonstrate that the sludge that is produced by the facility leachate collection and treatment system is not

a hazardous waste, and to formally support an exclusion from regulation of the sludge as hazardous waste under Subpart D of 40 CFR. Part 261. To facilitate the review process, this petition has been structured based on a March 1993 United States Environmental Protection Agency (USEPA) guidance document entitled *Petitions to Delist Hazardous Wastes – A Guidance Manual*. Appendix A of the guidance document is an outline for a delisting petition provided in the form of a checklist. A completed version of the checklist is provided as Appendix A of this petition to further facilitate review.

The particular waste of interest for this proposed delisting action is sludge from the leachate treatment system at the Bulger facility. Leachate is treated with lime for metals removal and is generated via flocculation, coagulation, clarification, thickening, and dewatering. The USEPA made a determination that the sludge is a listed hazardous waste because it is derived from leachate the USEPA believes is classified as a listed waste (specifically, F039). Pursuant to 40 CFR 261, F039 is defined as “Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous...” This petition is considered the most expedient method of addressing the status of the sludge and is intended to demonstrate that the sludge is not hazardous.

Existing sludge characterization data indicate that, constituent concentrations are generally below their Universal Treatment Standards (UTS) and that concentrations are below acceptable limits developed via simulation with the USEPA Delisting Risk Assessment System software. To support delisting of the sludge, this petition demonstrates that the concentrations of constituents found in the sludge and Toxicity Characteristic Leaching Procedure (TCLP) extracts are not present at concentrations that could affect human health or the environment if the sludge were not managed under the hazardous waste rules. This petition accomplishes this objective via direct comparison of measured concentrations of constituents of interest for the sludge (total concentrations) and extract (TCLP concentrations) to both the UTS and human health and ecological receptor-based benchmarks produced by the Delisting Risk Assessment System (DRAS) model.

A.6 STATEMENT OF INTEREST IN PROPOSED ACTION

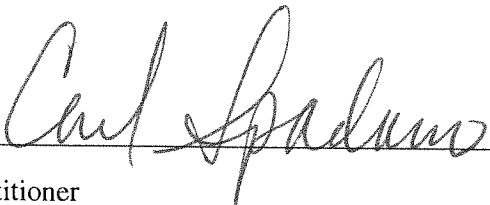
MAX owns and operates the Bulger facility. Sampling and analysis of the sludge indicates that the sludge does not exhibit the characteristics of hazardous waste. Nonetheless, per USEPA, and in accordance with the April 6, 2018 Consent Order and Agreement (COA) between MAX and the Pennsylvania Department of Environmental Protection (PADEP), the sludge must be managed as hazardous F039 waste, presumably based on the “derived from” rule. Under this listing, the treatment and handling of the sludge from the leachate treatment system as hazardous waste results in additional unwarranted operating costs for MAX given that the sludge does not exhibit the characteristics of hazardous waste and concentrations of constituents of interest are below levels that are protective of human health and the environment. The MAX Bulger facility is not permitted to land dispose materials that are either characteristic or listed wastes. Therefore, management of the sludge as a F039 waste stream would entail transportation and disposal at another facility that accepts hazardous waste, likely many hundreds of miles away. To the extent that unnecessary fuel consumption and the potential for accidents during hauling can be avoided, MAX is interested in formally delisting the sludge as a hazardous waste.

A.7 STATEMENT OF NEED AND JUSTIFICATION

This petition has been prepared based on compliance, community relations, safety, environmental, and economic considerations. MAX entered into a Consent Order and Agreement with PADEP to prepare this delisting petition and MAX has complied with the requirement to do so via preparation of this document. The transportation over long distances for off-site disposal of the leachate treatment system sludge can be avoided if the delisting petition is approved. This is advantageous primarily from a transportation perspective given that shipping the waste to a hazardous site will likely require moving it several hundred miles away. Although the chances for vehicular accidents associated with hauling are remote, they are not nonexistent, and hence safety considerations also exist. MAX has adequate air space at its Yukon Subtitle D permitted landfill for management of the sludge and, consequently, offsite air space in RCRA Subtitle C facilities can be preserved if the sludge is delisted. This, as well as elimination of vehicular emissions and reduction of fuel consumption associated with long distance off-site transportation are environmental benefits. Finally, disposal of the sludge at an external RCRA Subtitle C facility is expensive relative to placement in a MAX-owned facility and this places an economic burden on MAX and its employees.

A.8 CERTIFICATION STATEMENT

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Petitioner
Carl Spadaro
Environmental General Manager
MAX Environmental Technologies



Date

B. WASTE AND WASTE MANAGEMENT HISTORY INFORMATION

This section presents a description of the waste for which this delisting petition has been prepared. It describes the basis for the current hazardous listing and summarizes the history of waste generation and placement at the Bulger facility. It also presents the recent waste management methods and identifies proposed waste management methods in the event that the waste is delisted as proposed.

B.1 BASIS FOR WASTE LISTING

The petitioned material was not considered a listed waste by MAX but is now being managed as an F039 listed waste under the terms of the COA. Some listed wastes were disposed in Impoundment 2 generating the leachate that results in the production of sludge via treatment. The materials disposed in the various on-site cells were either delisted materials, were considered exempt from the hazardous waste regulations, or were placed prior to the advent of the Land Disposal Restrictions and/or the Resource Conservation and Recovery Act. MAX (or its predecessor, Mill Service, Inc.) also historically managed K062 (spent pickle liquor) at the facility. The spent pickle liquor was treated with lime. Spent pickle liquor treated with lime is exempt from regulation under the hazardous waste regulations. Materials are treated as necessary to render them nonhazardous.

Notwithstanding MAX's position regarding the listing of the leachate and the resultant sludge, MAX has agreed to submit a delisting petition for the sludge via the aforementioned April 6, 2018 Consent Order and Agreement with PADEP.

For the purposes of this petition, the sludge is therefore considered to be derived from F039, defined at 40 CFR 261.31 as "Leachate (liquids that have percolated through land disposed waste) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part." Subpart D of 40 CFR 261 is the lists of hazardous wastes and includes wastes from non-specific sources (i.e., F-listed wastes), and wastes from specific sources including wood-preserving, pigments, organic chemicals, inorganic chemicals, pesticides, explosives, petroleum refining, iron and steel, primary aluminum, secondary lead, veterinary pharmaceuticals, ink formulation, and coking (K-listed wastes), as well as discarded commercial chemical products, off-specification species, container residues, and spill residues thereof that are either acutely hazardous (P-Listed wastes) or toxic (U-Listed wastes). F039 has been assigned Hazard Code T, indicating that it is toxic.

B.2 HISTORY OF WASTE GENERATION

MAX's Bulger facility (formerly owned by Mill Service, Inc.) opened in 1958 and is located approximately 18 miles west-southwest of Pittsburgh. It accepted waste pickle liquor from western Pennsylvania steel mills for treatment via neutralization with lime. The first unit, Impoundment 1/1A was constructed of earthen materials and was filled and out of service before 1980 prior to the Federal Resource Conservation and Recovery Act (RCRA) regulations. It was closed pursuant to the regulations in effect at the time. Impoundment 2, a lined unit, was operational between 1980 and 1987. This impoundment was closed pursuant to a 1985 Consent Order and in agreement with the regulations in effect at the time. This was

subsequently modified in 1999 to allow MAX to place select soils and sludges in the impoundment to create a cap support zone for final capping. In 2006, MAX and the PADEP entered a consent order and agreement to re-close Impoundment 1/1A by rebuilding the settled grade with residual waste and then installing a synthetic liner. All of the incoming materials are subject to analytical testing and must meet stringent requirements prior to being accepted based primarily on PADEP's regulated fill criteria for low organic contamination. In 2009, MAX accepted their first waste from shale gas drilling, and by 2013, the majority of the materials for the cap support zone came from this industry.

As indicated, the primary materials received for placement at the facility consist of wastes generated in steel-making operations or other metal-related industries, including materials generated as a result of remediation of metal-impacted sites. Predominantly managed materials are as follows:

- Waste pickle liquor as spent sulfuric, hydrochloric, and nitric/hydrofluoric acids (K062); - Impoundment 2 only
- Emission control dust and sludge generated from electric arc furnace steel production (K061); - Impoundment 2 only
- Wastewater treatment plant sludge generated from steelmaking operations;
- Slags, dusts, and sludges from manufacturing operations;
- Foundry sands, slags, and soils, accepted non-hazardous wastes;
- Oil and gas industry drill cuttings since 2009.

Perimeter drains collect runoff and leachate from Impoundments 1/1A and 2. Any leachate and contact stormwater is piped to the facility's leachate treatment system. Generally, leachate is treated with lime to precipitate metals then with acid to ensure a neutral pH (i.e., between 6.0-9.0 SU) prior to discharge. Treatment of leachate via polymer addition and clarification is conducted for solids removal. Sludge from the clarifier is placed in thickener tanks and the thickened sludge is subsequently transferred to containers or a filter press from which the water drains for collection and recycle back into the treatment system.

B.3 VOLUME OF PETITIONED WASTE

This petition is for sludge that will be generated on a continuous basis. Approximately 40 to 60 cubic yards of sludge is generated every month. This volume was estimated from the number and capacity of full roll-off boxes historically transported offsite each month. The quantity of sludge is not expected to vary significantly over time, though they may decline if improvements in stormwater controls or treatment plant operation, or a reduction in leachate generation occurs. Most recently the sludge was transported to MAX's Yukon facility (233 MAX Lane, Yukon, PA 15698). Alternatively, it can be transported another suitable facility after being tested to ensure that it meets the facility's acceptance criteria. In addition to the Bulger sludge, MAX's Yukon Landfill 6 receives 40,000 to 70,000 cubic yards of waste each year such that the sludge constitutes approximately 1 percent of the material placed in the receiving landfill annually.

B.4 HISTORY OF WASTE MANAGEMENT

Most recently, sludge generated in the leachate treatment system at the Bulger facility was managed as a residual waste and was transported via covered roll-off boxes to MAX's Yukon facility for disposal. If this delisting petition is successful, MAX will have the flexibility to resume disposal of the sludge in the company owned landfill. It is not planned that the material would be transported to any other Subtitle D residual waste landfill; however MAX wishes to have that option available.

C. PROCESS AND WASTE MANAGEMENT INFORMATION

This section describes the processes that contribute to the waste for which this delisting petition has been prepared. It summarizes the wastes accepted by the Bulger facility, describes general operations at the Bulger leachate treatment facility where the sludge is being generated, and provides a description of how the sludge was disposed of at the Yukon facility.

C.1 GENERAL OPERATIONS AT THE GENERATING FACILITY

MAX's Bulger facility is currently used for placement of various solid materials which are used beneficially for closure of a former impoundment. The facility had a SIC code of 4953 corresponding to "Refuse Systems." The facility has a NAICS code of 562219 corresponding to "Other Non-Hazardous Waste Treatment and Disposal." A 15-acre fill area accepts impacted soils from cleanup of Brownfields projects and drilling sites, air pollution control dusts, slag and refractory wastes, wastewater treatment sludges, oils and gas drilling wastes (including drill cuttings, muds, drilling fluids, and unused fracking sand), and dewatered dredging wastes. No products are manufactured at the facility and no other wastes are generated at the facility other than typical municipal refuse and septage.

The leachate treatment plant produces sludge which, according to the USEPA must be managed as EPA Hazardous Waste F039 – "Leachate ...resulting from the disposal of more than one restricted waste listed as an F-, K-, P- or U-listed waste." The treated effluent from the wastewater treatment plant is discharged pursuant to an NPDES permit (Permit No. PA0044326) and is regulated under the Clean Water Act and Clean Streams Law.

The Bulger facility consists of two impoundments. The on-site treatment facility treats leachate from both impoundments and contact stormwater. Figure 2 depicts the current layout of the facility. Operations are conducted in accordance with multiple permits as identified in the following table.

MAX Bulger Facility Permits

Type of Permit	Permit No.	Issuing Agency	Date Issued
Solid Waste Disposal/Processing Facility Permit	301359	PADEP	2/3/14
NPDES Permit	PA0044326	PADEP	3/1/2001
Water Obstruction and Encroachment Permits	6377706	PADEP	03/31/1978
	E63-165		10/04/1985
	E63-358		12/09/1992
Dams and Waterways Management	General Permit No. 4	PADEP	07/24/1985

1. An NPDES Permit Renewal Application was submitted on February 14, 2018.

C.2 CONTRIBUTING MANUFACTURING PROCESSES

Because no manufacturing occurs at the Bulger facility, no on-site manufacturing processes contribute to the leachate treatment plant sludge. Land disposed materials from which the treated leachate originates included materials associated with various manufacturing operations, primarily steelmaking.

C.3 CONTRIBUTING WASTE TREATMENT PROCESSES

Leachate from both Impoundments 1 and 2 as well as contact stormwater are channeled to the on-site wastewater treatment plant. The leachate treatment plant has a design capacity of approximately 160 gallons/minute. The plant can run 24 hours a day, 7 days a week. A process flow diagram of the leachate treatment plant is provided as Figure 3.

The streams associated with Impoundments 1 and 2 are first held in Equalization Tanks. Metal hydroxide precipitation occurs in Reaction Tank No. 1 using dolomitic lime. The leachate/contact stormwater then flows to Reaction Tank No. 2 where a synthetic polymer are added to aid flocculation and coagulation. Aeration is also employed to remove volatile organics from the leachate. The treated waste then flows to a clarifier for settling.

The solids from the clarifier are pumped to thickener tanks. From there, the wet solids are pumped to containers or a filter press for dewatering. Water collected is conveyed back into the treatment plant. Most recently, the sludge was conveyed to the MAX's Yukon facility for disposal as residual waste.

The treated effluent from the clarifier is subjected to pH adjustment using sulfuric acid or caustic soda contingent upon pH and is eventually discharged to Outfall 001 subject to NPDES permit conditions.

C.4 WASTE MANAGEMENT OPERATIONS (LAND DISPOSAL)

Delisting the petitioned sludge will allow MAX the flexibility to dispose of the waste in any Subtitle D nonhazardous waste landfill. Most recently, the sludge has been disposed in Landfill 6 at the Yukon facility and it is planned that this practice will continue should the delisting petition be approved. Figure 4 displays the Yukon site plan and the location of Landfill 6.

Landfill 6 has a base layer of compacted clay, which is covered with a polyvinyl chloride (PVC) synthetic liner. Above this is a leachate detection and collection system which channels leachate that percolates through the primary liner. The primary liner is made of high density polyethylene (HDPE) which is covered by 12 inches of permeable protective material. Perforated piping in this permeable protective material collects leachate which is transported to the treatment plant.

Landfill 6 is approximately 16 acres in size and was constructed with a capacity of 990 acre-feet (1.6 million cubic yards). In 2016, a vertical expansion of the disposal unit was requested and approved, which increased the capacity by about 430,000 cubic yards. Appendix B presents relevant drawings from MAX's permit modification application for the vertical expansion and contains a schematic of the waste unit showing unit dimensions, influent points, effluent points and the planned final waste thickness. Current estimates place the waste thickness at 140 feet. In 2017-2018, the leachate collection system was improved by lining the interior perimeter channel and installing additional 1.2 million gallon leachate storage system.

C.5 PROCESS MATERIALS

All the treatment chemicals used for leachate treatment and sludge generation are commercially available. The function and quantity of each is listed in the table below. Safety Data Sheets (SDS) for the treatment chemicals are provided in Appendix C.

Chemicals Used for Treatment of Leachate/Contact Stormwater

Material	Function	Max Annual Quantity (tons/year) ⁽¹⁾
Dolomitic Lime	Metal hydroxide precipitation	180
KR-F2220 Polymer	Flocculation/Coagulation	0.46
Sulfuric Acid	Neutralization (pH adjustment)	46
Sodium Hydroxide	Neutralization (pH adjustment)	46

1. Best estimates of annual usage based on available records.

The streams treated do not contain oil, grease or hydraulic fluids given their origin although oil and grease effluent monitoring is conducted under the NPDES program by default.

C.6 SPECIAL INFORMATION

Not applicable. An upfront exclusion for a waste that is not currently being generated is not being requested. An exclusion for a waste generated by a multiple waste treatment plant is not being requested.

D. ANALYTICAL PLAN DEVELOPMENT

The analytical plan for the delisting process was developed via a multi-tiered evaluation process. First, available information as communicated by current and former MAX employees regarding the types of materials managed at the facility was considered. Second, the preliminary delisting sampling and analysis data obtained by MAX personnel in May of 2017 were reviewed. Third, the preliminary delisting data were contrasted to UTS. Fourth, a preliminary understanding and proposed analytical program was discussed with PADEP personnel at a meeting held September 12, 2017. During the meeting, PADEP personnel indicated that a more extensive list of analytes than was proposed at the meeting should be considered. As a result of these evaluation elements, and pursuant to a specific request by PADEP personnel, a comprehensive Sampling and Analysis Plan (SAP) and a comprehensive Quality Assurance Project Plan (QAPP) were prepared and submitted to PADEP for approval. As agreed, the SAP was submitted first for approval to ensure agreement on the scope of the sampling and analysis program prior to preparation of the QAPP. The SAP and QAPP were revised in response to PADEP comment and were finalized in October 2017 (SAP) and February 2018 (QAPP). The historical sample obtained in May of 2017, and the supplemental samples obtained in accordance with the PADEP-approved plans were analyzed for the following constituent classes where sample dates are indicated in brackets and the analytical methods are identified in parentheses:

Initial Delisting Samples [5-15-17]	Supplemental Delisting Samples [10-18-2017, 01-25-18, 03-23-18]
TCLP Metals (1311/6010B/7471B)	TCLP Metals (1311/6010B/7471B)
Total Metals (6010B/7471B)	Total Metals (6010B/7471B)
Volatile Organics (8260B)	Volatile Organics (8260B)
Semi-Volatile Organics (8270D)	Semi-Volatile Organics (8270D)
Pesticides (3541/8081B)	TCLP Semi-Volatile Organics (1311/3510C)
Chlorinated Herbicides (8151A)	Pesticides (3541/8081B)
Polychlorinated Biphenyls (8082)	Chlorinated Herbicides (8151A)
Total Cyanide (9014)	Polychlorinated Biphenyls (8082)
Amenable Cyanide (4500)	Total Cyanide (9014)
Fluoride (9056A)	Amenable Cyanide (4500)
Sulfide (9030/9034)	Fluoride (9056A)
	Sulfide (9030/9034)
	pH (9045D/1311)

D.1 CONSTITUENTS OF INTEREST

The initial constituents of interest for the leachate treatment system sludge consist of the various chemicals or classes of chemicals identified in the preceding table. It should be noted, however, that many of the constituents were not expected to be present in the sludge based on knowledge of the types of materials managed at the facility. Complete classes of chemicals (specifically pesticides, chlorinated herbicides, and Polychlorinated Biphenyls) were shown to be absent as a result of the initial delisting sampling and analysis. Nonetheless, in view of the potential for seasonal variability, these classes of constituents were carried

through for the supplemental delisting sampling program. These classes of chemicals were not found in any of the supplemental delisting samples.

Constituents of interest for the purposes of execution of the Delisting Risk Assessment System simulations were also selected. This was a relatively straightforward process given that a decision was made to simulate any targeted and detected constituent accommodated by the DRAS software. The complete list of chemicals considered constituents of interest for the DRAS simulation is as follows:

Metals	Volatile Organics	Semi-Volatile Organics	Anions
Antimony	2-Butanone	Aniline	Cyanide
Arsenic	4-Methyl-2-pentanone	Benzo (a) anthracene	Fluoride
Barium	Benzene	Benzyl alcohol	
Beryllium	Carbon disulfide	Bis(2-ethylhexyl)phthalate	
Cadmium	Chloroform	Chrysene	
Chromium	Toluene	Di-n-butyl phthalate	
Cobalt		Fluoranthene	
Copper		Isophorone	
Iron		Phenanthrene	
Lead		Phenol	
Manganese		Pyrene	
Mercury		Pyridine	
Nickel			
Selenium			
Silver			
Thallium			
Vanadium			
Zinc			

Various other constituents were also reported by the laboratory but were not simulated using the DRAS software. Specifically, the laboratory provided results for some constituents that were not requested analytes. Examples are calcium and potassium, which are quantitated using Inductively Coupled Plasma, and hence are reported by the laboratory by default. These non-toxic constituents (essential human nutrients) were not simulated. Aluminum was also analyzed and reported by the laboratory but is not supported by DRAS given its low toxicity. In addition to the preceding, pH and sulfide were also considered as indicators of corrosivity and reactivity, respectively.

D.2 MASS BALANCE DEMONSTRATIONS

Mass balance calculations in the traditional manner were not used in this petition given that concentrations were measured and mass balances were unnecessary to estimate concentrations. However, the USEPA's Delisting Risk Assessment System requires the use of TCLP extract concentrations for the groundwater pathway. TCLP analysis was completed for routine toxicity characteristic parameters. A conservative (protective) method of estimating extract concentrations based on total measured concentrations and the extracting fluid to solids ratio (20:1) used for the TCLP method was used to estimate extract concentrations for non-toxicity characteristic parameters that were detected in the sludge samples. A conservative

extraction efficiency (100%) was assumed to estimate the concentration (i.e., mass per unit volume) in the extracts.

D.3 OTHER CONSTITUENTS OF CONCERN

This petition utilized laboratory analysis that covered a broad suite of chemical classes and adhered to EPA sanctioned procedures specific to delisting wastes. Thus, there are no delisting constituents of concern that were not addressed by the chemical analyses. The analyses that were completed were much more extensive than was considered necessary based on knowledge of the materials managed at the facility. For example, analysis for pesticides, herbicides, and PCBs was conducted although there was no reason to suspect that such compounds would be present. The analytical data confirmed this belief as none of the targeted pesticides, herbicides, or PCBs were detected.

D.4 OTHER HAZARDOUS WASTE CHARACTERISTICS

The laboratory analytical data were used to ascertain the toxicity, corrosivity, and reactivity of the Bulger sludge samples. The sludge was deemed to be non-ignitable based on generator knowledge and physical and olfactory inspection of the material. TCLP analysis for constituents expected to be present are below regulatory limits for classification as a hazardous waste as a result of the toxicity characteristic. The non-corrosive nature of the sludge was ascertained via pH measurements (as reported by the SW-846 Test Method 9045D) which showed the pH of the sludge to be between 8.51 and 8.87 standard pH units (i.e., well within the 2.0-12.5 range outside of which a material is considered corrosive). Measured sulfide and cyanide concentrations are well below concentrations that could be indicative of a reactive material. The USEPA Delisting Petition guidance manual stipulates that reactive sulfide and reactive cyanide should be analyzed if total sulfide and total cyanide results exceed 500 and 250 parts per million, respectively. Sulfide was not detected in any of the leachate treatment system sludge samples and the maximum total cyanide concentration measured was 3.42 mg/kg, well below the aforementioned benchmarks.

E. SAMPLING AND ANALYSIS INFORMATION

This section discusses the sludge sampling effort completed by MAX's contractors to support the delisting petition for the Bulger facility sludge. A draft SAP for the Bulger sludge was submitted to PADEP in August 2017. Comments received on the Plan in September 2017 were incorporated into a final SAP that was submitted in October 2017. A corresponding QAPP was submitted in draft form in November 2017. The final QAPP, incorporating agency comments, was submitted in February 2018.

E.1 WASTE SAMPLING INFORMATION

All sludge sampling was conducted in accordance with the PADEP-approved SAP and QAPP for the project. Sampling was conducted by experienced personnel from FTS, a company affiliated with KEY. The following contact information is provided for KEY and FTS:

Mr. Bert Hubbard, P.E.
200 Third Avenue
Carnegie, PA, 15106
412-279-3363
bhubbard@keyenvir.com

Mr. Andrew Clark
200 Third Avenue
Carnegie, PA, 15106
412-429-2694
aclark.2006@ft-s.com

Resumes for personnel who prepared and implemented the SAP and the QAPP are provided in Appendix D.

E.2 SAMPLING STRATEGY

The initial sample obtained by MAX personnel to support the delisting petition was obtained as grab samples from the de-watering boxes. The results for these samples were provided to PADEP during the project planning stage and were deemed acceptable as preliminary data although PADEP requested that additional samples be collected subject to an approved SAP and QAPP and that alternate sampling protocols be used (e.g., the use of a compositing approach for all but the volatile organic chemical fraction). In accordance with the SAP/QAPP, it was planned that a supplemental composite and grab sample of sludge would be collected from the de-watering boxes that receives sludge from the thickener tanks during each of the three planned sampling events. Composite sampling was planned for all analytical fractions/analytes with the exception of volatile organics. The composite sample was to be generated by collecting a vertical core sample from each quadrant of any full or partially full roll-off box (it was expected that one or more boxes could contain material at the time of sampling). The grab sample was to be obtained from a random roll-off box location and was to be collected in a manner to minimize the potential for losses of volatile organics. However, given the nature of the treatment operations, it was anticipated that material may not be present in a dewatering box during a given sample event and the SAP/QAPP also included provisions for the collection of sampling from other vessels (i.e., the clarifier or the thickener tanks). It became necessary in fact, to collect samples directly from the clarifier.

During the first sampling event, material was present in a dewatering box. A sample for volatile organic analysis was obtained as a random grab sample from one of the corners of the box using a hand auger to

eliminate the potential for loss of volatiles during subsequent sample processing. The volatile organic aliquot was obtained from the subsurface (center of a core) such that the potential for losses as a result of volatilization from the surface of the containerized sludge was minimized.

The remaining sample materials were then homogenized via coning and quartering or mixing in a bowl if the sludge had a high liquid content. Sample containers were filled once the coning and quartering or mixing process was complete. Excess material was returned to the unit being sampled (i.e., dewatering box or clarifier).

Because the dewatering boxes are emptied periodically, it was necessary on the following two occasions to collect the sample from the clarifier. A similar vertical core/quadrant-based approach was used. Sampling equipment was described in the SAP. Figure 2 shows the general locations of the treatment facility which contains the box staging area and the clarifier.

In accordance with the SAP/QAPP, one such composite sample per event was considered to be adequate for characterization purposes because the treatment process results in mixing that minimizes time or location variabilities. Duplicate samples were obtained during the January 2018 and March 2018 sampling events to evaluate laboratory precision, per the final QAPP.

E.3 SAMPLE SPECIFIC INFORMATION

This section has been prepared only for the recent samples collected specifically for this delisting petition. The earliest sample (May 15, 2017) was collected by site personnel using the sample bottle provided by the laboratory. Specific sampling details are not available for that sample.

Sludge samples were collected at the Bulger facility on October 18, 2017, January 25, 2018 (duplicate sample collected) and March 23, 2018 (duplicate sample collected), for a total of five discrete samples for analysis. These three sampling events, combined with the May 2017 sample, provide a complete calendar year in which a sample was taken roughly once a quarter.

E.3.1 Sample Identification

The following sample-specific identification information is provided for the leachate treatment system sludge samples collected at the Bulger facility:

Field Sample ID	Sample Date	Type of Sample	Composite or Grab	Sample Location	Sample Time
Clarifier Sludge	05-15-17	Sludge	Grab	Clarifier	11:00
RO-101817	10-18-17	Sludge	Composite/Grab (VOC)	Container	11:25
001	01-25-18	Sludge	Composite/Grab (VOC)	Clarifier	09:48
002	01-25-18	Sludge duplicate	Composite/Grab (VOC)	Clarifier	09:48
CL001-032308	03-23-18	Sludge	Composite/Grab (VOC)	Clarifier	10:38
CL002-032318	03-23-18	Sludge duplicate	Composite/Grab (VOC)	Clarifier	10:38

Because the dewatering boxes are emptied periodically, opportunistic sampling was employed. Samples were obtained from various treatment system vessels contingent upon the presence of sludge in such vessels. The following preferential hierarchy was used: sample dewatering box sludge if sludge present; sample thickener sludge if present; sample sludge from clarifier. Given the absence of sludge in various downstream vessels the dewatering box and the clarifier were necessarily sampled contingent upon the sample date. The sludge in the various vessels is considered indicative of the sludge although it must be recognized that the water content of the sludge varies significantly in the various vessels. Results are reported on a dry weight basis in accordance with typical protocols which tends to normalize the results although varying water contents affect detection limits.

Samples for semi-volatiles organics, pesticides, herbicides, PCBs, cyanides, fluoride, sulfide and TCLP analyses were placed in two 1-liter amber glass jars (unpreserved) after compositing. Grab samples for volatile organics analyses were placed in varying containers (bisulfite vials and a 40-mL methanol vial or 4 ounce glass jars) depending on the sample location and water content of the sludge. All sample containers were provided by the laboratory.

Materials collected from the roll-off boxes and clarifier (non-volatiles analysis) were obtained using various bulk sampling devices such as ponar dredges or augers contingent upon the location sampled. Equal amounts of bulk material were obtained from each of the four corners or quadrants of the selected sample locations and were mixed and placed in the sample containers. Samples of the bulk materials were obtained using dedicated, pre-cleaned stainless steel spoons, and, for the composite samples, were mixed in stainless steel mixing bowls. A photograph is provided in Appendix E showing the sludge in the thickener tank. The samples for volatiles analyses were single grab samples collected in the “middle” of the unit to avoid loss of volatile constituents.

E.4 OTHER GENERAL INFORMATION

During the October 18, 2017 sampling event, the weather was described as temperatures in the 60s and sunny. The weather on January 25, 2018 was overcast with temperatures in the 30s. On March 23, 2018, the temperature was in the 30s and the day was sunny. Sample representativeness was not affected by any other concurrent activities occurring at the facility. The leachate treatment system is isolated from active waste treatment, storage and disposal areas.

All sample equipment used in sampling was pre-cleaned at FTS’s offices and wrapped for transport to the site. Decontamination processes were provided in the SAP (Attachment E, Standard Operating Procedures). Sample chain of custody was maintained per Attachment A, Standard Operating Procedures, provided in the SAP. Field notes and details on the chain of custody are provided in Appendix E of this petition. Sample coolers were picked up at the site by a laboratory courier.

E.5 LOCALIZED AREA OF CONTAMINATION

The sludge is generated via a consistent treatment process and is not expected to exhibit the presence of any hot spots because the treatment system employs processes that are continuously mixed. In accordance

with the PADEP-approved SAP/QAPP, composite samples were collected of the sludge (with the exception of grab sampling for VOC analysis) to result in concentrations representative of the sludge. Samples were also obtained over an extended period of time to account for potential seasonal variations.

E.6 MULTIPLE WASTE TREATMENT FACILITY

This section is not applicable for the Bulger facility delisting petition. The sludge is generated from only one source and is not mixed with any other materials.

E.7 WASTE ANALYSIS INFORMATION

E.7.1 Organization Conducting the Analyses

Laboratory analyses of the sludge samples were performed by Fairway Laboratories, Inc. of Altoona Pennsylvania. Fairway Laboratories is certified by the State of Pennsylvania (Certification No. PA 41-04684). The following contact information is provided:

Ms. Michelle Fye
Fairway Laboratories, Inc.
2019 Ninth Avenue
Altoona, PA 16603
814-946-4306

Analyses were conducted by qualified, experienced personnel. All laboratory employees are trained on the particular equipment and are subject to refresher training as required. Personnel conducting each analysis are identified in the data packages by their initials. Training and certification information is maintained at the laboratory and are available for inspection. Signed laboratory packages are provided in Appendix F of this petition.

E.7.2 Laboratory Sample Identification Numbers

Laboratory sample identification numbers as logged during collection and as assigned by the laboratory are as follows:

Field Sample ID	Sample Date and Time	Laboratory Sample Number	Composite or Grab
Clarifier Sludge	05-15-17 11:00	7E16171-01	Grab
RO-101817	10-18-17 11:25 ⁽¹⁾	7J18186-01	Composite
RO-101817	10-18-17 11:25 ⁽¹⁾	7J18186-02	Grab (VOC)
001	01-25-18 09:48	8A30001-03	Composite
001	01-25-18 09:15	8A30001-01	Grab (VOC)
002	01-25-18 09:48	8A30001-04	Composite
002	01-25-18 09:15	8A30001-02	Grab (VOC)
CL001-032318	03-23-18 10:38	8C27001-03	Composite
CL001-032318	03-23-18 10:10	8C27001-01	Grab (VOC)
CL002-032318	03-23-18 10:38	8C27001-04	Composite
CL002-032318	03-23-18 10:10	8C27001-02	Grab (VOC)

The analytical and preparation methods employed for the sampling and analysis program are as follows:

Analytical Method	Analytes	Preparation Method
EPA 6010B 7471B	Metals	3050B
EPA SW846-9045D	pH	EPA SW846-9045D
SM20-4500	Amenable Cyanide	SM20-4500
EPA 8151A	Chlorinated Herbicides	EPA 8151A
EPA 9056A	Fluoride	EPA 9056A
SM 2540 G97	Percent Solids	SM 2540 G97
EPA SW846 9030/9034	Sulfide	EPA SW846 9030/9034
EPA 9014	Total Cyanide	EPA 9010
EPA 8081B	Pesticides	EPA 3541
EPA 8082	PCBs	EPA 3541
EPA 8270D	Semivolatile Organics	EPA 3541
EPA 1311	TCLP pH	EPA 1311
EPA 6010B	TCLP Metals	EPA 1311
EPA 8270D	TCLP Semivolatile Organics	EPA 1311/3510C
EPA 8260B	Volatile Organics	EPA 5035/8260B

Sample specific laboratory results are summarized in Table 1. The table includes all constituents for which analyses were conducted and the final results reported on a dry-weight basis. If an analyte was not detected, the sample-specific Method Detection Limit is indicated in the table. For the most part, Method Detection Limits were generally below the UTS, with the exception of compounds hexachlorocyclopentadiene and technical grade chlordane.

Detection limits varied from sample to sample, and occasionally were greater than the UTS particularly in the January 2018 sample. Additional information on sample receipt, preparation dates, analyses, test results, quantification limits, etc. are provided in the laboratory reports presented in Appendix F. The data were subjected to Level II data validation and data validation memoranda are also provided in Appendix F.

E.7.3 Laboratory Equipment

Fairway Laboratories provided a list of laboratory equipment from their Quality Assurance Manual. Pages from that document are reproduced as Appendix G.

E.7.4 Analytical Results

Complete analytical results for all samples are presented in Table 1. The DRAS simulation based on the constituents of interest and the output of the DRAS simulation are presented in Appendix H.

The pH of the sludge samples (as reported by the SW-846 Test Method 9045D) covered a narrow range, from 8.51 to 8.87 standard units. These pH values are well within the range of 2 to 12.5 standard pH units, outside of which a material is defined as corrosive. These pH results exhibited very little variability over the course of the sampling period. Hence it can be concluded that this sludge is not corrosive. The sludge is also non-reactive and non-ignitable based on the nature of the material and generator knowledge.

To support this delisting petition, the analytical results were evaluated via two mechanisms. The first mechanism is direct comparison of the concentrations to the UTS. As previously indicated, the measured concentrations (on a chemical-specific basis) are an order of magnitude or more below their respective UTS. The second is simulation of potential human health or ecological risks via the use of a conservative multi-media exposure model. Specifically, this petition was prepared using the USEPA’s DRAS to identify constituents that could pose a threat to human or ecological receptors.

DRAS was run assuming a target cancer risk level of 1×10^{-6} and a target hazard quotient of 1 (non-carcinogenic human health effects and ecological receptors). The output of the DRAS model are acceptable concentrations based on the target risk levels. DRAS also identifies constituents which exceed acceptable concentrations on a pathway-specific basis.

The sludge samples were analyzed for 19 metals, 18 of which may be simulated using DRAS (DRAS does not simulate aluminum as a result of its low toxicity). The analytical results (number of detections/number of samples, maximum, and average) and the corresponding DRAS-generated maximum allowable total concentration (DRAS Limit) for the 18 metals are summarized in the following table.

Measured Total Metal Concentrations - Leachate Treatment System Sludge

Metal	Detects/ No. of Samples	Sludge Total Concentration (mg/kg)		Benchmark Values (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Limit ⁽³⁾
Antimony	0/6	Not detected	10.8	-	> 1,000,000
Arsenic	3/6	13.1	8.21	-	2,140
Barium	6/6	9,140	5,520	-	> 1,000,000
Beryllium	6/6	12.4	8.68	-	60,900
Cadmium	6/6	6.02	4.76	-	80,600
Chromium	6/6	270	206	-	12,200
Cobalt	5/6	178	132	-	16,200
Copper	5/6	263	194	-	> 1,000,000
Iron	5/6	23,000	18,800	-	> 1,000,000
Lead	6/6	125	95.7	-	> 1,000,000
Manganese	5/5	16,700	13,600	-	> 1,000,000
Mercury ⁽⁴⁾	5/6	0.147	0.125	-	28.7
Nickel	6/6	1,050	798	-	609,000
Selenium	2/6	17.4	12.9	-	> 1,000,000
Silver	0/6	Not detected	1.30	-	> 1,000,000
Thallium	1/6	6.61	4.06	-	964
Vanadium	6/6	65.4	48.2	-	> 1,000,000
Zinc	6/6	2,380	1,650	-	> 1,000,000

1. To calculate the average, all non-detects were assigned a value of the detection limit divided by 2 and the average was taken of the resulting values. However, if the detection limit divided by 2 was greater than the highest measurement observed, this value was ignored when calculating the average. Duplicate sample results were averaged first before the overall average was determined.
2. Universal Treatment Standards as listed in 40 CFR 268.48. UTS for metals are based on concentrations in the waste extract (TCLP results).
3. The DRAS delisting limit is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
4. The DRAS delisting level for mercury is based on the fish ingestion pathway assuming that the mercury exists as methyl mercury.

As shown in the preceding table, the maximum and average concentrations of total metals in the sludge samples are well below the calculated DRAS limits, typically by multiple orders of magnitude. As expected given the types of materials treated and disposed at the facility, metals were consistently detected in the sludge samples. Antimony and silver were not detected in any samples.

TCLP analysis for metals was also completed to support the delisting process. UTS have been developed for metals based on concentrations in the waste extract and TCLP data are used to determine compliance with the UTS for metals. The DRAS software also relies on TCLP data as inputs to support analysis of potential exposure associated with groundwater pathways. The TCLP results for the 18 metals, as well as the corresponding UTS/DRAS limits are summarized in the following table:

Measured TCLP Metal Concentrations - Leachate Treatment System Sludge

Metal	Detects/ No. of Samples	Sludge TCLP Concentration (mg/L)		Benchmark Values (mg/L)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Limit ⁽³⁾
Antimony	3/6	0.0732	0.0347	1.15	1.31
Arsenic	0/6	Not detected	0.0121	5.0	0.0103
Barium	6/6	0.607	0.484	21	433
Beryllium	2/6	0.00408	0.00155	1.22	0.948
Cadmium	0/6	Not detected	0.00376	0.11	1.11
Chromium	5/6	0.0504	0.0237	0.60	22.3
Cobalt	4/5	0.119	0.0646	-	2.54
Copper	2/5	0.0192	0.0105	-	290
Iron	1/5	0.260	0.0708	-	> 1,000,000
Lead	1/6	0.0202	0.0131	0.75	6.64
Manganese	5/5	24.5	11.5	-	195
Mercury	1/6	0.000937	0.000456	0.025	0.83
Nickel	6/6	1.38	0.4955	11	160
Selenium	2/6	0.0190	0.0136	5.7	10.9
Silver	0/6	Not detected	0.00500	0.14	89.8
Thallium	0/6	Not detected	0.0193	0.20	0.445
Vanadium	0/6	Not detected	0.0927	1.6	40.3
Zinc	5/6	0.474	0.127	4.3	2,450

1. To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
2. Universal Treatment Standards as listed in 40 CFR 268.48.
3. The DRAS delisting limit is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/L this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.

As shown in the preceding table, the metals were generally detected less frequently in the TCLP extract than as a result of the total analysis. This is consistent with expectations given that the leachate is treated with lime which tends to bind the metals. Arsenic, cadmium, silver, thallium and vanadium were not detected in any sample so the average of one half of the detection limits is presented in the “Average” column for these analytes. Except for arsenic, the laboratory detection limits or the measured concentrations are at least one order of magnitude lower than their respective delisting limits. Only one constituent, arsenic, yielded a result greater than its delisting limit. Specifically, the average of the TCLP detection limits was 0.0121 mg/L, slightly above the delisting level of 0.0103 mg/L. This apparent

exceedance is considered purely artificial given that arsenic was not in fact detected in any of the TCLP extracts analyzed. In conclusion, it is apparent that 1) the metals in the sludge are not particularly leachable, and 2) do not constitute a threat to any receptors via the potential groundwater pathway.

Two laboratory methods were used to quantitate 119 volatile and semi-volatile organic compound concentrations in the samples (some overlap exists – e.g., naphthalene is quantitated via both 8260B and 8270D). A total of 17 volatile and semi-volatile organic compounds were detected in the samples. The analytical results may be summarized as follows (complete data are provided elsewhere in this petition). Although, pyridine was not detected in the SVOC sludge analysis, its concentration is reported as it was detected in TCLP analysis.

Measured VOC and SVOC Total Concentrations - Leachate Treatment System Sludge

Organic Compound	Detects/ No. of Samples	Total concentration (mg/kg)		Benchmark values (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS Level ⁽³⁾
Volatile Organic Compounds					
2-Butanone ⁽⁴⁾	3/6	0.182	0.0755	36	> 1,000,000
4-Methyl-2-pentanone ⁽⁵⁾	3/5	0.0973	0.0490	33	> 1,000,000
Benzene	3/6	0.0192	0.00788	10	87,100
Carbon disulfide	4/6	0.103	0.0335	-	> 1,000,000
Chloroform	1/6	0.00370	0.00204	6.0	15,100
Toluene	3/6	0.0170	0.00608	10	> 1,000,000
Semi-Volatile Organic Compounds					
Aniline	2/6	11.3	2.71	14	> 1,000,000
Benzo(a)anthracene	1/6	0.318	0.280	3.4	117
Benzyl alcohol	1/6	0.445	0.445	-	> 1,000,000
Bis(2-ethylhexyl)phthalate	2/6	7.67	3.60	28	> 1,000,000
Chrysene	1/6	0.191	0.191	3.4	11,500
Di-n-butyl phthalate	4/6	31	8.22	28	> 1,000,000
Fluoranthene	1/6	0.254	0.244	3.4	294,000
Isophorone	1/6	0.54	0.527	-	> 1,000,000
Phenanthrene	1/6	0.191	0.191	5.6	Not applicable
Phenol	1/6	0.572	0.572	6.2	> 1,000,000
Pyrene	1/6	0.254	0.254	8.2	527,000
Pyridine	0/6	Not detected	9.76	16	> 1,000,000

- To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
- Universal Treatment Standards as listed in 40 CFR 268.48.
- The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
- 2-Butanone - methyl ethyl ketone
- 4-Methyl-2-pentanone - methyl isobutyl ketone

Several things are noteworthy regarding the detected organic constituents. The first is that organics are detected much less frequently than the metals: while many metals were detected in all of the total analysis samples, the organics were typically detected in less than 50% of the samples, many in only one of the samples. Second, a number of the detected analytes, such as methyl ethyl ketone (2-butanone), 4-methyl-2-pentanone, bis(2-ethylhexyl)phthalate and di-n-butyl phthalate are considered common laboratory

artifacts. Third, some of the constituents (i.e., the Polynuclear Aromatic Hydrocarbons such as benzo[a]anthracene, chrysene, fluoranthene, phenanthrene, and pyrene) are ubiquitous in the environment and are often found in environmental samples at anthropogenic background levels simply as a result of atmospheric deposition.

Nonetheless, notwithstanding the potential source of the organics, the concentrations of most of the preceding volatile and semi-volatile organic compounds (VOCs and SVOCs) were reported at concentrations several orders of magnitude below the UTS and the maximum allowable concentration determined via the DRAS simulation (i.e., the DRAS Limit). The only exception is di-n-butyl phthalate which was quantitated in one sample at a concentration slightly above the UTS (i.e., 31 mg/kg versus 28 mg/kg) but more than four orders of magnitude lower than its DRAS limit. Consequently, it is concluded that organic compounds are not of concern for surface exposure pathways (i.e., pathways other than the groundwater pathway).

In accordance with the PADEP-approved SAP/QAPP, TCLP SVOC analysis was completed for the latter two supplemental sludge samples collected by FTS personnel. TCLP SVOC analysis was completed for the 13 SVOCs included on the TCLP list (i.e., Table CCWE in 40 CFR 268.41), although 3- and 4-methylphenol (i.e., m- and p-cresol) were reported together given that they co-elute. Pyridine was the only organic constituent detected on TCLP testing. However, given the detection of other non-TCLP VOCs and SVOCs, and given that the DRAS requires the entry of TCLP concentrations for any analytes of interest, conservative estimates of TCLP concentrations were calculated for those organic constituents that were detected via totals analysis. A worst-case procedure was used in this respect.

Specifically, the TCLP procedure relies on an extraction fluid mass/sample mass ratio of 20:1. Per Method 1311, “The solid phase is extracted with an amount of extraction fluid equal to 20 times the weight of the solid phase.” As a worst-case estimate, it may therefore be assumed that the extraction efficiency is 100% and that 100% of any constituent present in the solid sample will be present in the extract albeit at a concentration equal to 1/20th of that in the solid phase.

The following tables present summaries of the calculated TCLP VOC and SVOC extract concentrations for analytes detected in at least one of the samples subjected to totals analysis (the average concentrations for the totals analysis were first determined, as summarized in the preceding table, and the theoretical leachate concentration was then determined). As shown in the following table, the hypothetical and measured TCLP concentrations are significantly lower than the DRAS limits.

Calculated TCLP VOC and SVOC Concentrations – Leachate Treatment System Sludge

Organic Compound	Average Total Concentration (mg/kg) ⁽¹⁾	Calculated Leachate Concentration (mg/L) ⁽²⁾	Benchmark Value (mg/L)	
			UTS ⁽³⁾	DRAS Limit ⁽⁴⁾
Volatile Organic Compounds				
2-Butanone	0.0755	0.00378	-	4,220
4-Methyl-2-pentanone	0.0490	0.00245	-	562
Benzene	0.00788	0.000394	-	0.249
Carbon disulfide	0.0335	0.00167	4.8	686
Chloroform	0.00204	0.000102	4.8	0.0973
Toluene	0.00608	0.000304	-	184
Semi-Volatile Organic Compounds				
Aniline	2.71	0.135	-	2.4
Benzo(a)anthracene	0.280	0.0140	-	0.0852
Benzyl alcohol	0.445	0.0223	-	3,520
Bis(2-ethylhexyl)phthalate	3.60	0.180	-	> 1,000,000
Chrysene	0.191	0.00955	-	8.52
Di-n-butyl phthalate	8.22	0.411	-	299
Fluoranthene	0.244	0.0122	-	29.9
Isophorone	0.527	0.0264	-	13.7
Phenanthrene	0.191	0.00955	-	Not applicable
Phenol	0.572	0.0286	-	2,110
Pyrene	0.254	0.0127	-	54.1
Pyridine ⁽⁵⁾	NA	0.0195	-	7.03

1. To calculate the average, all non-detects were assigned a value of one half the detection limit. If one half a sample-specific detection was greater than the maximum concentration, this value was excluded from the average calculation. Duplicate sample results were averaged before the overall average was determined.
2. To calculate a conservative leachate concentration, the contaminant concentration in the sludge was divided by 20. These were all assumed to be below the detection limit of the TCLP analysis.
3. Universal Treatment Standards as listed in 40 CFR 268.48.
4. The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/L this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.
5. Unlike the other organic compounds, the pyridine concentration listed here is the average of one detected TCLP value and one half of the TCLP detection limits for the other non-detects. This compound was not detected in any of the sludge samples (total analysis).

As shown in the preceding table, the hypothetical (all analytes except pyridine) and measured (pyridine) TCLP concentrations are significantly lower than the DRAS limits. The concentrations are all at least an order of magnitude lower than their respective DRAS limits and in most cases are three orders of magnitude or more below the limits.

In accordance with the PADEP-approved SAP/QAPP, sludge samples were also analyzed for Polychlorinated Biphenyls (PCBs), pesticides, and chlorinated herbicides. These constituents were not expected to be present based on the nature of the materials treated/disposed at the facility. No PCBs, pesticides, or chlorinated herbicides were detected in any of the sludge samples collected and consequently these results are not summarized in this Executive Summary. Tabulation of the non-detect results for these classes of organic constituents is provided elsewhere in this delisting petition.

Finally, cyanide (total and amenable), fluoride, and sulfide analyses were completed in accordance with the SAP/QAPP. As before, because DRAS requires the entry of extract concentrations, the average extract concentrations were assumed to be equal to the average total concentration divided by 20.

Measured Anion Concentrations - Leachate Treatment System Sludge

Anion	Detects/ No. of Samples	Sludge Concentration (mg/kg)		Benchmark value (mg/kg)	
		Maximum	Average ⁽¹⁾	UTS ⁽²⁾	DRAS limit ⁽³⁾
Cyanide (Total)	3/6	3.42	1.17	590	> 1,000,000
Cyanide (Amenable)	3/6	3.42	1.17	30	> 1,000,000
Fluoride	6/6	1590	851	--	> 1,000,000
Sulfide	0/6	Not detected	9.53	--	--

1. To calculate the average, all non-detects were assigned a value of the detection limit divided by 2 and the average taken of the resulting values. However, if the detection limit divided by 2 was greater than the highest measurement observed, this value was ignored when calculating the average.
2. Universal Treatment Standards as listed in 40 CFR 268.48.
3. The DRAS delisting level is the limiting exposure pathway-specific concentration calculated by DRAS assuming a cancer risk level of 1×10^{-6} and a hazard quotient of 1. Where the DRAS delisting limit exceeds 1,000,000 mg/kg this was assumed to be the pure substance and a concentration of 1 million parts per million is reported.

As shown, the anion concentrations are below their respective UTS as well as the limits calculated via DRAS simulation although UTS have not been established for fluoride or sulfide and DRAS does not include dose-response information for sulfide. The sulfide and cyanide concentrations are well below levels that might be considered indicative of reactive conditions (i.e., 500 mg/kg and 250 mg/kg, respectively).

The following table presents the theoretical worst-case extract concentrations for two of the anions of interest (sulfide was not subjected to DRAS extract simulation given that DRAS does not accommodate sulfide).

Calculated Anion Extract Concentrations – Leachate Treatment System Sludge

Anion	Average Total Concentration (mg/kg)	Calculated Leachate Concentration (mg/L)	Benchmark values (mg/L)	
			UTS	DRAS Level
Cyanide (Total)	1.17	0.0585	-	37.5
Cyanide (Amenable)	1.17	0.0585	-	37.5
Fluoride	851	42.6	-	479

Again, as shown in the preceding table, the theoretical worst-case extract concentrations are well below the DRAS limits. UTS have not been promulgated for anions in extraction fluids.

In conclusion, it is evident that the total concentrations and the extract concentrations for the Bulger leachate treatment system sludge are well below UTS and limits based on the most protective pathway as determined via the DRAS multi-media simulation software. Only one UTS exceedance was noted in one sample, suggesting a lab artifact. The only DRAS limit exceedance was for a compound in the TCLP extract that was not actually detected (i.e., the detection limit, although low, exceeded the very protective DRAS limit for arsenic). It is recommended that the sludge be delisted as F039 based on this assessment.

E.7.5 Laboratory Quality Control Analyses

Fairway Laboratories completed quality control analysis in accordance with the analytical methods selected for quantitation of the various constituents of interest. Quality control analysis consisted of the analysis of Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate analysis, addition of required surrogate compounds, and preparation and analysis of method blanks. The supplemental analytical data were subjected to Level II data validation, as documented in Appendix F.

E.7.6 Analytical Inconsistencies and Deviations

Several constituents were detected in laboratory method blanks and, in accordance with published data validation protocols, these constituents were qualified as non-detects if detected in samples at concentrations less than 5 times the concentration detected in the associated method blank. Some non-conformances were identified for Laboratory Control Samples and for Matrix Spike/Matrix Spike Duplicate results. However, non-conformances issues for MS/MSD samples are not atypical for solid matrices. Review of the sample results indicates that they were consistent with the other samples and that surrogate recoveries were acceptable. Therefore, no action was taken as a result of this nonconformance issue. Based on review of the data it has been concluded that they are of acceptable quality for their intended use.

E.7.7 Relative Percent Difference – Field Duplicate Samples

Consistency between results for field duplicate samples is used to assess the variability attributable to the collection, handling, storage and/or laboratory handling/analysis. The SAP for the leachate treatment system sludge included collecting grab/composite samples from the treatment system over a calendar year. Because of the consistency of the source material, it was determined that laboratory and field quality control would be evaluated via intersample comparison, as well as, a set of duplicate samples collected during two separate sampling events.

Comparison of each of the sample results indicated that metals/cyanide were the most frequently and most consistently detected analytes. Pesticides, herbicides and PCBs were not detected in any samples.

For the field duplicates, the relative percent difference was calculated and presented in Table 2. For the vast majority of the analytes, the RPD was below 50%, with a few exceptions:

- Analytes which were detected in one of the duplicate pairs, but not the other such as TCLP beryllium, toluene, and pyridine. As an example, the January 2018 results for pyridine are not in agreement: while the undetected result is equal to all other sludge measurements, the single detect is significantly higher than any other measurement. Despite this, the resulting average was retained to present the most conservative assessment of the Bulger sludge. Therefore, TCLP beryllium, toluene, and pyridine were retained for DRAS modeling.
- Analytes that were detected in both of the duplicate pair samples, such as barium, copper, iron, lead, TCLP aluminum, TCLP cobalt, TCLP nickel, TCLP zinc, carbon sulfide, cyanide (total

and amenable), the RPDs exceeded 50%, but a comparison of these results to others indicates that there is some minimal variability in the measurements from sample to sample.

- Analytes that were not detected in either of the field duplicate samples, but which had RPDs greater than 50%, such as PCBs. This variation is not considered to be significant since no pesticides or PCBs were ever detected in any of the samples and are not expected to be present based on the source of materials accepted at the facility.

Even though the RPDs for several analytes as discussed above exceeded the goal of 50%, these results are still considered to be usable for the purposes of the DRAS modeling and determining the appropriateness of delisting the sludge. No results were eliminated from consideration in the modeling based on the RPDs for the field duplicates, therefore resulting in a conservative estimate of any potential impacts associated with the Bulger sludge.

F. GROUNDWATER MONITORING INFORMATION

The sludge from the Bulger leachate treatment system was managed under the PA Solid Waste Management Act, Chapter 288 (Residual Waste Disposal Landfills) at MAX's Bulger facility. The sludge was most recently disposed of in MAX's Yukon Landfill 6, which is depicted in Figure 4. Landfill 6, is approximately 16 acres in size, has historically been used for disposal of the sludge given that it was considered a residual waste and will be used for sludge disposal should this delisting petition be approved.

F.1 MANAGEMENT OF PETITIONED WASTE

The petitioned waste has historically been transported off-site to MAX's Yukon facility (233 MAX Lane, Yukon, PA 15698) located 50 miles southeast of the Bulger facility. This facility consists of five closed impoundments and a sixth active impoundment (currently classified as a landfill). In addition to the Bulger sludge, the Yukon Landfill 6 accepts waste from a wide range of materials from the energy, construction, and manufacturing industries, as well as metal-impacted materials (e.g., soil) from site remediation projects. Groundwater monitoring of the facility is required pursuant to MAX's Solid Waste Permit No. 301071 and PADEP's residual waste management regulations. Groundwater monitoring requirements for Landfill 6 have not been waived. In addition, the petitioned waste is a small portion of the materials emplaced in the landfill (1 percent), and therefore the existing groundwater monitoring conducted pursuant to the Solid Waste Permit provides valuable information regarding the overall potential environmental impacts and risks associated with the current management scenario.

F.2 GROUNDWATER MONITORING INFORMATION

Three water-bearing zones have been identified at the Yukon waste management site where the sludge has historically been disposed. Groundwater monitoring is conducted in these units per the *Facility Wide Groundwater Monitoring and Reporting Plan* prepared in December 1996 by CE Consultants, Inc. These units, from top to bottom, are the Redstone Coal (present only in the southwestern portion of the Yukon facility near closed Lagoons 1-3), the Pittsburgh Coal, and the Pittsburgh Limestone, which comprise the lower portion (the coal units) of the Pittsburgh Formation of the Pennsylvanian age Monongahela Group and the uppermost portion of the Conemaugh Group (the limestone unit).

Landfill 6 was constructed on top of the Pittsburgh Limestone. Any remaining pillars of the Pittsburgh Coal were removed during construction, leaving no mine workings beneath the landfill. Groundwater is present in the Pittsburgh Coal within mine spoils located southeast and northwest of Landfill 6. Groundwater in the spoils is monitored via three wells located upgradient/southeast (SP-1) and downgradient (SP-2 and SP-3) of the landfill. Because water from SP-1 does not flow beneath Landfill 6, monitoring of SP-1 was discontinued (approved by PADEP in October 1996), and intra-well comparisons are used to monitor for potential releases from Landfill 6.

The Pittsburgh Limestone is the first laterally-continuous hydrostratigraphic unit beneath the entire Yukon property. The Pittsburgh Limestone is a confined aquifer at the site, with upward vertical gradients, and a general flow direction toward the northwest. Wells W-9 and TB-210 are upgradient of both Impoundment

5 and Landfill 6, but monitoring of TB-210 was discontinued with PADEP approval in October 1996. Wells W-10, W-11, W-12, W-13 and W-14 are located at 200-foot intervals around the northwestern (downgradient) boundary of Landfill 6. Similarly, with PADEP consent, monitoring of W-13 and W-14 was discontinued. Monitoring well locations are shown in Figure 4.

Additional groundwater monitoring is conducted around the closed lagoons, at two mine discharge points along Sewickley Creek north of the facility, three wells in mine workings to recover groundwater potentially affected by Impoundment 5, and a domestic well north of Impoundment 5. Landfill 6 is also monitored via a spring, seven surface water locations, two additional leachate locations, and water from blanket drains (when they are producing).

Monitoring is conducted according to Permit 301071 and the residual waste regulations. The most recent annual report (Form 14R) is provided as Appendix I. Under the current permit, the facility is required to analyze for any parameter with established Maximum Contaminant Level (MCL), Maximum Contaminant Level Goal (MCLG) or secondary MCL. In addition, Mandatory Abatement Trigger Levels were established for each analyte. Groundwater samples are analyzed for the following parameters:

- Volatile organics (BTEX and halogenated aliphatics)
- Total Organic Halogens (TOX)
- Total Organic Carbon (TOC)
- Extractable organics
- Total and dissolved metals
- Phenols
- Cyanide
- General chemistry (pH, specific conductance, chloride, fluoride, sulfate, alkalinity, chemical oxygen demand, total dissolved solids and turbidity)
- Nitrate and ammonia-nitrogen

The most recent groundwater analytical results indicate that the groundwater downgradient of Landfill 6 (Wells W-10, W-11 and W-12) are included in Appendix I of this petition. No volatile organics were detected, and all detection limits were below Safe Drinking Water Act Maximum Contaminant Levels (MCLs). Dissolved barium was detected in two of the three downgradient wells at concentrations that are an order of magnitude below the MCLs. No other dissolved metals were detected. These data, in conjunction with the results of the DRAS modeling, indicate that no adverse groundwater impacts have been observed nor are they expected to occur as a result of continued disposal of the sludge in Landfill 6.

F.3 LANDFILL 6 DETAILS

The currently operating, permitted residual waste landfill (Landfill 6) is approximately 16 acres in size. It receives 40,000 to 70,000 cubic yard of waste each year, of which approximately 1 percent is the sludge under consideration in this delisting petition. While the groundwater is being monitored per the current residual waste permit for the facility, no groundwater impacts potentially related to metals, VOCs or SVOCs

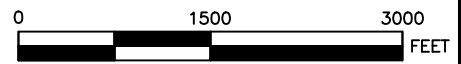
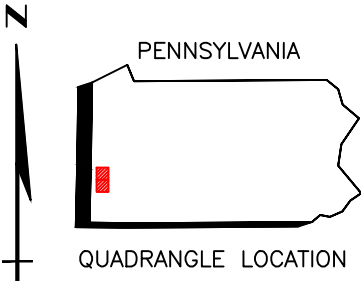
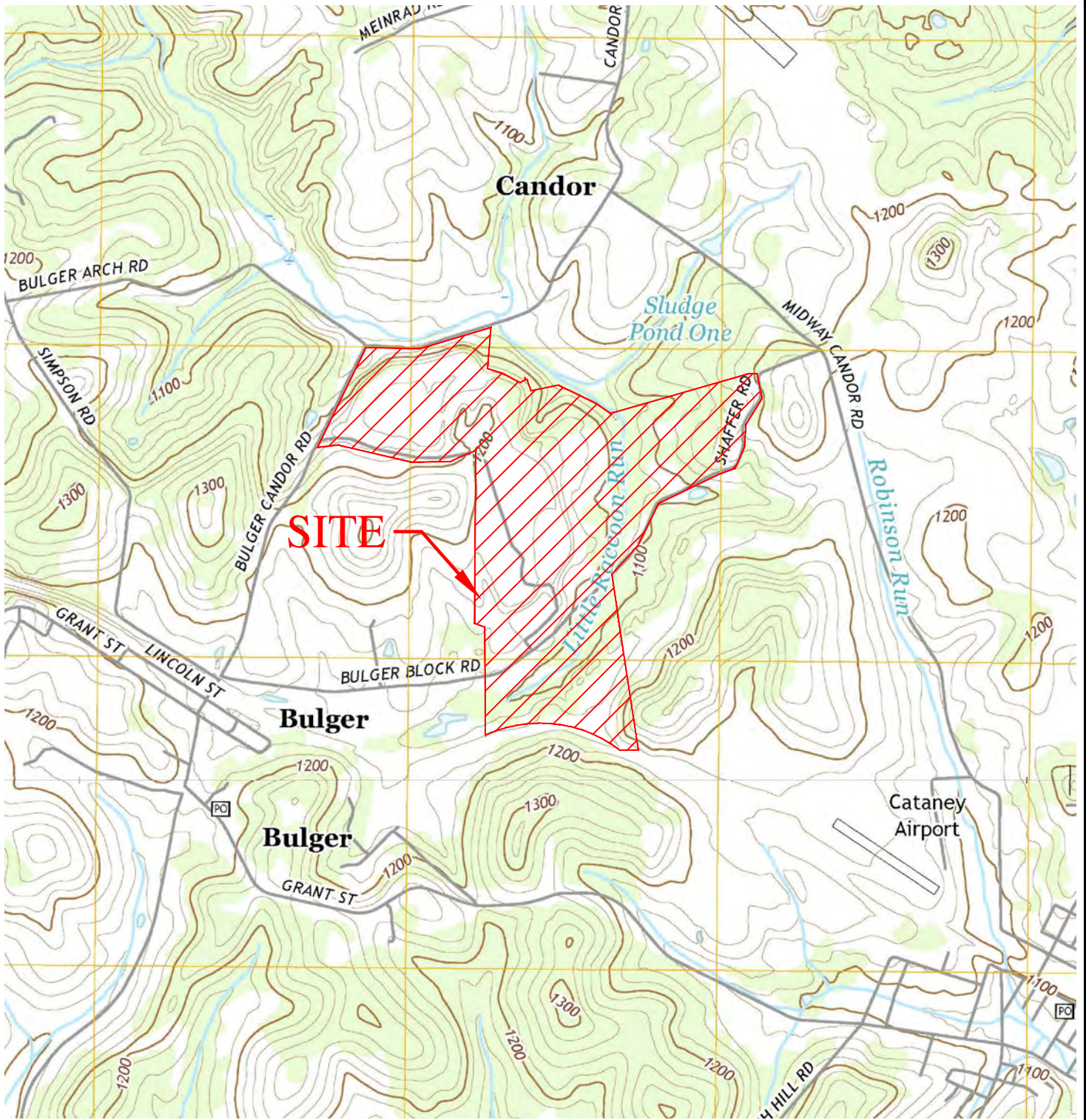
that have been noted in the sludge samples have been observed in the downgradient monitoring wells. No additional groundwater monitoring is required for the sludge disposal conducted at the facility.

G. CONCLUSIONS

Based upon the data and analysis presented in this Delisting Petition, MAX has demonstrated that the Bulger sludge does not exhibit characteristics that would cause the sludge to be considered hazardous. MAX has conducted sampling and analysis of the sludge in accordance with PADEP–approved plans and has evaluated the analytical results via comparison to UTS and via multimedia simulation using the USEPA DRAS model. A limited number of constituents were identified as being present in the sludge and the concentrations of these constituents have been shown to be below UTS and limits determined via the DRAS simulation. It has also been demonstrated that the sludge is also not ignitable, corrosive or reactive. Based on the data collected and the subsequent data evaluation as documented in this petition is it recommended that the sludge be delisted as F039 and that MAX be allowed to dispose of the sludge at the Yukon facility in accordance with historical precedent or at any approved Subtitle D facility.

FIGURES

y:\max environmental\bulger\039 delisting\figure 1 - site location map.dwg Last Saved By: Emaloney 6/4/2018 2:19 PM Plotted By: Elizabeth Maloney 6/4/2018 2:19 PM Scale: 1:1



MAX ENVIRONMENTAL TECHNOLOGIES, INC.

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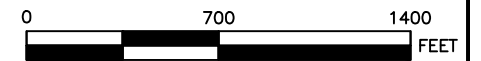
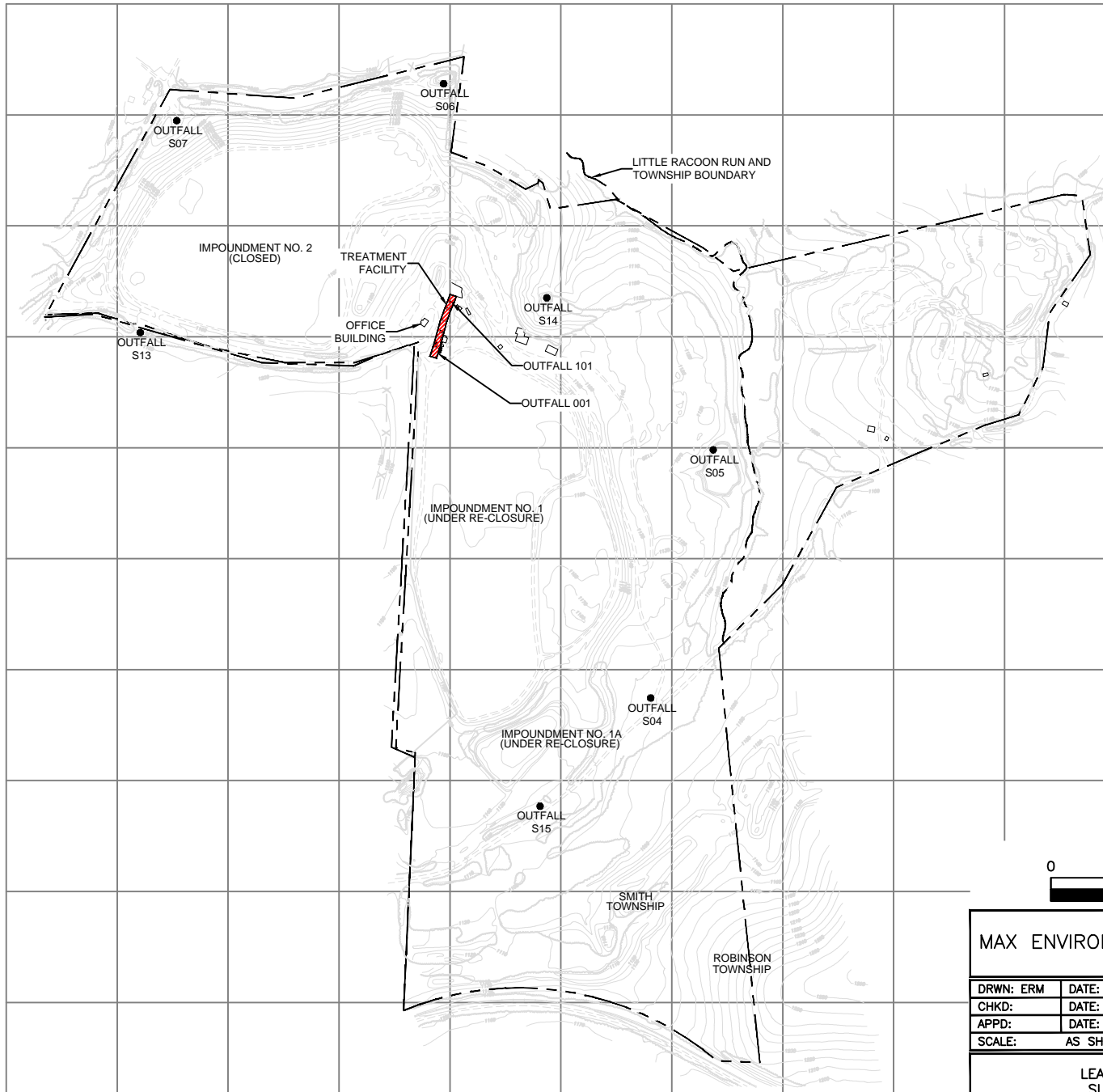
LEACHATE TREATMENT SYSTEM
 SLUDGE DELISTING PETITION
 BULGER, PENNSYLVANIA

REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
 CLINTON, PENNSYLVANIA 2016
 MIDWAY, PENNSYLVANIA 2016

ISSUE DATE:
 KEY ENVIRONMENTAL, INC.
 200 THIRD AVENUE
 CARNEGIE, PA 15106

SITE LOCATION MAP

PROJECT NO: 17-472
 FIGURE 1



MAX ENVIRONMENTAL TECHNOLOGIES, INC.	
DRWN: ERM	DATE: 06/04/18
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APPD:	DATE:
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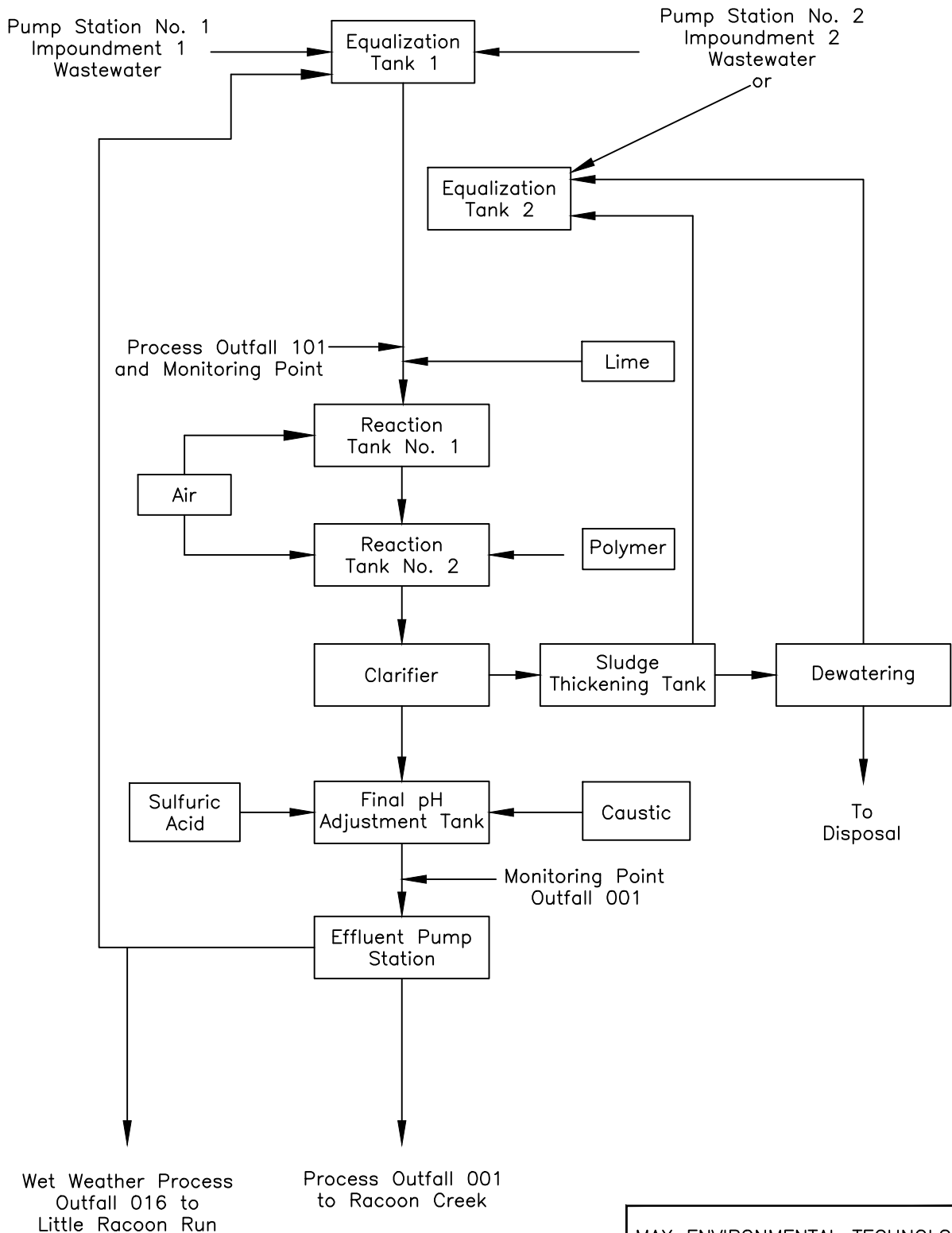
LEACHATE TREATMENT SYSTEM
SLUDGE DELISTING PETITION
BULGER, PENNSYLVANIA

REFERENCE:	ISSUE DATE:
	KEY ENVIRONMENTAL, INC. 200 THIRD AVENUE CARNEGIE, PA 15106

SITE PLAN

PROJECT NO: 17-472
FIGURE 2

Y:\max environmental\bulger\039 delisting\figure 3 - pfd - treatment plant.dwg Last Saved By: Emaloney 6/4/2018 2:20 PM Plotted By: Elizabeth Maloney 6/4/2018 2:23 PM Scale: 1:1



Note:
 MAX proposes to remove Outfall 101 from NPDES Permit PA0044326. The PADEP Waste Management Program and MAX are entering into a Consent Order and Agreement that will regulate the management of the wastewater treatment plant sludge, thus eliminating the need for an internal outfall.

REFERENCE:

ISSUE DATE:

KEY ENVIRONMENTAL, INC.
 200 THIRD AVENUE
 CARNEGIE, PA 15106

MAX ENVIRONMENTAL TECHNOLOGIES, INC.

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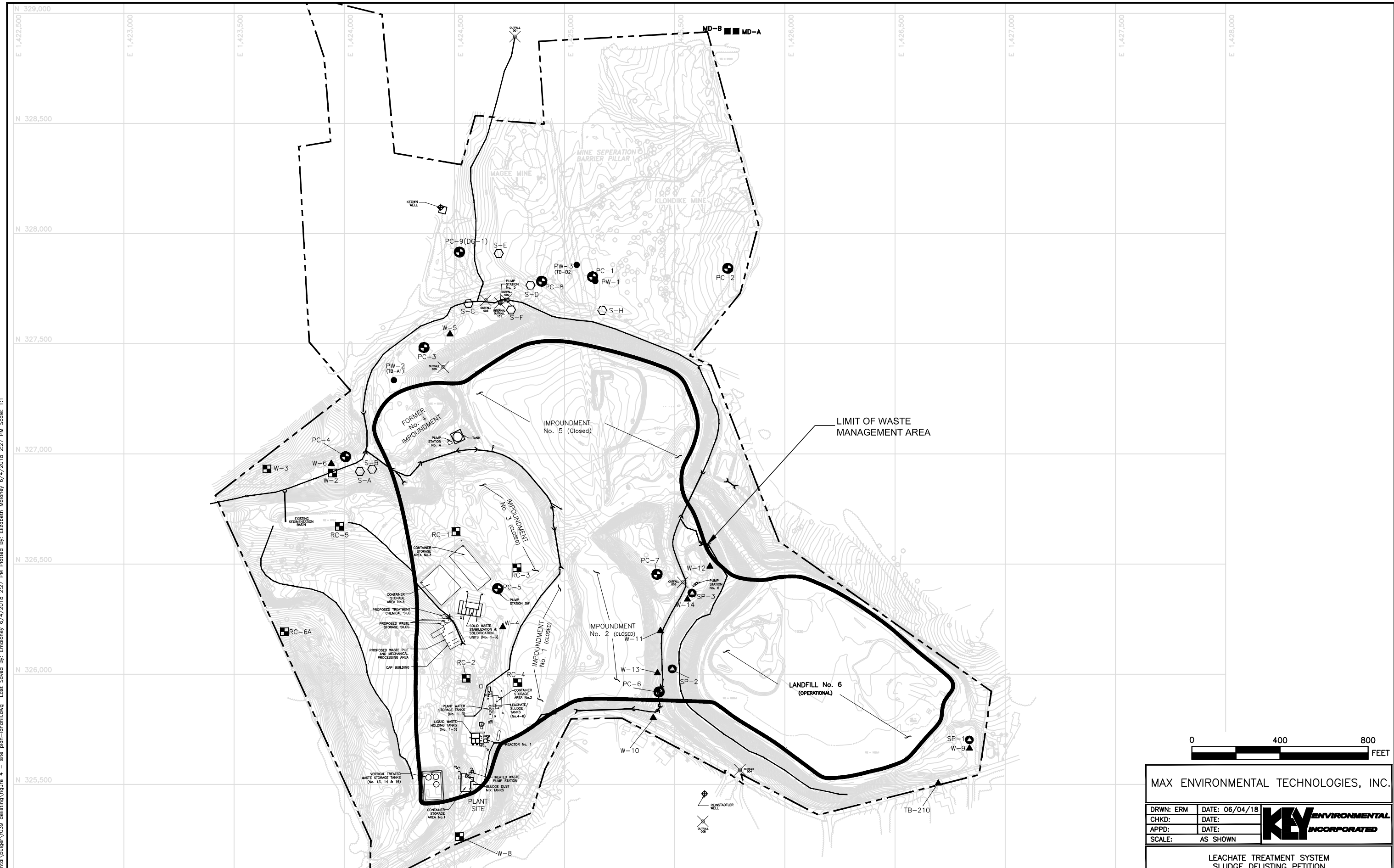
LEACHATE TREATMENT SYSTEM
 SLUDGE DELISTING PETITION
 BULGER, PENNSYLVANIA

PROCESS FLOW DIAGRAM -
 TREATMENT PLANT

PROJECT NO: 17-472

FIGURE 3

Y:\max_environmental\bulger\039_delisting\figure 4 - site plan-landfill.dwg Last Saved By: Emaloney 6/14/2018 2:27 PM Plotted By: Elizabeth Moloney 6/14/2018 2:27 PM Scale: 1:1



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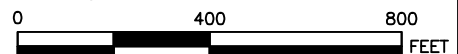
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KEY ENVIRONMENTAL, INC. 200 THIRD AVENUE CARNEGIE, PA 15106	PROJECT NO: 17-472 FIGURE 4

MAX ENVIRONMENTAL TECHNOLOGIES, INC.

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KEY ENVIRONMENTAL INCORPORATED



LEACHATE TREATMENT SYSTEM
SLUDGE DELISTING PETITION
BULGER, PENNSYLVANIA

TABLES

**TABLE 1
ANALYTICAL RESULTS - LEACHATE TREATMENT SYSTEM SLUDGE
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA**

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	'Clarifier Sludge' Clarifier 5/15/2017		'RO-101817' Roll-Off Box 10/18/2017		'001' Clarifier 1/25/2018		'002' Clarifier 1/25/2018 Duplicate		'CL001-032308' Clarifier 3/23/2018		'CL002-030208' Clarifier 3/23/2018 Duplicate	
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
pH (9045D)														
pH	SU	-	8.51		8.67		8.54		8.77		8.84		8.87	
Metals (6010B/7471B)														
Aluminum	mg/kg	-- ⁽³⁾	NA		48700		71000	I,T	44900	I,T	64600	T	46400	T
Antimony	mg/kg	-- ⁽³⁾	18.7	U,I,L	12.4	U,I	36.5	U,I	30.7	U,I	26	U	17.9	U
Arsenic	mg/kg	-- ⁽³⁾	6.16	U,I	13.1		13.1	U	11	U	11.2	J	10.1	J
Barium	mg/kg	-- ⁽³⁾	9140	I,L	7310	I	5480		5440	H	293	J	86.8	J
Beryllium	mg/kg	-- ⁽³⁾	7.88		6.54		11.6		7.66		12.4		8.96	
Cadmium	mg/kg	-- ⁽³⁾	3.66	J	4.72	J	5.28	J	5.52	J	6.02	J	4.51	J
Chromium	mg/kg	-- ⁽³⁾	215	I	178		270		167		246		180	
Cobalt	mg/kg	-- ⁽³⁾	NA		101		135		146		178		131	
Copper	mg/kg	-- ⁽³⁾	NA		178		263	J	132	J	236		174	
Iron	mg/kg	-- ⁽³⁾	NA		23000	I	22700	J, T	12600	J, H	18200	T	13500	T
Lead	mg/kg	-- ⁽³⁾	125	I	118		88.4	J	44.5	J	83.3		63.2	
Manganese	mg/kg	-- ⁽³⁾	NA		12000	I	14100	T	14600	H,T	16700	T	12200	T
Mercury	mg/kg	-- ⁽³⁾	0.139		0.139		0.147	J	0.0987	U	0.123		0.124	
Nickel	mg/kg	-- ⁽³⁾	765	I	629		863		924		1050		759	
Selenium	mg/kg	-- ⁽³⁾	22.4	U,I	12.9	J	33.6	U	28.2	U	23.9	U	17.4	J
Silver	mg/kg	-- ⁽³⁾	1.23	U,G	1.68	U	4.92	U	4.13	U	3.5	U	2.41	U
Thallium	mg/kg	-- ⁽³⁾	6.62	U,I	4.05	U,I	11.9	U	9.99	U	8.46	U	6.61	J
Vanadium	mg/kg	-- ⁽³⁾	46		55		65.4	J	42.1	J	45.1	J	31.3	J
Zinc	mg/kg	-- ⁽³⁾	1480	I	1260		2020		1620		2380		1720	
TCLP Metals (1311/6010B/7471B)														
Aluminum	mg/l	-	NA		0.100	U	3.21	J	0.0718	J	3.22	J	1.34	J
Antimony	mg/l	1.15	0.0732		0.0273	U	0.0284	J	0.0256	J	0.05	U	0.05	U
Arsenic	mg/l	5	0.025	U	0.0160	U	0.0160	U	0.0160	U	0.04	U	0.04	U
Barium	mg/l	21	0.607		0.356		0.448		0.537		0.405		0.554	
Beryllium	mg/l	1.22	0.0017	J	0.00120	U	0.00408	J	0.00120	U	0.01	U	0.01	U
Cadmium	mg/l	0.11	0.0052	U	0.00245	U	0.00245	U	0.00245	U	0.02	U	0.02	U
Chromium	mg/l	0.6	0.0111	J	0.00075	U	0.0388	F	0.0305	F	0.0471		0.0504	
Cobalt	mg/l	-	NA		0.0100	U	0.117	J	0.0237	J	0.119		0.118	
Copper	mg/l	-	NA		0.0100	U	0.0192	J	0.0129	J	0.05	U	0.05	U
Iron	mg/l	-	NA		0.0400	U	0.0250	U	0.0250	U	0.26		0.2	U
Lead	mg/l	0.75	0.0202	J	0.0120	U	0.0120	U	0.0120	U	0.04	U	0.04	U
Manganese	mg/l	-	NA		1.68		12.3	T	12.5	T	16.1	T	24.5	T
Mercury	mg/l	0.025	0.000937	J,K,Q	0.00059	U,Q	0.00059	U,Q	0.00059	U,Q	0.00059	U,Q	0.00059	U,Q
Nickel	mg/l	11	0.0725	J	0.0741	J	0.785	J	0.45	J	1.05		1.38	
Selenium	mg/l	5.7	0.0224	U	0.0242	U	0.0157	J	0.019	J	0.1	U	0.1	U
Silver	mg/l	0.14	0.00802	U	0.00600	U	0.00600	U	0.00600	U	0.02	U	0.02	U
Thallium	mg/l	0.2	0.0361	U	0.00900	U	0.00900	U	0.00900	U	0.1	U	0.1	U
Vanadium	mg/l	1.6	0.00374	U	0.0130	U	0.0377	U	0.0401	U	0.1	U	0.1	U
Zinc	mg/l	4.3	0.0225	J	0.0110	U	0.474	J	0.0168	J	0.275		0.191	
pH (1311)														
pH	SU	-	8.37		8.31		5.88		7.39		5.68		5.72	

TABLE 1
ANALYTICAL RESULTS - LEACHATE TREATMENT SYSTEM SLUDGE
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	'Clarifier Sludge' Clarifier 5/15/2017		'RO-101817' Roll-Off Box 10/18/2017		'001' Clarifier 1/25/2018		'002' Clarifier 1/25/2018 Duplicate		'CL001-032308' Clarifier 3/23/2018		'CL002-030208' Clarifier 3/23/2018 Duplicate	
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
Volatile Organic Compounds (8260B)														
1,1,1,2-Tetrachloroethane	mg/kg	6	0.0006	U,I4	0.0003	U,I5	0.193	U,I4	0.155	U,I4	0.0022	U,I4	0.0018	U,I4
1,1,1-Trichloroethane	mg/kg	6	0.0012	U,I4	0.0007	U,I5	0.4	U,I4	0.32	U,I4	0.0046	U,I4	0.0037	U,I4
1,1,2,2-Tetrachloroethane	mg/kg	6	0.001	U,I4	0.0009	U,I5	0.477	U,I4	0.381	U,I4	0.0054	U,I4	0.0044	U,I4
1,1,2-Trichloroethane	mg/kg	6	0.001	U,I4	0.0006	U,I5	0.335	U,I4	0.268	U,I4	0.0038	U,I4	0.0031	U,I4
1,1-Dichloroethane	mg/kg	6	0.0005	U,I4	0.0004	U,I5	0.206	U,I4	0.165	U,I4	0.0024	U,I4	0.0019	U,I4
1,1-Dichloroethene	mg/kg	6	0.0011	U,I4	0.0004	U,I5	0.245	U,I4,E	0.196	U,I4,E	0.0028	U,I4	0.0022	U,I4
1,2,3-Trichloropropane	mg/kg	30	0.0015	U,I4	0.0004	U,I5	0.219	U,I4	0.175	U,I4	0.0076	U,I4	0.0061	U,I4
1,2,4-Trichlorobenzene	mg/kg	19	0.0015	U,I4	0.0013	U,I5	0.748	U,I4	0.598	U,I4	0.0085	U,I4	0.0068	U,I4
1,2-Dibromo-3-chloropropane	mg/kg	15	0.0013	U,I4	0.0007	U,I5	0.374	U,I4	0.299	U,I4	0.0043	U,I4,E	0.0034	U,I4,E
1,2-Dibromoethane (EDB)	mg/kg	15	0.0009	U,I4	0.0009	U,I5	0.503	U,I4	0.402	U,I4	0.0057	U,I4	0.0046	U,I4
1,2-Dichlorobenzene	mg/kg	6	0.0011	U,I4	0.0008	U,I5	0.438	U,I4	0.351	U,I4	0.005	U,I4	0.004	U,I4
1,2-Dichloroethane	mg/kg	6	0.001	U,I4	0.0005	U,I5	0.258	U,I4	0.206	U,I4	0.0029	U,I4	0.0024	U,I4
1,2-Dichloropropane	mg/kg	18	0.0005	U,I4	0.0003	U,I5	0.18	U,I4	0.144	U,I4	0.0021	U,I4	0.0017	U,I4
1,3-Dichlorobenzene	mg/kg	6	0.0013	U,I4	0.0008	U,I5	0.425	U,I4	0.34	U,I4	0.0048	U,I4	0.0039	U,I4
1,4-Dichlorobenzene	mg/kg	6	0.0012	U,I4	0.0009	U,I5	0.516	U,I4	0.412	U,I4	0.0059	U,I4	0.0047	U,I4
2-Butanone	mg/kg	36	0.0673	I4	0.0035	U,I5	1.93	U,I4,E	1.55	U,I4,E	0.182	I4	0.133	I4
2-Chloroethylvinyl ether	mg/kg	-	1.56	U,I4	0.0016	U,I5	0.877	U,I4	0.701	U,I4	1.02	U,I4	0.777	U,I4
2-Hexanone	mg/kg	-	NA		0.0007	U,I5	0.412	U,I4	0.33	U,I4	0.0047	U,I4	0.0038	U,I4
4-Methyl-2-pentanone	mg/kg	33	NA		0.0052	J,I5	0.193	U,I4	0.155	U,I4	0.0973	J,I4	0.0884	J,I4
Acetone	mg/kg	160	NA		0.328	U,I5	2	U,I4,E	1.6	U,I4,E	10.3	J, I4,D	7.17	J,D,I4
Acrolein	mg/kg	-	1.38	U,I4	0.0099	U,I5	5.54	U,I4,D	4.43	U,I4,D	6.45	U,I4	4.91	U,I4
Acrylonitrile	mg/kg	84	0.002	U,I4	0.001	U,I5	0.58	U,I4	0.464	U,I4	0.0066	U,I4	0.0053	U,I4
Benzene	mg/kg	10	0.0074	J,I4	0.0003	U,I5	0.168	U,I4	0.134	U,I4	0.0192	J,I4	0.013	J,I4
Bromodichloromethane	mg/kg	15	0.0006	U,I4	0.0012	U,I5	0.683	U,I4	0.546	U,I4	0.0078	U,I4	0.0062	U,I4
Bromoform	mg/kg	15	0.0008	U,I4	0.001	U,I5	0.567	U,I4	0.454	U,I4	0.0065	U,I4	0.0052	U,I4
Bromomethane	mg/kg	-	0.0022	U,I4	0.0004	U,I5	0.245	U,I4	0.196	U,I4	0.0028	U,I4	0.0022	U,I4
Carbon disulfide	mg/kg	-	0.0218	J,I4	0.0069	J,I5	0.657	U,I4	0.526	U,I4	0.0404	J, I4	0.103	J, I4
Carbon tetrachloride	mg/kg	6	0.0013	U,I4	0.0012	U,I5	0.696	U,I4	0.557	U,I4	0.0079	U,I4	0.0064	U,I4
Chlorobenzene	mg/kg	6	0.0022	U,I4	0.0003	U,I5	0.142	U,I4	0.113	U,I4	0.0016	U,I4	0.0013	U,I4
Chloroethane	mg/kg	6	0.0014	U,I4	0.0011	U,I5	0.593	U,I4	0.474	U,I4	0.0068	U,I4	0.0054	U,I4
Chloroform	mg/kg	6	0.0037	J,I4	0.0007	U,I5	0.4	U,I4	0.32	U,I4	0.0046	U,I4	0.0037	U,I4
Chloromethane	mg/kg	-	NA		0.0004	U,I5	0.232	U,I4	0.186	U,I4	0.0026	U,I4	0.0021	U,I4
cis-1,2-Dichloroethene	mg/kg	-	NA		0.0003	U,I5	0.18	U,I4	0.144	U,I4	0.0021	U,I4	0.0017	U,I4
cis-1,3-Dichloropropene	mg/kg	18	0.0005	U,I4	0.0005	U,I5	0.258	U,I4	0.206	U,I4	0.0029	U,I4	0.0024	U,I4
Dibromochloromethane	mg/kg	-	0.0011	U,I4	0.0004	U,I5	0.206	U,I4	0.165	U,I4	0.0024	U,I4	0.0019	U,I4
Dibromomethane	mg/kg	15	0.0007	U,I4	0.0008	U,I5	0.451	U,I4	0.361	U,I4	0.0051	U,I4	0.0041	U,I4
Dichlorodifluoromethane	mg/kg	7.2	0.0016	U,I4,G	0.001	U,E,I5	0.554	U,I4,E	0.443	U,I4,E	0.0063	U,I4,E	0.0051	U,I4,E
Ethylbenzene	mg/kg	10	0.0002	U,I4	0.0006	U,I5	0.309	U,I4	0.247	U,I4	0.0035	U,I4	0.0028	U,I4
Hexachlorobutadiene	mg/kg	5.6	0.0022	U,I4	0.001	U,I5	0.58	U,I4	0.464	U,I4	0.0066	U,I4	0.0053	U,I4
Iodomethane	mg/kg	65	0.0009	U,I4	0.0009	U,I5	0.49	U,I4	0.392	U,I4	0.0056	U,I4	0.0045	U,I4
Isopropylbenzene	mg/kg	-	NA		0.0009	U,I5	0.528	U,I4	0.423	U,I4	0.006	U,I4	0.0048	U,I4
Methyl-tertbutyl ether	mg/kg	-	NA		0.0003	U,I5	0.18	U,I4	0.144	U,I4	0.0021	U,I4	0.0017	U,I4
Methylene chloride	mg/kg	30	0.0101	U,I4	0.0012	U,I5	0.67	U,I4,E	0.536	U,I4,E	0.0076	U,I4	0.0061	U,I4
Naphthalene	mg/kg	5.6	0.0015	U,I4	0.0005	U,I5	0.284	U,I4	0.227	U,I4	0.0032	U,I4	0.0026	U,I4
Styrene	mg/kg	-	NA		0.0003	U,I5	0.155	U,I4	0.124	U,I4	0.0018	U,I4	0.0014	U,I4
Tetrachloroethene	mg/kg	6	0.0015	U,I4	0.0007	U,I5	0.4	U,I4	0.32	U,I4	0.0046	U,I4	0.0037	U,I4
Toluene	mg/kg	10	0.0071	J,I4	0.0023	J,I5	0.155	U,I4	0.124	U,I4	0.017	J,I4	0.0014	U,I4

TABLE 1
ANALYTICAL RESULTS - LEACHATE TREATMENT SYSTEM SLUDGE
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	'Clarifier Sludge' Clarifier 5/15/2017		'RO-101817' Roll-Off Box 10/18/2017		'001' Clarifier 1/25/2018		'002' Clarifier 1/25/2018 Duplicate		'CL001-032308' Clarifier 3/23/2018		'CL002-030208' Clarifier 3/23/2018 Duplicate	
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
Volatile Organic Compounds (8260B)														
trans-1,2-Dichloroethene	mg/kg	30	0.0013	U,I4	0.0004	U,I5	0.245	U,I4,E	0.196	U,I4,E	0.0028	U,I4	0.0022	U,I4
trans-1,3-Dichloropropene	mg/kg	18	0.0006	U,I4	0.0003	U,I5	0.193	U,I4	0.155	U,I4	0.0022	U,I4	0.0018	U,I4
Trichloroethene	mg/kg	6	0.0012	U,I4	0.0005	U,I5	0.271	U,I4	0.216	U,I4	0.0031	U,I4	0.0025	U,I4
Trichlorofluoromethane	mg/kg	30	0.0052	U,I4	0.0007	U,I5	0.387	U,I4	0.309	U,I4	0.0044	U,I4	0.0035	U,I4
Vinyl chloride	mg/kg	6	0.004	U,I4	0.0005	U,I5	0.271	U,I4,E	0.216	U,I4,E	0.0031	U,I4	0.0025	U,I4
Xylenes (total)	mg/kg	30	0.0022	U,I4	0.0015	U,I5	0.825	U,I4	0.66	U,I4	0.0094	U,I4	0.0075	U,I4
Semivolatile Organic Compounds (8270D)														
1,2,4-Trichlorobenzene	mg/kg	19	1.03	U,A7	0.35	U,G,I	15.5	U	11.7	U	1.8	U	1.26	U
1,2-Dichlorobenzene	mg/kg	6	0.842	U,A7	0.286	U,G,I	12.7	U	9.59	U	1.47	U	1.03	U
1,2-Diphenylhydrazine	mg/kg	-	0.374	U,A7	0.127	U	5.64	U	4.26	U	0.655	U	0.459	U
1,3-Dichlorobenzene	mg/kg	6	0.468	U,A7	0.159	U,G,I	7.05	U	5.33	U	0.818	U	0.574	U
1,4-Dichlorobenzene	mg/kg	6	0.468	U,A7	0.159	U,G,I	7.05	U	5.33	U	0.818	U	0.574	U
2,4,5-Trichlorophenol	mg/kg	7.4	1.59	U,A7	0.54	U	24	U	18.1	U	2.78	U	1.95	U
2,4,6-Trichlorophenol	mg/kg	7.4	1.5	U,A7	0.509	U,G	22.6	U	17	U	2.62	U	1.84	U
2,4-Dichlorophenol	mg/kg	14	1.03	U,A7	0.35	U,G,I	15.5	U	11.7	U	1.8	U	1.26	U
2,4-Dimethylphenol	mg/kg	14	0.749	U,A7	0.254	U,G,I	11.3	U	8.52	U	1.31	U	0.919	U
2,4-Dinitrophenol	mg/kg	160	2.43	U,A7,F	0.827	U	36.7	U	27.7	U	4.26	U	2.99	U
2,4-Dinitrotoluene	mg/kg	140	1.97	U,A7	0.668	U	29.6	U	22.4	U	3.44	U	2.41	U
2,6-Dinitrotoluene	mg/kg	28	1.78	U,A7	0.604	U	26.8	U	20.2	U	3.11	U	2.18	U
2-Chloronaphthalene	mg/kg	5.6	0.562	U,A7	0.191	U,G	8.46	U	6.39	U	0.982	U	0.689	U
2-Chlorophenol	mg/kg	5.7	0.468	U,A7	0.159	U,G,I	7.05	U	5.33	U	0.818	U	0.574	U
2-Methylnaphthalene	mg/kg	-	0.749	U,A7	0.254	U,G,I	11.3	U	8.52	U	1.31	U	0.919	U
2-Methylphenol	mg/kg	5.6	1.5	U,A7	0.509	U,G,I	22.6	U	17	U	2.62	U	1.84	U
2-Nitroaniline	mg/kg	-	1.03	U,A7	0.35	U	15.5	U	11.7	U	1.8	U	1.26	U
2-Nitrophenol	mg/kg	-	1.4	U,A7	0.477	U,G,I	21.2	U	16	U	2.45	U	1.72	U
3 & 4-Methylphenol	mg/kg	5.6	0.842	U,A7	0.286	U	12.7	U	9.59	U	1.47	U	1.03	U
3,3'-Dichlorobenzidine	mg/kg	-	0.842	U,A7	0.286	U	12.7	U	9.59	U	1.47	U	1.03	U
3-Nitroaniline	mg/kg	-	2.62	U,A7	0.89	U	39.5	U	29.8	U	4.58	U	3.21	U
4,6-Dinitro-2-methylphenol	mg/kg	160	2.99	U,A7	1.02	U	45.1	U	34.1	U	5.24	U	3.67	U
4-Bromophenyl phenyl ether	mg/kg	15	0.655	U,A7	0.223	U	9.87	U	7.46	U	1.15	U	0.804	U
4-Chloro-3-methylphenol	mg/kg	14	0.842	U,A7	0.286	U	12.7	U	9.59	U	1.47	U	1.03	U
4-Chloroaniline	mg/kg	16	1.22	U,A7	0.413	U,I	18.3	U	13.8	U	2.13	U	1.49	U
4-Chlorophenyl phenyl ether	mg/kg	-	1.22	U,A7	0.413	U	18.3	U	13.8	U	2.13	U	1.49	U
4-Nitroaniline	mg/kg	28	2.15	U,A7	0.731	U	32.4	U	24.5	U	3.76	U	2.64	U
4-Nitrophenol	mg/kg	29	2.34	U,A7	0.795	U	35.3	U	26.6	U	4.09	U	2.87	U
Acenaphthene	mg/kg	43.4	0.655	U,A7	0.223	U	9.87	U	7.46	U	1.15	U	0.804	U
Acenaphthylene	mg/kg	3	0.749	U,A7	0.254	U	11.3	U	8.52	U	1.31	U	0.919	U
Acetophenone	mg/kg	9.7	1.03	U,A7	0.35	U,G,I	15.5	U	11.7	U	1.8	U	1.26	U
Aniline	mg/kg	14	0.655	U,A7	0.223	U,G,I	11.3	J	8.52	J	1.15	U	0.804	U
Anthracene	mg/kg	3.4	0.468	U,A7	0.159	U	7.05	U	5.33	U	0.818	U	0.574	U
Benzidine	mg/kg	-	3.28	U,A7,F	1.11	U	49.4	U,F	37.3	U,F	5.73	U,F	4.02	U,F
Benzo (a) anthracene	mg/kg	3.4	0.468	U,A7	0.318	J	7.05	U	5.33	U	0.818	U	0.574	U
Benzo (a) pyrene	mg/kg	3.4	1.03	U,A7	0.35	U	15.5	U	11.7	U	1.8	U	1.26	U
Benzo (b) fluoranthene	mg/kg	6.8	1.03	U,A7	0.35	U	15.5	U	11.7	U	1.8	U	1.26	U
Benzo (g,h,i) perylene	mg/kg	1.8	0.749	U,A7	0.254	U	11.3	U	8.52	U	1.31	U	0.919	U
Benzo (k) fluoranthene	mg/kg	6.8	0.655	U,A7	0.223	U	9.87	U	7.46	U	1.15	U	0.804	U
Benzoic acid	mg/kg	-	4.02	U,A7	1.37	U	60.6	U	45.8	U	7.04	U,G	4.94	U,G

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			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
Semivolatile Organic Compounds (8270D)														
Benzyl alcohol	mg/kg	-	1.31	U,A7	0.445	J,G,I	19.7	U	14.9	U	2.29	U	1.61	U
Bis(2-chloroethoxy)methane	mg/kg	7.2	1.31	U,A7	0.445	U,A9,I,G	19.7	U	14.9	U	2.29	U	1.61	U
Bis(2-chloroethyl)ether	mg/kg	6	1.03	U,A7	0.35	U,G,I	15.5	U	11.7	U	1.8	U	1.26	U
Bis(2-chloroisopropyl)ether	mg/kg	7.2	0.562	U,A7	0.191	U,A9,G,I	8.46	U,A9	6.39	U,A9	0.982	U,A9	0.689	U,A9
Bis(2-ethylhexyl)phthalate	mg/kg	28	7.67	J,A7	1.05	J	42.3	U	32	U	4.91	U	3.44	U
Butyl benzyl phthalate	mg/kg	28	1.12	U,A7	0.381	U	16.9	U	12.8	U	1.96	U	1.38	U
Chrysene	mg/kg	3.4	0.468	U,A7	0.191	J	7.05	U	5.33	U	0.818	U	0.574	U
Dibenz (a,h) anthracene	mg/kg	8.2	0.655	U,A7	0.223	U	9.87	U	7.46	U	1.15	U	0.804	U
Dibenzofuran	mg/kg	-	0.281	U,A7	0.0954	U	4.23	U	3.2	U	0.491	U	0.344	U
Diethyl phthalate	mg/kg	28	0.936	U,A7,F	0.318	U	14.1	U	10.7	U	1.64	U	1.15	U
Dimethyl phthalate	mg/kg	28	0.562	U,A7	0.191	U	8.46	U	6.39	U	0.982	U	0.689	U
Di-n-butyl phthalate	mg/kg	28	7.39	J,A7	2.07	J	31	J	22.4	U	3.44	J	2.41	U
Di-n-octyl phthalate	mg/kg	28	0.655	U,A7	0.223	U	9.87	U	7.46	U	1.15	U	0.804	U
Diphenylamine	mg/kg	-	1.12	U,A7	0.381	U	16.9	U	12.8	U	1.96	U	1.38	U
Fluoranthene	mg/kg	3.4	0.468	U,A7	0.254	J	7.05	U	5.33	U	0.818	U	0.574	U
Fluorene	mg/kg	3.4	0.374	U,A7	0.127	U	5.64	U	4.26	U	0.655	U	0.459	U
Hexachlorobenzene	mg/kg	10	1.12	U,A7	0.381	U	16.9	U	12.8	U	1.96	U	1.38	U
Hexachlorobutadiene	mg/kg	5.6	1.22	U,A7	0.413	U,G,I	18.3	U	13.8	U	2.13	U	1.49	U
Hexachlorocyclopentadiene	mg/kg	2.4	2.34	U,A7	0.795	U,G,I	35.3	U	26.6	U	4.09	U	2.87	U
Hexachloroethane	mg/kg	30	1.12	U,A7	0.381	U,G,I	16.9	U	12.8	U	1.96	U	1.38	U
Indeno (1,2,3-cd) pyrene	mg/kg	3.4	1.03	U,A7	0.35	U	15.5	U	11.7	U	1.8	U	1.26	U
Isophorone	mg/kg	-	1.03	U,A7	0.54	J,G	15.5	U	11.7	U	1.8	U	1.26	U
Naphthalene	mg/kg	5.6	0.562	U,A7	0.191	U,G,I	8.46	U	6.39	U	0.982	U	0.689	U
Nitrobenzene	mg/kg	14	1.22	U,A7	0.413	U,I	18.3	U	13.8	U	2.13	U	1.49	U
N-Nitrosodimethylamine	mg/kg	-	1.22	U,A7	0.413	U,G,I	18.3	U	13.8	U	2.13	U	1.49	U
N-Nitrosodi-n-propylamine	mg/kg	-	0.936	U,A7	0.318	U,G,I	14.1	U	10.7	U	1.64	U	1.15	U
Pentachlorophenol	mg/kg	7.4	2.34	U,A7	0.795	U	35.3	U	26.6	U	4.09	U	2.87	U
Phenanthrene	mg/kg	5.6	0.468	U,A7	0.191	J	7.05	U	5.33	U	0.818	U	0.574	U
Phenol	mg/kg	6.2	1.22	U,A7	0.572	J,G,I	18.3	U	13.8	U	2.13	U	1.49	U
Pyrene	mg/kg	8.2	0.655	U,A7	0.254	J	9.87	U	7.46	U	1.15	U	0.804	U
Pyridine	mg/kg	16	4.87	U,A7	1.65	U,G,I	73.3	U	55.4	U	8.51	U	5.97	U
TCLP Semivolatile Organic Compounds (1311/3510C)														
1,4-Dichlorobenzene	mg/l	7.5	NA		0.004	U	0.004	U	0.004	U	0.004	U	0.004	U
2,4,5-Trichlorophenol	mg/l	400	NA		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U
2,4,6-Trichlorophenol	mg/l	2	NA		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U
2,4-Dinitrotoluene	mg/l	0.13	NA		0.0085	U	0.0085	U	0.0085	U	0.0085	U	0.0085	U
2-Methylphenol	mg/l	200	NA		0.0065	U	0.0065	U	0.0065	U	0.0065	U	0.0065	U
3 & 4-Methylphenol	mg/l	200	NA		0.0045	U	0.0045	U	0.0045	U	0.0045	U	0.0045	U
Benzidine	mg/l	-	NA		0.011	U	0.011	U	0.011	U	0.011	U,F	0.011	U,F
Hexachlorobenzene	mg/l	0.13	NA		0.009	U	0.009	U	0.009	U	0.009	U	0.009	U
Hexachlorobutadiene	mg/l	0.5	NA		0.008	U	0.008	U	0.008	U	0.008	U	0.008	U
Hexachloroethane	mg/l	3	NA		0.0055	U	0.0055	U	0.0055	U	0.0055	U	0.0055	U
Nitrobenzene	mg/l	2	NA		0.006	U	0.006	U	0.006	U	0.006	U	0.006	U
Pentachlorophenol	mg/l	100	NA		0.0135	U	0.0135	U	0.0135	U	0.0135	U	0.0135	U
Pyridine	mg/l	5	NA		0.0135	U	0.0135	U	0.0835	J,Y	0.0135	U	0.0135	U

TABLE 1
ANALYTICAL RESULTS - LEACHATE TREATMENT SYSTEM SLUDGE
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	'Clarifier Sludge' Clarifier 5/15/2017		'RO-101817' Roll-Off Box 10/18/2017		'001' Clarifier 1/25/2018		'002' Clarifier 1/25/2018 Duplicate		'CL001-032308' Clarifier 3/23/2018		'CL002-030208' Clarifier 3/23/2018 Duplicate	
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
Polychlorinated Biphenyls (8082)														
PCB-1016	mg/kg	10 ⁽⁴⁾	0.023	U	0.025	U	0.159	U	0.168	U	0.77	U	0.46	U
PCB-1221	mg/kg	10 ⁽⁴⁾	0.033	U	0.035	U	0.233	U	0.236	U	0.267	U	0.159	U
PCB-1232	mg/kg	10 ⁽⁴⁾	0.034	U	0.027	U	0.17	U	0.18	U	0.204	U	0.122	U
PCB-1242	mg/kg	10 ⁽⁴⁾	0.011	U	0.009	U	0.057	U	0.061	U	0.068	U	0.041	U
PCB-1248	mg/kg	10 ⁽⁴⁾	0.007	U	0.018	U	0.117	U	0.124	U	0.14	U	0.083	U
PCB-1254	mg/kg	10 ⁽⁴⁾	0.025	U	0.039	U	0.251	U	0.266	U	0.3	U	0.179	U
PCB-1260	mg/kg	10 ⁽⁴⁾	0.024	U	0.029	U	0.186	U	0.197	U	0.451	U	0.269	U
Pesticides (3541/8081B)														
4,4'-DDD	mg/kg	0.087	0.0154	U	0.0177	U,D	0.074	U	0.0526	U	0.00868	U	0.00639	U
4,4'-DDE	mg/kg	0.087	0.0139	U	0.00806	U	0.0337	U	0.0239	U	0.00394	U	0.0029	U
4,4'-DDT	mg/kg	0.087	0.0129	U	0.0193	U	0.0808	U,D	0.0574	U,D	0.00947	U	0.00697	U
Aldrin	mg/kg	0.066	0.0162	U	0.00806	U	0.0337	U,D	0.0239	U,D	0.00394	U,F,H	0.0029	U,F
alpha-BHC	mg/kg	0.066	0.0141	U	0.0058	U,D	0.0242	U	0.0172	U	0.00284	U	0.00209	U
alpha-Chlordane	mg/kg	0.26	0.015	U	0.0271	U	0.113	U	0.0804	U	0.0133	U	0.00976	U
beta-BHC	mg/kg	0.066	0.0201	U	0.0293	U	0.123	U	0.0871	U	0.0144	U,D,G,K	0.0106	U,D,G
Chlordane (tech)	mg/kg	0.26	0.513	U	0.807	U	3.37	U	2.4	U	0.395	U	0.291	U
delta-BHC	mg/kg	0.066	0.0127	U	0.00677	U,D	0.0283	U,F	0.0201	U,F	0.00331	U	0.00244	U
Dieldrin	mg/kg	0.13	0.0139	U	0.00773	U	0.0323	U	0.023	U	0.00379	U	0.00279	U
Endosulfan I	mg/kg	0.066	0.15	U	0.00709	U	0.0296	U,F	0.0211	U,F	0.00347	U,F	0.00256	U,F
Endosulfan II	mg/kg	0.13	0.0164	U	0.00902	U	0.0377	U,D,F	0.0268	U,D,F	0.00442	U,F	0.00325	U,F
Endosulfan sulfate	mg/kg	0.13	0.0125	U	0.0258	U	0.108	U,D,F	0.0766	U,D,F	0.0126	U,D,F,H	0.00929	U,D,F
Endrin	mg/kg	0.13	0.0164	U	0.011	U,D	0.0458	U	0.0325	U	0.00536	U,H	0.00395	U
Endrin aldehyde	mg/kg	0.13	0.0162	U	0.0122	U	0.0512	U	0.0364	U	0.00599	U	0.00441	U
Endrin ketone	mg/kg	-	0.026	U	0.0316	U	0.132	U	0.0938	U	0.0155	U	0.0114	U
gamma-BHC (Lindane)	mg/kg	0.066	0.0133	U	0.0406	U,D	0.17	U	0.121	U	0.0199	U,I,K	0.0146	U
gamma-Chlordane	mg/kg	0.26	0.0141	U	0.0258	U	0.108	U	0.0766	U	0.0126	U	0.00929	U
Heptachlor	mg/kg	0.066	0.0137	U,D	0.00677	U	0.0283	U	0.0201	U	0.00331	U,D,K	0.00244	U,D
Heptachlor epoxide	mg/kg	0.066	0.0223	U	0.00806	U	0.0337	U	0.0239	U	0.00394	U	0.0029	U
Isodrin	mg/kg	0.066	NA		NA		0.0269	U,D,F	0.0191	U,D,F	0.00316	U	0.00232	U
Methoxychlor	mg/kg	0.18	0.025	U	0.0142	U,D	0.0592	U	0.0421	U	0.00694	U,D	0.00511	U,D
Toxaphene	mg/kg	2.6	0.855	U	1.34	U	5.61	U	3.99	U	0.658	U	0.484	U
Chlorinated Herbicides (8151A)														
2,4-D	mg/kg	10	0.00315	U	0.00899	U,D,F	0.0968	U	0.0667	U	0.0925	U	0.0634	U,K
2,4,5-T	mg/kg	7.9	0.00157	U	0.00678	U,D	0.0729	U,K	0.0503	U	0.058	U	0.0398	U,K
2,4,5-TP (Silvex)	mg/kg	7.9	0.00157	U	0.00765	U,D	0.0823	U	0.0567	U	0.0725	U	0.0496	U,K
2,4-DB	mg/kg	-	0.00315	U	0.00852	U,D	0.0917	U,F,H	0.0632	U,F	0.0893	U	0.0612	U,K
Acifluorfen	mg/kg	-	0.00157	U	0.00899	U,D	0.0968	U,D	0.0667	U,D	0.0121	U	0.00832	U,K
Dalapon	mg/kg	-	0.0394	U	0.0437	U,D	0.47	U,D	0.324	U,D	0.319	U	0.219	U,I
Dicamba	mg/kg	-	0.00157	U	0.00689	U,D	0.0742	U,K	0.0512	U	0.047	U	0.0322	U
Dichloroprop	mg/kg	-	0.00157	U	0.008	U,D	0.0861	U,K	0.0594	U	0.0701	U	0.048	U
Dinoseb	mg/kg	2.5	0.00157	U	0.00326	U,D	0.0351	U,D,K	0.0242	U,D	0.0764	U	0.0523	U

TABLE 1
ANALYTICAL RESULTS - LEACHATE TREATMENT SYSTEM SLUDGE
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	'Clarifier Sludge' Clarifier 5/15/2017		'RO-101817' Roll-Off Box 10/18/2017		'001' Clarifier 1/25/2018		'002' Clarifier 1/25/2018 Duplicate		'CL001-032308' Clarifier 3/23/2018		'CL002-030208' Clarifier 3/23/2018 Duplicate	
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers
Total Cyanide (9014)														
Cyanide (total)	mg/kg	-	0.344	U	1.08	J	3.42	J	1.75	J	2.02	U	1.34	U
Amenable Cyanide (4500)														
Amenable Cyanide	mg/kg	-	0.344	U	1.08	J	3.42	J	1.75	J	2.02	U	1.34	U
Fluoride (9056A)														
Fluoride	mg/kg	-	536	I	224		1560		1180		1590		961	
Sulfide (9030/9034)														
Sulfide	mg/kg	-	8.45	U	6.02	U	26.6	U	21.2	U	30.6	U	21.5	U
% Solids (2540G)														
% Solids	%	-	21		30.1		7.5		8.65		6.92		8.08	

NOTES

(1) 40 CFR 268.40 Universal Treatment Standards For Non-Wastewaters. Analytes for which no UTS is available are indicated with "--".

(2) Method detection limit reported for non-detected results

(3) No UTS for Total Metals. See TCLP results

(4) UTS for PCB is the sum of all PCB Isomers

NA - Not analyzed

SU - Standard units

A7 - A reduced amount of sample was used during the preparation step due to the matrix of the sample

A9 - This result is intended for end user internal monitoring purposes only. This analyte does not appear on the laboratory scope of accreditation

D - A continuing calibration verification analyzed with the analytical batch recovered above the acceptance range for the noted analyte

E - A continuing calibration verification analyzed with the analytical batch recovered below the acceptance range for the noted analyte

F - The laboratory control sample analyzed with this preparation batch recovered above the acceptance range for the noted analyte

G - The laboratory control sample analyzed with this preparation batch recovered below the acceptance range for the noted analyte

H - The spike recovery was above the acceptance range for the matrix spike and/or matrix spike duplicate sample analyzed with the preparation batch

I - The spike recovery was below the acceptance range for the matrix spike and/or matrix spike duplicate sample analyzed with the preparation batch

I4 - Vials were prepared at the laboratory from the received container

I5 - Vial provided by laboratory contained preservative for 5 grams of sample; however, the vial was received with greater than 130% of that amount of sample

J - Detected between the method detection limit and the reporting limit; therefore, the result is an estimated value

J - Data validation indicated that the RPD result between the duplicates is greater than 50%, due to laboratory or field sampling imprecision

K - The RPD result exceeded the quality control limits for the duplicate, laboratory control sample duplicate, or matrix spike duplicate sample analyzed with the preparation batch

L - The noted analyte was detected in the method blank

Q - Sample was analyzed at a dilution. Reporting limits were adjusted accordingly

T - Result was over the calibration range, but within the linear dynamic range of the instrument for the noted analyte

U - Not detected at reported concentration

U - Data validation indicated that analyte concentration was below the blank action level

Y - Laboratory reports that result may be biased due to possible matrix interference

TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
pH (9045D)												
pH	SU	-	8.54		8.77		2.7	8.84		8.87		0.3
Metals (6010B/7471B)												
Aluminum	mg/kg	-- ⁽³⁾	71000	I,T	44900	I,T	45.0	64600	T	46400	T	32.8
Antimony	mg/kg	-- ⁽³⁾	36.5	U,I	30.7	U,I	17.3	26	U	17.9	U	36.9
Arsenic	mg/kg	-- ⁽³⁾	13.1	U	11	U	17.4	11.2	J	10.1	J	10.3
Barium	mg/kg	-- ⁽³⁾	5480		5440	H	0.7	293	J	86.8	J	108.6
Beryllium	mg/kg	-- ⁽³⁾	11.6		7.66		40.9	12.4		8.96		32.2
Cadmium	mg/kg	-- ⁽³⁾	5.28	J	5.52	J	4.4	6.02	J	4.51	J	28.7
Chromium	mg/kg	-- ⁽³⁾	270		167		47.1	246		180		31.0
Cobalt	mg/kg	-- ⁽³⁾	135		146		7.8	178		131		30.4
Copper	mg/kg	-- ⁽³⁾	263	J	132	J	66.3	236		174		30.2
Iron	mg/kg	-- ⁽³⁾	22700	J, T	12600	J, H	57.2	18200	T	13500	T	29.7
Lead	mg/kg	-- ⁽³⁾	88.4	J	44.5	J	66.1	83.3		63.2		27.4
Manganese	mg/kg	-- ⁽³⁾	14100	T	14600	H,T	3.5	16700	T	12200	T	31.1
Mercury	mg/kg	-- ⁽³⁾	0.147	J	0.0987	U	39.3	0.123		0.124		0.8
Nickel	mg/kg	-- ⁽³⁾	863		924		6.8	1050		759		32.2
Selenium	mg/kg	-- ⁽³⁾	33.6	U	28.2	U	17.5	23.9	U	17.4	J	31.5
Silver	mg/kg	-- ⁽³⁾	4.92	U	4.13	U	17.5	3.5	U	2.41	U	36.9
Thallium	mg/kg	-- ⁽³⁾	11.9	U	9.99	U	17.5	8.46	U	6.61	J	24.6
Vanadium	mg/kg	-- ⁽³⁾	65.4	J	42.1	J	43.3	45.1	J	31.3	J	36.1
Zinc	mg/kg	-- ⁽³⁾	2020		1620		22.0	2380		1720		32.2
TCLP Metals (1311/6010B/7471B)												
Aluminum	mg/l	-	3.21	J	0.0718	J	191.2	3.22	J	1.34	J	82.5
Antimony	mg/l	1.15	0.0284	J	0.0256	J	10.4	0.05	U	0.05	U	0.0
Arsenic	mg/l	5	0.0160	U	0.0160	U	0.0	0.04	U	0.04	U	0.0
Barium	mg/l	21	0.448		0.537		18.1	0.405		0.554		31.1
Beryllium	mg/l	1.22	0.00408	J	0.00120	U	109.1	0.01	U	0.01	U	0.0
Cadmium	mg/l	0.11	0.00245	U	0.00245	U	0.0	0.02	U	0.02	U	0.0
Chromium	mg/l	0.6	0.0388	F	0.0305	F	24.0	0.0471		0.0504		6.8
Cobalt	mg/l	-	0.117	J	0.0237	J	132.6	0.119		0.118		0.8
Copper	mg/l	-	0.0192	J	0.0129	J	39.3	0.05	U	0.05	U	0.0
Iron	mg/l	-	0.0250	U	0.0250	U	0.0	0.26		0.2	U	26.1
Lead	mg/l	0.75	0.0120	U	0.0120	U	0.0	0.04	U	0.04	U	0.0
Manganese	mg/l	-	12.3	T	12.5	T	1.6	16.1	T	24.5	T	41.4
Mercury	mg/l	0.025	0.00059	U,Q	0.00059	U,Q	0.0	0.00059	U,Q	0.00059	U,Q	0.0
Nickel	mg/l	11	0.785	J	0.45	J	54.3	1.05		1.38		27.2
Selenium	mg/l	5.7	0.0157	J	0.019	J	19.0	0.1	U	0.1	U	0.0
Silver	mg/l	0.14	0.00600	U	0.00600	U	0.0	0.02	U	0.02	U	0.0
Thallium	mg/l	0.2	0.00900	U	0.00900	U	0.0	0.1	U	0.1	U	0.0
Vanadium	mg/l	1.6	0.0377	U	0.0401	U	6.2	0.1	U	0.1	U	0.0
Zinc	mg/l	4.3	0.474	J	0.0168	J	186.3	0.275		0.191		36.1
pH (1311)												
pH	SU	-	5.88		7.39		22.8	5.68		5.72		0.7

TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
Volatile Organic Compounds (8260B)												
1,1,1,2-Tetrachloroethane	mg/kg	6	0.193	U,I4	0.155	U,I4	21.8	0.0022	U,I4	0.0018	U,I4	20.0
1,1,1-Trichloroethane	mg/kg	6	0.4	U,I4	0.32	U,I4	22.2	0.0046	U,I4	0.0037	U,I4	21.7
1,1,2,2-Tetrachloroethane	mg/kg	6	0.477	U,I4	0.381	U,I4	22.4	0.0054	U,I4	0.0044	U,I4	20.4
1,1,2-Trichloroethane	mg/kg	6	0.335	U,I4	0.268	U,I4	22.2	0.0038	U,I4	0.0031	U,I4	20.3
1,1-Dichloroethane	mg/kg	6	0.206	U,I4	0.165	U,I4	22.1	0.0024	U,I4	0.0019	U,I4	23.3
1,1-Dichloroethene	mg/kg	6	0.245	U,I4,E	0.196	U,I4,E	22.2	0.0028	U,I4	0.0022	U,I4	24.0
1,2,3-Trichloropropane	mg/kg	30	0.219	U,I4	0.175	U,I4	22.3	0.0076	U,I4	0.0061	U,I4	21.9
1,2,4-Trichlorobenzene	mg/kg	19	0.748	U,I4	0.598	U,I4	22.3	0.0085	U,I4	0.0068	U,I4	22.2
1,2-Dibromo-3-chloropropane	mg/kg	15	0.374	U,I4	0.299	U,I4	22.3	0.0043	U,I4,E	0.0034	U,I4,E	23.4
1,2-Dibromoethane (EDB)	mg/kg	15	0.503	U,I4	0.402	U,I4	22.3	0.0057	U,I4	0.0046	U,I4	21.4
1,2-Dichlorobenzene	mg/kg	6	0.438	U,I4	0.351	U,I4	22.1	0.005	U,I4	0.004	U,I4	22.2
1,2-Dichloroethane	mg/kg	6	0.258	U,I4	0.206	U,I4	22.4	0.0029	U,I4	0.0024	U,I4	18.9
1,2-Dichloropropane	mg/kg	18	0.18	U,I4	0.144	U,I4	22.2	0.0021	U,I4	0.0017	U,I4	21.1
1,3-Dichlorobenzene	mg/kg	6	0.425	U,I4	0.34	U,I4	22.2	0.0048	U,I4	0.0039	U,I4	20.7
1,4-Dichlorobenzene	mg/kg	6	0.516	U,I4	0.412	U,I4	22.4	0.0059	U,I4	0.0047	U,I4	22.6
2-Butanone	mg/kg	36	1.93	U,I4,E	1.55	U,I4,E	21.8	0.182	I4	0.133	I4	31.1
2-Chloroethylvinyl ether	mg/kg	-	0.877	U,I4	0.701	U,I4	22.3	1.02	U,I4	0.777	U,I4	27.0
2-Hexanone	mg/kg	-	0.412	U,I4	0.33	U,I4	22.1	0.0047	U,I4	0.0038	U,I4	21.2
4-Methyl-2-pentanone	mg/kg	33	0.193	U,I4	0.155	U,I4	21.8	0.0973	J,I4	0.0884	J,I4	9.6
Acetone	mg/kg	160	2	U,I4,E	1.6	U,I4,E	22.2	10.3	J, I4,D	7.17	J,D,I4	35.8
Acrolein	mg/kg	-	5.54	U,I4,D	4.43	U,I4,D	22.3	6.45	U,I4	4.91	U,I4	27.1
Acrylonitrile	mg/kg	84	0.58	U,I4	0.464	U,I4	22.2	0.0066	U,I4	0.0053	U,I4	21.8
Benzene	mg/kg	10	0.168	U,I4	0.134	U,I4	22.5	0.0192	J,I4	0.013	J,I4	38.5
Bromodichloromethane	mg/kg	15	0.683	U,I4	0.546	U,I4	22.3	0.0078	U,I4	0.0062	U,I4	22.9
Bromoform	mg/kg	15	0.567	U,I4	0.454	U,I4	22.1	0.0065	U,I4	0.0052	U,I4	22.2
Bromomethane	mg/kg	-	0.245	U,I4	0.196	U,I4	22.2	0.0028	U,I4	0.0022	U,I4	24.0
Carbon disulfide	mg/kg	-	0.657	U,I4	0.526	U,I4	22.1	0.0404	J,I4	0.103	J,I4	87.3
Carbon tetrachloride	mg/kg	6	0.696	U,I4	0.557	U,I4	22.2	0.0079	U,I4	0.0064	U,I4	21.0
Chlorobenzene	mg/kg	6	0.142	U,I4	0.113	U,I4	22.7	0.0016	U,I4	0.0013	U,I4	20.7
Chloroethane	mg/kg	6	0.593	U,I4	0.474	U,I4	22.3	0.0068	U,I4	0.0054	U,I4	23.0
Chloroform	mg/kg	6	0.4	U,I4	0.32	U,I4	22.2	0.0046	U,I4	0.0037	U,I4	21.7
Chloromethane	mg/kg	-	0.232	U,I4	0.186	U,I4	22.0	0.0026	U,I4	0.0021	U,I4	21.3
cis-1,2-Dichloroethene	mg/kg	-	0.18	U,I4	0.144	U,I4	22.2	0.0021	U,I4	0.0017	U,I4	21.1
cis-1,3-Dichloropropene	mg/kg	18	0.258	U,I4	0.206	U,I4	22.4	0.0029	U,I4	0.0024	U,I4	18.9
Dibromochloromethane	mg/kg	-	0.206	U,I4	0.165	U,I4	22.1	0.0024	U,I4	0.0019	U,I4	23.3
Dibromomethane	mg/kg	15	0.451	U,I4	0.361	U,I4	22.2	0.0051	U,I4	0.0041	U,I4	21.7
Dichlorodifluoromethane	mg/kg	7.2	0.554	U,I4,E	0.443	U,I4,E	22.3	0.0063	U,I4,E	0.0051	U,I4,E	21.1
Ethylbenzene	mg/kg	10	0.309	U,I4	0.247	U,I4	22.3	0.0035	U,I4	0.0028	U,I4	22.2
Hexachlorobutadiene	mg/kg	5.6	0.58	U,I4	0.464	U,I4	22.2	0.0066	U,I4	0.0053	U,I4	21.8
Iodomethane	mg/kg	65	0.49	U,I4	0.392	U,I4	22.2	0.0056	U,I4	0.0045	U,I4	21.8
Isopropylbenzene	mg/kg	-	0.528	U,I4	0.423	U,I4	22.1	0.006	U,I4	0.0048	U,I4	22.2
Methyl-tertbutyl ether	mg/kg	-	0.18	U,I4	0.144	U,I4	22.2	0.0021	U,I4	0.0017	U,I4	21.1
Methylene chloride	mg/kg	30	0.67	U,I4,E	0.536	U,I4,E	22.2	0.0076	U,I4	0.0061	U,I4	21.9
Naphthalene	mg/kg	5.6	0.284	U,I4	0.227	U,I4	22.3	0.0032	U,I4	0.0026	U,I4	20.7
Styrene	mg/kg	-	0.155	U,I4	0.124	U,I4	22.2	0.0018	U,I4	0.0014	U,I4	25.0
Tetrachloroethene	mg/kg	6	0.4	U,I4	0.32	U,I4	22.2	0.0046	U,I4	0.0037	U,I4	21.7
Toluene	mg/kg	10	0.155	U,I4	0.124	U,I4	22.2	0.017	J,I4	0.0014	U,I4	169.6

TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
Volatile Organic Compounds (8260B)												
trans-1,2-Dichloroethene	mg/kg	30	0.245	U,I4,E	0.196	U,I4,E	22.2	0.0028	U,I4	0.0022	U,I4	24.0
trans-1,3-Dichloropropene	mg/kg	18	0.193	U,I4	0.155	U,I4	21.8	0.0022	U,I4	0.0018	U,I4	20.0
Trichloroethene	mg/kg	6	0.271	U,I4	0.216	U,I4	22.6	0.0031	U,I4	0.0025	U,I4	21.4
Trichlorofluoromethane	mg/kg	30	0.387	U,I4	0.309	U,I4	22.4	0.0044	U,I4	0.0035	U,I4	22.8
Vinyl chloride	mg/kg	6	0.271	U,I4,E	0.216	U,I4,E	22.6	0.0031	U,I4	0.0025	U,I4	21.4
Xylenes (total)	mg/kg	30	0.825	U,I4	0.66	U,I4	22.2	0.0094	U,I4	0.0075	U,I4	22.5
Semivolatile Organic Compounds (8270D)												
1,2,4-Trichlorobenzene	mg/kg	19	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
1,2-Dichlorobenzene	mg/kg	6	12.7	U	9.59	U	27.9	1.47	U	1.03	U	35.2
1,2-Diphenylhydrazine	mg/kg	-	5.64	U	4.26	U	27.9	0.655	U	0.459	U	35.2
1,3-Dichlorobenzene	mg/kg	6	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
1,4-Dichlorobenzene	mg/kg	6	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
2,4,5-Trichlorophenol	mg/kg	7.4	24	U	18.1	U	28.0	2.78	U	1.95	U	35.1
2,4,6-Trichlorophenol	mg/kg	7.4	22.6	U	17	U	28.3	2.62	U	1.84	U	35.0
2,4-Dichlorophenol	mg/kg	14	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
2,4-Dimethylphenol	mg/kg	14	11.3	U	8.52	U	28.1	1.31	U	0.919	U	35.1
2,4-Dinitrophenol	mg/kg	160	36.7	U	27.7	U	28.0	4.26	U	2.99	U	35.0
2,4-Dinitrotoluene	mg/kg	140	29.6	U	22.4	U	27.7	3.44	U	2.41	U	35.2
2,6-Dinitrotoluene	mg/kg	28	26.8	U	20.2	U	28.1	3.11	U	2.18	U	35.2
2-Chloronaphthalene	mg/kg	5.6	8.46	U	6.39	U	27.9	0.982	U	0.689	U	35.1
2-Chlorophenol	mg/kg	5.7	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
2-Methylnaphthalene	mg/kg	-	11.3	U	8.52	U	28.1	1.31	U	0.919	U	35.1
2-Methylphenol	mg/kg	5.6	22.6	U	17	U	28.3	2.62	U	1.84	U	35.0
2-Nitroaniline	mg/kg	-	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
2-Nitrophenol	mg/kg	-	21.2	U	16	U	28.0	2.45	U	1.72	U	35.0
3 & 4-Methylphenol	mg/kg	5.6	12.7	U	9.59	U	27.9	1.47	U	1.03	U	35.2
3,3'-Dichlorobenzidine	mg/kg	-	12.7	U	9.59	U	27.9	1.47	U	1.03	U	35.2
3-Nitroaniline	mg/kg	-	39.5	U	29.8	U	28.0	4.58	U	3.21	U	35.2
4,6-Dinitro-2-methylphenol	mg/kg	160	45.1	U	34.1	U	27.8	5.24	U	3.67	U	35.2
4-Bromophenyl phenyl ether	mg/kg	15	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
4-Chloro-3-methylphenol	mg/kg	14	12.7	U	9.59	U	27.9	1.47	U	1.03	U	35.2
4-Chloroaniline	mg/kg	16	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
4-Chlorophenyl phenyl ether	mg/kg	-	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
4-Nitroaniline	mg/kg	28	32.4	U	24.5	U	27.8	3.76	U	2.64	U	35.0
4-Nitrophenol	mg/kg	29	35.3	U	26.6	U	28.1	4.09	U	2.87	U	35.1
Acenaphthene	mg/kg	43.4	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
Acenaphthylene	mg/kg	3	11.3	U	8.52	U	28.1	1.31	U	0.919	U	35.1
Acetophenone	mg/kg	9.7	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Aniline	mg/kg	14	11.3	J	8.52	J	28.1	1.15	U	0.804	U	35.4
Anthracene	mg/kg	3.4	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
Benzidine	mg/kg	-	49.4	U,F	37.3	U,F	27.9	5.73	U,F	4.02	U,F	35.1
Benzo (a) anthracene	mg/kg	3.4	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
Benzo (a) pyrene	mg/kg	3.4	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Benzo (b) fluoranthene	mg/kg	6.8	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Benzo (g,h,i) perylene	mg/kg	1.8	11.3	U	8.52	U	28.1	1.31	U	0.919	U	35.1
Benzo (k) fluoranthene	mg/kg	6.8	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
Benzoic acid	mg/kg	-	60.6	U	45.8	U	27.8	7.04	U,G	4.94	U,G	35.1

TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
Semivolatile Organic Compounds (8270D)												
Benzyl alcohol	mg/kg	-	19.7	U	14.9	U	27.7	2.29	U	1.61	U	34.9
Bis(2-chloroethoxy)methane	mg/kg	7.2	19.7	U	14.9	U	27.7	2.29	U	1.61	U	34.9
Bis(2-chloroethyl)ether	mg/kg	6	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Bis(2-chloroisopropyl)ether	mg/kg	7.2	8.46	U,A9	6.39	U,A9	27.9	0.982	U,A9	0.689	U,A9	35.1
Bis(2-ethylhexyl)phthalate	mg/kg	28	42.3	U	32	U	27.7	4.91	U	3.44	U	35.2
Butyl benzyl phthalate	mg/kg	28	16.9	U	12.8	U	27.6	1.96	U	1.38	U	34.7
Chrysene	mg/kg	3.4	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
Dibenz (a,h) anthracene	mg/kg	8.2	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
Dibenzofuran	mg/kg	-	4.23	U	3.2	U	27.7	0.491	U	0.344	U	35.2
Diethyl phthalate	mg/kg	28	14.1	U	10.7	U	27.4	1.64	U	1.15	U	35.1
Dimethyl phthalate	mg/kg	28	8.46	U	6.39	U	27.9	0.982	U	0.689	U	35.1
Di-n-butyl phthalate	mg/kg	28	31	J	22.4	U	32.2	3.44	J	2.41	U	35.2
Di-n-octyl phthalate	mg/kg	28	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
Diphenylamine	mg/kg	-	16.9	U	12.8	U	27.6	1.96	U	1.38	U	34.7
Fluoranthene	mg/kg	3.4	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
Fluorene	mg/kg	3.4	5.64	U	4.26	U	27.9	0.655	U	0.459	U	35.2
Hexachlorobenzene	mg/kg	10	16.9	U	12.8	U	27.6	1.96	U	1.38	U	34.7
Hexachlorobutadiene	mg/kg	5.6	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
Hexachlorocyclopentadiene	mg/kg	2.4	35.3	U	26.6	U	28.1	4.09	U	2.87	U	35.1
Hexachloroethane	mg/kg	30	16.9	U	12.8	U	27.6	1.96	U	1.38	U	34.7
Indeno (1,2,3-cd) pyrene	mg/kg	3.4	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Isophorone	mg/kg	-	15.5	U	11.7	U	27.9	1.8	U	1.26	U	35.3
Naphthalene	mg/kg	5.6	8.46	U	6.39	U	27.9	0.982	U	0.689	U	35.1
Nitrobenzene	mg/kg	14	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
N-Nitrosodimethylamine	mg/kg	-	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
N-Nitrosodi-n-propylamine	mg/kg	-	14.1	U	10.7	U	27.4	1.64	U	1.15	U	35.1
Pentachlorophenol	mg/kg	7.4	35.3	U	26.6	U	28.1	4.09	U	2.87	U	35.1
Phenanthrene	mg/kg	5.6	7.05	U	5.33	U	27.8	0.818	U	0.574	U	35.1
Phenol	mg/kg	6.2	18.3	U	13.8	U	28.0	2.13	U	1.49	U	35.4
Pyrene	mg/kg	8.2	9.87	U	7.46	U	27.8	1.15	U	0.804	U	35.4
Pyridine	mg/kg	16	73.3	U	55.4	U	27.8	8.51	U	5.97	U	35.1
TCLP Semivolatile Organic Compounds (1311/3510C)												
1,4-Dichlorobenzene	mg/l	7.5	0.004	U	0.004	U	0.0	0.004	U	0.004	U	0.0
2,4,5-Trichlorophenol	mg/l	400	0.006	U	0.006	U	0.0	0.006	U	0.006	U	0.0
2,4,6-Trichlorophenol	mg/l	2	0.006	U	0.006	U	0.0	0.006	U	0.006	U	0.0
2,4-Dinitrotoluene	mg/l	0.13	0.0085	U	0.0085	U	0.0	0.0085	U	0.0085	U	0.0
2-Methylphenol	mg/l	200	0.0065	U	0.0065	U	0.0	0.0065	U	0.0065	U	0.0
3 & 4-Methylphenol	mg/l	200	0.0045	U	0.0045	U	0.0	0.0045	U	0.0045	U	0.0
Benzidine	mg/l	-	0.011	U	0.011	U	0.0	0.011	U,F	0.011	U,F	0.0
Hexachlorobenzene	mg/l	0.13	0.009	U	0.009	U	0.0	0.009	U	0.009	U	0.0
Hexachlorobutadiene	mg/l	0.5	0.008	U	0.008	U	0.0	0.008	U	0.008	U	0.0
Hexachloroethane	mg/l	3	0.0055	U	0.0055	U	0.0	0.0055	U	0.0055	U	0.0
Nitrobenzene	mg/l	2	0.006	U	0.006	U	0.0	0.006	U	0.006	U	0.0
Pentachlorophenol	mg/l	100	0.0135	U	0.0135	U	0.0	0.0135	U	0.0135	U	0.0
Pyridine	mg/l	5	0.0135	U	0.0835	J,Y	144.3	0.0135	U	0.0135	U	0.0

TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
Polychlorinated Biphenyls (8082)												
PCB-1016	mg/kg	10 ⁽⁴⁾	0.159	U	0.168	U	5.5	0.77	U	0.46	U	50.4
PCB-1221	mg/kg	10 ⁽⁴⁾	0.233	U	0.236	U	1.3	0.267	U	0.159	U	50.7
PCB-1232	mg/kg	10 ⁽⁴⁾	0.17	U	0.18	U	5.7	0.204	U	0.122	U	50.3
PCB-1242	mg/kg	10 ⁽⁴⁾	0.057	U	0.061	U	6.8	0.068	U	0.041	U	49.5
PCB-1248	mg/kg	10 ⁽⁴⁾	0.117	U	0.124	U	5.8	0.14	U	0.083	U	51.1
PCB-1254	mg/kg	10 ⁽⁴⁾	0.251	U	0.266	U	5.8	0.3	U	0.179	U	50.5
PCB-1260	mg/kg	10 ⁽⁴⁾	0.186	U	0.197	U	5.7	0.451	U	0.269	U	50.6
Pesticides (3541/8081B)												
4,4'-DDD	mg/kg	0.087	0.074	U	0.0526	U	33.8	0.00868	U	0.00639	U	30.4
4,4'-DDE	mg/kg	0.087	0.0337	U	0.0239	U	34.0	0.00394	U	0.0029	U	30.4
4,4'-DDT	mg/kg	0.087	0.0808	U,D	0.0574	U,D	33.9	0.00947	U	0.00697	U	30.4
Aldrin	mg/kg	0.066	0.0337	U,D	0.0239	U,D	34.0	0.00394	U,F,H	0.0029	U,F	30.4
alpha-BHC	mg/kg	0.066	0.0242	U	0.0172	U	33.8	0.00284	U	0.00209	U	30.4
alpha-Chlordane	mg/kg	0.26	0.113	U	0.0804	U	33.7	0.0133	U	0.00976	U	30.7
beta-BHC	mg/kg	0.066	0.123	U	0.0871	U	34.2	0.0144	U,D,G,K	0.0106	U,D,G	30.4
Chlordane (tech)	mg/kg	0.26	3.37	U	2.4	U	33.6	0.395	U	0.291	U	30.3
delta-BHC	mg/kg	0.066	0.0283	U,F	0.0201	U,F	33.9	0.00331	U	0.00244	U	30.3
Dieldrin	mg/kg	0.13	0.0323	U	0.023	U	33.6	0.00379	U	0.00279	U	30.4
Endosulfan I	mg/kg	0.066	0.0296	U,F	0.0211	U,F	33.5	0.00347	U,F	0.00256	U,F	30.2
Endosulfan II	mg/kg	0.13	0.0377	U,D,F	0.0268	U,D,F	33.8	0.00442	U,F	0.00325	U,F	30.5
Endosulfan sulfate	mg/kg	0.13	0.108	U,D,F	0.0766	U,D,F	34.0	0.0126	U,D,F,H	0.00929	U,D,F	30.2
Endrin	mg/kg	0.13	0.0458	U	0.0325	U	34.0	0.00536	U,H	0.00395	U	30.3
Endrin aldehyde	mg/kg	0.13	0.0512	U	0.0364	U	33.8	0.00599	U	0.00441	U	30.4
Endrin ketone	mg/kg	-	0.132	U	0.0938	U	33.8	0.0155	U	0.0114	U	30.5
gamma-BHC (Lindane)	mg/kg	0.066	0.17	U	0.121	U	33.7	0.0199	U,I,K	0.0146	U	30.7
gamma-Chlordane	mg/kg	0.26	0.108	U	0.0766	U	34.0	0.0126	U	0.00929	U	30.2
Heptachlor	mg/kg	0.066	0.0283	U	0.0201	U	33.9	0.00331	U,D,K	0.00244	U,D	30.3
Heptachlor epoxide	mg/kg	0.066	0.0337	U	0.0239	U	34.0	0.00394	U	0.0029	U	30.4
Isodrin	mg/kg	0.066	0.0269	U,D,F	0.0191	U,D,F	33.9	0.00316	U	0.00232	U	30.7
Methoxychlor	mg/kg	0.18	0.0592	U	0.0421	U	33.8	0.00694	U,D	0.00511	U,D	30.4
Toxaphene	mg/kg	2.6	5.61	U	3.99	U	33.8	0.658	U	0.484	U	30.5
Chlorinated Herbicides (8151A)												
2,4-D	mg/kg	10	0.0968	U	0.0667	U	36.8	0.0925	U	0.0634	U,K	37.3
2,4,5-T	mg/kg	7.9	0.0729	U,K	0.0503	U	36.7	0.058	U	0.0398	U,K	37.2
2,4,5-TP (Silvex)	mg/kg	7.9	0.0823	U	0.0567	U	36.8	0.0725	U	0.0496	U,K	37.5
2,4-DB	mg/kg	-	0.0917	U,F,H	0.0632	U,F	36.8	0.0893	U	0.0612	U,K	37.3
Acifluorfen	mg/kg	-	0.0968	U,D	0.0667	U,D	36.8	0.0121	U	0.00832	U,K	37.0
Dalapon	mg/kg	-	0.47	U,D	0.324	U,D	36.8	0.319	U	0.219	U,I	37.2
Dicamba	mg/kg	-	0.0742	U,K	0.0512	U	36.7	0.047	U	0.0322	U	37.4
Dichloroprop	mg/kg	-	0.0861	U,K	0.0594	U	36.7	0.0701	U	0.048	U	37.4
Dinoseb	mg/kg	2.5	0.0351	U,D,K	0.0242	U,D	36.8	0.0764	U	0.0523	U	37.5

**TABLE 2
COMPARISON OF FIELD DUPLICATE RESULTS
MAX ENVIRONMENTAL TECHNOLOGIES, INC. FACILITY
BULGER, PA**

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	1/25/2018		1/25/2018 Duplicate		1/25/2018 Relative Percent Difference	3/23/2018		3/23/2018 Duplicate		3/23/2018 Relative Percent Difference
			Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers		Result ⁽²⁾	Qualifiers	Result ⁽²⁾	Qualifiers	
Total Cyanide (9014)												
Cyanide (total)	mg/kg	-	3.42	J	1.75	J	64.6	2.02	U	1.34	U	40.5
Amenable Cyanide (4500)												
Amenable Cyanide	mg/kg	-	3.42	J	1.75	J	64.6	2.02	U	1.34	U	40.5
Fluoride (9056A)												
Fluoride	mg/kg	-	1560		1180		27.7	1590		961		49.3
Sulfide (9030/9034)												
Sulfide	mg/kg	-	26.6	U	21.2	U	22.6	30.6	U	21.5	U	34.9
% Solids (2540G)												
% Solids	%	-	7.5		8.65		14.2	6.92		8.08		15.5

NOTES

(1) 40 CFR 268.40 Universal Treatment Standards For Non-Wastewaters. Analytes for which no UTS is available are indicated

(2) Method detection limit reported for non-detected results

(3) No UTS for Total Metals. See TCLP results

(4) UTS for PCB is the sum of all PCB Isomers

NA - Not analyzed

SU - Standard units

A7 - A reduced amount of sample was used during the preparation step due to the matrix of the sample

A9 - This result is intended for end user internal monitoring purposes only. This analyte does not appear on the laboratory scope of accreditation

D - A continuing calibration verification analyzed with the analytical batch recovered above the acceptance range for the noted

E - A continuing calibration verification analyzed with the analytical batch recovered below the acceptance range for the noted

F - The laboratory control sample analyzed with this preparation batch recovered above the acceptance range for the noted

G - The laboratory control sample analyzed with this preparation batch recovered below the acceptance range for the noted

H - The spike recovery was above the acceptance range for the matrix spike and/or matrix spike duplicate sample analyzed with

I - The spike recovery was below the acceptance range for the matrix spike and/or matrix spike duplicate sample analyzed with

I4 - Vials were prepared at the laboratory from the received container

I5 - Vial provided by laboratory contained preservative for 5 grams of sample; however, the vial was received with greater than

J - Detected between the method detection limit and the reporting limit; therefore, the result is an estimated value

J - Data validation indicated that the RPD result between the duplicates is greater than 50%, due to laboratory or field sampling imprecision

K - The RPD result exceeded the quality control limits for the duplicate, laboratory control sample duplicate, or matrix spike

L - The noted analyte was detected in the method blank

Q - Sample was analyzed at a dilution. Reporting limits were adjusted accordingly

T - Result was over the calibration range, but within the linear dynamic range of the instrument for the noted analyte

U - Not detected at reported concentration

U - Data validation indicated that analyte concentration was below the blank action level

Y - Laboratory reports that result may be biased due to possible matrix interference

APPENDIX A

COMPLETED DELISTING PETITION CHECKLIST

3. Facility Responsible for Generating Petitioned Waste. Section A.3

a. Name of facility: Bulger Facility

b. Location of facility:

Street: 200 MAX Drive

City: Bulger

State: PA Zip Code: 15109

c. RCRA ID Number: EPA ID Number - PAD059087072

4. Location of Petitioned Waste. Section A.4

Same as facility name and address given in item 3;

or

a. Name of facility: Same as above

b. Location of facility:

Street: _____

City: _____

State: _____ Zip Code: _____

c. RCRA ID Number: _____

5. Describe the proposed delisting action. Section A.5

6. Provide a statement of your interest in the proposed action. Section A.6

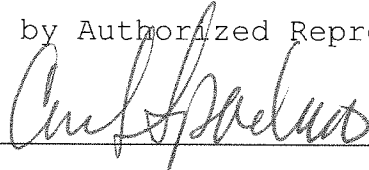
7. Provide a statement of the need and justification for the proposed action. Section A.7

8. Signed Certification Statement.

Section A.8

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed by Authorized Representative*,



Typed Name: Carl Spadaro

Title: Environmental General Manager

*Note: An "authorized representative" is a person responsible for the overall operation of a facility or an operation unit (i.e., part of a facility), for example, a plant manager, superintendent, or person of equivalent responsibility. Consultants or other outside parties should not sign the certification statement.

SECTION B. WASTE AND WASTE MANAGEMENT HISTORY INFORMATION

(Refer to Guidance Manual Section 4.0, "Waste and Waste Management History Information.")

BASIS FOR THE WASTE LISTING

1. Which of the following scenarios best describes the petitioned waste? (Choose the most appropriate scenario and provide the information requested for the chosen scenario.)

Section **B.1**

- a. Petitioned waste is not a mixture of two or more listed hazardous wastes.

Common name of petitioned waste: **Leachate**

EPA Hazardous Waste Number: **F039**

Hazardous waste description: **Leachate ...resulting from the disposal of more than one restricted wastes listed as an F-, K-, P- or U-listed waste.**

- b. Petitioned waste is a mixture of two or more listed hazardous wastes.

Common name of mixture: _____

For all listed wastes provide:

EPA Hazardous Waste Number: _____

Hazardous waste description: _____

Common name: _____

- c. Petitioned waste is a mixture of one or more solid non-hazardous wastes and one or more listed hazardous wastes, as described in 40 CFR §261.3(a)(2)(iii-iv).

Common name of mixture: _____

Solid waste(s) common name(s): _____

For all listed wastes provide:

EPA Hazardous
Waste Number: _____

Hazardous waste
description: _____

Common name: _____

- d. Petitioned waste is generated from the treatment, storage, or disposal of one or more listed hazardous wastes (or solid non-hazardous and listed hazardous waste mixture), as described in 40 CFR §261.3(c)(2)(i).

Description of
petitioned waste: _____

Common name of
petitioned waste: _____

Solid waste(s)
common name(s): _____

For all listed wastes provide:

EPA Hazardous
Waste Number: _____

Hazardous waste
description: _____

Common name: _____

2. Describe the physical form of the petitioned waste. Section **B.1**
3. If the physical form is sludge or liquid, estimate based on waste analysis the percentage of solids (e.g., provide a range). Section **B.1**

HISTORY OF WASTE GENERATION

4. Which of the following describes the generation of the petitioned waste: (Indicate those that apply and provide the information requested for each item.) Section B.2

- a. Waste has been generated in the past.

Provide the year when waste was first generated:

1958 (Impoundment 1/1A);
1980 Impoundment 2) as
F039

Provide the year when waste generation ended (if applicable): _____

- b. Waste is presently being generated.

Provide the year when waste was first generated: _____

- c. Waste will be generated in the future.

VOLUME OF PETITIONED WASTE

5. Is the petition for a waste of fixed quantity (e.g., a discrete volume of waste contained in a unit)?

Yes [Answer item 5a]

No [Answer item 5b]

- a. Petitioned waste is/will be a fixed quantity.

Section _____

Estimated volume: _____
Quantity Unit of measurement

Describe the method of volume estimation.

- b. Petitioned waste is/will be generated on a routine or continuous basis. Section B.3

	Average Quantity	Maximum Quantity	Unit of Measurement
Monthly Volume	<u>50</u>	<u>80</u>	<u>cubic yards</u>
Annual Volume	<u> </u>	<u> </u>	<u> </u>

Describe the method of volume estimation.

HISTORY OF WASTE MANAGEMENT

6. As appropriate, describe the present, past, and proposed waste management methods for the petitioned waste. Section B.4

- a. Present waste management methods, and off-site facility or facilities used (name, address, and waste management method).
- b. Past waste management methods, if different from present, and off-site facility or facilities used (name, address, and waste management method).
- c. Proposed waste management methods if delisting petition is granted, and off-site facility or facilities to be used (name, address, and waste management method).

SECTION C: PROCESS AND WASTE MANAGEMENT INFORMATION

(Refer to Guidance Manual Section 5.0, "Process and Waste Management Information.")

GENERAL OPERATIONS AT THE GENERATING FACILITY

1. Describe facility business area(s) and operations. Include SIC code(s). Section C.1

SIC

4	9	5	3
---	---	---	---

 : Refuse Systems (NAICS code: 562219)

SIC

--	--	--	--

 : _____

2. List and describe products manufactured at the facility. Section C.1

3. List and describe all wastes (including all hazardous wastes) generated at the facility. Section C.1

4. Describe your manufacturing and waste treatment areas and waste management units. Attach schematics showing the layout of the facility. Section C.1

5. Describe the regulatory status of all on-site waste treatment, storage, and disposal units. Include a list of all hazardous waste permits and other permits issued under Federal and State environmental statutes. Include the permit numbers in this list. Section C.1

CONTRIBUTING MANUFACTURING PROCESSES

6. Describe and include schematics of all "pre-process" steps used to prepare materials for processing prior to primary manufacturing operations, including surface and equipment preparation operations. Identify all pre-process material inputs and outputs in your descriptions and schematics.
Section C.2

7. Provide a step-by-step description and schematic of each manufacturing process contributing to the petitioned waste. Include each process step, reactions occurring, flow rates, and material inputs and outputs, as well as reaction intermediates and byproducts. Identify and describe waste inputs and outputs on the schematic(s) and indicate how each waste is managed.
Section C.2

8. Describe, and identify on the schematic, exactly where the petitioned waste is generated (if generated by a manufacturing process).
Section C.2

9. List and describe all process equipment, including the function of each unit and the ranges of the operating parameters.
Section C.2

10. Describe all of your operating cycles (batch cycles, versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis, as appropriate. Identify periods when process wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).
Section C.2

11. Assess the extent that all contributing manufacturing processes, operations, process materials, or generated wastes have varied in the past or may vary in the future.
Section C.2

12. Describe how the composition and generation rate of the petitioned waste may periodically vary due to any aspect of manufacturing process variability.
Section C.2

13. Does a waste treatment process contribute to the petitioned waste?

Yes [Continue with item 14]

No [Skip to item 22]

CONTRIBUTING WASTE TREATMENT PROCESSES

14. Provide a step-by-step description and schematic of each waste treatment process contributing to the petitioned waste. Include process steps, reactions occurring, flow rates, material inputs, and waste inputs and outputs. Section C.3

15. Describe, and identify on the schematic, exactly where the petitioned waste is generated (if applicable).

Section C.3

16. Identify and describe waste inputs and outputs on the schematic(s) and indicate how each waste is managed.

Section C.3

17. Describe all non-process wastes entering the waste treatment processes, including composition, rate of inputs, and source.

Section C.3

18. List and describe all process equipment, including the function of each unit and the ranges of the operating parameters.

Section C.3

19. Describe all of your operating cycles (batch cycles versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis, as appropriate. Identify periods when treatment wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).

Section C.3

20. Assess the extent that all contributing treatment processes, operations, process materials, or generated wastes have varied in the past or may vary in the future. Section C.3

21. Describe how the composition and generation rate of the petitioned waste may periodically vary due to any aspect of treatment process variability. Section C.3

22. Has the petitioned waste been managed in a land-based unit?

Yes [Continue with item 23]

No [Skip to item 25]

WASTE MANAGEMENT OPERATIONS

23. Provide the following information (items 23a through 23g) for each unit that is (or was) used to manage the petitioned waste: Section C.4

(If the petitioned waste is managed in more than one unit, assign a number to each unit (e.g., Unit #1, Unit #2, etc.) and use the unit numbers to associate a description with a specific unit.)

- a. Unit location/address (indicate if on- or off-site).
- b. Description of unit construction (current design and materials).
- c. History of unit design (e.g., chronological summary of any changes to original construction).
- d. Purpose and description of any unit design and operating modifications.
- e. Estimated surface area.
- f. Estimated unit capacity volume.

g. Listing of waste and material inputs which have occurred throughout the life of the unit, if known.

24. Provide detailed schematic(s) of the waste unit(s) showing (as appropriate) unit dimensions, influent point(s), effluent point(s), and waste thickness. Section C.4

PROCESS MATERIALS

25. List all materials used in the operations that contribute to the petitioned waste. The list should include: Section C.5

a. The name of the material(s).

b. The process/operation in which it is used (i.e., manufacturing process, treatment process, waste management operations).

c. Function of each material in the process.

d. Approximate annual quantities used.

26. Provide Material Safety Data Sheets (MSDS) and any other compositional information for tradename and non-elemental materials. Section C.5

27. Specify the source, quality (i.e., recycled or virgin), and quantity of oil, grease, and hydraulic fluids entering the processes. Section C.5

SPECIAL INFORMATION

28. Are you requesting an upfront exclusion for a waste that is not currently generated but will be in the future?

Yes [Continue with item 29]

No [Skip to item 32]

29. Explain how the bench-scale or pilot-scale process demonstration adequately models the proposed full-scale process. Section NA

30. Explain any real or potential differences between the two processes. Section NA

31. Describe the impact of those differences on the character of the petitioned waste. Section NA

32. Are you requesting an exclusion for a waste generated by a multiple waste treatment facility (MWTF)?

Yes [Continue with item 33]

No [Skip to Section D]

33. Describe your procedure for prescreening clients and wastes and how this procedure will be implemented should your waste be excluded. Section NA

34. Describe the procedures by which you will ensure that: (1) treatment levels required by an exclusion are maintained and (2) a hazardous waste is not disposed improperly as non-hazardous. Section NA

SECTION D: ANALYTICAL PLAN DEVELOPMENT

(Refer to Guidance Manual Section 6.0, "Analytical Plan Development.")

1. Provide a complete list of the constituents and parameters of concern identified for your petitioned waste based on appropriate waste constituent analyses and the results of an engineering analysis. Identify those constituents quantitated by laboratory analysis and those quantitated using mass balance demonstrations. Section D.1
2. Provide mass balance demonstrations for those constituents of concern in your list for which analyses were not conducted. Provide all calculations and assumptions. Section D.2
3. Explain why any other delisting constituent of concern is not on the constituent of concern list for your petitioned waste. Section D.3
4. Explain why your petitioned waste does not exhibit any hazardous waste characteristic for which analysis was not conducted. Section D.4

SECTION E: SAMPLING AND ANALYSIS INFORMATION

(Refer to Guidance Manual Sections 7.0 and 8.0, "Sampling Plan Development" and "Waste Sampling and Analysis Information," respectively.)

1. Has a draft sampling and analysis plan been submitted to EPA for review prior to petition preparation? Section E.1

Yes [Answer items 1a and 1b]

No [Skip to item 2]

a. Submittal date of sampling and analysis plan _____ / _____ / _____

b. Log number assigned by EPA to your draft submittal _____

WASTE SAMPLING INFORMATION

2. Were all sampling-related activities performed by in-house staff?

Yes [Answer items 2a and 2b]

No [Answer item 2b]

- a. Name and address of the organization(s) or company(s) responsible for designing the sampling strategy and collecting the samples. Section E.1

Name KEY Environmental, Inc. and Field and Technical Services, Inc
Street 200 Third Avenue
City Carnegie State PA Zip 15106
Telephone (412) 279-3363

- b. For each individual person (in-house or otherwise) who designed the sampling plan, the quality control plan, and/or participated in sample collection, please provide a resume of qualifications and the following information: Section E.1

Name _____
Affiliation _____
Title _____

SAMPLING STRATEGY

3. Provide the following information (items 3a through 3f) on the sampling strategy you followed to ensure that the samples were representative. Section E.2

- a. Identify which process point discharges, containment areas (e.g., lagoons), or other areas (e.g., soil) were sampled and why these areas were selected for sample collection.
- b. Describe the techniques and guidelines used to select waste sampling points (e.g., random sampling procedure or fixed transect and offset sampling procedure).
- c. Describe the sampling and subsampling (i.e., transferring of sample aliquots into containers specific to certain analyses) procedures used during the sample collection process, including the particular days and times selected for sample collection, the number of grab samples collected for each composite sample, and why these procedures were used.
- d. Describe the sampling devices used for sample collection and the basis for selecting the devices.
- e. Identify and discuss any deviations from your original sampling plan and strategy and the impact of these deviations on waste characterization.
- f. Explain why you believe the samples collected are non-biased and sufficiently represent the petitioned waste. In this explanation, fully address the potential for waste uniformity or spatial and temporal variability and how the strategy ensured collection of representative samples

SAMPLE SPECIFIC INFORMATION

4. How many samples of the petitioned waste were collected?

Section E.3

5. For each individual sample collected, please provide the following sample-specific information (items 5a through 5g).

a. For each sample included in item 4, provide the sample identification number (as it appears in your field logbook and other records), the date that the sample was taken, an indication as to what type of sample it is (waste sample versus quality control sample and whether or not it is a composite sample).

Section E.3.1

Type of Sample
[Mark one box only]

Sample Identification Number	Date Sample Was Taken	Waste Sample	Quality Control Sample	Composite Sample	
				Yes	No
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- b. Describe how each sample was collected, and its point of collection from the petitioned waste. If a sample is a composite of grabs, provide the number of grab samples collected for the composite sample, the sampling location for each grab sample, the volume of each grab sample, and the volume of the composite sample. Section E.3
- c. Describe the general sampling location (e.g., which quadrant of a surface impoundment) and the specific sampling points (e.g., specific location in the quadrant). You may refer to numbered sampling points indicated in a diagram. Section E.3
- d. Describe how each sample was composited (e.g., equipment used and manner of mixing). Section E.3
- e. Provide a physical description of each sampling at time of collection (e.g., color, odor, whether phase separation occurred soon after collection). Section E.3
- f. for each composite sample, specify the time and date when the grab samples were collected and the time and date when the sample was composited, as applicable. Section E.3
- g. Describe the handling and preparation techniques used for each sample (including types of containers used and techniques employed for container preparation) and types and amounts of preservatives used. Section E.3

OTHER GENERAL INFORMATION

6. Describe the weather conditions during sampling (if conducted outdoors). Section E.4
7. Describe any facility activities separate from sampling that occurred at the same time and might have affected sample representativeness. Section E.4

8. Describe sampling device decontamination; and note when disposable devices were used for sample collection.
Section E.4
9. Were the chain-of-custody procedures specified in SW-846 followed?
Yes [Skip to item 11]
No [Continue with item 10]
10. Provide a description of the quality control procedures and documentation system used to track sample location and maintain sample integrity during transportation to the laboratory. Copies of the chain-of-custody forms may be provided, but are not required. Section E.4

LOCALIZED AREA OF CONTAMINATION

11. Have you collected samples to characterize a localized area of contamination (a "hot spot") within the petitioned waste?
Yes [Continue with item 12]
No [Skip to item 16]
12. Discuss your basis for believing a hot spot may or does exist (e.g., records of a one-time discharge of a concentrated material at a specific location). Section NA
13. Describe the known or predicted location (on a diagram) and the dimensions (e.g., depth, width and length) of the hot spot. Section NA
14. Identify the samples specifically collected to characterize the hot spot. Section NA
15. Explain why the samples sufficiently represent the hot spot. Section NA

MULTIPLE WASTE TREATMENT FACILITY

16. Have you collected samples to characterize a waste generated by a multiple waste treatment facility (MWTF)?

Yes [Continue with item 17]

No [Skip to item 21]

17. List and describe the untreated wastes that were treated and are represented by the treatment residue samples collected during the sampling period. Section NA

18. Provide the percentage of total wastes treated annually that was represented by the sampling period. Section NA

19. List and briefly describe the untreated wastes that also are treated at the facility but were not represented by the sampling period. Section NA

20. Explain why the wastes not represented by the sampling period are not expected to contain any other hazardous constituents of concern, different levels of constituents of concern, or other different characteristics than that represented by the sampling period. Section NA

WASTE ANALYSIS INFORMATION

21. Was sample analyses done by in-house staff?

No [Answer items 21a and 21b]

Yes [Answer item 21b]

a. Name and address of the organization(s) or company(s) responsible for sample analyses. Section E.7.1

Name Ms Michelle Fye c/o Fairway Laboratories, Inc
Street 2019 Ninth Avenue
City Altoona State PA Zip Code 16603
Telephone (814) 946-4306

b. For each individual person (in-house and otherwise) who conducted analyses or was responsible for data reduction, validation, and laboratory quality control, please provide a resume of qualifications and the following information: Section E.7.1

Name _____
Affiliation _____
Title _____

22. Provide your signed laboratory data reporting forms from all analyses, including results from quality control analyses. Section E.7.1

23. Provide the following information on each sample and each analysis. Section E.7.2

a. Sample identification numbers as logged during collection and as assigned by the laboratory.

b. Type of sample (e.g., waste sample, waste sample replicate, equipment blank, field blank.)

c. Date of sample receipt by the laboratory.

- d. The sample workup or preparation method and reference for the method (e.g., SW-846 Method 3500).
 - e. The date of sample workup or preparation.
 - f. The name of the person conducting the analysis.
 - g. The date of extraction and analysis.
 - h. The test method used and the source of the test method (e.g., SW-846 Method 8020).
 - i. The specific constituent, parameter, or hazard for which analysis was conducted.
 - j. The test results, expressed in appropriate units (e.g., mg/L, mg/kg).
 - k. The basis for the analysis (e.g., wet weight, dry weight).
 - l. The quantitation limits.
24. Provide the names and model numbers of all equipment used during analysis. Section **E.7.1**
25. Provide all other information necessary to fully interpret the test procedures or results. Section **NA**

26. For each quality control analysis that involved a matrix or a surrogate spike and spike duplicate analysis, provide the following information. Section E.7.5

- a. The name of the spike analyte added.
- b. The concentration of the spike analyte in the unspiked sample.
- c. The amount of the spike analyte added.
- d. The measured amount of the spike in both spiked samples.
- e. The calculated percent recovery of the spike and method of calculation.
- f. The acceptance criterion for recovery of each matrix spike.
- g. The relative percent difference (RPD) between the duplicate results.
- h. The acceptance criterion for the RPD.

27. Identify whether the waste analytical data was corrected based on quality control results (e.g., blank analysis) and explain how the correction was made. Section E.7.5

28. Explain any inconsistencies or deviations found in the reported analytical results. The discussion should include any observed analytical interferences and what actions were taken to resolve the problems. Section E.7.6

SECTION F: GROUND-WATER MONITORING INFORMATION

(Refer to Guidance Manual Section 9.0, "Ground-water Monitoring Information.")

1. Indicate which of the following describes the management of the petitioned waste. Section F.1
 - a. The petitioned waste is currently managed in a land-based waste management unit (on-site or off-site), and ground-water monitoring is required pursuant to 40 CFR Part 264 or 265 or authorized State equivalent, or other Federal, state, or local requirements; or if ground-water monitoring information is otherwise available for the unit.
[Go to item 2]
 - b. The petitioned waste was once managed (but is no longer) in a land-based waste management unit (on-site or off-site) and ground-water monitoring was required pursuant to 40 CFR part 264 or 265 or authorized State equivalent, or other Federal, state, or local requirements; or if ground-water monitoring information is otherwise available for the unit.
[Go to item 2]
 - c. The petitioned waste is currently managed, or was once managed, in a land-based waste management unit, but ground-water monitoring requirement has been waived.
[Go to item 9]
 - d. The petitioned waste is currently managed, or was once managed, in one or more land-based waste management units containing also significant amounts of other wastes, and you consider ground-water data from these non-dedicated units are immaterial in evaluating the petitioned waste's impact on ground-water quality.
[Go to item 10]
 - e. None of the above management scenarios apply.
[Go to item 11]

2. Has the appropriate responsible party previously submitted ground-water monitoring information for the subject units to an EPA Regional office or an authorized State in response to 40 CFR part 264 or 265 requirements (or authorized State equivalent)?

Yes [Continue with item 3]

No [Skip to item 5]

3. Do you wish that we directly obtain the ground-water monitoring information from the EPA Region of State?

Yes [Complete item 4 and continue with item 6]

No [Skip to item 5]

4. Indicate the EPA Regional or State contact for obtaining the ground-water monitoring information (include name of contact, affiliation, mailing address, and phone number).

Section NA

a. Name of contact: Diane McDaniel

b. Affiliation: Bureau of Waste Management, PADEP

c. Title of report (if applicable): _____

d. Street/P.O. Box: 400 Waterfront Drive

City: Pittsburgh

State: PA Zip Code: 15222

e. Phone: (412)442-4153

5. Provide all available and relevant (e.g., for each unit used to manage the petitioned waste) ground-water monitoring information and reports which, at a minimum, should include:

Section F.2

a. A description of site geology and hydrology.

- b. A description of the ground-water monitoring systems for the units in which the petitioned waste is (or was) managed.
- c. The results obtained from the analysis of ground-water samples.
- d. A discussion of sampling and analytical procedures followed in obtaining and analyzing the ground-water samples.
- e. Any additional information necessary to characterize the petitioned waste's impact on ground-water quality.
- f. An analysis and discussion of whether the above-listed information and data that indicate contamination of the ground-water is attributable to the petitioned waste.

6. Is the unsaturated (vadose) zone monitored at any of the subject units?

Yes **[Continue with item 7]**

No **[Skip to item 8]**

7. Provide the following information on vadose zone monitoring (e.g., lysimeter information) in as much detail as possible (similar to that requested for ground-water monitoring systems).

Section **F.2**

- a. A description of regional, local, and unit-specific geology and hydrology, and soil characteristics.
- b. A description of the monitoring system(s) (e.g., design and construction).

- c. A description of the sampling and analytical procedures followed.
 - d. Analytical and QC data obtained from sample analysis.
 - e. An interpretation of the information and data presented.
8. Discuss whether ground-water contamination exists on the site and, if it does, identify the source. If the source is not the petitioned waste, explain, with supporting information, why the petitioned waste has not contributed to the contamination. Section F.2
[End]
9. Provide documentation on the waiver or exemption of ground-water monitoring at the land-based waste management unit containing the petitioned waste. Section NA
[End]
10. Identify the units in question, provide estimates of the relative volumes of the petitioned and other wastes disposed in the units, and discuss in detail why you consider ground-water data from these non-dedicated units are immaterial in evaluating the petitioned waste's impact on ground-water quality. Section NA
[End]
11. Describe why ground-water monitoring is not required for your petitioned waste. Section NA

APPENDIX B

DRAWING SET OF VERTICAL INCREASE OF LANDFILL 6

APPLICATION-DRAWING SET MAJOR PERMIT MODIFICATION VERTICAL INCREASE OF IMPOUNDMENT NO. 6 MAX ENVIRONMENTAL TECHNOLOGIES, INC. - YUKON FACILITY SOUTH HUNTINGDON TWP., WESTMORELAND CO., PENNSYLVANIA

PERMIT NO. 301071

PREPARED FOR:



MAX ENVIRONMENTAL TECHNOLOGIES, INC.
1815 WASHINGTON ROAD
PITTSBURGH, PA 15241

PREPARED BY:



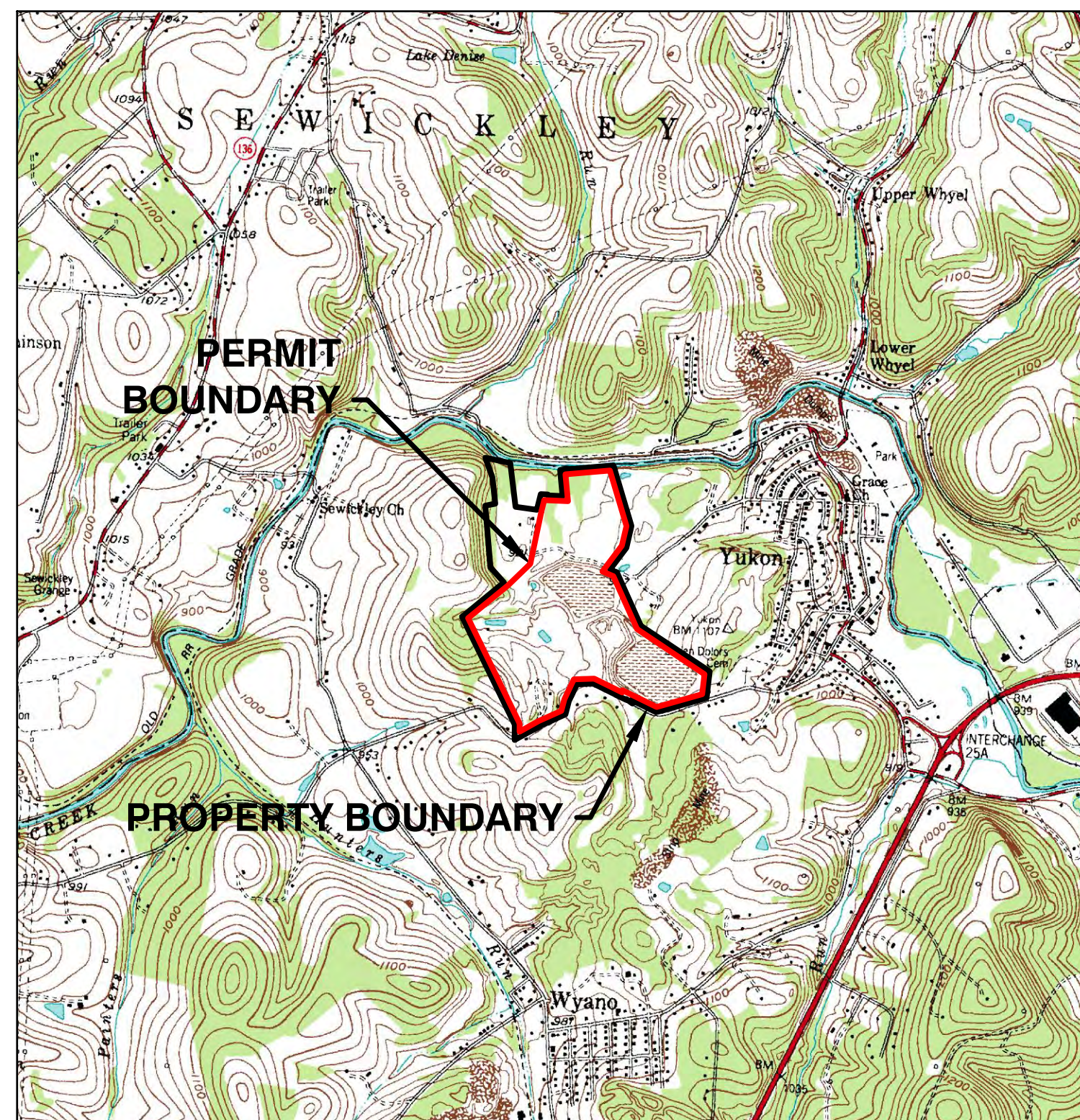
**CIVIL & ENVIRONMENTAL
CONSULTANTS, INC**
4000 TRIANGLE LANE, SUITE 200
EXPORT, PA 15632

INITIAL SUBMITTAL: AUGUST 2012

- △ REVISION NO. 1: APRIL 2013
- △ REVISION NO. 2: MARCH 2014
- △ REVISION NO. 3: NOVEMBER 2014
- △ REVISION NO. 4: MAY 2015
- △ REVISION NO. 5: DECEMBER 2015

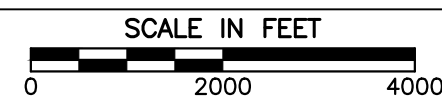
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△	3/20/14	REVISED TO ADDRESS DEP COMMENT LETTER DATED 8/29/2013
△	11/20/14	REVISED TO ADDRESS DEP COMMENT LETTER DATED 9/11/2014
△	5/20/15	REVISED TO ADDRESS DEP COMMENT LETTER DATED 4/8/2015
△	12/20/15	REVISED TO ADDRESS DEP COMMENT LETTER DATED 10/20/2015

SUBMITTAL RECORD		
NO	DATE	DESCRIPTION



REFERENCE
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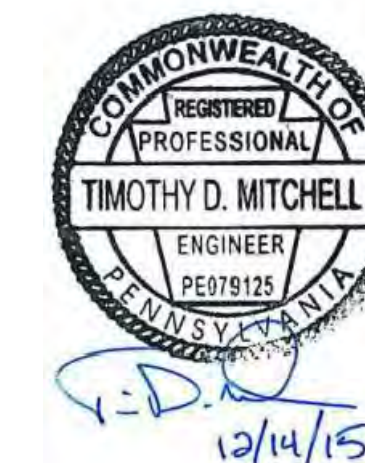
LOCATION MAP



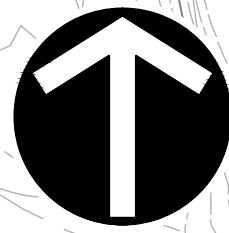
DRAWINGS		
DRAWING TITLE	DRAWING NO.	REVISION NO.
TITLE SHEET	P-000	5
GENERAL SITE ARRANGEMENT	P-090	3
EXISTING CONDITIONS - AND SUBSURFACE INVESTIGATION	P-100	3
PERMITTED BASE GRADES	P-101	-
PERMITTED FINAL GRADING	P-102	-
PREVIOUSLY PERMITTED LEACHATE DETECTION ZONE	P-103	2
PREVIOUSLY PERMITTED LEACHATE COLLECTION ZONE	P-104	2
PREVIOUSLY PERMITTED DETAILS	P-105	2
PROPOSED FINAL GRADING	P-200	5
PHASING (SHEET 1 OF 2)	P-201	5
PHASING (SHEET 2 OF 2)	P-202	5
SITE IMPROVEMENTS TO BE PERFORMED PRIOR TO PHASE 1 WASTE ACCEPTANCE	P-203	3
EROSION, SEDIMENT, AND STORMWATER CONTROL PLAN	P-300	5
ENGINEERING CROSS-SECTIONS	P-400	5
DETAILS (SHEET 1 OF 5)	P-500	5
DETAILS (SHEET 2 OF 5)	P-501	5
DETAILS (SHEET 3 OF 5)	P-502	5
DETAILS (SHEET 4 OF 5)	P-503	5
DETAILS (SHEET 5 OF 5)	P-504	5
ALTERNATIVE SLUDGE DEWATERING PLAN	P-600	2
LEACHATE TRANSMISSION LINE AND ABOVE GROUND STORAGE TANK PLAN	P-700	5
ABOVE GROUND STORAGE TANK TYPICAL FOUNDATION DETAILS	P-701	5
LEACHATE STORAGE TANK MINE GROUTING PLAN	P-702	5

NOTE:

- AS SHOWN ON THESE DRAWINGS, IN AREAS WHERE THE PERMIT BOUNDARY IS SHOWN ADJACENT TO A PROPERTY BOUNDARY, THE PERMIT BOUNDARY SHALL BE CONSIDERED COINCIDENT WITH THE PROPERTY BOUNDARY.



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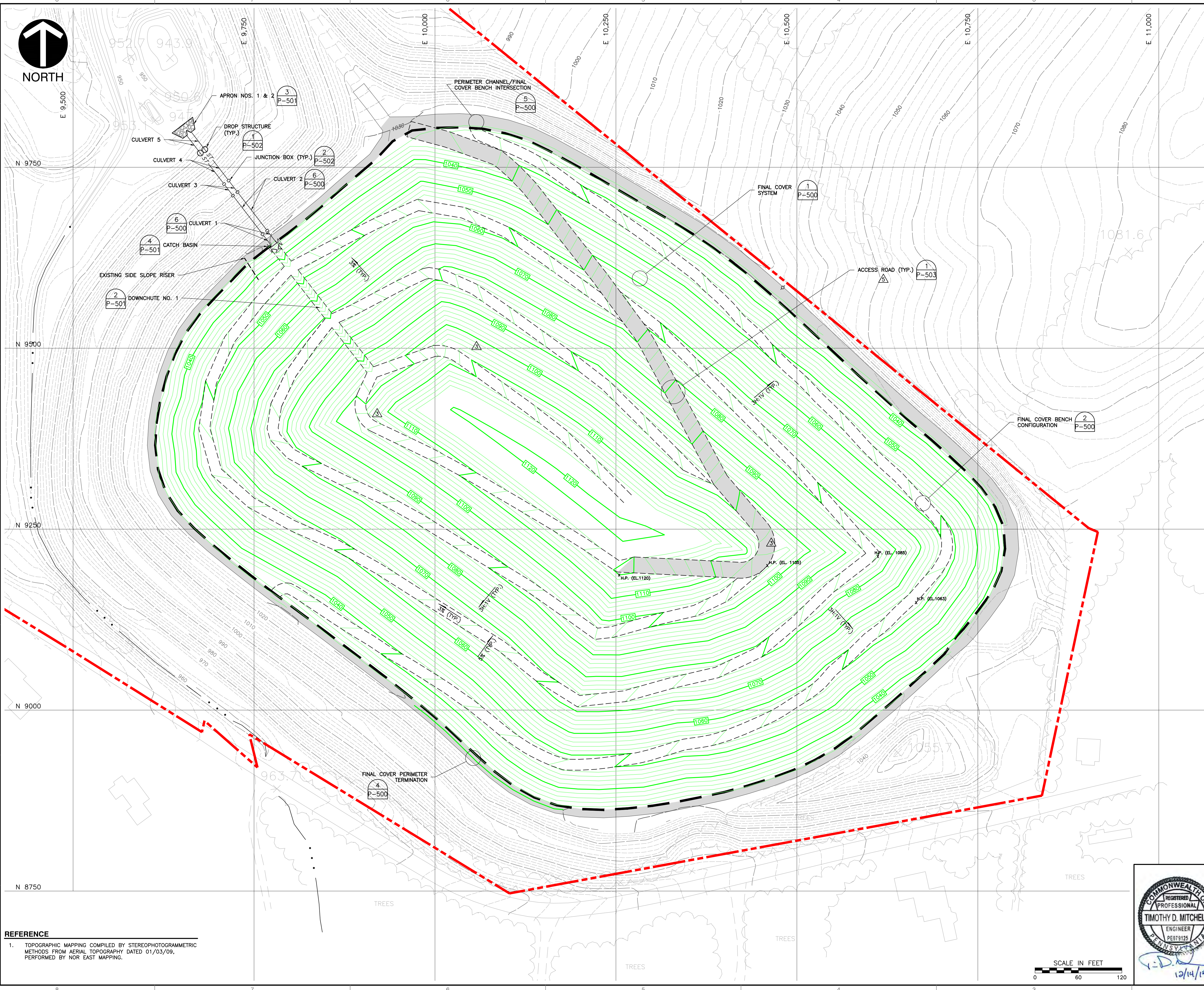
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REVISION RECORD		
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2	12/2015	REVISED TO ADDRESS DEP COMMENT LETTER DATED 10/20/2015
SUBMITTAL RECORD		
NO	DATE	DESCRIPTION

LEGEND	
	870 EXISTING INDEX CONTOUR
	EXISTING INTERMEDIATE CONTOUR
	PROPOSED FINAL GRADING INDEX CONTOUR
	PROPOSED FINAL GRADING INTERMEDIATE CONTOUR
	LIMITS OF BENCHES
	APPROXIMATE LIMIT OF WASTE PLACEMENT
	PERMIT BOUNDARY/PROPERTY LINE
	STORMWATER CULVERT
	APRON
	JUNCTION BOX
	DETAIL DESIGNATION
	SHEET WHERE DETAIL IS SHOWN

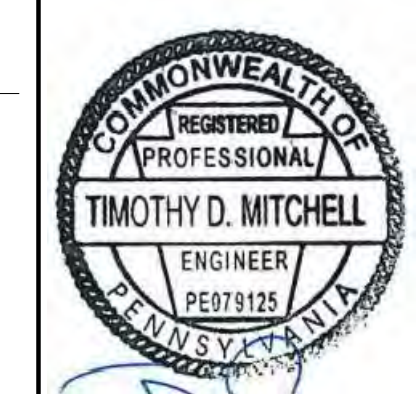
NOTE

1. THE PERMIT BOUNDARY FOR THE FACILITY COINCIDES WITH THE PROPERTY BOUNDARY.



REFERENCE

1. TOPOGRAPHIC MAPPING COMPILED BY STEREOPHOTOGAMMETRIC METHODS FROM AERIAL TOPOGRAPHY DATED 01/03/09, PERFORMED BY NOR EAST MAPPING.



* HAND SIGNATURE ON FILE

C&E
Civil & Environmental Consultants, Inc.
4000 Triangle Lane, Suite 200 - Export, PA 15632
Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
www.ccecinc.com

MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON FACILITY
VERTICAL INCREASE OF IMPOUNDMENT NO. 6
SOUTH HUNTINGDON TOWNSHIP,
WESTMORELAND COUNTY, PENNSYLVANIA

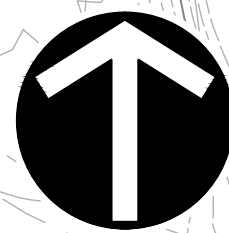
DRAWN BY: RJP CHECKED BY: TDM APPROVED BY: *ECD
DATE: JULY 2012 DWG SCALE: 1"= 60' PROJECT NO: 111-935.0002

PROPOSED FINAL GRADING

P-200

12/14/15

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NORTH

REVISION RECORD		
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2	12/20/15	REVISED TO ADDRESS DEP COMMENT LETTER DATED 10/20/2015

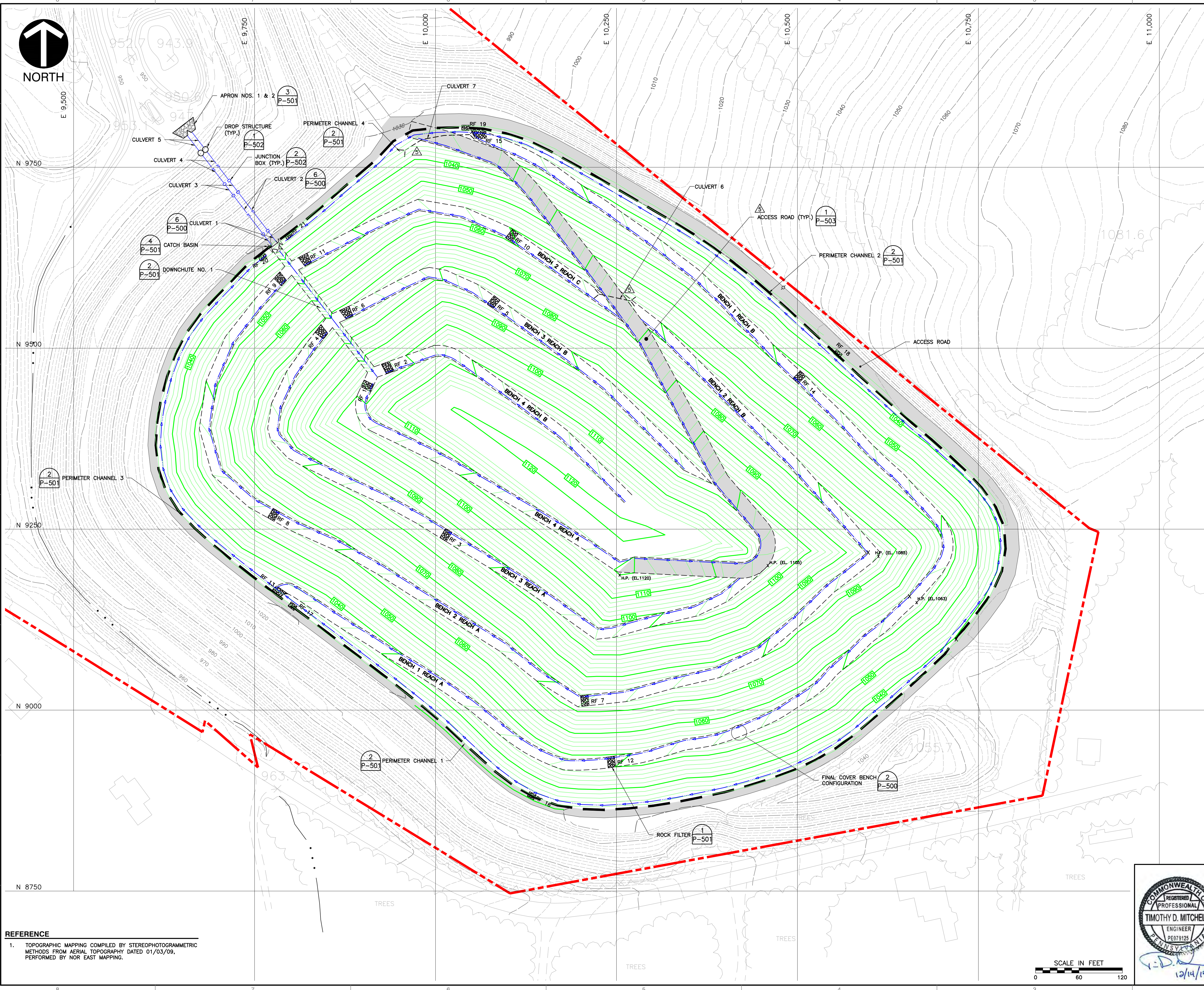
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LEGEND

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		PROPOSED FINAL GRADING INTERMEDIATE CONTOUR
		LIMIT OF BENCHES
		DRAINAGE SWALE/CHANNEL
		STORMWATER CULVERT
		PERMIT BOUNDARY/PROPERTY LINE
	RF1	ROCK FILTER
		APRON
		JUNCTION BOX
		DROP STRUCTURE
		DETAIL DESIGNATION
	P-500	SHEET WHERE DETAIL IS SHOWN

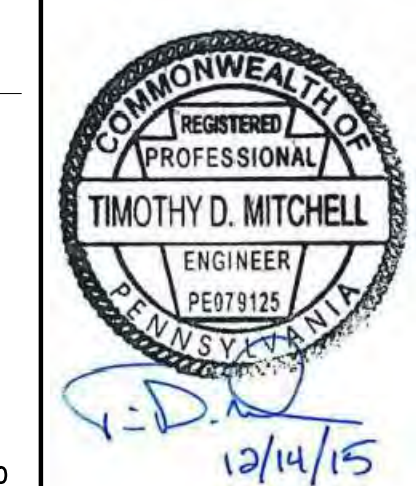
NOTE

1. THE PERMIT BOUNDARY FOR THE FACILITY COINCIDES WITH THE PROPERTY BOUNDARY.



REFERENCE

1. TOPOGRAPHIC MAPPING COMPILED BY STEREOPHOTOGRAMMETRIC METHODS FROM AERIAL TOPOGRAPHY DATED 01/03/09, PERFORMED BY NOR EAST MAPPING.



* HAND SIGNATURE ON FILE

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Civil & Environmental Consultants, Inc.
4000 Triangle Lane, Suite 200 - Export, PA 15632
Ph: 724.327.5200 - 800.899.3610 - Fax: 724.327.5280
www.ccecinc.com

MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON FACILITY
VERTICAL INCREASE OF IMPOUNDMENT NO. 6
SOUTH HUNTINGDON TOWNSHIP,
WESTMORELAND COUNTY, PENNSYLVANIA

DRAWN BY: RJP	CHECKED BY: TDM	APPROVED BY: *EDC
DATE: JULY 2012	DWG SCALE: 1" = 60'	PROJECT NO: 111-935.0002

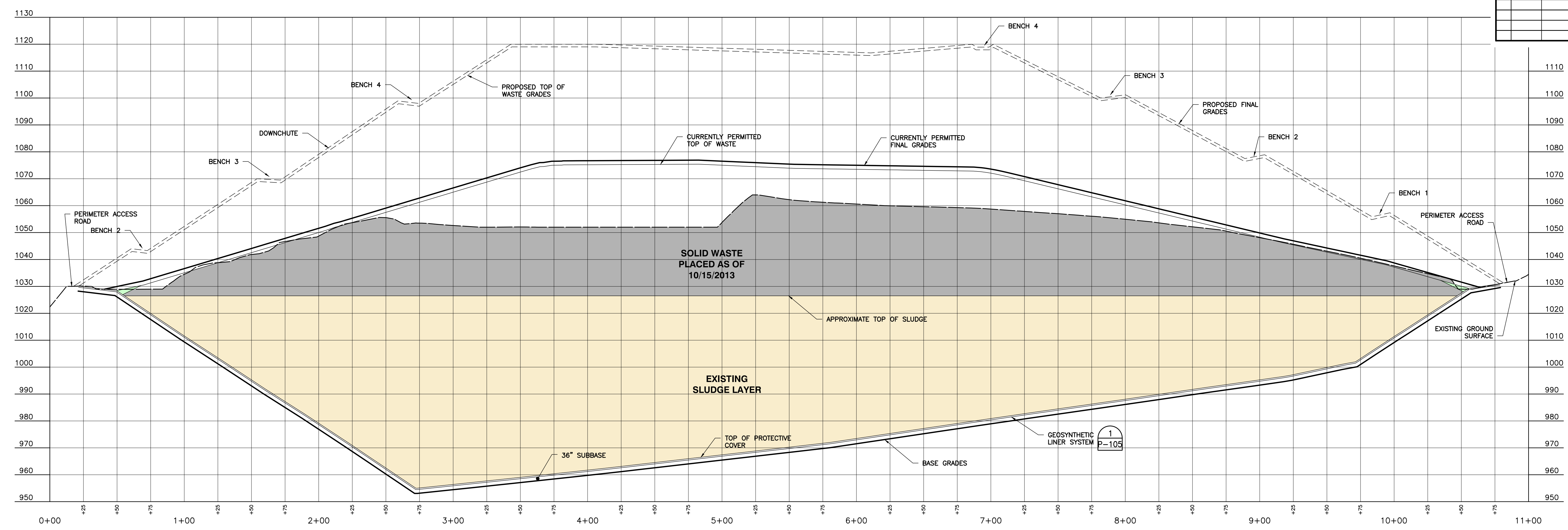
EROSION, SEDIMENT, AND STORMWATER CONTROL PLAN

P-300

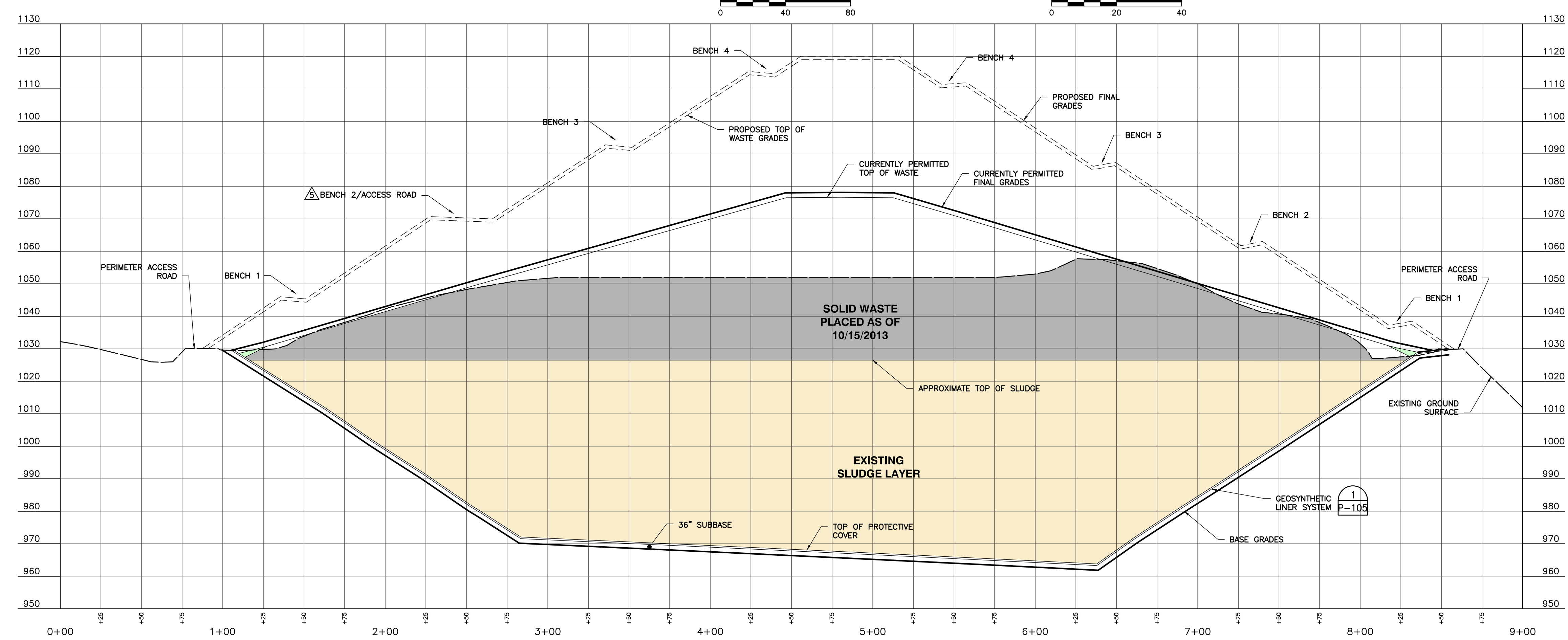
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2	12/20/15	REVISED TO ADDRESS DEP COMMENT LETTER DATED 10/20/2015

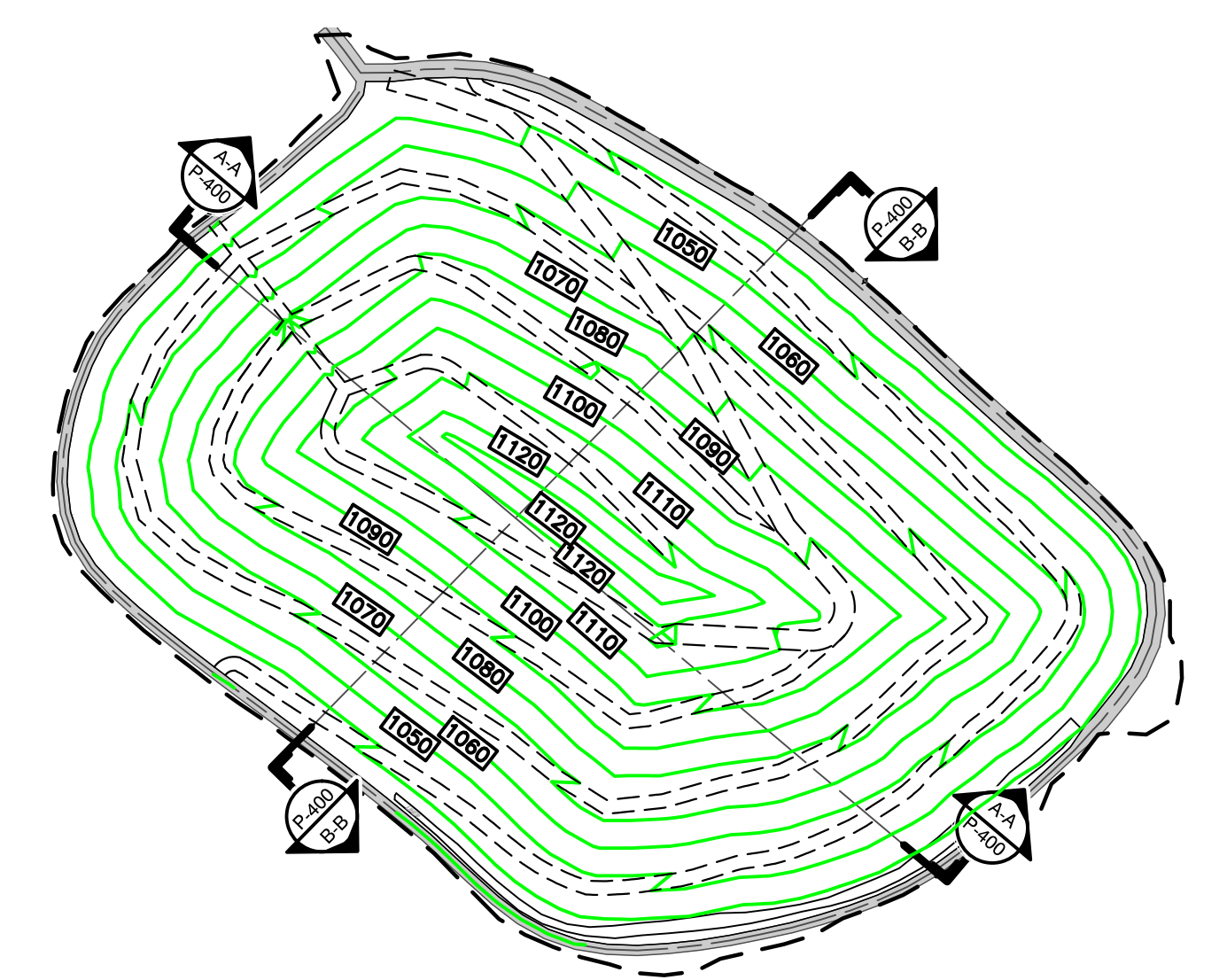
SUBMITTAL RECORD		
NO	DATE	DESCRIPTION



CROSS-SECTION A-A
 HORIZONTAL SCALE IN FEET: 0 40 80
 VERTICAL SCALE IN FEET: 0 20 40



CROSS-SECTION B-B
 HORIZONTAL SCALE IN FEET: 0 40 80
 VERTICAL SCALE IN FEET: 0 20 40

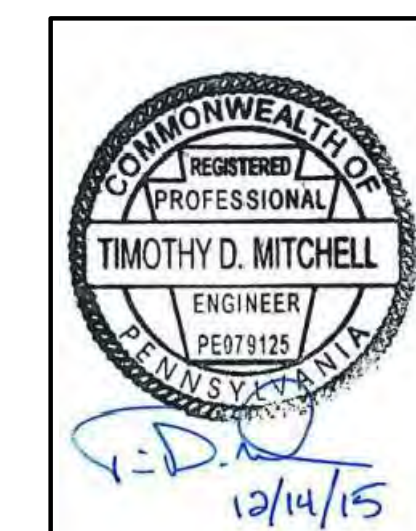


CROSS-SECTION INDEX MAP
 * HAND SIGNATURE ON FILE

CEC
Civil & Environmental Consultants, Inc.
 4000 Triangle Lane, Suite 200 - Export, PA 15632
 Ph: 724.327.5200 · 800.899.3610 · Fax: 724.327.5280
 www.cecinc.com

MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON FACILITY
VERTICAL INCREASE OF IMPOUNDMENT NO. 6
SOUTH HUNTINGDON TOWNSHIP,
WESTMORELAND COUNTY, PENNSYLVANIA

DRAWN BY: JHG CHECKED BY: TDM APPROVED BY: *EDC
 DATE: JULY 2012 DWG SCALE: AS SHOWN PROJECT NO.: 111-935.0002
 DRAWING NO.: **P-400**



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APPENDIX C

**LEACHATE TREATMENT PLANT SAFETY DATA SHEETS
(PROVIDED ON CD IN HARD COPY)**



I. Product and Company Information Reviewed on 08/07/09

Manufacturer: Western Lime Corporation
 206 N. 6th Avenue
 West Bend, WI 53095
 Information: 800-433-0036

Chemical Name Calcium Oxide + Magnesium Oxide	Chemical Family Alkaline earth oxide	Chemical Formula Mostly CaO and MgO
Molecular weight CaO = 56.08 MgO = 40.32	Trade Names/Synonyms (Dolomitic) Quicklime, (Pebble)Lime	Material Use Flux, Caustic agent, pH adjustment, absorption

II. Composition and Information on Ingredients

Component	CAS#	Exposure Limits	% by weight
Calcium Oxide	1305-78-8	OSHA PEL: 5 mg/m ³ ACGH TLV: 2mg/m ³	59%
Magnesium Oxide	1309-48-4	OSHA PEL: 10 mg/m ³ ACGIH TLV: 10 mg/m ³	39%
Crystalline Silica	14808-60-7	OSHA PEL: 10 mg/m ³ (% SiO ₂ resp +2) ACGIH TLV: 0.025 mg/m ³	N/A
Dolomite	16389-88-1	OSHA PEL: 15 mg/m ³ ACGH TLV: 10mg/m ³	<1%

III. Hazards Identification

Emergency Overview: Dolomitic Quicklime is an odorless white or greyish-white granular powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract. Quicklime reacts violently with water, releasing sufficient heat to ignite combustible materials.

Eyes:	Contact can cause severe irritation or burning of eyes, including permanent damage.
Skin:	Contact can cause severe irritation or burning of skin, especially in the presence of moisture.
Ingestion:	This product can cause severe irritation or burning of gastro-intestinal tract if swallowed
Inhalation:	This product can cause severe irritation of the respiratory system. Long-term exposure may cause permanent damage. Quicklime is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain crystalline silica, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled in the form of quartz or cristobalite. Inhalation of silica can cause a chronic lung disorder, silicosis.

Medical Conditions Aggravated by Exposure: Contact may aggravate disorders of eyes, skin, gastrointestinal tract, and respiratory system.

Potential Environmental Effects: This material is alkaline and if released into water or soil will cause and increase in its pH.

IV. First Aid Measures

Eyes:	Immediately flush eyes with large amounts of water for at least 15 minutes. Pull back the eyelid to make sure all the lime dust has been washed out.
Skin:	Flush exposed area with large amounts of water. Seek medical attention immediately.
Inhalation:	Remove to fresh air. Seek medical attention if necessary. If breathing has stopped, give artificial respiration.
Ingestion:	Give large quantities of water or fruit juice. Do not induce vomiting. Seek medical



WesternLime

MSDS – Material Safety Data sheet
Dolomitic Pebble Lime Blend
(Calcium Magnesium Oxide)

attention immediately. Never give anything by mouth if victim is rapidly losing consciousness or is unconscious or convulsing.
Note to Physicians: Provide general supportive measures and treat symptomatically.

V. Fire Fighting Measures

Fire Hazards:	Quicklime is not combustible or flammable. However, quicklime reacts violently with water, releasing sufficient heat to ignite combustible materials in certain instances. Quicklime is not an explosion hazard, although reaction with water or other incompatible materials causes the material to swell and may rupture containers.
Hazardous Combustion Products:	None Identified.
Extinguishing Media:	Use dry chemical fire extinguisher. Do not use water or halogenated compounds, except that water may be used to deluge small amounts of quicklime.
Fire Fighting Instructions:	Keep personnel removed from and upwind of fire. Wear full fire-fighting turn-out gear(full Bunker gear), and respiratory protection (SCBA)

VI. Accidental Release Measures

Spill/Leak Procedures:	DO NOT use water on bulk material spills. Lime Reacts violently with water, producing heat. Use proper protective equipment.
Small Spills:	Use dry methods to collect spilled materials. Do not clean up with compressed air. Store spilled materials in dry, sealed plastic or metal containers. Surfaces contaminated with residual amounts may be water washed.
Large Spills:	Use dry methods to collect spilled materials. Evacuate area down wind of clean-up operations to avoid dust exposure. Store spilled materials in dry, sealed plastic or metal containers.
Containment:	For large spills, as much as possible avoid the generation of dusts. Do not release into sewers or waterways.
Cleanup:	Residual amounts can be flushed with large amounts of water. Equipment can be decontaminated by washing with either a mild vinegar and water solution, or detergent and water solution.

VII. Handling and Storage

Handling:	Keep in tightly closed containers. Protect from physical damage. Avoid direct contact with material.
Storage:	Store in a cool, dry and well ventilated location. Do not store near incompatible materials. Keep away from moisture. Do not store or ship in aluminum containers.

VIII. Exposure controls/Personal Protection Equipment

Personal Protective Equipment (PPE):	Wear clean, dry gloves, full length pants over boots, long sleeved shirt buttoned at the neck, head protection and approved eye protection selected for the working conditions.
Gloves	Gauntlets cuff style
Respiratory	NIOSH approved filtering anti-dust mask
Eyes	Tight fitting goggles/glasses with side shield



MSDS – Material Safety Data sheet
Dolomitic Pebble Lime Blend
(Calcium Magnesium Oxide)

WesternLime

Footwear	Resistant to caustics
Clothing	Fully covering skin

IX. Physical and chemical properties			
Physical State: Solid	Appearance: White granular substance	Odor: No Odor	Specific Gravity: 3.2 – 3.4
Boiling Point: 5162 F, 2850 C	Vapor Pressure: N/A	pH (25° C): Sat Soln CaO: 11.8	Density (kg/m3): 720 - 1130
Melting Point: 4658 F, 2570 C	Vapor Density: N/A	Solubility in Water: 0.10g/100 g Sat.soln	Freezing Point: 2580 C

X. Stability and Reactivity	
Stability:	Chemically stable, but reacts rapidly with water to form calcium hydroxide and magnesium oxide, generating heat.
Incompatibility/Conditions to avoid:	Quicklime should not be mixed or stored with the following materials, due to the potential for violent reaction and release of heat. Water, Acids, Reactive Fluorinated Compounds, Reactive Brominated Compounds, Reactive Powdered Metals, Organic Acid Anhydrides, Nitro-Organic Compounds, Reactive Phosphorous Compounds.
Hazardous Decomposition Products:	None
Hazardous Polymerization:	None

XI. Toxicological Information	
No LD50/LC50 have been identified for this products components. Quicklime is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain crystalline silica, which has been classified by IARC as (Group I) carcinogenic to humans when inhaled in the form of quartz or cristobalite.	

XII. Ecological Information	
Ecotoxicity:	Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.
Environmental Fate:	This material shows no bioaccumulation or food chain toxicity potential.

XIII. Disposal Considerations:	
Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation Act	

XIV. Transportation Information	
Quicklime is not classified as a hazardous material by DOT when transported. When being transported by air, quicklime is classified in the Department of Transportation (DOT) regulations as a hazardous material. (49 CFR 172, Table 172.101:Calcium Oxide by aircraft only. Class 8 Corrosives. PIN UN1910. Packing Group III. Maximum Net per package – passenger vehicles, 25 kg.)	



WesternLime

MSDS – Material Safety Data sheet
 Dolomitic Pebble Lime Blend
 (Calcium Magnesium Oxide)

XV. Regulatory Information	
<u>EPA Regulations</u>	
RCRA Hazardous Waste Number (40 CFR 261.33)	Not Listed
RCRA Hazardous Waste Classification (40 CFR 261)	Not Listed
CERCLA Hazardous Substance (40 CFR 261)	Not Listed
CERLA Reportable Quantity (RQ)	Not Listed
SARA 311/312 codes	Not Listed
Sara Toxic Chemical (40 CFR 372.65)	Not Listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355)	Not Listed
Threshold Planning Quantity (TPQ)	Not Listed
All components are listed on the USEPA TSCA Inventory List	
<u>OSHA/MSHA Regulations</u>	
Air Contaminant (29 CFR 1910.1000, Table Z-1)	Not Listed
MSHA	Not Listed
OSHA Specifically Regulated Substance (29CFR 1910)	Not Listed
State Regulations: Consult state and local authorities for guidance	
<u>Canadian Environmental Protection Act (CEPA)</u>	
Domestic Substances List	Listed

XVI. Other Information		
HMIS	Health Risks	1
	Flammability	0
	Reactivity	1
	Personal Protection	E
NFPA	Health Hazard	3
	Fire Hazard	0
	Reactivity	1
WHIMS Classification	"E" Corrosive Materials	
WHIMS Classification	"D2A" Materials Causing Other toxic effects	

Western Lime Corporation presents this information in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling. Individuals receiving this material must consult their own legal or technical advisors and/or exercise their own judgment in determining this materials appropriateness for a particular application. Western Lime Corporation makes no representations or warranties, either expressed or implied, and will not assume responsibility or liability for any claims losses or damages resulting from the use or reliance upon or failure to use this information.



KROFF CHEMICAL COMPANY, INC.
One North Shore Center
Suite 450, 12 Federal Street
Pittsburgh, PA 15212

Material Safety Data Sheet

PRODUCT NAME: KR-F2220

Revision Date: 4/01/98

Supersedes: 4/10/95

SECTION 1: IDENTIFICATION

Product Name: KR-F2220
Manufacturer: Kroff Chemical Company, Inc.
Address: One North Shore Center
Suite 450, 12 Federal Street
Pittsburgh, PA 15212

In Emergency: 1-800-424-9300
Additional Information: (412) 321-9800

SECTION 2: HAZARDOUS INGREDIENTS

<u>Hazardous Components</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>Other Limits Recommended</u>	<u>%</u>
Anionic Acrylamide Copolymer	25085-02-3	N/E	N/E	Irritant (eye)	Major
Petroleum Hydrocarbon	64742-47-8	N/E	N/E	300 ppm TLV*	20-30
Surfactant <small>*Inhalation - TLV recommended by Exxon Medical Research.</small>	26027-38-3	N/E	N/E	Irritant (eye & skin)	1-3

SARA Section 313 Reportable Toxic Chemicals: None

SECTION 3: PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point: Approximately 215°F
Vapor Pressure (mm Hg): Nil N/E
Vapor Density (Air=1): Nil N/E
Solubility in Water: Emulsion - slightly soluble in water.
Appearance and Odor: Milky white liquid; petroleum hydrocarbon odor.

Specific Gravity (H₂O=1): Approximately 1
Melting Point: < 23°F
Evaporation Rate (Butyl Acetate=1): < 1



KROFF CHEMICAL COMPANY, INC.

Material Safety Data Sheet

PRODUCT: KR-F2220

SECTION 4: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): > 200°F (PMCC)

Flammable Limits: Lower = N/E Upper = N/E

Extinguishing Media: Any available extinguishant; CO₂, dry chemical.

Special Fire Fighting Procedures: Spilled product creates extremely slippery conditions, especially in contact with water. Use caution. Respiratory and eye protection is required.

Unusual Fire and Explosion Hazards: Petroleum hydrocarbon component is combustible. Vapors/fumes will ignite. Heated vapors can ignite explosively.

SECTION 5: REACTIVITY DATA

Stability: Stable: XXX Unstable:

Conditions to Avoid: None known.

Incompatibility (Materials to Avoid): Strong oxidizers.

Hazardous Decomposition or Byproducts: None known.

Hazardous Polymerization: May Occur: Will Not Occur: XXX

Conditions to Avoid: None known

SECTION 6: HEALTH HAZARD DATA

Route(s) of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes

Health Hazards (Acute or Chronic): Irritant to the eyes and skin. Inhalation of heated vapors may irritate the respiratory system. Prolonged inhalation of concentrated/heated vapors may cause damage to kidneys.



KROFF CHEMICAL COMPANY, INC.

Material Safety Data Sheet

PRODUCT: KR-F2220

SECTION 6: HEALTH HAZARD DATA (Con't)

Carcinogenicity: NTP: No IARC Monographs: No OSHA Regulated: No

Signs and Symptoms of Exposure:

Reddening, swelling of affected area with possible itching, burning or other discomfort.

Medical Conditions Generally Aggravated by Exposure:

Existing cuts, rashes, allergies or other sensitive areas.

Emergency and First Aid Procedures:

Eyes and Skin: Flush thoroughly with water.

Inhalation: Move to fresh air.

Ingestion: Seek medical attention as with any continued discomfort.

SECTION 7: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case of Released /Spilled Material:

Remove sources of ignition. Contain and collect, using a suitable absorbent if needed. Place into suitable container(s) for disposal. Flush residuals to drain thoroughly as spilled product creates extremely slippery conditions.

Waste Disposal Method:

Incinerate or other approved method according to local, state, and federal regulations.

Precautions to be taken in Handling and Storing:

Handle as an irritant. Contains surfactant, irritant. Do not get into eyes. Avoid repeated/prolonged skin contact. Do not inhale vapors/mists.

Other Precautions:

Do not ingest. Store away from sources of ignition. Spilled product creates very slippery conditions, especially in contact with water.





KROFF CHEMICAL COMPANY, INC.

Material Safety Data Sheet

PRODUCT: KR-F2220

SECTION 8: CONTROL MEASURES

Respiratory Protection (Specify Type): Not required for normal end use process. Observe Section II limits.

Ventilation:

Local Exhaust: Insure removal of vapors/mists.

Special: Not required.

Mechanical (General): Recommended.

Other: Not required.

Protective Gloves: Impervious neoprene or rubber.

Eye Protection: Safety glasses or goggles.

Other Protective Clothing/Equipment:

Shoes, apron or other to prevent prolonged/repeated skin contact.

Work/Hygienic Practices: Wash thoroughly after handling.

SECTION 9: OTHER INFORMATION

****Kroff Chemical Company, Inc. ("Kroff") expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein. ****

All information appearing herein is based upon data obtained from the Manufacturer and/or recognized technical sources. While the information is believed to be accurate, Kroff makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Kroff's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product.



MATERIAL SAFETY DATA SHEET

SECTION I - CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: **DOLOMITIC
HYDRATED LIME**

WHMIS – CLASSIFICATION:
D2A: MATERIALS CAUSING OTHER TOXIC EFFECTS
E: CORROSIVE MATERIAL

MANUFACTURER'S AND SUPPLIER'S NAME:

GRAYMONT DOLIME (OH) INC 21880 West, State, Route 163, Genoa, Ohio 43430.

GRAYMONT WESTERN LIME INC. 206 N. 6th Avenue, West Bend, Wisconsin, 53095

EMERGENCY TEL. No.: (613) 996 – 6666 CANUTEC (Canada) (800) 424 – 9300 CHEMTREC (US)

Chemical Name Calcium Magnesium Hydroxide Oxide and Calcium Magnesium Hydroxide	Chemical Family Alkaline earth hydroxide	Chemical Formula Complex mixture – mostly CaMg(OH)₄ and Ca(OH)₂MgO
Molecular Weight CaMg(OH)₄ = 132.41 Ca(OH)₂MgO = 114.40	Trade Name and Synonyms Hydrated dolomitic lime (Ca(OH)₂MgO), Double hydrated dolomitic lime (CaMg(OH)₄)	Material Use Neutralization, Flocculation, Stabilization, Polishing, Masonry Mortar, Plaster, Stucco, Fresco Paints and Lime wash.

<u>PRODUCT NAME</u>	<u>FORMULA</u>	<u>CAS#</u>
BONDCRETE [®] Mason's Lime	CaMg(OH) ₄	39445-23-3
Graymont Dolomitic Hydrated Agricultural Lime	Ca(OH) ₂ MgO	58398-71-3
Graymont Dolomitic Hydrated Lime	Ca(OH) ₂ MgO	58398-71-3
Graymont Dolomitic Spray Lime	CaMg(OH) ₄	39445-23-3
GRAND PRIZE [®] Finish Lime	Ca(OH) ₂ MgO	58398-71-3
HI-MAG-CHEM [®] Hydrate	Ca(OH) ₂ MgO	58398-71-3
IVORY [®] Autoclaved Finish Lime	CaMg(OH) ₄	39445-23-3
KEMIDOL [®] Hydrate	Ca(OH) ₂ MgO	58398-71-3
KEMIDOL [®] Superhydrate	CaMg(OH) ₄	39445-23-3
LIMOID [®] Type "N" Hydrate	Ca(OH) ₂ MgO	58398-71-3
LIMOID [®] Type "S" Hydrate	CaMg(OH) ₄	39445-23-3
MORTASEAL [®] Autoclaved Mason's Lime	CaMg(OH) ₄	39445-23-3
SNOWDRIFT [®] Autoclaved Finish Lime	CaMg(OH) ₄	39445-23-3
SUPER LIMOID [®] Agricultural Hydrated Lime	Ca(OH) ₂ MgO	58398-71-3
SUPER LIMOID [®] Mason's Hydrated Lime Type "S"	CaMg(OH) ₄	39445-23-3
SUPER LIMOID [®] Mason's Hydrated Lime Type "SA"	CaMg(OH) ₄	39445-23-3
WESTERN LIMATE – Industrial Grade of Dolomitic Hydrated Lime	CaMg(OH) ₄	39445-23-3
WESTERN MIRACLE LIME – Type S Dolomitic Hydrated Masonry Lime	CaMg(OH) ₄	39445-23-3
WESTERN Air Entrained Lime – Type SA Dolomitic Hydrated Masonry Lime	CaMg(OH) ₄	39445-23-3
WESTERN FINISH LIME – Type S Dolomitic Hydrated Masonry Lime	CaMg(OH) ₄	39445-23-3

SECTION II - COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients	Approximate Concentration	C.A.S. Number	Exposure limits (mg/m ³)					
			OSHA PEL	ACGIH TLV	RSST VEMP	MSHA PEL	NIOSH REL	NIOSH IDLH
(Complex Mixture)	(% by weight)		(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 8/40h	(TWA) 10/40h	
Calcium Magnesium Hydroxide	60 to 100	39445-23-3	N/A	N/A	N/A	N/A	N/A	N/A
Calcium Magnesium Hydroxide Oxide	60 to 100	58398-71-3	N/A	N/A	N/A	N/A	N/A	N/A
Calcium hydroxide	30 to 60	1305-62-0	15 (tot dust) 5 resp dust	5	5	5	N/A	N/A
Magnesium Hydroxide	0 to 40	1309-42-8	N/A	N/A	N/A	N/A	N/A	N/A
Magnesium Oxide	0 to 40	1309-48-4	10	10	10	10	N/A	N/A
Crystalline Silica, Quartz	0 à 0.1 Or 0.1 à 1 (Note 1)	14808-60-7	30/(%SiO ₂)+2 (T) 10/(%SiO ₂)+2 (R)	0.025 (R)	0.1 (R)	30/(%SiO ₂)+2 (T) 10/(%SiO ₂)+2 (R)	0.05 (R)	50

(Note 1): Concentration of crystalline silica in a series of lime products will vary from source to source. It was not detected on some samples (< 0.1% w/w). Therefore two ranges are being disclosed. (Note 2): ACGIH TLV Version 1973 has been adopted by the Mine Safety Health Administration (MSHA) as the regulatory Exposure Standard. (Note 3): (T) Total Dust; (R): Respirable Dust.

SECTION III - PHYSICAL AND CHEMICAL DATA

Physical State Gas <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input checked="" type="checkbox"/>	Odor and Appearance Slight earthy odor – Fine white powder		Odor Threshold (p.p.m.) Not applicable	Specific Gravity 2.2 - 2.6
Vapor Pressure (mm) Not applicable	Vapor Density (Air = 1) Not applicable	Evaporation Rate Not applicable	Boiling Point (°C) Decomposes at 345	Melting Point (°C) Not applicable
Solubility in Water (20°C) 0.1g/100g Solution	Volatiles (% by volume) Not applicable	pH (25 °C) Sat. solution Ca(OH)₂ 12.45	Bulk Density (kg/m ³) 400 - 650	Coefficient of water/oil distribution Not applicable

SECTION IV - FIRE OR EXPLOSION HAZARD DATA

Flammability

Yes No

If yes, under which conditions?

Extinguishing Media

Dolomitic Hydrated Lime does not burn. Use extinguisher appropriate for material burning.

Special Fire Fighting Procedures

Not applicable

Flash point (°C) and Method

Not applicable

Upper flammable limit (% by volume)

Not applicable

Lower flammable limit (% by volume)

Not applicable

Auto Ignition Temperature (°C)

Not applicable

TDG Flammability Classification

Non-flammable

Hazardous Combustion Products

None

Dangerous Combustion Products

None

EXPLOSION DATA

Sensitivity to Chemical Impact

Not applicable

Rate of Burning

Not applicable

Explosive Power

Not applicable

Sensitivity to Static Discharge

Not applicable**SECTION V - REACTIVITY DATA**

Chemical Stability

Yes No

If no, under which conditions?

Absorbs carbon dioxide in the air to form calcium magnesium carbonate.

Incompatibility to other substances

Yes No

If so, which ones?

Boron tri-fluoride, chlorine tri-fluoride, ethanol, fluorine, hydrogen fluoride, phosphorus pentoxide; water and acids (violent reaction with generating heat and possible explosion in confined area).

Reactivity

Yes No

If so, under which conditions?

Reacts violently with Maleic Anhydride, strong acids. Reacts chemically with acids and many other compounds and chemical elements to form calcium and magnesium based compounds. Explosive when mixed with nitro organic compounds.

Hazardous Decomposition Products

Calcium Hydroxide decomposes at 540°C and Magnesium Hydroxide decomposes at 345°C to produce calcium oxide, magnesium oxide and water.

Hazardous Polymerization Products

Will not occur.

SECTION VI - TOXICOLOGICAL PROPERTIES

Route of Entry

Skin Contact Skin Absorption Eye Contact Acute Inhalation Chronic Inhalation Ingestion

Effects of Acute Exposure to Product

Skin **Severe irritation of mucous and skin, removes natural skin oils.**

Eyes **Severe eye irritation, intense watering of the eyes, possible lesions, possible blindness when exposed for prolonged period. Eye Irritation Data: Eye-Rabbit-10mg/ 24 h – Severe.**

Inhalation **If inhaled in form of dust, irritation of breathing passages, cough, sneezing.**

Ingestion **If ingested: pain, vomiting blood, diarrhea, collapse, drop in blood pressure (indicates perforation of esophagus or stomach).**

Effects of Chronic Exposure to Product:

Contact dermatitis. Following repeated or prolonged contact, this product can cause redness, desquamation and fissures. This product may contain trace amounts of crystalline silica. Excessive inhalation of respirable crystalline silica dust may result in respiratory disease, including silicosis, pneumoconiosis and pulmonary fibrosis.

LD ₅₀ of Product (Specify Species and Route) Unavailable	Irritancy of Product Severe to moist tissues	Exposure limits of Product Unavailable
LC ₅₀ of Product (Specify Species) Unavailable	Sensitization to Product None	Synergistic materials None reported

Carcinogenicity Reproductive effects Teratogenicity Mutagenicity

Dolomitic Hydrated Lime is not listed as a carcinogen by ACGIH, MSHA, OSHA, NTP, DFG, RSST or IARC. It may, however, contain trace amounts of Crystalline Silica listed carcinogens by these organizations.

Crystalline Silica, which inhaled in the form of quartz or crystobalite from occupational sources, is classified by IARC as carcinogenic to humans. (Group 1)

Silica, crystalline (Airborne particles of respirable size) is regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer.

NIOSH considers crystalline silica to be potential occupational carcinogen as defined by the OSHA carcinogen policy [29 CFR 1990]. (Ca).

NTP lists respirable Crystalline Silica as known to be human carcinogens based on sufficient evidence of carcinogenicity in humans. (K).

ACGIH lists respirable Crystalline Silica (quartz) as suspected human carcinogen. (A2).

DFG lists respirable Crystalline Silica as a substance that causes cancer in man (1)

RSST lists respirable Crystalline Silica (quartz) as suspected human carcinogen.

SECTION VII - PREVENTIVE MEASURES

Personal Protective Equipment (PPE)	Wear clean, dry gloves, full length pants over boots, long sleeved shirt buttoned at the neck, head protection and approved eye protection selected for the working conditions.
Gloves (Specify)	Gauntlets Cuff style.
Respiratory (Specify)	Respirator Recommendations for Dolomitic Hydrated Lime: Not available. Respirator Recommendations for Calcium Oxide: NIOSH approved respirator. <u>Up to 10 mg/m³</u> : (APF = 5) Any quarter-mask respirator. <u>Up to 20 mg/m³</u> : (APF = 10) Any particulate respirator equipped with an N95, R95 or P95 filter except quarter-mask respirator. Any supplied-air respirator. <u>Up to 25 mg/m³</u> : (APF = 25) Any supplied-air respirator operated in a continuous-flow mode. Any powered, air purifying respirator with a high-efficiency particulate filter.
Eyes (Specify)	ANSI, CSA or ASTM approved safety glasses with side shields. Tight fitting dust goggles should be worn when excessive (visible) dust conditions are present. Do not wear contact lenses without tight fitting goggles when handling this chemical.
Footwear (Specify)	Resistant to caustics.
Clothing (Specify)	Fully covering skin. Remove when wet or contaminated. Change daily.
Other (Specify)	Evaluate degree of exposure and use PPE if necessary. After handling lime, employees must shower. If exposed daily, use oil, Vaseline, silicone base crème etc. to protect exposed skin, particularly neck, face and wrists.
Engineering Controls (e.g. ventilation, enclosed process, specify)	Enclose dust sources; use exhaust ventilation (dust collector) at handling points, keep levels below Max. Concentration Permitted.
Leak and Spill Procedure	Limit access to trained personnel. Use industrial vacuums for large spills. Ventilate area.
Waste Disposal	Transport to disposal area or bury. Review Federal, Provincial and local Environmental regulations.
Handling Procedures and Equipment	Avoid skin and eye contact. Minimize dust generation. Wear protective goggles and in cases of insufficient ventilation, use NIOSH approved dust respirator. An eye wash station and safety shower should be readily available where this material or its water dispersions are used. Contact lenses should not be worn when working with this chemical.
Storage Requirements	Keep tightly closed containers in a cool, dry and well ventilated area, away from acids. Keep out of reach of children.
Special Shipment Information	Dolomitic Hydrated Lime is not regulated by the Transportation of Dangerous Goods (TDG) Regulations (Canada) nor the Hazardous Materials Regulations (USA).

SECTION VIII - FIRST AID MEASURES

Skin

Carefully and gently brush the contaminated body surfaces in order to remove all traces of lime. Use a brush, cloth or gloves. Remove all lime-contaminated clothing. Rinse contaminated area with lukewarm water for 15 to 20 minutes. Consult a physician if exposed area is large or if irritation persists.

Eyes

Immediately rinse contaminated eye(s) with gently running lukewarm water (saline solution is preferred) for 15 to 20 minutes. In the case of an embedded particle in the eye, or chemical burn, as assessed by first aid trained personnel, contact a physician.

Inhalation

Move source of dust or move victim to fresh air. Obtain medical attention immediately. If victim does not breathe, give artificial respiration.

Ingestion

If victim is conscious, give 300 ml (10 oz) of water, followed by diluted vinegar (1 part vinegar, 2 parts water) or fruit juice to neutralize the alkali. Do not induce vomiting. Contact a physician immediately.

General Advise

Consult a physician for all exposures except minor instances of inhalation.

SECTION IX - REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 (**SARA Title III**). / The Emergency Planning and "Community Right-to-Know" Act (**EPCRA**). / Comprehensive Environmental Response, Compensation and Liability Act (**CERCLA**). / Resource Conservation and Recovery Act (**RCRA**).

Component Dolomitic Hydrated Lime has been reviewed against the following regulatory listings:

- **SARA Section 302 – Emergency Planning Notification. Extremely Hazardous Substances (EHS) List and Threshold Planning Quantity (TPQ). (40 CFR, Part 355, Section 30): Not listed.**
- **SARA Section 304 – Emergency Release Notification. Extremely Hazardous Substances (EHS) and Reportable Quantity (RQ) List. (40 CFR, Part 355, Section 40): Not listed.**
- **SARA Section 311/312 – Hazard Categories (40 CFR, Part 370): This product is regulated under CFR 1910.1200 (OSHA Hazard Communication) as Immediate (Acute) Health Hazards – Irritant.**
- **SARA Section 313 – Toxics Release Inventory (TRI). Toxic Chemical List (40 CFR, Part 372). Not listed.**
- **CERCLA – Hazardous Substance (40 CFR, Part 302): Not listed in Table 302.4.**
- **RCRA – Hazardous Waste Number (40 CFR, Part 261, Subpart D): Not listed.**
- **RCRA – Hazardous Waste Classification (40 CFR, Part 261, Subpart C): Not classified.**

CWA 311. - Clean Water Act List of Hazardous Substances.

Dolomitic Hydrated Lime does not appear on the Clean Water Act (CWA) list of hazardous substances.

California Proposition 65.

Component Calcium Magnesium Hydroxide does not appear on the above regulatory listing. This product may contain small amounts of crystalline silica. Silica, crystalline (Airborne particles of respirable size) is regulated under California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Crystalline Silica is listed as a chemical known to the State to cause cancer.

Transportation - Hazardous Materials Regulations (USA) & Transportation of Dangerous Goods (TDG) Regulations (Can).

Dolomitic Hydrated Lime does not appear on the above regulatory listings.

Toxic Substances Control Act (TSCA).

All naturally occurring components of this product are automatically included in the USEPA TSCA Inventory List per 40 CFR 710.4 (b). All other components are listed on the USEPA TSCA Chemical Substances Inventory. Dolomitic Hydrated Lime is subject to inventory update reporting (IUR).

Canadian Environmental Protection Act (CEPA) – Substances Lists (DSL/NDSL).

Dolomitic Hydrated Lime (Calcium Magnesium Hydroxide & Calcium Magnesium Hydroxide Oxide) is specified on the Non-Domestic Substances List (NDSL).

ANSI/NSF 60 - Drinking Water Treatment Additives.

Not applicable



FDA - U.S. Food and Drug Administration, Department of Health and Human Services.

Not applicable

SECTION X - OTHER INFORMATION

<p>Hazardous Materials Identification System (U.S.)</p>		<p>National Fire Protection Association (U.S.) NFPA 704</p> <p>Health Hazard</p>	<p>Fire Hazard</p>  <p>Instability / Thermal Hazard</p> <p>Specific hazard</p>
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<p>WHMIS – Classification: “E” Corrosive Materials.</p>	<p>WHMIS – Classification: “D2A” Materials causing other toxic effects.</p>
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<p>Symbol:</p> 	<p>Symbol:</p> 
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Additional Information/Comments:

The technical data contained herein is given as information only and is believed to be reliable.
GRAYMONT makes no guarantee of results and assumes no obligation or liability in connection therewith.

Sources Used:

NFPA, NLA, TDG, CSST, RSST, (LSRO-FASEB), Hazardous Products Act, Environment Canada, Enviroguide, OSHA, ACGIH, IARC, NIOSH, CFR, NTP, HSDB, EPA SRS, RTECS, DFG, Chemistry and Technology of Lime and Limestone (John Wiley and Sons, Inc.), Lime and Limestone (WILEY-VCH).

SECTION XI - PREPARATION INFORMATION

<p>Prepared by: GRAYMONT (QC) INC. Quality Assurance & Technical Services</p>	<p>Telephone number: (450) 449-2262</p>	<p>Date : August 2012</p>
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An electronic version of this MSDS is available at: www.graymont.com under the **PRODUCTS** section.

SULFURIC ACID

MATERIAL SAFETY DATA SHEET

Distributed By: PVS NOLWOOD CHEMICALS, INC. 10900 Harper Avenue Detroit, MI. 48213 (313) 925-0300	
PVS ITEM #	PVS MSDS #
Multi	0738

CONTROLLED DOCUMENT
IF STAMPED IN RED

Section 1. Chemical Product and Company Identification

Product Name: Sulfuric Acid
Synonym: Sulphuric Acid, Oil of Vitriol
Chemical Name: Sulfuric Acid
Chemical Family: Inorganic Mineral Acid
Chemical Formula: H₂SO₄
C.A.S. Number: 7664-93-9
Manufacturer: PVS Chemical Solutions
55 Lee Street
Buffalo, NY 14210
Emergency Contact: CHEMTREC 1-800-424-9300
Technical Contact: 716/825-5762
Revision Date: November 1, 2010

Section 2. Composition, Information on Ingredients

<u>Component(s)</u>	<u>Percent</u>	<u>CAS Reg No.</u>	<u>Hazardous</u>
Sulfuric Acid	75-100% (typ)	7664-93-9	Yes
Water	0-25% (typ)	7732-18-5	No

Section 3. Health and Hazard Information

EMERGENCY OVERVIEW: Causes eye and skin burns. Liquid and mist cause severe burns to all body tissue. Causes digestive and respiratory tract burns. May be fatal if swallowed or if mist is inhaled. Strong inorganic acid mists containing sulfuric acid may cause cancer. Concentrated sulfuric acid reacts violently with water and other substances under certain conditions.

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact with eyes may result in permanent visual loss unless removed quickly by thorough irrigation with water.

Inhalation: Inhalation of concentrated vapor or mist may damage respiratory tract. Inhalation may be fatal. May cause irritation to the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Ingestion: Swallowing may be fatal. Causes severe and permanent damage to the digestive tract

Skin Contact: Contact with liquid, mist, or vapor can cause immediate irritation or corrosive burns to all human tissue. Severity of the burn is generally determined by the concentration of the solution and duration of exposure.

Skin Absorption:
Chronic Effect:

Absorption is unlikely to occur.
Prolonged or repeated skin contact may cause dermatitis.
Prolonged or repeated exposure may cause erosion of teeth,
perforation of nasal septum or bronchitis. Exposure to
strong inorganic acid mists containing sulfuric acid is
carcinogenic to humans.

Section 4. First Aid Measures

Inhalation:

Remove victim to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

Ingestion:

Do not induce vomiting. Drink copious amounts of water or milk. Get immediate medical attention. Never give anything by mouth to an unconscious person.

Direct Contact:

Wipe off excess. Flush immediately with water for at least 15 minutes while removing contaminated clothing. Get immediate medical attention. Wash clothing before re-use. Destroy contaminated shoes.

Direct Eye Contact:

Flush immediately with water for at least 15 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye/lid tissue. Get immediate medical attention.

Section 5. Fire Fighting Measures

Flash Point:

Not flammable. May ignite combustible materials.

Flammable Limits In Air:

Lower: not applicable Upper: not applicable

Extinguishing Media:

Use dry chemical or CO₂ fire extinguishers to fight surrounding fire. Do not use water on acid itself. Apply from farthest possible distance.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective clothing. Cool exterior of storage tanks.

Unusual Fire And Explosion Hazards: Violent reaction with water. Evolution of explosive hydrogen gas on contact with most metals. Will react with organic material with evolution of heat and dense white fumes.

Section 6. Accidental Release Measures

Spill or Leak:

Utilize full protective clothing, including boots and protective equipment. Contain spill in order to prevent contamination of sewage system or waterway. Pump into marked containers for reclamation or disposal. If possible, neutralize on a dry basis with suitable alkali such as lime or soda ash; then flush with

Sulfuric Acid Material Safety Data Sheet

water in accordance with applicable regulations. Do not get water inside containers.

Section 7. Handling & Storage

Storage: Store in a cool dry well ventilated area. Do not store near combustible materials, alkaline substances or other incompatible materials. Store protected from moisture. Keep container closed when not in use. Protect container from physical damage. Diking of storage tanks is recommended.

Normal Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not allow water to enter container due to violent reaction. Use only with adequate ventilation. When diluting, always add the acid to the water to avoid dangerous spattering.

Section 8. Exposure Controls and Personal Protection

Exposure Limits: OSHA PEL: 1 mg/m³ (TWA)
ACGIH TLV: 0.2 mg/m³ (TWA)
NIOSH: 1mg/m³, 15 mg/m³ IDLH

Ventilation: Provide ventilation to control exposure levels below airborne exposure limits. Use local exhaust ventilation. Reference NFPA Standard 91 for design of exhaust systems.

Respiratory Protection: When exposure limit is exceeded and engineering controls are not feasible, use NIOSH/MSHA approved, full face respirator with cartridges approved for sulfuric acid vapor and mist. Consult respirator manufacturer to determine appropriate equipment. If concentrations are high or unknown, use self-contained breathing apparatus.

Protective Gloves: Wear impervious rubber gloves.

Eye Protection: Wear splash proof chemical safety goggles. Eyewash fountains recommended in all storage and handling areas. Do not wear contact lenses.

Other Protective Equipment: Wear protective clothing to prevent skin contact. Full face shield and rubber footwear should be used. Acid-resistant hood and full body suit recommended. Safety shower recommended in all storage and handling areas.

Work/Hygienic Practices: Avoid breathing fumes. Use gloves when handling. Remove and change contaminated clothing immediately.

Section 9. Physical and Chemical Properties

Appearance And Odor: Clear to slightly cloudy, oily liquid; Odorless to slightly pungent.

Molecular Weight: 98.08

Boiling Point: 77.7% = 193°C; 93% = 279°C; 96% = 308°C; 98% = 327°C;
99% = 310°C

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<u>Freezing Point:</u>	77.7% = -11.4 °C; 93% = -29 °C; 96% = -14 °C; 98% = -1 °C; 99% = 4.4 °C
<u>Vapor Pressure (Reid):</u>	93.2% = 0.0016 mm Hg; 98% = 0.002 mm Hg
<u>Vapor Density (Air = 1):</u>	3.4
<u>Specific Gravity (Water = 1):</u>	77.7% = 1.706; 93.2% = 1.835; 96% = 1.843; 98% = 1.844; 99% = 1.842
<u>Percent Volatile By Weight:</u>	no information
<u>Evaporation Rate (Butyl Acetate = 1):</u>	<1
<u>pH:</u>	<1
<u>Solubility In Water:</u>	Completely miscible, liberates heat

Section 10. Stability and Reactivity

Stability: Stable under ordinary conditions and use.

Hazardous Polymerization: Will not occur.

Incompatibility (Conditions And Materials To Avoid): Material is stable when properly handled. Concentrated acid reacts violently with water, spattering and liberating heat. Reactive with materials such as metals, metal oxides, hydroxides, nitrates, amines, carbonates and other alkaline materials. Reacts with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively. Reacts with carbonates to generate carbon dioxide gas. Incompatible with bases, halogens, nitrates, permanganates, chlorates, perchlorates, metal acetylides, fulminates, picrates and organic materials. Reactions can generate a great deal of heat as does the dilution of acid with water. Concentrated acid is a strong oxidizing agent. May cause ignition of combustible materials on contact with generation of sulfur dioxide fumes. Avoid excessive heat, open flames or sparks.

Hazardous Decomposition Products: Explosive hydrogen gas is generated by the action of acid on most metals and may accumulate in metal containers. Releases Sulfur Dioxide at extremely high temperatures.

Section 11. Toxicological Information

Toxicity Data (Animal): Oral, rat: LD₅₀ = 2140 mg/kg
Inhalation, rat: LC₅₀ = 510 mg/m³
Standard Draize, eye rabbit 250 ug (severe)
Skin and eye irritation (rabbit): (FHSA) Corrosive

Carcinogenicity: The International Agency of Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a Category 1 carcinogen, a substance that is "carcinogenic to humans". This classification is for inorganic acid mists only and does not apply to sulfuric acid or sulfuric acid solutions.

Medical Conditions Aggravated By Exposure: Repeated skin contact with dilute solutions may cause dermatitis. May cause dental erosion.

Section 12. Ecological Information

Ecotoxic Effects: Harmful to aquatic life in very low concentrations. May be dangerous if it enters water intake; Fish toxicity; 2.8 µg/L 96 hrs LC50 Rainbow trout.

Section 13. Disposal Considerations

Waste Disposal Methods: Dispose of spilled, neutralized or waste product, contaminated soil and other materials in accordance with all local, state and federal regulations. Waste sulfuric acid would exhibit the RCRA characteristic of corrosivity and should be handled as a Hazardous Waste. Do not flush to surface water or sanitary sewer.

Section 14. Transportation Information

USDOT:

Proper shipping name: Sulfuric acid (with more than 51% acid)
Hazard Class: 8
UN Number: UN1830
Packing Group: II
Reportable Quantity: 1000 pounds (454 kg)
IMO: 8
IATA/ICAO Class: 8
ERG Guide: 137

Canada (Under TDG)

Shipping Name: Sulfuric acid (with more than 51% acid)
Classification(s): Class 8
Product Identification No: UN1830
Packing Group: II
Regulated Limit: 50 kg

Section 15. Regulatory Information

SARA Title III: Sulfuric Acid (aerosol forms only) is a toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

SARA Title III Sec 302: Listed as an Extremely Hazardous Substance with a TPQ = 1000lbs.

SARA Title III Sec 312: Acute, Chronic, Reactivity

SARA Title III Sec 313: Listed as "aerosol form only".

RCRA 261.33: No
TSCA 8(d): Listed

Sulfuric Acid Material Safety Data Sheet

CERCLA: RQ = 1000 lbs.
WHMIS Classification: Class E – Corrosive, Class D1A – Very Toxic, Class D2B – Suspected Human Carcinogen.
WHMIS Health Effects Index: Acute Lethality - very toxic – immediate
Materials Causing Other Toxic Effects- Chronic
Corrosive to animal skin

Other Ratings:

(hazard index key: 4=severe, 3=serious, 2=moderate, 1=slight, 0=minimal)

HMIS: Health=3, Flammability=0, Reactivity=2

NFPA: Health=3, Flammability=0, Reactivity=2

Section 16. Other Information

For additional Non-emergency health, safety, or environmental information, contact:

PVS Chemical Solutions
55 Lee Street
Buffalo, New York 14210
(716) 825-5762

NOTICE: PVS Chemical Solutions, Inc. urges customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of PVS Chemical Solutions, Inc., it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific MSDS's, PVS Chemical Solutions, Inc. is not and cannot be responsible for MSDS's obtained from any source other than PVS Chemical Solutions, Inc. If you have obtained a PVS Chemical Solutions, Inc. MSDS from a non-PVS Chemical Solutions, Inc. source or if you are not sure that a PVS Chemical Solutions, Inc. MSDS is current, please contact PVS Chemical Solutions, Inc. for the most current version.



Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name	• Caustic Soda Beads
Synonyms	• Anhydrous Sodium Hydroxide; Caustic Soda; NaOH; PELS® Caustic Soda Beads; PELS® Plus Caustic Soda Beads; Sodium Hydroxide
CAS Number	• 1310-73-2
EC Number	• 215-185-5
Molecular Formula	• :H 1:O 1:Na 1:

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s)	• Chemical reagent; Industrial uses
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1.3 Details of the supplier of the safety data sheet

Manufacturer	• Axiall, LLC 1000 Abernathy Rd. NE, Suite 1200 Atlanta, GA 30328 United States www.axiall.com msdsinfo@axiall.com
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Distributed By:
SAL Chemical
3036 Birch Drive
Weirton, WV 26062
304-748-8200

Telephone (General) • +1 225-685-1240

Responsible Party - EU	• Intertek France 12 Rue Alfred Kastler 71530 Fragnes France christian.gimenez@intertek.com
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Telephone (General) • 33 (0) 385 99 1274

Telephone (General) • 33 385 99 1288 - Fax

1.4 Emergency telephone number

Manufacturer	• +1 304-455-6882
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Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

2.1 Classification of the substance or mixture

CLP	• Skin Corrosion 1A - H314
------------	----------------------------

2.2 Label Elements

CLP

DANGER

Hazard statements • H314 - Causes severe skin burns and eye damage.

Precautionary statements

- Prevention** • P260 - Do not breathe dust.
 P264 - Wash thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P310 - Immediately call a POISON CENTER or doctor/physician.
 P363 - Wash contaminated clothing before reuse.
 P321 - Specific treatment, see supplemental first aid information.
 P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal** • P405 - Store locked up.
 P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

- CLP** • According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS Revision 3

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition

2.1 Classification of the substance or mixture

- UN GHS** • Skin Corrosion 1B
 Serious Eye Damage 1

2.2 Label elements

UN GHS

DANGER

Hazard statements • Causes severe skin burns and eye damage.
 Causes serious eye damage

Precautionary statements

- Prevention** • Do not breathe dust.
 Wash thoroughly after handling.
 Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 Wash contaminated clothing before reuse.
 Specific treatment, see supplemental first aid information.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal**
- Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS

- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous
-

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Serious Eye Damage 1
Skin Corrosion 1B

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements**
- Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

- Prevention**
- Do not breathe dust.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor/ .
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal**
- Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.
-

Canada

According to: WHMIS 2015

2.1 Classification of the substance or mixture

WHMIS 2015

- Serious Eye Damage 1
Skin Corrosion 1B

2.2 Label elements

WHMIS 2015

DANGER

- Hazard statements** • Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

- Prevention** • Do not breathe dust.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response** • IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash contaminated clothing before reuse.
Specific treatment, see supplemental first aid information.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor/ .
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

- Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards**WHMIS 2015**

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Section 3 - Composition/Information on Ingredients**3.1 Substances**

Composition				
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive
Sodium hydroxide	CAS:1310-73-2 EC Number:215-185-5 EU Index:011-002-00-6	96% TO 100%	NDA	EU CLP: Annex VI, Table 3.1: Skin Corr. 1A, H314 UN GHS Revision 3: Skin Corr. 1B; Eye Dam. 1 OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1 WHMIS 2015: Skin Corr. 1B; Eye Dam. 1
Sodium chloride	CAS:7647-14-5 EC Number:231-598-3	0% TO 2%	Ingestion/Oral-Rat LD50 • 3000 mg/kg	EU CLP: Self Classified: Eye Irrit. 2, H319 UN GHS Revision 3: Eye Irrit. 2; Skin Irrit. 3; Acute Tox. 5 (oral) OSHA HCS 2012: Eye Irrit. 2 WHMIS 2015: Eye Irrit. 2
Sodium carbonate (2:1)	CAS:497-19-8 EC Number:207-838-8 EU Index:011-005-00-2	0% TO 2%	Ingestion/Oral-Rat LD50 • 4090 mg/kg Inhalation-Rat LC50 • 2300 mg/m ³ 2 Hour(s)	EU CLP: Annex VI, Table 3.1: Eye Irrit. 2, H319 UN GHS Revision 3: Eye Irrit. 2; Acute Tox 5 (oral) OSHA HCS 2012: Eye Irrit. 2 WHMIS 2015: Acute Tox. 4 (Inhalation); Eye Irrit. 2; STOT SE 3: Resp. Irrit.

3.2 Mixtures

- Material does not meet the criteria of a mixture in accordance with Regulation (EC) No 1272/2008.

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

- Inhalation**
- Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Move victim to fresh air.
- Skin**
- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.
- Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

- Suitable Extinguishing Media**
- SMALL FIRES: Dry chemical or carbon dioxide.
LARGE FIRES: Dry chemical, carbon dioxide, alcohol-resistant foam or water spray.
- Unsuitable Extinguishing Media**
- No data available

5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Containers may explode when heated.
- Hazardous Combustion Products**
- Depending on conditions, decomposition products may include the following materials: carbon oxides; halogenated compounds; metal oxide/oxides.

5.3 Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate the area before entry.
- Emergency Procedures**
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- Avoid generating dust. Carefully shovel or sweep up spilled material and place in suitable container.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

- Handling**
- Handle and open container with care. Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. Add this product only to water. Never add water to this product. Do not add to warm or hot water, a violent eruption or explosive reaction can result. May cause fire or explosion. Avoid contact with organic materials. Take any precaution to avoid mixing with strong acids. When making solutions or diluting, only add caustic soda slowly to surface of cold water while stirring. Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Caustic soda may react with various sugars to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Empty containers retain product residue and can be hazardous. Do not reuse container. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

- Storage**
- Ventilate enclosed areas. Keep only in the original container. Keep container tightly closed. Keep away from incompatible materials. Store in a cool, dry, well-ventilated place.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines						
	Result	ACGIH	Canada British Columbia	Canada Ontario	Canada Quebec	NIOSH
Sodium hydroxide (1310-73-2)	Ceilings	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling	2 mg/m3 Ceiling
Exposure Limits/Guidelines (Con't.)						
	Result				OSHA	

Sodium hydroxide (1310-73-2)	TWAs	2 mg/m3 TWA
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8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Eye/Face

- Wear chemical splash goggles and face shield.

Skin/Body

- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. HANDS: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Environmental Exposure Controls

- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	White dustless granules with no odor.
Color	White	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	1390 °C(2534 °F)	Melting Point/Freezing Point	310 to 320 °C(590 to 608 °F)
Decomposition Temperature	No data available	pH	Strongly basic
Specific Gravity/Relative Density	= 2.13 Water=1	Water Solubility	100 %
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available	Volatiles (Wt.)	0 %

Flammability

Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	No data available
Flammability (solid, gas)	No data available		

Environmental

Octanol/Water Partition coefficient	No data available		
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9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity**10.1 Reactivity**

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

- Under normal conditions of storage and use, hazardous polymerization will not occur.

10.4 Conditions to avoid

- Incompatible materials. Excess heat.

10.5 Incompatible materials

- Keep away from the following materials to prevent strong exothermic reactions: oxidizing agents, strong alkalis, strong acids. Reactive or incompatible with the following materials: metals (Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.), acids, organic materials (May cause fire or explosion.), food sugars (Caustic soda may react with various sugars to generate carbon monoxide.), water (Aqueous reaction with caustic soda can generate heat (strongly exothermic)).

10.6 Hazardous decomposition products

- Depending on conditions, decomposition products may include the following materials: carbon oxides; halogenated compounds; metal oxide/oxides.

Section 11 - Toxicological Information**11.1 Information on toxicological effects**

		Components
Sodium hydroxide (96% TO 100%)	1310-73-2	Irritation: Eye-Monkey • 1 % 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
		Impurities, Stabilizers, etc...
		Acute Toxicity: Ingestion/Oral-Rat LD50 • 4090 mg/kg; Inhalation-Rat LC50 • 2300 mg/m ³ 2 Hour(s); <i>Lungs, Thorax, or Respiration:</i> Dyspnea ; <i>Gastrointestinal:</i> Other changes ;
Sodium carbonate (2:1) (0% TO 2%)	497-19-8	Irritation: Eye-Rabbit • 50 mg • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TClO • 16.2 mg/m ³ 16 Week(s)-Intermittent; <i>Sense Organs and Special Senses:</i> Olfaction:Change in sensation of smell ; <i>Lungs, Thorax, or Respiration:</i> Emphysema ; <i>Immunological Including Allergic:</i> Decrease in cellular immune response
		Irritation: Eye-Rabbit • 100 mg 24 Hour(s) • Moderate irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Multi-dose Toxicity: Ingestion/Oral-Rat TDL0 • 201.6 g/kg 6 Week(s)-Intermittent; <i>Vascular:</i> BP elevation not characterized in autonomic section ;
Sodium chloride (0% TO 2%)	7647-14-5	Mutagen: <i>Unscheduled DNA synthesis</i> • Ingestion/Oral-Rat • 16800 mg/kg 4 Week(s)-Continuous; Reproductive: Ingestion/Oral-Rat TDL0 • 56400 mg/kg (5D pre-21D post); <i>Reproductive Effects:</i> Maternal

GHS Properties	Classification
Acute toxicity	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Skin Corrosion 1A UN GHS 3 • Skin Corrosion 1B OSHA HCS 2012 • Skin Corrosion 1B WHMIS 2015 • Skin Corrosion 1B
Serious eye damage/Irritation	EU/CLP • Classification criteria not met UN GHS 3 • Serious Eye Damage 1 OSHA HCS 2012 • Serious Eye Damage 1 WHMIS 2015 • Serious Eye Damage 1
Skin sensitization	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Respiratory sensitization	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Aspiration Hazard	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Carcinogenicity	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
Toxicity for Reproduction	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
STOT-SE	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met
STOT-RE	EU/CLP • Classification criteria not met UN GHS 3 • Classification criteria not met OSHA HCS 2012 • Classification criteria not met WHMIS 2015 • Classification criteria not met

Potential Health Effects

Inhalation

Acute (Immediate)

- May cause corrosive burns - irreversible damage.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

Acute (Immediate)

- Causes severe skin burns.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

Acute (Immediate)

- Causes serious eye damage. Direct contact with the eyes can cause irreversible damage, including blindness.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

Acute (Immediate)

- May cause irreversible damage to mucous membranes.

Chronic (Delayed)

- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Key to abbreviations

LC = Lethal Concentration

LD = Lethal Dose

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity

	CAS	
Caustic Soda Beads	1310-73-2	Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Gambusia affinis</i> - Adult 125000 µg/L [Fresh water] 96 Hour(s) NOEC <i>Poecilia reticulata</i> - Young 56 mg/L [Marine water] 96 Hour(s) LC50 <i>Guppy</i> - <i>Poecilia reticulata</i> 196 mg/L [Marine water] 96 Hour(s) NOEC <i>Guppy</i> - <i>Poecilia reticulata</i> 56 mg/L [Marine water] Aquatic Toxicity-Crustacea: 48 Hour(s) EC50 Water Flea <i>Ceriodaphnia dubia</i> 40.4 mg/L [Fresh water] 48 Hour(s) LC50 <i>Crangon</i> - adult 33000-100000 µg/L [Marine water]

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Water solubility: Soluble.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1823	Sodium hydroxide, solid	8	II	NDA
TDG	UN1823	SODIUM HYDROXIDE, SOLID	8	II	NDA
IMO/IMDG	UN1823	SODIUM HYDROXIDE, SOLID	8	II	NDA
IATA/ICAO	UN1823	Sodium hydroxide, solid	8	II	NDA

14.6 Special precautions for user • None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • Acute

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Sodium carbonate (2:1)	497-19-8	Yes	No	Yes	No	Yes
Sodium chloride	7647-14-5	Yes	No	Yes	No	Yes
Sodium hydroxide	1310-73-2	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.04N, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)
• Sodium chloride	7647-14-5	Uncontrolled product according to WHMIS classification criteria
• Sodium carbonate (2:1)	497-19-8	D2B, E

Canada - WHMIS - Ingredient Disclosure List

• Sodium hydroxide	1310-73-2	1 %
• Sodium chloride	7647-14-5	Not Listed

• Sodium carbonate (2:1)	497-19-8	1 %
--------------------------	----------	-----

Environment

Canada - CEPA - Priority Substances List

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed

• Sodium carbonate (2:1)	497-19-8	Not Listed
U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification		
• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Sodium hydroxide	1310-73-2	Not Listed
• Sodium chloride	7647-14-5	Not Listed
• Sodium carbonate (2:1)	497-19-8	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- WARNING: This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H319 - Causes serious eye irritation

Revision Date

- 17/May/2016

Preparation Date

- 12/May/2014

Other Information

- NSF® Standard 60 Drinking Water Treatment Chemicals – PELS™ Caustic Soda Beads and PELS™ Plus Caustic Soda Beads have Health Effect Listing and are certified for maximum use of 100 mg/l.

Disclaimer/Statement of Liability

- The technical data given herein is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. No guarantee is being given as to the end use performance. The product is sold on the basis that buyers test the product for their specific purposes. This information related to the material designated and may not be valid for such material used in combination with any other materials or in any process.

Key to abbreviations

NDA = No Data Available


APPENDIX D

RESUMES OF SAMPLING PERSONNEL

Robert J. Hubbard, P.E.

Senior Project Manager/Risk Assessment Specialist

Professional Registrations and Certification			
Registration/Certification	State	Number	Date Exp.
Professional Engineer	PA	PE052342E	9/30/19
CFR 1910.120, 40-Hour Health & Safety Training/Refresher			current



Key Expertise

- Project Management
- Site Investigation
- Remedial Design
- Risk Assessment
- Fate and Transport
- Statistics
- Process Engineering
- Expert Witness
- Brownfields
- MGPs
- Wood Treating Facilities

Education:

B.S., Chemical Engineering, University of Colorado, 1984

Years of Experience/Years with KEY: 33/15

Professional Experience:

- Over 33 years of experience in multi-disciplinary environmental science and engineering projects
- Environmental projects administered under CERCLA and RCRA as well as various state programs
- Site investigation and remedy selection/design for both active and inactive/former industrial facilities
- Performance of human health and ecological risk assessments under relevant federal and state guidance
- Chemical fate and transport analysis for overland, subsurface, and atmospheric pathways
- Familiarity with multiple modeling tools, including, but not limited to closed-form solutions, BioScreen, BioChlor, PentoxSD, WASP4, and Screen III
- Development of risk-based cleanup criteria and narrative remediation goals via point estimate and Monte Carlo methods
- Completion of statistical analyses to support trend analysis, exposure point concentration determination, and background comparison
- Preparation of approved alternate concentration limits demonstrations, approved delisting petitions, and approved background demonstrations
- Expert witness support (depositional testimony and expert reports) for multiple sites (7) with emphasis on risk assessment and fate and transport
- Design engineer for groundwater remediation projects (pump and treat operations, air sparging, and in-situ chemical oxidation)
- Construction oversight, documentation, and reporting for remediation projects and demolition/decontamination

Primary Responsibilities:

Senior Project Manager responsible for scope, schedule, and budget on a variety of projects, including:

- Human health risk assessment
- Chemical fate and transport analysis
- Statistical evaluation of chemical analytical results
- Brownfields remediation and redevelopment
- Remediation of former manufactured gas plant (MGP) sites
- Treatment system design (air sparging, pump and treat, etc.)
- Project planning documents for multiple regulatory programs
- Managed projects with contract values of up to \$3MM

Representative Projects		
Role	Project	Location
Project Manager	Former Wood Treating Plant: Prepared Phase II Assessment report. Prepared technical memorandum to Ohio Bureau of Underground Storage Tank Regulation regarding impacts in the vicinity of former underground petroleum storage tanks and obtained a release regarding UST compliance issues, thereby preserving the eligibility of the site for consideration under the Voluntary Action Program. Acted as design engineer for excavation and offsite disposal of soils. Prepared an OEPA-approved arsenic background demonstration report confirming that intermittent arsenic detections in groundwater are within background levels, using information from the Ohio Ambient Groundwater Monitoring network, geochemistry, and statistics with results from a cross-gradient municipal production well a mile from the site.	OH
Expert Witness	Former Manufactured Gas Plant (MGP) Site: Provided technical support for the implementation of a soil gas sampling and analysis program. Completed data evaluation, statistical analyses, and risk assessment to demonstrate the receptors in an occupied onsite structure were not at risk as a result of potential vapor inhalation. Prepared a non-intrusive investigation work plan to study the potential presence of unidentified sources at the site. Provides ongoing expert witness support on behalf of the client.	VT
Risk Assessment Specialist Process Engineer	Former MGP Site: Supported remediation activities in a densely populated area. Developed acceptable ambient air concentrations for fugitive emissions and sized a blower to maintain negative pressure inside a sprung structure erected over the excavation area. Completed statistical analysis of downwind perimeter air sample results to demonstrate compliance with air standard and risk-based limits.	MO/IL
Risk Assessment Specialist	Former Chemical Production Site: Completed groundwater modeling for a benzene and ethylbenzene release located adjacent to the Elizabeth River under the Virginia Voluntary Remediation Program. Compiled historical analytical data, and prepared a work plan to collect additional data and complete tidal gauging. Conducted analytical groundwater modeling to simulate transport to the river and demonstrated that discharges would not adversely impact the receiving water body.	VA
Project Manager	Former Tar Plant: Prepared a U.S. EPA-approved work plan for implementation of a site investigation and coordinated field activities. Prepared an interim data submittal for the regulators, a risk assessment, a removal site evaluation, and an engineering evaluation/cost analysis.	MO
Process Engineer	Former Chlorobenzene/Naphthalene and Chromite Ore Processing Facilities: Provided technical support for two adjacent sites located on a major surface water body. Prepared an Area of Contamination demonstration ("like vs. like") memorandum to support onsite disposal of dredged sediment and excavated surficial materials. Prepared an engineering evaluation/cost analysis report. Prepared a TSCA self-implementing PCB remediation notification and coordinated PCB-impacted soil excavation and disposal activities. Designed a groundwater recovery and treatment system that employed chromium reduction, metals precipitation, clarification, solids management, pH adjustment, oil/water separation, and carbon adsorption. Provided support for construction quality assurance and prepared as-built drawings and operation and maintenance plan.	NJ
Process Engineer	Former Wood Treating Facility: Prepared a five-year report on behalf of the U.S. EPA and a focused feasibility study to address groundwater impacts. Prepared a technical memorandum supporting the use of monitored natural attenuation as the site remedy, and completed supplemental technology screening that demonstrated that the more costly alternatives were both ineffective and non-implementable.	TX
Expert Witness	Active Industrial Facility: Prepared an expert report on analytical methods and sediment core dating procedures for a law firm. A plaintiff alleged that a specific industry was the source of PCB impacts although other others existed. Judge issued a Summary Judgment exonerating the industry in view of substantial evidence pointing to other sources.	CT
Project Engineer	Former Creosote Wood Treating Facility: Prepared work plan to delineate DNAPL and dissolved phase constituents. Developed extensive supplemental sampling and analysis program to address regulatory concerns regarding downstream transport of site-related constituents. Conducted sediment core sampling in downstream pond and other depositional areas. Supported development of three-dimensional Graphic Information System. Assessed potential migration of DNAPL.	VA



Field & Technical Services

Andrew Clark Sampling Coordinator

Experience Summary

10+ years of experience supervising/conducting environmental sampling and investigation efforts. Expertise in groundwater/surface water/domestic well monitoring programs related to delineation, transport, remedial treatment performance monitoring and natural attenuation of various site constituents of concern.

Representative Projects

Groundwater Monitoring Program Supervisor responsible for the oversight of twenty-nine groundwater monitoring programs at individual sites across the United States

Interpretation and coordination of the site management and monitoring requirements pursuant to site control documents predicated under RCRA, TSCA and similar statutes.

Responsible for developing and implementing the training program for Field Sampling Technicians involving various groundwater sampling techniques such as Low Flow Purging and Sampling, Diffusion (No-Flow) Sample Collection, Westbay Discrete Interval Sampling, and Traditional (three well volume) groundwater sampling techniques.

Responsible for the field oversight of twenty-four discharge monitoring programs at individual sites in fourteen states

Responsibilities include the renewal, interpretation, and implementation of discharge permits from various state agencies, oversight of Discharge Monitoring and preparation of reports for clients and state agencies.

Significant experience in all sampling media

Environmental sampling efforts include employing various groundwater sampling techniques such as Low Flow Purging and Sampling, Westbay Discrete Interval Sampling, and Traditional (three well volume) groundwater sampling techniques. Proficient in techniques and instrumentation used to conduct industrial discharge sampling including composite and grab sample collection, preservation and submittal for laboratory analysis. Proficient in implementing domestic well monitoring programs.

Education

- B.A., Environmental Science with Chemistry Minor, Thiel College, 2007

Professional Registrations and Certifications

- CFR 1910.120, 40-Hour Health & Safety Training/Refresher
- CFR 172-704, DOT Hazardous Materials Training
- CFR 265.16, RCRA Hazardous Waste Training
- Adult CPR/AED



Field & Technical Services

Angela Gatchie

Data Manager/Project Scientist

Experience Summary

15+ years of experience managing environmental projects, reports and data, as well as, data validation and chemical analysis. Expertise includes statistical evaluation and graphical presentation utilizing programs which include EQUIS, GISKEY and custom Access applications.

Ms. Gatchie is the primary contact for more than ten different environmental laboratories.

Representative Projects

Responsible for the data acquisition, management, and reporting functions of forty-four groundwater monitoring programs at individual sites across the United States

Responsibilities include the coordination of groundwater monitoring and discharge monitoring (storm water, industrial wastewater, etc.); laboratory data oversight; data management, data validation, and report coordination/writing. The programs are implemented pursuant to site control documents predicated under RCRA, TSCA and similar statutes.

Responsible for the data acquisition, management, and reporting functions of twenty-four discharge monitoring programs at individual sites in fourteen states.

Responsibilities include laboratory coordination, review of the discharge monitoring reports, and submittal to the appropriate state agency.

Development and implementation of site groundwater sampling and reporting optimizations resulting in annual savings of \$220,000 continuing over the related life cycle of the client's monitoring obligations.

Successful optimizations in managed programs include negotiation of reduced frequency and/or number of wells monitored at multiple sites and elimination of a NPDES discharge monitoring and reporting program and a Consent Decree monitoring and reporting program.

Quality Assurance Contractor and Data Verification/Validation Contractor for Pre-design and Pilot Studies in Newark Bay and the Lower Passaic River

Related activities include Data Verification/Validation, Coordination and Support of Lab/Field Crews, Completion of Field Audits, Sample Tracking and Laboratory Quality Assurance Checking and Preparation of a Data Usability Report.

Manages all aspects of laboratory analytical data for client portfolio of groundwater and discharge monitoring programs.

Responsibilities include preparation of cost estimates, laboratory coordination, database preparation and creation using Access, GISKey, and EQUIS, database transfers, data evaluations, data validation, and table preparation for reporting purposes. Also responsible for the creation and distribution of chemical data, as well as, the trend line graphs for figures

Data Validation for client portfolio of groundwater and discharge monitoring programs.

As a data validator, validates data in accordance with the USEPA National Functional Guidelines for Organic and Inorganic Review as well as specific Regional guidelines including Regions I, II, III, IV, and V. In addition, client specific validation is performed using specific guidelines and forms set by the client.

Implementation and troubleshooting of an electronic validation tool to assist data validators in order to qualify data electronically and provide smooth transfer to a database.

Development of a real-time field data management system

Assisted with the development of a real-time field data management system which interfaces handheld data collection units with a web hosted data management platform. The developed system interfaces with EQUIS on the front end to allow the sampling technicians to print fully completed labels at the well and produces an out export of field data to EQUIS in its standard required format.

Conversion of Client's historical groundwater data (29 Sites)

Successful conversion of the Client's historical groundwater sampling data. The Client's groundwater sampling data, including a million plus records, was previously stored in various versions of EQUIS, GISKey, MS Access or in Excel spreadsheets in various structures.

Education

- B.S., Chemistry with Mathematics minor, University of Pittsburgh, 2001

Professional Registrations and Certifications

- CFR 1910.120, 40 Hour Health & Safety Training/Refresher
- 8 Hr. Field Quality Assurance and Documentation Training Certificate
- Access Database Management Certificate





Field & Technical Services

Benjamin Trask Sampling Technician

Experience Summary

2+ years of experience performing environmental sampling events.

Skills

Groundwater Sampling (Traditional/Low-Flow/West Bay/Diffusion Bags/Passive In-Situ)	Review and Assessment of Site Sampling, Health & Safety and Waste Management Plans
Domestic Well Sampling	Data Collection, Evaluation and Management
Waste Water Sampling	Compliance Inspections
Air Sampling	Excellent Communication and Verbal Skills

Representative Experience

Sampling

Proficient in multiple groundwater sample collection techniques, groundwater remediation projects, O&M remediation projects, non-aqueous phase liquid recovery and remediation, hazardous and non-hazardous waste handling, storage, and shipping.

Conduct groundwater sampling events utilizing various groundwater sampling techniques such as Low Flow Purging and Sampling, Diffusion (No-Flow) Sample Collection, Westbay Discrete Interval Sampling, and Traditional (three well volume) groundwater sampling techniques.

Proficient in conducting domestic well monitoring sampling events.

Compliance Inspections

Conduct site inspections to assess compliance for client sites that include: monuments, CAMU units, landfills, monitoring wells, outfalls, etc.

Education

- B.S., Environmental Studies, California University of Pennsylvania, 2015

Professional Registrations and Certifications

- CFR 1910.120, 40-Hour Health & Safety Training/Refresher
- CFR 172-704, DOT Hazardous Materials Training
- CFR 265.16, RCRA Hazardous Waste Training
- Adult CPR/AED

APPENDIX E

FIELD NOTES AND CHAIN OF CUSTODY FORMS

Location Bulger, PA Date 1/25/18
 Project / Client Bulger Sludge Sampling
 30's Overcast Samples: BT, EM

0745	arrive @ office / load truck
0810	Map to site
0849	On Site / sign in
0900	Talk with Rob Buttermore
0915	Collect Grab from clarifier
0948	Collect Comp from clarifier
1015	Sign out off site
1047	@ office / unload truck
1051	BT

1/25/18

BT

1/25/18

80

Location Bulges. PADate 3/23/18Project / Client F039 Deltisting30's Sunny Sampler: BT

0915	Mob to site			
0948	On site			
1616	Collect Grab	Sample / dup	From Clarifier	
1638	Collect Comp	Sample / dup		
1110	off site			
1150	@ office			

~~BT~~
3/23/18

Location Bulger, PA Date 10/18/17Project / Client Max Env. Permit Renewal60's Sunny Samplers BT, KMM

0905	Mod to site
1000	On site
1008	Arrive @ 001
1030	Start 001 ISCO
1111	Start 101 ISCO
1125	Start Sludge Sampling
1156	Off site
1240	@ office

~~BT~~
10/18/17

Location

Project / C

60's Sunny

0830

0842

0920

0940

1003

1030

1055

~~1111~~

1111

1140

1215

BT
10/19

PT

PT



Thickener tank

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.



2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

Client Page # 1 of 1

Page 80 of 81

Client Name: <u>Max Environmental</u>		Received on ice? Y N		Reportable to PADEP? Yes <input type="checkbox"/>		Analyses Requested					LAB USE ONLY																						
Address: <u>700 Max Drive</u> <u>Bulger, PA 15019</u>		Sample Temp: _____		PWSID # _____							Work Order # <u>9A30001</u>																						
Contact: _____											Attach # <u>1</u>																						
Phone #: _____											FLI Page # <u>1</u> of <u>2</u>																						
Fax #: _____											Tracking # _____																						
Project Name: <u>Bulger WDES Permit Renewal</u>		Composite Start		GRAB -or- Composite End		Matrix																											
Quote/PO #: _____																																	
TAT: Normal <input type="checkbox"/> Rush <input type="checkbox"/>		GRAB		Composite																													
Rush TAT subject to pre-approval and surcharge.																																	
Date Required: ___/___/___																																	
Sample Description/Location				Start Date		Start Time		End Date		End Time		Solid		Water		Other		# of Containers		VOCs		SVOCs, PCBs, Pest. and Herb.		Metals, Total and Ammonia, Cyanide		pH, Fluoride, Sulfide		% Solids		TCLP, SVOCs, Metals, pH		Bottle Type/Comments	
001		x						1/25/18		0915		x						2		x													
002		x						1/25/18		2200		x						1		x													
001				x				1/25/18		0948		x						2		x		x		x		x		x					
002				x				1/25/18		2200		x						1		x		x		x		x		x					
Sampled by: <u>Bu [Signature]</u> 1/25/18		Received by: <u>[Signature]</u> 1/26/18 11:30		Date		Time																											
Relinquished by: <u>[Signature]</u> 1/29/18 17:20		Received by: <u>[Signature]</u> 1/29/18 17:20		Date		Time																											
Relinquished by: _____		Received by: _____		Date		Time																											
Relinquished by: _____		Received by: _____		Date		Time																											

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse. White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.



2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

Client Page # 1 of 1

Client Name: <u>Max Environmental</u> Address: <u>700 Max Drive</u> <u>Bulger, PA 15019</u> Contact: <u>Carl Spadaro</u> Phone #: <u>(412) 445-9789</u> Fax #: _____ Project Name: <u>F039 Delisting Petition</u> Quote/PO #: _____		Received on ice? Y N Sample Temp: _____ Reportable to PADEP? Yes <input type="checkbox"/> PWSID # _____		Analyses Requested VOCs SVOCs, PCBs, Pest and Chlorinated Herb TAL Metals, Total and Ammonia Cyanide pH, Fluoride, Sulfide % Solids TCLP, SVOCs, Metals, pH								LAB USE ONLY Work Order # _____ Attach # _____ FLI Page # _____ of _____ Tracking # _____							
TAT: Normal <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Rush TAT subject to pre-approval and surcharge. Date Required: ____/____/____		GRAB	Composite	Composite Start GRAB -or- Composite End		Matrix Solid _____ Water _____ Other _____			# of Containers										
Sample Description/Location				Start Date	Start Time	End Date	End Time												Bottle Type/Comments
<u>Bulger - C1001 - 032318</u>		x				<u>3/23/18</u>	<u>1010</u>	x											
<u>Bulger - C1002 - 032318</u>		x				<u>3/23/18</u>	<u>1200</u>	x											
<u>Bulger - C1001 - 032318</u>			x			<u>3/23/18</u>	<u>1038</u>	x				x	x	x	x	x			
<u>Bulger - C1002 - 032318</u>			x			<u>3/23/18</u>	<u>1200</u>	x				x	x	x	x	x			
<u>BT 3/23/18</u>																			
Sampled by: <u>Bm/mask</u> <u>3/23/18</u> (Signature)		Received by: _____ Date Time		Remarks															
Relinquished by: _____ Date Time		Received by: _____ Date Time																	
Relinquished by: _____ Date Time		Received by: _____ Date Time																	
Relinquished by: _____ Date Time		Received by: _____ Date Time																	

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

APPENDIX F

**LABORATORY DATA PACKAGES AND VALIDATION MEMORANDA
(PROVIDED ON CD IN HARD COPY)**



2019 Ninth Avenue
 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
BULGER CLARIFIER SLUDGE	7E16171-01	Solid	Grab	05/15/17 11:00	05/16/17 18:15
101	7E16171-02	Water	Grab	05/15/17 11:00	05/16/17 18:15
TRIP BLANK	7E16171-03	Water	Trip Blank	05/15/17 00:00	05/16/17 18:15

7E16171 Report revised. This report replaces the report issued on 12/20/17 8:52. 1/9/18smc/mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
 Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



2019 Ninth Avenue
 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	-------------------	-----------	------

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 21°C	8.51			pH Units	05/22/17 13:20	SW846-9045 D	elb	
-------------	------	--	--	----------	----------------	--------------	-----	--

Calculated Analytes

Amenable Cyanide	<0.344	0.344	2.29	mg/kg dry	05/23/17 12:52	SM20-4500 CN-C+E+G	caa	
------------------	--------	-------	------	-----------	----------------	--------------------	-----	--

Chlorinated Herbicides by EPA Method 8151A

2,4-D	<3.15	3.15	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
Acifluorfen	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
2,4-DB	<3.15	3.15	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
2,4,5-T	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
2,4,5-TP (Silvex)	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
Dalapon	<39.4	39.4	158	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
Dicamba	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
Dichloroprop	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	
Dinoseb	<1.57	1.57	15.7	ug/kg dry	05/24/17 01:05	EPA 8151A	rsr	

Surrogate: 2,4-DCAA		70 %		40.6-150	05/24/17 01:05	EPA 8151A	rsr	
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Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	536	5.18	204	mg/kg dry	05/23/17 21:03	EPA 9056A	bdw	I
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 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Conventional Chemistry Parameters by SM/EPA Methods

% Solids	21.0		0.100	%	05/18/17 20:00	SM 2540 G-97	pra	
Sulfide	<8.45	8.45	89.7	mg/kg dry	05/16/17 19:30	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	<0.344	0.344	2.29	mg/kg dry	05/23/17 12:52	EPA 9014	caa	
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Metals by EPA 6000/7000 Series Methods

Silver	<1.23	1.23	9.13	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	G
Arsenic	<6.16	6.16	18.3	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I
Barium	9140	283	456	mg/kg dry	05/22/17 15:04	EPA 6010B/2.0	sr	I, L
Beryllium	7.88	0.936	4.56	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	
Cadmium	3.66 J	3.24	9.13	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	
Chromium	215	1.66	11.4	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I
Mercury	0.139	0.0137	0.137	mg/kg dry	05/18/17 10:16	EPA 7471B	jks	
Nickel	765	16.7	114	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 6000/7000 Series Methods

Lead	125	2.98	18.3	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I
Antimony	<18.7	18.7	22.8	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I, L
Selenium	<22.4	22.4	45.6	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I
Thallium	<6.62	6.62	45.6	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I
Vanadium	46.0	1.46	45.6	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	
Zinc	1480	10.0	45.6	mg/kg dry	05/22/17 14:59	EPA 6010B/2.0	sr	I

Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<16.2	16.2	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
alpha-BHC	<14.1	14.1	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
beta-BHC	<20.1	20.1	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
delta-BHC	<12.7	12.7	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
gamma-BHC (Lindane)	<13.3	13.3	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Chlordane (tech)	<513	513	2050	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
4,4'-DDD	<15.4	15.4	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Organochlorine Pesticides by EPA Extraction Method 3541

4,4'-DDE	<13.9	13.9	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
4,4'-DDT	<12.9	12.9	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Dieldrin	<13.9	13.9	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endosulfan I	<15.0	15.0	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endosulfan II	<16.4	16.4	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endosulfan sulfate	<12.5	12.5	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endrin	<16.4	16.4	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endrin aldehyde	<16.2	16.2	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Heptachlor	<13.7	13.7	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	D
Heptachlor epoxide	<22.3	22.3	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Methoxychlor	<25.0	25.0	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Toxaphene	<855	855	2050	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
alpha-Chlordane	<15.0	15.0	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
gamma-Chlordane	<14.1	14.1	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Endrin ketone	<26.0	26.0	41.0	ug/kg dry	05/18/17 11:02	EPA 8081B	RSR	
Surrogate: Tetrachloro-meta-xylene	60.3 %		40-157		05/18/17 11:02	EPA 8081B	RSR	
Surrogate: Decachlorobiphenyl	107 %		57.1-153		05/18/17 11:02	EPA 8081B	RSR	

Polychlorinated Biphenyls by EPA Extraction Method 3541

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.023	0.023	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1221	<0.033	0.033	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1232	<0.034	0.034	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1242	<0.011	0.011	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1248	<0.007	0.007	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1254	<0.025	0.025	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
PCB-1260	<0.024	0.024	0.041	mg/kg dry	05/19/17 07:14	EPA 8082	rsr	
<i>Surrogate: Tetrachloro-meta-xylene</i>		103 %	11-140		05/19/17 07:14	EPA 8082	rsr	
<i>Surrogate: Decachlorobiphenyl</i>		114 %	24.4-140		05/19/17 07:14	EPA 8082	rsr	

Semivolatile Organic Compounds by EPA Extraction Method 3541

Benzidine	<3.28	3.28	46.8	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	F
Pyridine	<4.87	4.87	18.7	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Diphenylamine	<1.12	1.12	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Acenaphthene	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Acenaphthylene	<0.749	0.749	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Anthracene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzoic acid	<4.02	4.02	93.6	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzo (a) anthracene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

A7

Benzo (b) fluoranthene	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzo (k) fluoranthene	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzo (g,h,i) perylene	<0.749	0.749	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzo (a) pyrene	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Benzyl alcohol	<1.31	1.31	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Bis(2-chloroethoxy)methane	<1.31	1.31	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Bis(2-chloroethyl)ether	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Bis(2-chloroisopropyl)ether	<0.562	0.562	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Bis(2-ethylhexyl)phthalate	7.67 J	2.81	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4-Bromophenyl phenyl ether	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Butyl benzyl phthalate	<1.12	1.12	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4-Chloroaniline	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4-Chloro-3-methylphenol	<0.842	0.842	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Chloronaphthalene	<0.562	0.562	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Chlorophenol	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4-Chlorophenyl phenyl ether	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Chrysene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Dibenz (a,h) anthracene	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	

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Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

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Semivolatile Organic Compounds by EPA Extraction Method 3541

A7

Dibenzofuran	<0.281	0.281	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Di-n-butyl phthalate	7.39 J	1.97	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
1,2-Dichlorobenzene	<0.842	0.842	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
1,3-Dichlorobenzene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
1,4-Dichlorobenzene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
3,3'-Dichlorobenzidine	<0.842	0.842	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2,4-Dichlorophenol	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Diethyl phthalate	<0.936	0.936	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	F
2,4-Dimethylphenol	<0.749	0.749	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Dimethyl phthalate	<0.562	0.562	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4,6-Dinitro-2-methylphenol	<2.99	2.99	46.8	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2,4-Dinitrophenol	<2.43	2.43	46.8	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	F
2,4-Dinitrotoluene	<1.97	1.97	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2,6-Dinitrotoluene	<1.78	1.78	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Di-n-octyl phthalate	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Aniline	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Naphthalene	<0.562	0.562	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
N-Nitrosodimethylamine	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

A7

3 & 4-Methylphenol	<0.842	0.842	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Acetophenone	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
1,2-Diphenylhydrazine	<0.374	0.374	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Fluoranthene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Fluorene	<0.374	0.374	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Hexachlorobenzene	<1.12	1.12	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Hexachlorobutadiene	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Hexachlorocyclopentadiene	<2.34	2.34	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Hexachloroethane	<1.12	1.12	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Indeno (1,2,3-cd) pyrene	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Isophorone	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Methylnaphthalene	<0.749	0.749	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Methylphenol	<1.50	1.50	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Nitroaniline	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
3-Nitroaniline	<2.62	2.62	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
4-Nitroaniline	<2.15	2.15	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Nitrobenzene	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2-Nitrophenol	<1.40	1.40	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

A7

4-Nitrophenol	<2.34	2.34	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
N-Nitrosodi-n-propylamine	<0.936	0.936	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Pentachlorophenol	<2.34	2.34	46.8	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Phenanthrene	<0.468	0.468	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Phenol	<1.22	1.22	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
Pyrene	<0.655	0.655	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
1,2,4-Trichlorobenzene	<1.03	1.03	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2,4,5-Trichlorophenol	<1.59	1.59	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
2,4,6-Trichlorophenol	<1.50	1.50	9.36	mg/kg dry	05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: 2-Fluorophenol</i>		91 %	10-169		05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: Phenol-d6</i>		93 %	10-166		05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: Nitrobenzene-d5</i>		87 %	18.8-170		05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: 2-Fluorobiphenyl</i>		92 %	35.1-154		05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: 2,4,6-Tribromophenol</i>		100 %	20-158		05/19/17 01:13	EPA 8270D	rsr	
<i>Surrogate: Terphenyl-d14</i>		87 %	52.1-160		05/19/17 01:13	EPA 8270D	rsr	

TCLP Extraction by EPA 1311

# pH @ 21.2°C	8.37			pH Units	05/18/17 08:36	EPA 1311	spp	
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TCLP Metals extracted by EPA 1311

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Project: BULGER
 Project Number: [none]
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Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Silver	<0.00802	0.00802	0.0200	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Arsenic	<0.0250	0.0250	0.0400	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Barium	0.607	0.0310	0.0500	mg/l	05/21/17 15:39	EPA 6010B/2.0	sr	
Beryllium	0.00170 J	0.000730	0.0100	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Cadmium	<0.00520	0.00520	0.0200	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Chromium	0.0111 J	0.00522	0.0250	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Mercury	0.000937 J	0.000410	0.00200	mg/l	05/22/17 13:41	EPA 7471B	jks	K, Q
Nickel	0.0725 J	0.0382	0.250	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Lead	0.0202 J	0.0169	0.0400	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Antimony	0.0732	0.0289	0.0500	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Selenium	<0.0224	0.0224	0.100	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Thallium	<0.0361	0.0361	0.100	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	

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Project: BULGER
 Project Number: [none]
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 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Vanadium	<0.00374	0.00374	0.100	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	
Zinc	0.0225 J	0.0136	0.100	mg/l	05/21/17 15:41	EPA 6010B/2.0	sr	

Volatile Organic Compounds by EPA Method 8260B

14

Acrolein	<1.38	1.38	18.3	mg/kg dry	05/25/17 19:49	EPA 8260B	mtc	
2-Chloroethylvinyl ether	<1.56	1.56	18.3	mg/kg dry	05/25/17 19:49	EPA 8260B	mtc	
Benzene	0.0074 J	0.0007	0.0090	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Toluene	0.0071 J	0.0006	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Ethylbenzene	<0.0002	0.0002	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Xylenes (total)	<0.0022	0.0022	0.0449	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Naphthalene	<0.0015	0.0015	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Acrylonitrile	<0.0020	0.0020	0.0449	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Bromodichloromethane	<0.0006	0.0006	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Bromoform	<0.0008	0.0008	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Bromomethane	<0.0022	0.0022	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
2-Butanone	0.0673	0.0067	0.0449	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Carbon disulfide	0.0218 J	0.0014	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Carbon tetrachloride	<0.0013	0.0013	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	

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Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

14

Chlorobenzene	<0.0022	0.0022	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Chloroethane	<0.0014	0.0014	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Chloroform	0.0067 J	0.0009	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2-Dibromo-3-chloropropane	<0.0013	0.0013	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Dibromochloromethane	<0.0011	0.0011	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2-Dibromoethane (EDB)	<0.0009	0.0009	0.0090	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Dibromomethane	<0.0007	0.0007	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2-Dichlorobenzene	<0.0011	0.0011	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,4-Dichlorobenzene	<0.0012	0.0012	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,3-Dichlorobenzene	<0.0013	0.0013	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Dichlorodifluoromethane	<0.0016	0.0016	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	G
1,2-Dichloroethane	<0.0010	0.0010	0.0090	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1-Dichloroethane	<0.0005	0.0005	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
trans-1,2-Dichloroethene	<0.0013	0.0013	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1-Dichloroethene	<0.0011	0.0011	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2-Dichloropropane	<0.0005	0.0005	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
trans-1,3-Dichloropropene	<0.0006	0.0006	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
cis-1,3-Dichloropropene	<0.0005	0.0005	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	

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Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: BULGER CLARIFIER SLUDGE

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

14

Hexachlorobutadiene	<0.0022	0.0022	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Iodomethane	<0.0009	0.0009	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Methylene chloride	<0.0101	0.0101	0.0897	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1,2,2-Tetrachloroethane	<0.0010	0.0010	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1,1,2-Tetrachloroethane	<0.0006	0.0006	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Tetrachloroethene	<0.0015	0.0015	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2,4-Trichlorobenzene	<0.0015	0.0015	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1,1-Trichloroethane	<0.0012	0.0012	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,1,2-Trichloroethane	<0.0010	0.0010	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Trichloroethene	<0.0012	0.0012	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Trichlorofluoromethane	<0.0052	0.0052	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
1,2,3-Trichloropropane	<0.0015	0.0015	0.0224	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Vinyl chloride	<0.0040	0.0040	0.0090	mg/kg dry	05/25/17 05:44	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene	98 %		70-130		05/25/17 05:44	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	109 %		70-130		05/25/17 05:44	EPA 8260B	MTC	
Surrogate: Fluorobenzene	99 %		70-130		05/25/17 05:44	EPA 8260B	MTC	

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 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Calculated Analytes

Amenable Cyanide	<0.0015	0.0015	0.0100	mg/l	05/23/17 12:29	SM20-4500 CN-C+E+G	caa	
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<0.0400	0.0400	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
Acifluorfen	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
2,4-DB	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
2,4,5-T	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
2,4,5-TP (Silvex)	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
Dalapon	<0.500	0.500	2.00	ug/l	05/23/17 14:08	EPA 8151A	rsr	
Dicamba	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
Dichloroprop	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
Dinoseb	<0.0200	0.0200	0.200	ug/l	05/23/17 14:08	EPA 8151A	rsr	
<i>Surrogate: 2,4-DCAA</i>		<i>80.1 %</i>	<i>57.3-151</i>		<i>05/23/17 14:08</i>	<i>EPA 8151A</i>	<i>rsr</i>	

Conventional Chemistry Parameters by SM/EPA Methods

Cyanide (total)	<0.0015	0.0015	0.0100	mg/l	05/23/17 12:29	SM 4500 CN C+E-11	caa	
Fluoride	1.91 J	0.051	2.00	mg/l	05/17/17 17:11	EPA 300.0/2.1	bdw	
Sulfide	<0.754	0.754	2.00	mg/l	05/17/17 13:00	SM 4500 S2 F-11	pra	

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 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 245.1

Mercury	<0.0000410	0.0000410	0.000200	mg/l	05/18/17 12:19	EPA 245.1/3.0	jks	
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Metals by Prep Method EPA 200.2

Silver	<0.00160	0.00160	0.00400	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Arsenic	<0.00501	0.00501	0.00800	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Barium	0.348	0.00619	0.0100	mg/l	05/21/17 18:53	EPA 200.7/4.4	sr	
Beryllium	0.000274 J	0.000146	0.00200	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Cadmium	<0.00104	0.00104	0.00400	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Chromium	0.0179	0.00104	0.00500	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Nickel	0.416	0.00764	0.0500	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Lead	<0.00338	0.00338	0.00800	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Antimony	<0.00579	0.00579	0.0100	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Selenium	<0.00449	0.00449	0.0200	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Thallium	<0.00722	0.00722	0.0200	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	
Vanadium	<0.000749	0.000749	0.0200	mg/l	05/21/17 18:55	EPA 200.7/4.4	sr	

Organochlorine Pesticides by EPA Extraction Method 3510C

Aldrin	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
alpha-BHC	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
beta-BHC	<0.010	0.010	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	

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Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Organochlorine Pesticides by EPA Extraction Method 3510C

delta-BHC	<0.006	0.006	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	F
gamma-BHC (Lindane)	<0.006	0.006	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Chlordane (tech)	<0.250	0.250	1.00	ug/l	05/17/17 18:23	EPA 8081B	RSR	
4,4'-DDD	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
4,4'-DDE	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
4,4'-DDT	<0.006	0.006	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Dieldrin	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endosulfan I	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endosulfan II	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endosulfan sulfate	<0.006	0.006	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endrin	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endrin aldehyde	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Heptachlor	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Heptachlor epoxide	<0.011	0.011	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Methoxychlor	<0.012	0.012	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Toxaphene	<0.417	0.417	1.00	ug/l	05/17/17 18:23	EPA 8081B	RSR	
alpha-Chlordane	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Isodrin	<0.008	0.008	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	

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 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Organochlorine Pesticides by EPA Extraction Method 3510C

gamma-Chlordane	<0.007	0.007	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
Endrin ketone	<0.013	0.013	0.020	ug/l	05/17/17 18:23	EPA 8081B	RSR	
<i>Surrogate: Tetrachloro-meta-xylene</i>		66.0 %	24-119		05/17/17 18:23	EPA 8081B	RSR	
<i>Surrogate: Decachlorobiphenyl</i>		31.8 %	13.2-124		05/17/17 18:23	EPA 8081B	RSR	

Polychlorinated Biphenyls by EPA Extraction Method 3510C

PCB-1016	<0.0563	0.0563	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1221	<0.0809	0.0809	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1232	<0.0821	0.0821	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1242	<0.0267	0.0267	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1248	<0.0167	0.0167	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1254	<0.0614	0.0614	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
PCB-1260	<0.0576	0.0576	0.100	ug/l	05/19/17 12:09	EPA 8082	rsr	
<i>Surrogate: Tetrachloro-meta-xylene</i>		63.7 %	10-139		05/19/17 12:09	EPA 8082	rsr	
<i>Surrogate: Decachlorobiphenyl</i>		47.7 %	10-144		05/19/17 12:09	EPA 8082	rsr	

Semivolatle Organic Compounds by EPA Extraction Method 3510C

Benzidine	<11.0	11.0	250	ug/l	05/18/17 18:28	EPA 8270D	rsr	D, F
Pyridine	<13.5	13.5	100	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Diphenylamine	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	

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Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3510C

Acenaphthene	<15.5	15.5	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Acenaphthylene	<2.00	2.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Anthracene	<1.00	1.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Benzoic acid	76.5 J	18.5	500	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
Benzo (a) anthracene	<3.00	3.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Benzo (b) fluoranthene	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Benzo (k) fluoranthene	<8.50	8.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	G
Benzo (g,h,i) perylene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Benzo (a) pyrene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Benzyl alcohol	<3.00	3.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Bis(2-chloroethoxy)methane	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Bis(2-chloroethyl)ether	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Bis(2-chloroisopropyl)ether	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Bis(2-ethylhexyl)phthalate	<12.5	12.5	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
4-Bromophenyl phenyl ether	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Butyl benzyl phthalate	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
4-Chloroaniline	<3.50	3.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
4-Chloro-3-methylphenol	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

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Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3510C

2-Chloronaphthalene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2-Chlorophenol	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
4-Chlorophenyl phenyl ether	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Chrysene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Dibenz (a,h) anthracene	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Dibenzofuran	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Di-n-butyl phthalate	79.5	1.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
1,2-Dichlorobenzene	<4.00	4.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
1,3-Dichlorobenzene	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
3,3'-Dichlorobenzidine	<11.5	11.5	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
2,4-Dichlorophenol	<7.00	7.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Diethyl phthalate	<2.00	2.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2,4-Dimethylphenol	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Dimethyl phthalate	<3.50	3.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
4,6-Dinitro-2-methylphenol	<9.50	9.50	250	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
2,4-Dinitrophenol	<13.0	13.0	250	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	

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Semivolatile Organic Compounds by EPA Extraction Method 3510C

2,6-Dinitrotoluene	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Di-n-octyl phthalate	<1.00	1.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
Naphthalene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Aniline	<1.00	1.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
N-Nitrosodimethylamine	<21.5	21.5	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Acetophenone	<1.50	1.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
1,2-Diphenylhydrazine	<8.00	8.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Fluoranthene	<1.00	1.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Fluorene	<3.00	3.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Hexachlorocyclopentadiene	<9.50	9.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Hexachloroethane	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Indeno (1,2,3-cd) pyrene	<3.50	3.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Isophorone	<3.00	3.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2-Methylnaphthalene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2-Methylphenol	<6.50	6.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3510C

2-Nitroaniline	<12.0	12.0	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
3-Nitroaniline	<7.00	7.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
4-Nitroaniline	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Nitrobenzene	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2-Nitrophenol	<5.50	5.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
4-Nitrophenol	<30.5	30.5	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
N-Nitrosodi-n-propylamine	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	D
Pentachlorophenol	<13.5	13.5	250	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Phenanthrene	<2.00	2.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Phenol	<3.50	3.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Pyrene	<2.50	2.50	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
1,2,4-Trichlorobenzene	<5.00	5.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	05/18/17 18:28	EPA 8270D	rsr	
Surrogate: 2-Fluorophenol	50.3 %		30.6-66.8		05/18/17 18:28	EPA 8270D	rsr	
Surrogate: Phenol-d6	36.8 %		17.9-51.5		05/18/17 18:28	EPA 8270D	rsr	
Surrogate: Nitrobenzene-d5	88.4 %		30.6-140		05/18/17 18:28	EPA 8270D	rsr	
Surrogate: 2-Fluorobiphenyl	92.4 %		40.6-121		05/18/17 18:28	EPA 8270D	rsr	
Surrogate: 2,4,6-Tribromophenol	108 %		50.4-131		05/18/17 18:28	EPA 8270D	rsr	

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Project: BULGER
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 Collector: CLIENT
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Reported:
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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Chloroform	<0.30	0.30	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Chloromethane	<0.33	0.33	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,2-Dibromo-3-chloropropane	<0.21	0.21	5.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Dibromochloromethane	<0.18	0.18	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,2-Dibromoethane (EDB)	<0.22	0.22	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Dibromomethane	<0.27	0.27	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Dichlorodifluoromethane	<0.37	0.37	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,2-Dichloroethane	<0.20	0.20	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,1-Dichloroethane	<0.27	0.27	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
trans-1,2-Dichloroethene	<0.37	0.37	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,1-Dichloroethene	<0.47	0.47	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,2-Dichloropropane	<0.21	0.21	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
trans-1,3-Dichloropropene	<0.19	0.19	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
cis-1,3-Dichloropropene	<0.13	0.13	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Hexachlorobutadiene	<0.58	0.58	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Iodomethane	<0.28	0.28	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Methylene chloride	<0.53	0.53	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
4-Methyl-2-pentanone	<0.22	0.22	10.0	ug/l	05/17/17 20:02	EPA 8260B	bag	

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 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: 101

Date/Time Sampled: 05/15/17 11:00

Laboratory Sample ID: 7E16171-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

1,1,2,2-Tetrachloroethane	<0.23	0.23	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,1,1,2-Tetrachloroethane	<0.17	0.17	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Tetrachloroethene	<0.45	0.45	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,2,4-Trichlorobenzene	<0.29	0.29	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,1,1-Trichloroethane	<0.35	0.35	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
1,1,2-Trichloroethane	<0.19	0.19	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Trichloroethene	<0.34	0.34	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Trichlorofluoromethane	<0.39	0.39	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Vinyl chloride	<0.43	0.43	1.00	ug/l	05/17/17 20:02	EPA 8260B	bag	
Surrogate: 4-Bromofluorobenzene	91.4 %		70-130		05/17/17 20:02	EPA 8260B	bag	
Surrogate: 1,2-Dichloroethane-d4	97.7 %		70-130		05/17/17 20:02	EPA 8260B	bag	
Surrogate: Fluorobenzene	96.3 %		70-130		05/17/17 20:02	EPA 8260B	bag	

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 PaDEP: PA 41-04684



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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: TRIP BLANK

Date/Time Sampled: 05/15/17 00:00

Laboratory Sample ID: 7E16171-03 (Water/Trip Blank)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<0.25	0.25	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Toluene	<0.26	0.26	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Ethylbenzene	<0.37	0.37	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Xylenes (total)	<1.07	1.07	2.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Naphthalene	<0.27	0.27	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Acetone	<0.80	0.80	10.0	ug/l	05/17/17 20:40	EPA 8260B	bag	
Acrolein	<3.51	3.51	50.0	ug/l	05/17/17 20:40	EPA 8260B	bag	
Bromodichloromethane	<0.21	0.21	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Bromoform	<0.17	0.17	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Bromomethane	<0.37	0.37	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
2-Butanone	<0.20	0.20	10.0	ug/l	05/17/17 20:40	EPA 8260B	bag	
Carbon disulfide	<0.36	0.36	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Carbon tetrachloride	<0.36	0.36	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Chlorobenzene	<0.33	0.33	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Chloroethane	<0.29	0.29	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
2-Chloroethylvinyl ether	<1.92	1.92	50.0	ug/l	05/17/17 20:40	EPA 8260B	bag	
Chloroform	<0.30	0.30	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Chloromethane	<0.33	0.33	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: TRIP BLANK

Date/Time Sampled: 05/15/17 00:00

Laboratory Sample ID: 7E16171-03 (Water/Trip Blank)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

1,2-Dibromo-3-chloropropane	<0.21	0.21	5.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Dibromochloromethane	<0.18	0.18	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,2-Dibromoethane (EDB)	<0.22	0.22	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Dibromomethane	<0.27	0.27	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Dichlorodifluoromethane	<0.37	0.37	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,2-Dichloroethane	<0.20	0.20	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1-Dichloroethane	<0.27	0.27	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
trans-1,2-Dichloroethene	<0.37	0.37	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1-Dichloroethene	<0.47	0.47	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,2-Dichloropropane	<0.21	0.21	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
trans-1,3-Dichloropropene	<0.19	0.19	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
cis-1,3-Dichloropropene	<0.13	0.13	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Hexachlorobutadiene	<0.58	0.58	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Iodomethane	<0.28	0.28	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Methylene chloride	<0.53	0.53	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
4-Methyl-2-pentanone	<0.22	0.22	10.0	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1,2,2-Tetrachloroethane	<0.23	0.23	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1,1,2-Tetrachloroethane	<0.17	0.17	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Client Sample ID: TRIP BLANK

Date/Time Sampled: 05/15/17 00:00

Laboratory Sample ID: 7E16171-03 (Water/Trip Blank)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Tetrachloroethene	<0.45	0.45	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,2,4-Trichlorobenzene	<0.29	0.29	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1,1-Trichloroethane	<0.35	0.35	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
1,1,2-Trichloroethane	<0.19	0.19	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Trichloroethene	<0.34	0.34	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Trichlorofluoromethane	<0.39	0.39	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
Vinyl chloride	<0.43	0.43	1.00	ug/l	05/17/17 20:40	EPA 8260B	bag	
<i>Surrogate: 4-Bromofluorobenzene</i>		91.1 %			05/17/17 20:40	EPA 8260B	bag	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %			05/17/17 20:40	EPA 8260B	bag	
<i>Surrogate: Fluorobenzene</i>		100 %			05/17/17 20:40	EPA 8260B	bag	

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control

Chlorinated Herbicides by EPA Method 8151A

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7138067 - EPA 8151A									
Blank (7138067-BLK1)					Prepared: 05/18/17 Analyzed: 05/23/17				
2,4-D	ND		0.0100	ug/l					
Acifluorfen	ND		0.0100	ug/l					
2,4-DB	ND		0.0100	ug/l					
2,4,5-T	ND		0.0100	ug/l					
2,4,5-TP (Silvex)	ND		0.0100	ug/l					
Dalapon	ND		0.100	ug/l					
Dicamba	ND		0.0100	ug/l					
Dichloroprop	ND		0.0100	ug/l					
Dinoseb	ND		0.0100	ug/l					
<i>Surrogate: 2,4-DCAA</i>			90.1	ug/l	100		90.1 57.3-151		
LCS (7138067-BS1)					Prepared: 05/18/17 Analyzed: 05/23/17				
2,4-D	0.0813			ug/l	0.0800		102 34.1-144		200
Acifluorfen	0.0487			ug/l	0.0800		60.9 13.7-139		200
2,4-DB	0.0731			ug/l	0.0800		91.4 21.6-160		200
2,4,5-T	0.0480			ug/l	0.0800		60.0 22.2-151		200
2,4,5-TP (Silvex)	0.0546			ug/l	0.0800		68.2 30.8-119		200
Dalapon	1.01			ug/l	0.800		127 10-177		200
Dicamba	0.0578			ug/l	0.0800		72.2 22.9-125		200
Dichloroprop	0.0456			ug/l	0.0800		57.0 31.4-116		200
Dinoseb	0.0891			ug/l	0.0800		111 10-150		200
<i>Surrogate: 2,4-DCAA</i>			74.9	ug/l	100		74.9 57.3-151		
LCS (7138067-BS2)					Prepared: 05/19/17 Analyzed: 05/23/17				

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7138067 - EPA 8151A (Continued)									
LCS (7138067-BS2)					Prepared: 05/19/17 Analyzed: 05/23/17				
2,4-D	0.0579			ug/l	0.0800		72.4 34.1-144		200
Acifluorfen	0.0449			ug/l	0.0800		56.1 13.7-139		200
2,4-DB	0.0642			ug/l	0.0800		80.2 21.6-160		200
2,4,5-T	0.0487			ug/l	0.0800		60.9 22.2-151		200
2,4,5-TP (Silvex)	0.0529			ug/l	0.0800		66.1 30.8-119		200
Dalapon	0.513			ug/l	0.800		64.2 10-177		200
Dicamba	0.0532			ug/l	0.0800		66.5 22.9-125		200
Dichloroprop	0.0476			ug/l	0.0800		59.5 31.4-116		200
Dinoseb	0.0739			ug/l	0.0800		92.4 10-150		200
<i>Surrogate: 2,4-DCAA</i>			81.7	ug/l	100		81.7 57.3-151		
LCS (7138067-BS3)					Prepared: 05/19/17 Analyzed: 05/23/17				
2,4-D	0.0509			ug/l	0.0800		63.6 34.1-144		200
Acifluorfen	0.0471			ug/l	0.0800		58.9 13.7-139		200
2,4-DB	0.0595			ug/l	0.0800		74.4 21.6-160		200
2,4,5-T	0.0481			ug/l	0.0800		60.1 22.2-151		200
2,4,5-TP (Silvex)	0.0509			ug/l	0.0800		63.6 30.8-119		200
Dalapon	0.876			ug/l	0.800		109 10-177		200
Dicamba	0.0502			ug/l	0.0800		62.8 22.9-125		200
Dichloroprop	0.0446			ug/l	0.0800		55.8 31.4-116		200
Dinoseb	0.0797			ug/l	0.0800		99.6 10-150		200
<i>Surrogate: 2,4-DCAA</i>			73.0	ug/l	100		73.0 57.3-151		
LCS (7138067-BS4)					Prepared: 05/19/17 Analyzed: 05/23/17				
2,4-D	0.0544			ug/l	0.0800		68.0 34.1-144		200

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Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7138067 - EPA 8151A (Continued)									
LCS (7138067-BS4)					Prepared: 05/19/17 Analyzed: 05/23/17				
Acifluorfen	0.0472			ug/l	0.0800		59.0 13.7-139		200
2,4-DB	0.0898			ug/l	0.0800		112 21.6-160		200
2,4,5-T	0.0520			ug/l	0.0800		65.0 22.2-151		200
2,4,5-TP (Silvex)	0.0515			ug/l	0.0800		64.4 30.8-119		200
Dalapon	0.956			ug/l	0.800		120 10-177		200
Dicamba	0.0589			ug/l	0.0800		73.6 22.9-125		200
Dichloroprop	0.0460			ug/l	0.0800		57.5 31.4-116		200
Dinoseb	0.0813			ug/l	0.0800		102 10-150		200
<i>Surrogate: 2,4-DCAA</i>			84.2	ug/l	100		84.2 57.3-151		
Matrix Spike (7138067-MS1)					Source: 7E17038-06 Prepared: 05/19/17 Analyzed: 05/23/17				
2,4-D	0.0814			ug/l	0.0800	0.00	102 27.5-148		10
Acifluorfen	0.00370			ug/l	0.0800	0.00	4.62 10-172		200
2,4-DB	0.478			ug/l	0.0800	0.00	598 10-178		10
2,4,5-T	0.0523			ug/l	0.0800	0.00	65.4 15.1-160		10
2,4,5-TP (Silvex)	0.0860			ug/l	0.0800	0.00	108 27.2-130		10
Dalapon	1.05			ug/l	0.800	0.00	131 10-189		10
Dicamba	0.0465			ug/l	0.0800	0.00	58.1 25.9-132		10
Dichloroprop	0.0369			ug/l	0.0800	0.00	46.1 10-177		10
Dinoseb	0.0921			ug/l	0.0800	0.00	115 10-144		10
<i>Surrogate: 2,4-DCAA</i>			72.1	ug/l	100		72.1 57.3-151		
Matrix Spike Dup (7138067-MSD1)					Source: 7E17038-06 Prepared: 05/19/17 Analyzed: 05/23/17				
2,4-D	0.0752			ug/l	0.0800	0.00	94.0 27.5-148	7.92	10
Acifluorfen	0.00640			ug/l	0.0800	0.00	8.00 10-172	200	200

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7138067 - EPA 8151A (Continued)										
Matrix Spike Dup (7138067-MSD1)		Source: 7E17038-06			Prepared: 05/19/17 Analyzed: 05/23/17					
2,4-DB	0.466			ug/l	0.0800	0.00	582	10-178	2.65	10
2,4,5-T	0.0550			ug/l	0.0800	0.00	68.8	15.1-160	5.03	10
2,4,5-TP (Silvex)	0.101			ug/l	0.0800	0.00	126	27.2-130	15.8	10
Dalapon	0.982			ug/l	0.800	0.00	123	10-189	6.44	10
Dicamba	0.0495			ug/l	0.0800	0.00	61.9	25.9-132	6.25	10
Dichloroprop	0.0472			ug/l	0.0800	0.00	59.0	10-177	24.5	10
Dinoseb	0.101			ug/l	0.0800	0.00	127	10-144	9.61	10
<i>Surrogate: 2,4-DCAA</i>			85.6	ug/l	100		85.6	57.3-151		
Batch: 7142030 - EPA 8151A										
Blank (7142030-BLK1)		Prepared: 05/22/17 Analyzed: 05/23/17								
2,4-D	ND		3.33	ug/kg wet						
2,4,5-TP (Silvex)	ND		3.33	ug/kg wet						
<i>Surrogate: 2,4-DCAA</i>			22200	ug/kg wet	33300		67	40.6-150		



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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7136063 - General Preparation									
Blank (7136063-BLK1)									
Sulfide	ND		20.0	mg/kg wet					
Prepared & Analyzed: 05/16/17									
LCS (7136063-BS1)									
Sulfide	256		80.0	mg/kg wet	228		112 90-110		200
Prepared & Analyzed: 05/16/17									
Duplicate (7136063-DUP1)									
Sulfide	ND		79.9	mg/kg dry		ND			10
Prepared & Analyzed: 05/16/17									
Matrix Spike (7136063-MS1)									
Sulfide	959		320	mg/kg dry	911	ND	105 90-110		200
Prepared & Analyzed: 05/16/17									
Batch: 7137006 - General Preparation									
Blank (7137006-BLK1)									
Fluoride	ND		1.00	mg/l					
Prepared & Analyzed: 05/17/17									
Blank (7137006-BLK2)									
Fluoride	ND		1.00	mg/l					
Prepared & Analyzed: 05/17/17									
Blank (7137006-BLK3)									
Fluoride	ND		1.00	mg/l					
Prepared & Analyzed: 05/17/17									
Blank (7137006-BLK4)									
Fluoride	ND		1.00	mg/l					
Prepared & Analyzed: 05/17/17									
Blank (7137006-BLK5)									
Fluoride	ND		1.00	mg/l					
Prepared: 05/17/17 Analyzed: 05/18/17									

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Max Environmental
 651 Holiday Drive Foster Plaza #5
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 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
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Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137006 - General Preparation (Continued)										
Blank (7137006-BLK6)										
Fluoride	ND		1.00	mg/l						
						Prepared: 05/17/17 Analyzed: 05/18/17				
Blank (7137006-BLK7)										
Fluoride	ND		1.00	mg/l						
						Prepared: 05/17/17 Analyzed: 05/18/17				
LCS (7137006-BS1)										
Fluoride	2.00		1.00	mg/l	2.00		100	90-110		10
						Prepared & Analyzed: 05/17/17				
Batch: 7137068 - General Preparation										
Blank (7137068-BLK1)										
Sulfide	ND		1.00	mg/l						
						Prepared & Analyzed: 05/17/17				
LCS (7137068-BS1)										
Sulfide	11.8		1.00	mg/l	11.3		104	80-120		200
						Prepared & Analyzed: 05/17/17				
Matrix Spike (7137068-MS1)										
Sulfide	10.8		1.00	mg/l	11.3	ND	95.6	80-120		200
						Prepared & Analyzed: 05/17/17				
Matrix Spike Dup (7137068-MSD1)										
Sulfide	11.0		1.00	mg/l	11.3	ND	97.3	80-120	1.83	200
						Prepared & Analyzed: 05/17/17				
Batch: 7138060 - General Preparation										
Blank (7138060-BLK1)										
% Solids	ND		0.100	%						
						Prepared & Analyzed: 05/18/17				

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Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7138060 - General Preparation (Continued)										
Blank (7138060-BLK2)										
% Solids	ND		0.100	%						Prepared & Analyzed: 05/18/17
Duplicate (7138060-DUP1)										
% Solids	57.6		0.100	%		58.9			2.21	5
Duplicate (7138060-DUP2)										
% Solids	19.9		0.100	%		19.5			1.75	5
Batch: 7143028 - General Prep										
Blank (7143028-BLK1)										
Cyanide (total)	ND		0.0100	mg/l						Prepared & Analyzed: 05/23/17
Blank (7143028-BLK2)										
Cyanide (total)	ND		0.0100	mg/l						Prepared & Analyzed: 05/23/17
LCS (7143028-BS1)										
Cyanide (total)	0.175		0.0100	mg/l	0.200		87.7	85-115		200
LCS (7143028-BS2)										
Cyanide (total)	0.011		0.0100	mg/l	0.0100		107	85-115		200
Matrix Spike (7143028-MS1)										
Cyanide (total)	0.179		0.0100	mg/l	0.200	0.002	88.7	85-115		200
Matrix Spike (7143028-MS2)										
Cyanide (total)	0.176		0.0100	mg/l	0.200	ND	88.2	85-115		200

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Reported:
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Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7143028 - General Prep (Continued)										
Matrix Spike Dup (7143028-MSD1)			Source: 7E16093-02		Prepared & Analyzed: 05/23/17					
Cyanide (total)	0.164		0.0100	mg/l	0.200	0.002	80.8	85-115	9.16	200



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Reported:
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Quality Control
 (Continued)

Cyanide by Preparation Method EPA 9010

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7143029 - General Prep										
Blank (7143029-BLK1)										
Cyanide (total)	ND		0.484	mg/kg wet						
Prepared & Analyzed: 05/23/17										
LCS (7143029-BS1)										
Cyanide (total)	8.70		0.493	mg/kg wet	9.87		88.2	85-115		200
Prepared & Analyzed: 05/23/17										
Duplicate (7143029-DUP1)										
Cyanide (total)	ND		0.634	mg/kg dry		ND				10
Source: 7E17178-01										

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Quality Control
 (Continued)

Metals by EPA 245.1

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137056 - EPA 200 Series										
Blank (7137056-BLK1)										
Mercury	ND		0.000200	mg/l						
					Prepared: 05/17/17 Analyzed: 05/18/17					
LCS (7137056-BS1)										
Mercury	0.00204		0.000200	mg/l	0.00200		102	85-115		200
					Prepared: 05/17/17 Analyzed: 05/18/17					
Matrix Spike (7137056-MS1)										
Mercury	0.000971		0.000200	mg/l	0.00100	ND	97.1	70-130		10
					Prepared: 05/17/17 Analyzed: 05/18/17					
Matrix Spike (7137056-MS2)										
Mercury	0.000952		0.000200	mg/l	0.00100	ND	95.2	70-130		10
					Prepared: 05/17/17 Analyzed: 05/18/17					
Matrix Spike Dup (7137056-MSD2)										
Mercury	0.000952		0.000200	mg/l	0.00100	ND	95.2	70-130	0.0792	10
					Prepared: 05/17/17 Analyzed: 05/18/17					
Reference (7137056-SRM1)										
Mercury	0.00201		0.000200	mg/l	0.00200		101	90-110		
					Prepared: 05/17/17 Analyzed: 05/18/17					

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 01/09/18 10:06

Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137074 - EPA 3050B									
Blank (7137074-BLK1)					Prepared: 05/17/17 Analyzed: 05/22/17				
Antimony	1.08		0.935	mg/kg wet					
Arsenic	ND		0.748	mg/kg wet					
Barium	6.00		0.935	mg/kg wet					
Beryllium	ND		0.187	mg/kg wet					
Cadmium	ND		0.374	mg/kg wet					
Chromium	0.0864	J	0.467	mg/kg wet					
Lead	ND		0.748	mg/kg wet					
Nickel	ND		4.67	mg/kg wet					
Selenium	ND		1.87	mg/kg wet					
Silver	0.0621	J	0.374	mg/kg wet					
Thallium	ND		1.87	mg/kg wet					
Zinc	ND		1.87	mg/kg wet					
Vanadium	ND		1.87	mg/kg wet					
LCS (7137074-BS1)					Prepared: 05/17/17 Analyzed: 05/22/17				
Antimony	35.6		0.947	mg/kg wet	37.9	94	80-120		200
Arsenic	13.0		0.757	mg/kg wet	15.1	86	80-120		200
Barium	36.4		0.947	mg/kg wet	37.9	96	80-120		200
Beryllium	3.43		0.189	mg/kg wet	3.79	91	80-120		200
Cadmium	6.63		0.379	mg/kg wet	7.57	87	80-120		200
Chromium	3.64		0.473	mg/kg wet	3.79	96	80-120		200
Lead	13.5		0.757	mg/kg wet	15.1	89	80-120		200
Nickel	36.4		4.73	mg/kg wet	37.9	96	80-120		200
Selenium	31.5		1.89	mg/kg wet	37.9	83	80-120		200
Silver	5.78		0.379	mg/kg wet	7.57	76	80-120		200

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Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137074 - EPA 3050B (Continued)										
LCS (7137074-BS1)										
					Prepared: 05/17/17 Analyzed: 05/22/17					
Thallium	13.5		1.89	mg/kg wet	15.1		89	80-120		200
Zinc	34.9		1.89	mg/kg wet	37.9		92	80-120		200
Vanadium	34.6		1.89	mg/kg wet	37.9		91	80-120		200
Duplicate (7137074-DUP1)										
			Source: 7E16171-01			Prepared: 05/17/17 Analyzed: 05/22/17				
Antimony	ND		18.3	mg/kg dry		ND				20
Arsenic	ND		14.6	mg/kg dry		ND				20
Barium	7940		366	mg/kg dry		9140			14	20
Beryllium	6.95		3.66	mg/kg dry		7.88			13	20
Cadmium	3.22	J	7.32	mg/kg dry		3.66			13	20
Chromium	192		9.15	mg/kg dry		215			11	20
Lead	113		14.6	mg/kg dry		125			10	20
Nickel	677		91.5	mg/kg dry		765			12	20
Selenium	ND		36.6	mg/kg dry		ND				20
Silver	ND		7.32	mg/kg dry		ND				20
Thallium	ND		36.6	mg/kg dry		ND				20
Zinc	1310		36.6	mg/kg dry		1480			12	20
Vanadium	40.8		36.6	mg/kg dry		46.0			12	20
Matrix Spike (7137074-MS1)										
			Source: 7E16171-01			Prepared: 05/17/17 Analyzed: 05/22/17				
Antimony	54.7		18.4	mg/kg dry	147	ND	37	75-125		200
Arsenic	40.1		14.7	mg/kg dry	58.8	ND	68	75-125		200
Barium	7790		367	mg/kg dry	147	9140	NR	75-125		200
Beryllium	19.7		3.67	mg/kg dry	14.7	7.88	81	75-125		200
Cadmium	28.9		7.34	mg/kg dry	29.4	3.66	86	75-125		200
Chromium	193		9.18	mg/kg dry	14.7	215	NR	75-125		200

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Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137074 - EPA 3050B (Continued)										
Matrix Spike (7137074-MS1)			Source: 7E16171-01		Prepared: 05/17/17 Analyzed: 05/22/17					
Lead	157		14.7	mg/kg dry	58.8	125	55	75-125		200
Nickel	773		91.8	mg/kg dry	147	765	5	75-125		200
Selenium	97.7		36.7	mg/kg dry	147	ND	66	75-125		200
Silver	23.0		7.34	mg/kg dry	29.4	ND	78	75-125		200
Thallium	16.9	J	36.7	mg/kg dry	58.8	ND	29	75-125		200
Zinc	1360		36.7	mg/kg dry	147	1480	NR	75-125		200
Vanadium	168		36.7	mg/kg dry	147	46.0	83	75-125		200
Batch: 7137085 - EPA 7471A										
Blank (7137085-BLK1)			Prepared: 05/17/17 Analyzed: 05/18/17							
Mercury	ND		0.0324	mg/kg wet						
LCS (7137085-BS1)			Prepared: 05/17/17 Analyzed: 05/18/17							
Mercury	0.3427		0.0329	mg/kg wet	0.332		103	85-115		200
Matrix Spike (7137085-MS1)			Source: 7E16171-01		Prepared: 05/17/17 Analyzed: 05/18/17					
Mercury	0.8507		0.138	mg/kg dry	0.696	0.1393	102	70-130		20
Matrix Spike Dup (7137085-MSD1)			Source: 7E16171-01		Prepared: 05/17/17 Analyzed: 05/18/17					
Mercury	0.8383		0.133	mg/kg dry	0.671	0.1393	104	70-130	1.47	20
Reference (7137085-SRM1)			Prepared: 05/17/17 Analyzed: 05/18/17							
Mercury	0.3278		0.0330	mg/kg wet	0.333		98.3	90-110		

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
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Quality Control
 (Continued)

Metals by Prep Method EPA 200.2

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137019 - EPA 200.2									
Blank (7137019-BLK1)					Prepared: 05/17/17 Analyzed: 05/21/17				
Antimony	ND		0.0100	mg/l					
Arsenic	ND		0.00800	mg/l					
Barium	ND		0.0100	mg/l					
Beryllium	0.000501	J	0.00200	mg/l					
Cadmium	ND		0.00400	mg/l					
Chromium	ND		0.00500	mg/l					
Lead	ND		0.00800	mg/l					
Nickel	ND		0.0500	mg/l					
Selenium	0.00646	J	0.0200	mg/l					
Silver	ND		0.00400	mg/l					
Thallium	ND		0.0200	mg/l					
Vanadium	0.00548	J	0.0200	mg/l					
LCS (7137019-BS1)					Prepared: 05/17/17 Analyzed: 05/21/17				
Antimony	0.425		0.0100	mg/l	0.400	106	85-115		200
Arsenic	0.158		0.00800	mg/l	0.160	99	85-115		200
Barium	0.396		0.0100	mg/l	0.400	99	85-115		200
Beryllium	0.0403		0.00200	mg/l	0.0400	101	85-115		200
Cadmium	0.0809		0.00400	mg/l	0.0800	101	85-115		200
Chromium	0.0406		0.00500	mg/l	0.0400	101	85-115		200
Lead	0.163		0.00800	mg/l	0.160	102	85-115		200
Nickel	0.424		0.0500	mg/l	0.400	106	85-115		200
Selenium	0.414		0.0200	mg/l	0.400	103	85-115		200
Silver	0.0755		0.00400	mg/l	0.0800	94	85-115		200
Thallium	0.168		0.0200	mg/l	0.160	105	85-115		200

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Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Metals by Prep Method EPA 200.2 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137019 - EPA 200.2 (Continued)										
LCS (7137019-BS1)										
Vanadium	0.395		0.0200	mg/l	0.400		99	85-115		200
Prepared: 05/17/17 Analyzed: 05/21/17										
Duplicate (7137019-DUP1)										
Source: 7E16172-04 Prepared: 05/17/17 Analyzed: 05/21/17										
Antimony	0.00755	J	0.0100	mg/l		0.00644			16	10
Arsenic	ND		0.00800	mg/l		ND				10
Barium	0.0790		0.0100	mg/l		0.0830			5	10
Beryllium	0.000342	J	0.00200	mg/l		0.000307			11	10
Cadmium	ND		0.00400	mg/l		ND				10
Chromium	ND		0.00500	mg/l		ND				10
Lead	0.00351	J	0.00800	mg/l		0.00426			19	10
Nickel	ND		0.0500	mg/l		ND				20
Selenium	ND		0.0200	mg/l		ND				10
Silver	ND		0.00400	mg/l		ND				10
Thallium	ND		0.0200	mg/l		ND				10
Vanadium	0.000858	J	0.0200	mg/l		0.000963			11	10
Matrix Spike (7137019-MS1)										
Source: 7E16133-02 Prepared: 05/17/17 Analyzed: 05/21/17										
Antimony	0.438		0.0100	mg/l	0.400	0.00593	108	70-130		200
Arsenic	0.145		0.00800	mg/l	0.160	ND	91	70-130		200
Barium	0.488		0.0100	mg/l	0.400	0.0928	99	70-130		200
Beryllium	0.0397		0.00200	mg/l	0.0400	0.000340	98	70-130		200
Cadmium	0.0787		0.00400	mg/l	0.0800	ND	98	70-130		200
Chromium	0.0401		0.00500	mg/l	0.0400	ND	100	70-130		200
Lead	0.160		0.00800	mg/l	0.160	ND	100	70-130		200
Nickel	0.408		0.0500	mg/l	0.400	ND	102	75-125		200
Selenium	0.399		0.0200	mg/l	0.400	ND	100	70-130		200

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Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Metals by Prep Method EPA 200.2 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7137019 - EPA 200.2 (Continued)										
Matrix Spike (7137019-MS1)		Source: 7E16133-02			Prepared: 05/17/17 Analyzed: 05/21/17					
Silver	0.0735		0.00400	mg/l	0.0800	ND	92	70-130		200
Thallium	0.143		0.0200	mg/l	0.160	ND	90	70-130		200
Vanadium	0.390		0.0200	mg/l	0.400	ND	98	70-130		200
Matrix Spike (7137019-MS2)		Source: 7E16172-04			Prepared: 05/17/17 Analyzed: 05/21/17					
Antimony	0.432		0.0100	mg/l	0.400	0.00644	106	70-130		200
Arsenic	0.146		0.00800	mg/l	0.160	ND	91	70-130		200
Barium	0.468		0.0100	mg/l	0.400	0.0830	96	70-130		200
Beryllium	0.0394		0.00200	mg/l	0.0400	0.000307	98	70-130		200
Cadmium	0.0782		0.00400	mg/l	0.0800	ND	98	70-130		200
Chromium	0.0397		0.00500	mg/l	0.0400	ND	99	70-130		200
Lead	0.157		0.00800	mg/l	0.160	0.00426	96	70-130		200
Nickel	0.398		0.0500	mg/l	0.400	ND	99	75-125		200
Selenium	0.396		0.0200	mg/l	0.400	ND	99	70-130		200
Silver	0.0736		0.00400	mg/l	0.0800	ND	92	70-130		200
Thallium	0.141		0.0200	mg/l	0.160	ND	88	70-130		200
Vanadium	0.391		0.0200	mg/l	0.400	0.000963	98	70-130		200

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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137037 - EPA 3510C										
Blank (7137037-BLK1)					Prepared & Analyzed: 05/17/17					
Aldrin	ND		0.002	ug/l						
alpha-BHC	ND		0.002	ug/l						
beta-BHC	ND		0.002	ug/l						
delta-BHC	ND		0.002	ug/l						
gamma-BHC (Lindane)	ND		0.002	ug/l						
Chlordane (tech)	ND		0.100	ug/l						
4,4'-DDD	ND		0.002	ug/l						
4,4'-DDE	ND		0.002	ug/l						
4,4'-DDT	ND		0.002	ug/l						
Dieldrin	ND		0.002	ug/l						
Endosulfan I	ND		0.002	ug/l						
Endosulfan II	ND		0.002	ug/l						
Endosulfan sulfate	ND		0.002	ug/l						
Endrin	ND		0.002	ug/l						
Endrin aldehyde	ND		0.002	ug/l						
Heptachlor	ND		0.002	ug/l						
Heptachlor epoxide	ND		0.002	ug/l						
Methoxychlor	ND		0.002	ug/l						
Toxaphene	ND		0.100	ug/l						
alpha-Chlordane	ND		0.002	ug/l						
Isodrin	ND		0.002	ug/l						
gamma-Chlordane	ND		0.002	ug/l						
Endrin ketone	ND		0.002	ug/l						
<i>Surrogate: Tetrachloro-meta-xylene</i>			9.11	ug/l	20.0		45.5	24-119		
<i>Surrogate: Decachlorobiphenyl</i>			9.00	ug/l	20.0		45.0	13.2-124		

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Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

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Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Organochlorine Pesticides by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137037 - EPA 3510C (Continued)									
LCS (7137037-BS1)					Prepared & Analyzed: 05/17/17				
Aldrin	6.37			ug/l	12.0	53.0	33.1-89.1		200
alpha-BHC	7.26			ug/l	12.0	60.5	38.7-88.9		200
beta-BHC	8.08			ug/l	12.0	67.3	52.6-112		200
delta-BHC	7.93			ug/l	12.0	66.1	24.2-62		200
gamma-BHC (Lindane)	7.61			ug/l	12.0	63.4	42-94.2		200
4,4'-DDD	8.02			ug/l	12.0	66.8	31.7-132		200
4,4'-DDE	8.68			ug/l	12.0	72.3	44.4-103		200
4,4'-DDT	8.14			ug/l	12.0	67.8	48.7-117		200
Dieldrin	8.31			ug/l	12.0	69.2	46.8-107		200
Endosulfan I	3.18			ug/l	12.0	26.5	11.6-82.2		200
Endosulfan II	1.44			ug/l	12.0	12.0	10-95.8		200
Endosulfan sulfate	8.74			ug/l	12.0	72.8	46.6-90.2		200
Endrin	8.49			ug/l	12.0	70.8	36.8-113		200
Endrin aldehyde	9.71			ug/l	12.0	80.9	35.4-133		200
Heptachlor	7.82			ug/l	12.0	65.2	35.1-98.1		200
Heptachlor epoxide	7.80			ug/l	12.0	65.0	47.7-99.1		200
Methoxychlor	9.01			ug/l	12.0	75.1	46.6-125		200
alpha-Chlordane	7.33			ug/l	12.0	61.1	41.7-97.9		200
Isodrin	11.2			ug/l	12.0	93.7	37.6-106		200
gamma-Chlordane	12.1			ug/l	12.0	101	34.8-133		200
Endrin ketone	9.24			ug/l	12.0	77.0	49.7-126		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			9.97	ug/l	20.0	49.8	24-119		
<i>Surrogate: Decachlorobiphenyl</i>			9.88	ug/l	20.0	49.4	13.2-124		

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Project: BULGER

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Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

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Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Organochlorine Pesticides by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137037 - EPA 3510C (Continued)									
LCS Dup (7137037-BSD1)					Prepared & Analyzed: 05/17/17				
Aldrin	5.97			ug/l	12.0		49.8 33.1-89.1	6.38	200
alpha-BHC	6.45			ug/l	12.0		53.7 38.7-88.9	11.9	200
beta-BHC	7.01			ug/l	12.0		58.4 52.6-112	14.1	200
delta-BHC	6.75			ug/l	12.0		56.3 24.2-62	16.0	200
gamma-BHC (Lindane)	6.75			ug/l	12.0		56.2 42-94.2	12.1	200
Chlordane (tech)	ND		0.100	ug/l			80-120		200
4,4'-DDD	6.85			ug/l	12.0		57.1 31.7-132	15.8	200
4,4'-DDE	7.56			ug/l	12.0		63.0 44.4-103	13.8	200
4,4'-DDT	7.16			ug/l	12.0		59.7 48.7-117	12.8	200
Dieldrin	7.28			ug/l	12.0		60.7 46.8-107	13.1	200
Endosulfan I	3.17			ug/l	12.0		26.4 11.6-82.2	0.265	200
Endosulfan II	1.83			ug/l	12.0		15.2 10-95.8	23.4	200
Endosulfan sulfate	7.61			ug/l	12.0		63.4 46.6-90.2	13.9	200
Endrin	7.55			ug/l	12.0		62.9 36.8-113	11.8	200
Endrin aldehyde	8.57			ug/l	12.0		71.4 35.4-133	12.5	200
Heptachlor	7.78			ug/l	12.0		64.9 35.1-98.1	0.481	200
Heptachlor epoxide	6.94			ug/l	12.0		57.9 47.7-99.1	11.7	200
Methoxychlor	8.07			ug/l	12.0		67.2 46.6-125	11.1	200
Toxaphene	ND		0.100	ug/l			80-120		200
alpha-Chlordane	6.30			ug/l	12.0		52.5 41.7-97.9	15.0	200
Isodrin	10.5			ug/l	12.0		87.9 37.6-106	6.37	200
gamma-Chlordane	11.3			ug/l	12.0		94.1 34.8-133	6.82	200
Endrin ketone	7.97			ug/l	12.0		66.4 49.7-126	14.8	200
<i>Surrogate: Tetrachloro-meta-xylene</i>			<i>11.1</i>	<i>ug/l</i>	<i>20.0</i>		<i>55.7 24-119</i>		
<i>Surrogate: Decachlorobiphenyl</i>			<i>10.3</i>	<i>ug/l</i>	<i>20.0</i>		<i>51.5 13.2-124</i>		

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137037 - EPA 3510C (Continued)									
LCS Dup (7137037-BSD2)					Prepared & Analyzed: 05/17/17				
Hexachlorocyclopentadiene	5.55			ug/l	12.0	46.2	21.5-110	200	200
Hexachlorobenzene	6.98			ug/l	12.0	58.2	20.2-118	200	200
Aldrin	6.22			ug/l	12.0	51.9	33.1-89.1	200	200
alpha-BHC	7.07			ug/l	12.0	58.9	38.7-88.9	200	200
beta-BHC	7.56			ug/l	12.0	63.0	52.6-112	200	200
delta-BHC	7.30			ug/l	12.0	60.9	24.2-62	200	200
gamma-BHC (Lindane)	7.36			ug/l	12.0	61.3	42-94.2	200	200
4,4'-DDD	7.54			ug/l	12.0	62.9	31.7-132	200	200
4,4'-DDE	8.01			ug/l	12.0	66.7	44.4-103	200	200
4,4'-DDT	7.76			ug/l	12.0	64.6	48.7-117	200	200
Dieldrin	7.73			ug/l	12.0	64.4	46.8-107	200	200
Endosulfan I	3.88			ug/l	12.0	32.3	11.6-82.2	200	200
Endosulfan II	2.32			ug/l	12.0	19.4	10-95.8	200	200
Endosulfan sulfate	8.26			ug/l	12.0	68.8	46.6-90.2	200	200
Endrin	8.05			ug/l	12.0	67.1	36.8-113	200	200
Endrin aldehyde	9.22			ug/l	12.0	76.9	35.4-133	200	200
Heptachlor	7.99			ug/l	12.0	66.6	35.1-98.1	200	200
Heptachlor epoxide	7.46			ug/l	12.0	62.2	47.7-99.1	200	200
Methoxychlor	8.64			ug/l	12.0	72.0	46.6-125	200	200
alpha-Chlordane	7.01			ug/l	12.0	58.4	41.7-97.9	200	200
Isodrin	8.81			ug/l	12.0	73.4	37.6-106	200	200
gamma-Chlordane	9.28			ug/l	12.0	77.3	34.8-133	200	200
Endrin ketone	8.71			ug/l	12.0	72.6	49.7-126	200	200
<i>Surrogate: Tetrachloro-meta-xylene</i>			8.73	ug/l	20.0	43.7	24-119		

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137037 - EPA 3510C (Continued)										
LCS Dup (7137037-BSD2)										
Prepared & Analyzed: 05/17/17										
Surrogate: Decachlorobiphenyl			6.71	ug/l	20.0		33.6	13.2-124		



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Project: BULGER
 Project Number: [none]
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 Number of Containers: 24

Reported:
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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137039 - EPA 3541										
Blank (7137039-BLK1)					Prepared & Analyzed: 05/17/17					
gamma-BHC (Lindane)	ND		2.00	ug/kg wet						
Chlordane (tech)	ND		100	ug/kg wet						
Endrin	ND		2.00	ug/kg wet						
Heptachlor	ND		2.00	ug/kg wet						
Heptachlor epoxide	ND		2.00	ug/kg wet						
Methoxychlor	ND		2.00	ug/kg wet						
Toxaphene	ND		100	ug/kg wet						



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Max Environmental
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 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
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Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7136079 - EPA 3510C									
Blank (7136079-BLK1)					Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1016	ND		0.0100	ug/l					
PCB-1221	ND		0.0100	ug/l					
PCB-1232	ND		0.0100	ug/l					
PCB-1242	ND		0.0100	ug/l					
PCB-1248	ND		0.0100	ug/l					
PCB-1254	ND		0.0100	ug/l					
PCB-1260	ND		0.0100	ug/l					
<i>Surrogate: Tetrachloro-meta-xylene</i>			67.7	ug/l	100		67.7 10-139		
<i>Surrogate: Decachlorobiphenyl</i>			40.3	ug/l	100		40.3 10-144		
LCS (7136079-BS1)					Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1016	124			ug/l	100	124	36.4-162		200
PCB-1260	72.3			ug/l	100	72.3	38.2-136		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			54.5	ug/l	100		54.5 10-139		
<i>Surrogate: Decachlorobiphenyl</i>			29.5	ug/l	100		29.5 10-144		
LCS Dup (7136079-BSD1)					Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1016	109			ug/l	100	109	36.4-162	12.1	200
PCB-1260	65.0			ug/l	100	65.0	38.2-136	10.6	200
<i>Surrogate: Tetrachloro-meta-xylene</i>			51.2	ug/l	100		51.2 10-139		
<i>Surrogate: Decachlorobiphenyl</i>			37.1	ug/l	100		37.1 10-144		
LCS Dup (7136079-BSD2)					Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1016	89.5			ug/l	100	89.5	36.4-162	200	200
PCB-1260	63.7			ug/l	100	63.7	38.2-136	200	200

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 (570) 494-6380
 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7136079 - EPA 3510C (Continued)										
LCS Dup (7136079-BSD2)										
					Prepared: 05/16/17 Analyzed: 05/19/17					
Surrogate: Tetrachloro-meta-xylene			51.9	ug/l	100		51.9	10-139		
Surrogate: Decachlorobiphenyl			27.2	ug/l	100		27.2	10-144		
LCS Dup (7136079-BSD3)										
					Prepared: 05/16/17 Analyzed: 05/19/17					
PCB-1016	97.4			ug/l	100		97.4	36.4-162	200	200
PCB-1260	65.9			ug/l	100		65.9	38.2-136	200	200
Surrogate: Tetrachloro-meta-xylene			54.3	ug/l	100		54.3	10-139		
Surrogate: Decachlorobiphenyl			25.2	ug/l	100		25.2	10-144		

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Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7136078 - EPA 3541									
Blank (7136078-BLK1)					Prepared: 05/16/17 Analyzed: 05/18/17				
PCB-1016	ND		0.010	mg/kg wet					
PCB-1221	ND		0.010	mg/kg wet					
PCB-1232	ND		0.010	mg/kg wet					
PCB-1242	ND		0.010	mg/kg wet					
PCB-1248	ND		0.010	mg/kg wet					
PCB-1254	ND		0.010	mg/kg wet					
PCB-1260	ND		0.010	mg/kg wet					
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.101	mg/kg wet	0.100		101	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.100	mg/kg wet	0.100		100	24.4-140	
LCS (7136078-BS1)					Prepared: 05/16/17 Analyzed: 05/18/17				
PCB-1221	0.065		0.010	mg/kg wet	0.100		65.2	60.3-143	200
PCB-1254	0.112		0.010	mg/kg wet	0.100		112	69.4-134	200
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.108	mg/kg wet	0.100		108	70-130	
<i>Surrogate: Decachlorobiphenyl</i>			0.104	mg/kg wet	0.100		104	70-130	
Matrix Spike (7136078-MS1)		Source: 7E12085-29			Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1221	0.090		0.008	mg/kg dry	0.0779	ND	115	10-187	46.3
PCB-1254	0.073		0.008	mg/kg dry	0.0779	ND	94.0	20.5-174	30.1
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0730	mg/kg dry	0.0779		93.7	70-130	
<i>Surrogate: Decachlorobiphenyl</i>			0.0685	mg/kg dry	0.0779		88.0	70-130	
Matrix Spike Dup (7136078-MSD1)		Source: 7E12085-29			Prepared: 05/16/17 Analyzed: 05/19/17				
PCB-1221	0.070		0.008	mg/kg dry	0.0794	ND	88.7	10-187	24.0
PCB-1254	0.064		0.008	mg/kg dry	0.0794	ND	81.1	20.5-174	12.8

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 Project Manager: Carl Spadaro

Project: BULGER
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Reported:
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Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7136078 - EPA 3541 (Continued)										
Matrix Spike Dup (7136078-MSD1)										
			Source: 7E12085-29		Prepared: 05/16/17		Analyzed: 05/19/17			
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0679	mg/kg dry	0.0794		85.6	70-130		
<i>Surrogate: Decachlorobiphenyl</i>			0.0783	mg/kg dry	0.0794		98.6	70-130		

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C									
Blank (7137091-BLK1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Diphenylamine	ND		1.00	ug/l					
Benzidine	ND		5.00	ug/l					
Pyridine	ND		2.00	ug/l					
Acenaphthene	ND		1.00	ug/l					
Acenaphthylene	ND		1.00	ug/l					
Anthracene	ND		1.00	ug/l					
Benzoic acid	ND		10.0	ug/l					
Benzo (a) anthracene	ND		1.00	ug/l					
Benzo (b) fluoranthene	ND		1.00	ug/l					
Benzo (k) fluoranthene	ND		1.00	ug/l					
Benzo (g,h,i) perylene	0.0500	J	1.00	ug/l					
Benzo (a) pyrene	0.0500	J	1.00	ug/l					
Benzyl alcohol	ND		1.00	ug/l					
Bis(2-chloroethoxy)methane	ND		1.00	ug/l					
Bis(2-chloroethyl)ether	ND		1.00	ug/l					
Bis(2-chloroisopropyl)ether	ND		1.00	ug/l					
Bis(2-ethylhexyl)phthalate	0.460	J	1.00	ug/l					
4-Bromophenyl phenyl ether	ND		1.00	ug/l					
Butyl benzyl phthalate	ND		1.00	ug/l					
4-Chloroaniline	ND		1.00	ug/l					
4-Chloro-3-methylphenol	ND		1.00	ug/l					
2-Chloronaphthalene	ND		1.00	ug/l					
2-Chlorophenol	ND		1.00	ug/l					
4-Chlorophenyl phenyl ether	ND		1.00	ug/l					
Chrysene	ND		1.00	ug/l					

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 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
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Reported:
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
Blank (7137091-BLK1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Dibenz (a,h) anthracene	ND		1.00	ug/l					
Dibenzofuran	ND		1.00	ug/l					
Di-n-butyl phthalate	0.0800	J	1.00	ug/l					
1,2-Dichlorobenzene	ND		1.00	ug/l					
1,3-Dichlorobenzene	ND		1.00	ug/l					
1,4-Dichlorobenzene	ND		1.00	ug/l					
3,3'-Dichlorobenzidine	ND		1.00	ug/l					
2,4-Dichlorophenol	ND		1.00	ug/l					
Diethyl phthalate	0.0800	J	1.00	ug/l					
2,4-Dimethylphenol	ND		1.00	ug/l					
Dimethyl phthalate	ND		1.00	ug/l					
4,6-Dinitro-2-methylphenol	ND		5.00	ug/l					
2,4-Dinitrophenol	ND		5.00	ug/l					
2,4-Dinitrotoluene	ND		1.00	ug/l					
2,6-Dinitrotoluene	ND		1.00	ug/l					
Di-n-octyl phthalate	ND		1.00	ug/l					
Naphthalene	ND		1.00	ug/l					
N-Nitrosodimethylamine	ND		1.00	ug/l					
Aniline	ND		1.00	ug/l					
Acetophenone	ND		1.00	ug/l					
3 & 4-Methylphenol	ND		1.00	ug/l					
1,2-Diphenylhydrazine	ND		1.00	ug/l					
Fluoranthene	ND		1.00	ug/l					
Fluorene	ND		1.00	ug/l					
Hexachlorobenzene	ND		1.00	ug/l					

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
Blank (7137091-BLK1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Hexachlorobutadiene	ND		1.00	ug/l					
Hexachlorocyclopentadiene	ND		1.00	ug/l					
Hexachloroethane	ND		1.00	ug/l					
Indeno (1,2,3-cd) pyrene	ND		1.00	ug/l					
Isophorone	ND		1.00	ug/l					
2-Methylnaphthalene	ND		1.00	ug/l					
2-Methylphenol	ND		1.00	ug/l					
2-Nitroaniline	ND		1.00	ug/l					
3-Nitroaniline	ND		1.00	ug/l					
4-Nitroaniline	ND		1.00	ug/l					
Nitrobenzene	ND		1.00	ug/l					
2-Nitrophenol	ND		1.00	ug/l					
4-Nitrophenol	ND		1.00	ug/l					
N-Nitrosodi-n-propylamine	ND		1.00	ug/l					
Pentachlorophenol	ND		5.00	ug/l					
Phenanthrene	ND		1.00	ug/l					
Phenol	ND		1.00	ug/l					
Pyrene	ND		1.00	ug/l					
1,2,4-Trichlorobenzene	ND		1.00	ug/l					
2,4,5-Trichlorophenol	ND		1.00	ug/l					
2,4,6-Trichlorophenol	ND		1.00	ug/l					
<hr/>									
Surrogate: 2-Fluorophenol			20.1	ug/l	40.0		50.2 30.6-66.8		
Surrogate: Phenol-d6			15.2	ug/l	40.0		38.0 17.9-51.5		
Surrogate: Nitrobenzene-d5			16.5	ug/l	20.0		82.7 30.6-140		
Surrogate: 2-Fluorobiphenyl			15.9	ug/l	20.0		79.4 40.6-121		

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
Blank (7137091-BLK1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Surrogate: 2,4,6-Tribromophenol			44.8	ug/l	40.0		112 50.4-131		
Surrogate: Terphenyl-d14			20.3	ug/l	20.0		102 10-185		
LCS (7137091-BS1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Benzidine	14.2			ug/l	50.0		28.3 10-22		10
Pyridine	29.4			ug/l	100		29.4 10-71		10
Diphenylamine	36.8			ug/l	50.0		73.5 50-93		10
Acenaphthene	35.2			ug/l	50.0		70.5 50-114		10
Acenaphthylene	40.0			ug/l	50.0		79.9 56-115		10
Anthracene	40.8			ug/l	50.0		81.6 58-116		10
Benzoic acid	24.4			ug/l	50.0		48.7 24-58		10
Benzo (a) anthracene	41.4			ug/l	50.0		82.9 59-117		10
Benzo (b) fluoranthene	38.1			ug/l	50.0		76.1 60-122		10
Benzo (k) fluoranthene	37.0			ug/l	50.0		73.9 63-118		10
Benzo (g,h,i) perylene	39.0			ug/l	50.0		78.0 62-120		10
Benzo (a) pyrene	37.5			ug/l	50.0		74.9 59-122		10
Benzyl alcohol	35.8			ug/l	50.0		71.6 49-91		10
Bis(2-chloroethoxy)methane	35.1			ug/l	50.0		70.2 52-101		10
Bis(2-chloroethyl)ether	27.4			ug/l	50.0		54.7 49-89		10
Bis(2-chloroisopropyl)ether	25.8			ug/l	50.0		51.6 45-95		10
Bis(2-ethylhexyl)phthalate	48.3			ug/l	50.0		96.7 52-107		10
4-Bromophenyl phenyl ether	40.5			ug/l	50.0		81.0 60-109		10
Butyl benzyl phthalate	52.2			ug/l	50.0		104 49-115		10
4-Chloroaniline	36.9			ug/l	50.0		73.9 10-131		10
4-Chloro-3-methylphenol	40.5			ug/l	50.0		81.0 57-109		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)										
LCS (7137091-BS1)										
					Prepared: 05/17/17 Analyzed: 05/18/17					
2-Chloronaphthalene	32.9			ug/l	50.0		65.8	52-101		10
2-Chlorophenol	28.1			ug/l	50.0		56.2	46-86		10
4-Chlorophenyl phenyl ether	39.2			ug/l	50.0		78.4	57-110		10
Chrysene	37.7			ug/l	50.0		75.3	60-117		10
Dibenz (a,h) anthracene	39.8			ug/l	50.0		79.5	63-121		10
Dibenzofuran	37.3			ug/l	50.0		74.5	54-105		10
Di-n-butyl phthalate	47.7			ug/l	50.0		95.4	58-112		10
1,2-Dichlorobenzene	17.8			ug/l	50.0		35.6	24-67		10
1,3-Dichlorobenzene	16.2			ug/l	50.0		32.4	20-64		10
1,4-Dichlorobenzene	16.4			ug/l	50.0		32.7	21-65		10
3,3'-Dichlorobenzidine	42.6			ug/l	50.0		85.2	10-147		10
2,4-Dichlorophenol	38.0			ug/l	50.0		76.0	53-105		10
Diethyl phthalate	47.1			ug/l	50.0		94.3	61-115		10
Carbazole	22.7			ug/l	50.0		45.3	31-56		10
2,4-Dimethylphenol	30.2			ug/l	50.0		60.4	45-88		10
Dimethyl phthalate	43.1			ug/l	50.0		86.1	60-113		10
4,6-Dinitro-2-methylphenol	49.0			ug/l	50.0		97.9	49-127		10
2,4-Dinitrophenol	46.8			ug/l	50.0		93.6	57-107		10
2,4-Dinitrotoluene	44.2			ug/l	50.0		88.3	76-149		10
2,6-Dinitrotoluene	42.9			ug/l	50.0		85.8	54-120		10
Di-n-octyl phthalate	50.1			ug/l	50.0		100	44-114		10
Naphthalene	25.5			ug/l	50.0		51.1	40-90		10
Aniline	29.8			ug/l	50.0		59.7	10-101		10
N-Nitrosodimethylamine	20.4			ug/l	50.0		40.8	28-64		10
1-Methylnaphthalene	32.0			ug/l	50.0		64.0	49-101		10

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Project: BULGER
 Project Number: [none]
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
LCS (7137091-BS1)									
					Prepared: 05/17/17 Analyzed: 05/18/17				
Acetophenone	32.6			ug/l	50.0		65.3 53-98		10
3 & 4-Methylphenol	30.0			ug/l	50.0		60.0 39-78		10
1,2-Diphenylhydrazine	42.7		1.00	ug/l			56-114		10
2,3,4,6-Tetrachlorophenol	38.5			ug/l	50.0		77.0 72-140		10
Fluoranthene	43.6			ug/l	50.0		87.2 60-121		10
Fluorene	39.7			ug/l	50.0		79.4 57-117		10
Hexachlorobenzene	38.3			ug/l	50.0		76.6 60-108		10
Hexachlorobutadiene	20.5			ug/l	50.0		41.1 28-78		10
Hexachlorocyclopentadiene	27.4			ug/l	50.0		54.7 43-93		10
Hexachloroethane	16.4			ug/l	50.0		32.8 17-64		10
Indeno (1,2,3-cd) pyrene	39.6			ug/l	50.0		79.1 62-123		10
Isophorone	35.0			ug/l	50.0		69.9 53-106		10
2-Methylnaphthalene	32.6			ug/l	50.0		65.1 47-98		10
2-Methylphenol	30.2			ug/l	50.0		60.4 42-79		10
2-Nitroaniline	46.2			ug/l	50.0		92.5 57-117		10
3-Nitroaniline	40.1			ug/l	50.0		80.1 40-125		10
4-Nitroaniline	43.3			ug/l	50.0		86.6 57-106		10
Nitrobenzene	29.3			ug/l	50.0		58.6 46-92		10
2-Nitrophenol	36.0			ug/l	50.0		72.0 47-105		10
4-Nitrophenol	23.7			ug/l	50.0		47.3 23-56		10
N-Nitrosodiphenylamine	36.8			ug/l	50.0		73.5 54-104		10
N-Nitrosodi-n-propylamine	37.1			ug/l	50.0		74.3 52-105		10
Pentachlorophenol	47.7			ug/l	50.0		95.5 47-127		10
Phenanthrene	37.2			ug/l	50.0		74.4 57-112		10
Phenol	14.7			ug/l	50.0		29.4 20-45		10

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
LCS (7137091-BS1)					Prepared: 05/17/17 Analyzed: 05/18/17				
Pyrene	39.3			ug/l	50.0		78.6 61-115		10
1,2,4-Trichlorobenzene	24.7			ug/l	50.0		49.4 35-81		10
2,4,5-Trichlorophenol	42.5			ug/l	50.0		84.9 57-116		10
2,4,6-Trichlorophenol	39.5			ug/l	50.0		79.0 55-125		10

Surrogate: 2-Fluorophenol			17.7	ug/l	40.0		44.2 35-115		
Surrogate: Phenol-d6			14.4	ug/l	40.0		35.9 35-115		
Surrogate: Nitrobenzene-d5			14.2	ug/l	20.0		70.8 35-115		
Surrogate: 2-Fluorobiphenyl			13.6	ug/l	20.0		68.0 40-120		
Surrogate: 2,4,6-Tribromophenol			42.8	ug/l	40.0		107 40-120		
Surrogate: Terphenyl-d14			14.3	ug/l	20.0		71.7 40-120		

LCS (7137091-BS2)					Prepared: 05/17/17 Analyzed: 05/18/17				
Diphenylamine	34.5			ug/l	50.0		68.9 50-93		10
Pyridine	38.7			ug/l	100		38.7 10-71		10
Benzidine	17.1			ug/l	50.0		34.2 10-22		10
Acenaphthene	33.2			ug/l	50.0		66.4 50-114		10
Acenaphthylene	37.4			ug/l	50.0		74.8 56-115		10
Anthracene	38.3			ug/l	50.0		76.6 58-116		10
Benzoic acid	23.3			ug/l	50.0		46.6 24-58		10
Benzo (a) anthracene	40.0			ug/l	50.0		80.1 59-117		10
Benzo (b) fluoranthene	36.5			ug/l	50.0		73.0 60-122		10
Benzo (k) fluoranthene	35.6			ug/l	50.0		71.1 63-118		10
Benzo (g,h,i) perylene	37.5			ug/l	50.0		75.0 62-120		10
Benzo (a) pyrene	36.4			ug/l	50.0		72.7 59-122		10
Benzyl alcohol	33.5			ug/l	50.0		66.9 49-91		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)									
LCS (7137091-BS2)									
					Prepared: 05/17/17 Analyzed: 05/18/17				
Bis(2-chloroethoxy)methane	34.1			ug/l	50.0		68.2 52-101		10
Bis(2-chloroethyl)ether	26.8			ug/l	50.0		53.6 49-89		10
Bis(2-chloroisopropyl)ether	25.2			ug/l	50.0		50.4 45-95		10
Bis(2-ethylhexyl)phthalate	46.7			ug/l	50.0		93.5 52-107		10
4-Bromophenyl phenyl ether	38.4			ug/l	50.0		76.9 60-109		10
Butyl benzyl phthalate	50.5			ug/l	50.0		101 49-115		10
4-Chloroaniline	37.1			ug/l	50.0		74.2 10-131		10
4-Chloro-3-methylphenol	38.5			ug/l	50.0		77.0 57-109		10
2-Chloronaphthalene	31.4			ug/l	50.0		62.7 52-101		10
2-Chlorophenol	27.5			ug/l	50.0		55.0 46-86		10
4-Chlorophenyl phenyl ether	37.4			ug/l	50.0		74.8 57-110		10
Chrysene	35.7			ug/l	50.0		71.4 60-117		10
Dibenz (a,h) anthracene	38.2			ug/l	50.0		76.4 63-121		10
Dibenzofuran	35.3			ug/l	50.0		70.5 54-105		10
Di-n-butyl phthalate	44.9			ug/l	50.0		89.9 58-112		10
1,2-Dichlorobenzene	17.2			ug/l	50.0		34.4 24-67		10
1,3-Dichlorobenzene	15.6			ug/l	50.0		31.2 20-64		10
1,4-Dichlorobenzene	16.1			ug/l	50.0		32.2 21-65		10
3,3'-Dichlorobenzidine	45.6			ug/l	50.0		91.3 10-147		10
2,4-Dichlorophenol	37.1			ug/l	50.0		74.1 53-105		10
Diethyl phthalate	43.8			ug/l	50.0		87.6 61-115		10
Carbazole	20.9			ug/l	50.0		41.9 31-56		10
2,4-Dimethylphenol	28.3			ug/l	50.0		56.6 45-88		10
Dimethyl phthalate	40.5			ug/l	50.0		81.0 60-113		10
4,6-Dinitro-2-methylphenol	46.0			ug/l	50.0		91.9 49-127		10

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Project: BULGER
 Project Number: [none]
 Collector: CLIENT
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)										
LCS (7137091-BS2)					Prepared: 05/17/17 Analyzed: 05/18/17					
2,4-Dinitrophenol	43.9			ug/l	50.0		87.7	57-107		10
2,4-Dinitrotoluene	40.9			ug/l	50.0		81.8	76-149		10
2,6-Dinitrotoluene	40.6			ug/l	50.0		81.3	54-120		10
Di-n-octyl phthalate	48.3			ug/l	50.0		96.7	44-114		10
Naphthalene	24.5			ug/l	50.0		49.0	40-90		10
Aniline	28.1			ug/l	50.0		56.1	10-101		10
N-Nitrosodimethylamine	21.1			ug/l	50.0		42.1	28-64		10
1-Methylnaphthalene	30.9			ug/l	50.0		61.7	49-101		10
Acetophenone	31.8			ug/l	50.0		63.5	53-98		10
3 & 4-Methylphenol	27.9			ug/l	50.0		55.7	39-78		10
1,2-Diphenylhydrazine	39.4		1.00	ug/l				56-114		10
2,3,4,6-Tetrachlorophenol	36.5			ug/l	50.0		73.0	72-140		10
Fluoranthene	40.9			ug/l	50.0		81.7	60-121		10
Fluorene	37.3			ug/l	50.0		74.5	57-117		10
Hexachlorobenzene	36.2			ug/l	50.0		72.4	60-108		10
Hexachlorobutadiene	19.5			ug/l	50.0		38.9	28-78		10
Hexachlorocyclopentadiene	27.3			ug/l	50.0		54.7	43-93		10
Hexachloroethane	15.9			ug/l	50.0		31.8	17-64		10
Indeno (1,2,3-cd) pyrene	38.2			ug/l	50.0		76.4	62-123		10
Isophorone	33.9			ug/l	50.0		67.8	53-106		10
2-Methylnaphthalene	31.4			ug/l	50.0		62.7	47-98		10
2-Methylphenol	28.1			ug/l	50.0		56.1	42-79		10
2-Nitroaniline	43.7			ug/l	50.0		87.4	57-117		10
3-Nitroaniline	39.5			ug/l	50.0		79.0	40-125		10
4-Nitroaniline	40.8			ug/l	50.0		81.7	57-106		10

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Project: BULGER
 Project Number: [none]
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7137091 - EPA 3510C (Continued)										
LCS (7137091-BS2)					Prepared: 05/17/17 Analyzed: 05/18/17					
Nitrobenzene	28.7			ug/l	50.0		57.4	46-92		10
2-Nitrophenol	35.6			ug/l	50.0		71.1	47-105		10
4-Nitrophenol	21.3			ug/l	50.0		42.6	23-56		10
N-Nitrosodiphenylamine	34.5			ug/l	50.0		68.9	54-104		10
N-Nitrosodi-n-propylamine	35.9			ug/l	50.0		71.8	52-105		10
Pentachlorophenol	45.3			ug/l	50.0		90.5	47-127		10
Phenanthrene	34.6			ug/l	50.0		69.2	57-112		10
Phenol	13.6			ug/l	50.0		27.2	20-45		10
Pyrene	37.8			ug/l	50.0		75.6	61-115		10
1,2,4-Trichlorobenzene	23.9			ug/l	50.0		47.9	35-81		10
2,4,5-Trichlorophenol	39.4			ug/l	50.0		78.7	57-116		10
2,4,6-Trichlorophenol	37.5			ug/l	50.0		74.9	55-125		10
<hr/>										
Surrogate: 2-Fluorophenol			18.5	ug/l	40.0		46.2	35-115		
Surrogate: Phenol-d6			14.1	ug/l	40.0		35.2	35-115		
Surrogate: Nitrobenzene-d5			16.3	ug/l	20.0		81.7	35-115		
Surrogate: 2-Fluorobiphenyl			15.5	ug/l	20.0		77.4	40-120		
Surrogate: 2,4,6-Tribromophenol			42.5	ug/l	40.0		106	40-120		
Surrogate: Terphenyl-d14			15.4	ug/l	20.0		76.8	40-120		

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Project: BULGER
 Project Number: [none]
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 Number of Containers: 24

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7138041 - EPA 3541										
Blank (7138041-BLK1)										
Prepared: 05/17/17 Analyzed: 05/18/17										
Pyridine	ND		0.667	mg/kg wet						
1,4-Dichlorobenzene	ND		0.333	mg/kg wet						
2,4-Dinitrotoluene	ND		0.333	mg/kg wet						
3 & 4-Methylphenol	ND		0.333	mg/kg wet						
Hexachlorobenzene	ND		0.333	mg/kg wet						
Hexachlorobutadiene	ND		0.333	mg/kg wet						
Hexachloroethane	ND		0.333	mg/kg wet						
2-Methylphenol	ND		0.333	mg/kg wet						
Nitrobenzene	ND		0.333	mg/kg wet						
Pentachlorophenol	ND		1.67	mg/kg wet						
2,4,5-Trichlorophenol	ND		0.333	mg/kg wet						
2,4,6-Trichlorophenol	ND		0.333	mg/kg wet						
<hr/>										
Surrogate: 2-Fluorophenol			11.5	mg/kg wet	13.3		86	10-169		
Surrogate: Phenol-d6			11.5	mg/kg wet	13.3		87	10-166		
Surrogate: Nitrobenzene-d5			5.45	mg/kg wet	6.67		82	18.8-170		
Surrogate: 2-Fluorobiphenyl			5.77	mg/kg wet	6.67		87	35.1-154		
Surrogate: 2,4,6-Tribromophenol			12.2	mg/kg wet	13.3		92	20-158		
Surrogate: Terphenyl-d14			5.35	mg/kg wet	6.67		80	52.1-160		



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Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

TCLP Metals extracted by EPA 1311

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7138046 - EPA 3010A TCLP/SPLP									
Blank (7138046-BLK1)					Prepared: 05/18/17 Analyzed: 05/21/17				
Antimony	0.00926	J	0.0100	mg/l					
Arsenic	ND		0.00800	mg/l					
Barium	ND		0.0100	mg/l					
Beryllium	0.000502	J	0.00200	mg/l					
Cadmium	0.00115	J	0.00400	mg/l					
Chromium	ND		0.00500	mg/l					
Lead	ND		0.00800	mg/l					
Nickel	ND		0.0500	mg/l					
Selenium	0.00898	J	0.0200	mg/l					
Silver	ND		0.00400	mg/l					
Thallium	ND		0.0200	mg/l					
Vanadium	0.00518	J	0.0200	mg/l					
Zinc	ND		0.0200	mg/l					
Duplicate (7138046-DUP1)			Source: 7E17024-02			Prepared: 05/18/17 Analyzed: 05/21/17			
Antimony	0.0812		0.0500	mg/l		0.0864		6	20
Arsenic	ND		0.0400	mg/l		ND			20
Barium	0.796		0.0500	mg/l		0.761		4	20
Beryllium	0.00126	J	0.0100	mg/l		0.00151		18	20
Cadmium	ND		0.0200	mg/l		ND			20
Chromium	ND		0.0250	mg/l		ND			20
Lead	0.0282	J	0.0400	mg/l		0.0185		41	20
Nickel	0.0492	J	0.250	mg/l		0.0483		2	20
Selenium	ND		0.100	mg/l		ND			20
Silver	ND		0.0200	mg/l		ND			20

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Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

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Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7138046 - EPA 3010A TCLP/SPLP (Continued)										
Duplicate (7138046-DUP1)			Source: 7E17024-02		Prepared: 05/18/17 Analyzed: 05/21/17					
Thallium	ND		0.100	mg/l		ND				20
Vanadium	ND		0.100	mg/l		ND				20
Zinc	0.0259	J	0.100	mg/l		0.0336			26	20
Matrix Spike (7138046-MS1)			Source: 7E17024-02		Prepared: 05/18/17 Analyzed: 05/21/17					
Antimony	2.18		0.0500	mg/l	2.00	0.0864	105	75-125		200
Arsenic	0.747		0.0400	mg/l	0.800	ND	93	75-125		200
Barium	2.64		0.0500	mg/l	2.00	0.761	94	75-125		200
Beryllium	0.196		0.0100	mg/l	0.200	0.00151	97	75-125		200
Cadmium	0.386		0.0200	mg/l	0.400	ND	96	75-125		200
Chromium	0.201		0.0250	mg/l	0.200	ND	101	75-125		200
Lead	0.777		0.0400	mg/l	0.800	0.0185	95	75-125		200
Nickel	2.00		0.250	mg/l	2.00	0.0483	97	75-125		200
Selenium	1.91		0.100	mg/l	2.00	ND	96	75-125		200
Silver	0.360		0.0200	mg/l	0.400	ND	90	75-125		200
Thallium	0.700		0.100	mg/l	0.800	ND	88	75-125		200
Vanadium	1.96		0.100	mg/l	2.00	ND	98	75-125		200
Zinc	2.01		0.100	mg/l	2.00	0.0336	99	75-125		200
Batch: 7139056 - EPA 200 Series										
Blank (7139056-BLK1)			Source: 7E16171-01		Prepared: 05/19/17 Analyzed: 05/22/17					
Mercury	0.0001126	J	0.000200	mg/l						
Matrix Spike (7139056-MS1)			Source: 7E16171-01		Prepared: 05/19/17 Analyzed: 05/22/17					
Mercury	0.01065		0.00200	mg/l	0.0100	0.0009374	97.2	70-130		10

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7139056 - EPA 200 Series (Continued)										
Matrix Spike Dup (7139056-MSD1)			Source: 7E16171-01		Prepared: 05/19/17 Analyzed: 05/22/17					
Mercury	0.008433		0.00200	mg/l	0.0100	0.0009374	75.0	70-130	23.3	10

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 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7145080 - Volatiles										
Blank (7145080-BLK1)										
					Prepared: 05/19/17 Analyzed: 05/24/17					
Benzene	ND		0.0020	mg/kg wet						
Toluene	ND		0.0050	mg/kg wet						
Ethylbenzene	ND		0.0050	mg/kg wet						
Xylenes (total)	ND		0.0100	mg/kg wet						
2-Butanone	ND		0.0100	mg/kg wet						
Carbon tetrachloride	ND		0.0050	mg/kg wet						
Chlorobenzene	ND		0.0050	mg/kg wet						
Chloroform	ND		0.0050	mg/kg wet						
1,4-Dichlorobenzene	ND		0.0050	mg/kg wet						
1,2-Dichloroethane	ND		0.0020	mg/kg wet						
1,1-Dichloroethene	ND		0.0050	mg/kg wet						
Tetrachloroethene	ND		0.0050	mg/kg wet						
Trichloroethene	ND		0.0050	mg/kg wet						
Vinyl chloride	ND		0.0020	mg/kg wet						
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.0978</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>98</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.103</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>103</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.0988</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>99</i>	<i>70-130</i>		
LCS (7145080-BS1)										
					Prepared: 05/19/17 Analyzed: 05/25/17					
1,3,5-Trimethylbenzene	0.042		0.0050	mg/kg wet	0.0500		83	70-130		200
1,2,4-Trimethylbenzene	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
Benzene	0.042		0.0020	mg/kg wet	0.0500		84	70-130		200
Toluene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Ethylbenzene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Xylenes (total)	0.123		0.0100	mg/kg wet	0.150		82	70-130		200

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Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7145080 - Volatiles (Continued)										
LCS (7145080-BS1)										
Prepared: 05/19/17 Analyzed: 05/25/17										
Isopropylbenzene	0.042		0.0050	mg/kg wet	0.0500		83	70-130		200
Methyl tert-butyl ether	0.044		0.0050	mg/kg wet	0.0500		87	70-130		200
Bromobenzene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Bromochloromethane	0.040		0.0050	mg/kg wet	0.0500		81	70-130		200
Bromodichloromethane	0.039		0.0050	mg/kg wet	0.0500		79	70-130		200
Bromoform	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Bromomethane	0.037		0.0050	mg/kg wet	0.0500		73	70-130		200
2-Butanone	0.042		0.0100	mg/kg wet	0.0500		83	70-130		200
sec-Butylbenzene	0.040		0.0050	mg/kg wet	0.0500		81	70-130		200
tert-Butylbenzene	0.062		0.0050	mg/kg wet	0.0500		124	70-130		200
n-Butylbenzene	0.037		0.0050	mg/kg wet	0.0500		73	70-130		200
Carbon tetrachloride	0.038		0.0050	mg/kg wet	0.0500		76	70-130		200
Chlorobenzene	0.043		0.0050	mg/kg wet	0.0500		86	70-130		200
Chloroethane	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Chloroform	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
Chloromethane	0.036		0.0050	mg/kg wet	0.0500		71	70-130		200
4-Chlorotoluene	0.040		0.0050	mg/kg wet	0.0500		80	70-130		200
2-Chlorotoluene	0.042		0.0050	mg/kg wet	0.0500		83	70-130		200
1,2-Dibromo-3-chloropropane	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
Dibromochloromethane	0.044		0.0050	mg/kg wet	0.0500		87	70-130		200
1,2-Dibromoethane (EDB)	0.042		0.0020	mg/kg wet	0.0500		84	70-130		200
Dibromomethane	0.043		0.0050	mg/kg wet	0.0500		87	70-130		200
trans-1,4-Dichloro-2-butene	0.039		0.0050	mg/kg wet	0.0500		79	70-130		200
1,2-Dichlorobenzene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
1,4-Dichlorobenzene	0.039		0.0050	mg/kg wet	0.0500		79	70-130		200

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State Certifications: MD 275, WV 364

Max Environmental

Project: BULGER

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7145080 - Volatiles (Continued)										
LCS (7145080-BS1)										
					Prepared: 05/19/17 Analyzed: 05/25/17					
1,3-Dichlorobenzene	0.042		0.0050	mg/kg wet	0.0500		84	70-130		200
Dichlorodifluoromethane	0.031		0.0050	mg/kg wet	0.0500		63	70-130		200
1,2-Dichloroethane	0.040		0.0020	mg/kg wet	0.0500		80	70-130		200
1,1-Dichloroethane	0.040		0.0050	mg/kg wet	0.0500		79	70-130		200
trans-1,2-Dichloroethene	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
cis-1,2-Dichloroethene	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
1,1-Dichloroethene	0.040		0.0050	mg/kg wet	0.0500		79	70-130		200
2,2-Dichloropropane	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
1,3-Dichloropropane	0.043		0.0050	mg/kg wet	0.0500		86	70-130		200
1,2-Dichloropropane	0.042		0.0050	mg/kg wet	0.0500		84	70-130		200
trans-1,3-Dichloropropene	0.043		0.0050	mg/kg wet	0.0500		86	70-130		200
1,1-Dichloropropene	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
cis-1,3-Dichloropropene	0.042		0.0050	mg/kg wet	0.0500		84	70-130		200
Hexachlorobutadiene	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
p-Isopropyltoluene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Methylene chloride	0.041		0.0200	mg/kg wet	0.0500		81	70-130		200
n-Propylbenzene	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Styrene	0.044		0.0050	mg/kg wet	0.0500		87	70-130		200
1,1,2,2-Tetrachloroethane	0.033		0.0050	mg/kg wet	0.0500		66	70-130		200
1,1,1,2-Tetrachloroethane	0.041		0.0050	mg/kg wet	0.0500		82	70-130		200
Tetrachloroethene	0.041		0.0050	mg/kg wet	0.0500		81	70-130		200
1,2,4-Trichlorobenzene	0.038		0.0050	mg/kg wet	0.0500		76	70-130		200
1,2,3-Trichlorobenzene	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
1,1,1-Trichloroethane	0.039		0.0050	mg/kg wet	0.0500		77	70-130		200
1,1,2-Trichloroethane	0.042		0.0050	mg/kg wet	0.0500		84	70-130		200

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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: BULGER
 Project Number: [none]
 Collector: CLIENT
 Number of Containers: 24

Reported:
 01/09/18 10:06

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7145080 - Volatiles (Continued)										
LCS (7145080-BS1)										
Prepared: 05/19/17 Analyzed: 05/25/17										
Trichloroethene	0.040		0.0050	mg/kg wet	0.0500		79	70-130		200
Trichlorofluoromethane	0.041		0.0050	mg/kg wet	0.0500		81	70-130		200
1,2,3-Trichloropropane	0.043		0.0050	mg/kg wet	0.0500		86	70-130		200
Vinyl chloride	0.037		0.0020	mg/kg wet	0.0500		73	70-130		200
<hr/>										
Surrogate: 4-Bromofluorobenzene			0.101	mg/kg wet	0.100		101	70-130		
Surrogate: 1,2-Dichloroethane-d4			0.0938	mg/kg wet	0.100		94	70-130		
Surrogate: Fluorobenzene			0.0978	mg/kg wet	0.100		98	70-130		



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 Project Number: [none]
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Reported:
 01/09/18 10:06

Notes

- A7 A reduced amount of sample was used during the preparation step due to the matrix of the sample.
- D A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered above the acceptance range for the noted analyte.
- F The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered above the acceptance range for the noted analyte.
- G The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered below the acceptance range for the noted analyte.
- I The spike recovery was below the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I4 Vials were prepared at the laboratory from the received container.
- J Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, the result is an estimated value.
- K The RPD result exceeded the quality control limits for the duplicate, Laboratory Control Sample Duplicate (LCSD), or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- L The noted analyte was detected in the method blank.
- Q Sample was analyzed at a dilution. Reporting limits were adjusted accordingly.



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Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory; and should be considered as analyzed outside the EPA holding time.

^ The following analytes are to be filtered immediately upon sampling: Hexavalent Chromium. Filtration through a 0.45 micron filter within 15 minutes of sampling is required for compliance with the Clean Water Act (CWA) for reporting of hexavalent chromium to prevent interconversion of chromium species.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

* G indicates analysis performed by Fairway Laboratories, Inc. at the Greensburg location PaDEP: 65-00392. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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Reported:

Pittsburgh PA, 15220

Collector: CLIENT

01/09/18 10:06

Project Manager: Carl Spadaro

Number of Containers: 24

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody. Samples received at the laboratory after business hours are verified on the next business day. Discrepancies are documented on the Receiving Document.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved,

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Chain of Custody Receiving Document

Receiver: ML

Page 2 of 2

Date/Time of this check: 5-16-22 21:30 Client: Max Ems Lab # 7E16171 #2

Received on ICE? Y * Sample Temperature when delivered to the Lab: 16 Acceptable? Y * or In cool down process? *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y * Correct containers for all the analysis requested? Y * Matrix: Water Solid

COC #	Number and Type of BOTTLES						Comments				
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4 Pres.	Amber Non-Pres.	Poly NaOH		VOCS (Head space?)	Other	Properly Preserved	Bacti
<u>1</u>						<u>Zn Ac</u>		<input type="checkbox"/> *	<input checked="" type="checkbox"/> *		
<u>2</u>	<u>1</u>		<u>1</u>		<u>5</u>	<u>good assembly</u>		<input type="checkbox"/> *	<input type="checkbox"/> *		<u>Solid</u>
<u>FWS</u>						<u>FWC</u>					

*** DEVIATION PRESENT:**

No Ice ()

Not at Proper Temperature ()

Wrong Container ()

Missing Information: ()

CLIENT CALLED: YES () By Whom: _____ Date: _____

CLIENT RESPONSE: Proceed with analysis; qualify data () Will Resample () Provided Information () No Response; Proceed and qualified () Client Contact: _____ Date: _____

* Comments: _____

7E76171⁷³

§ 268.48 Universal treatment standards.

(a) Table UTS identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in § 268.2(i), these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

Universal Treatment Standards

[Note: NA means not applicable]

Regulated constituent common name	CAS ¹ number	Wastewater standard Concentration ² in mg/l	Nonwastewater standard Concentration ³ in mg/kg unless noted as "mg/l TCLP"
Organic Constituents			
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	38
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23
Acrylonitrile	107-13-1	0.24	84
Aldrin	309-00-2	0.021	0.066
4-Aminobiphenyl	92-67-1	0.13	NA
Aniline	62-53-3	0.81	14
o-Anisidine (2-methoxyaniline)	90-04-0	0.010	0.66
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-84-6	0.00014	0.066

7E76171 #4

beta-BHC	319-85-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4
Bromodichloromethane	75-27-4	0.35	15
Bromomethane/Methyl bromide	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88-85-7	0.066	2.5
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2

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bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
p-Chloro-m-cresol	59-50-7	0.018	14
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloromethane/Methyl chloride	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chloropchenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
p-Cresidine	120-71-8	0.010	0.66
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6.0

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o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94-75-7	0.72	10
1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethyl phthalate	84-66-2	0.20	28
p-Dimethylaminoazobenzene	60-11-7	0.13	NA
2,4-Dimethylaniline (2,4-xylydine)	95-68-1	0.010	0.66
2,4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14

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1,4-Dioxane	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-4	0.017	6.2
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
Ethyl acetate	141-78-6	0.34	33
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl)phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Heptachlor	76-44-8	0.0012	0.066
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	.0025
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	.0025

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1,2,3,4,7,8,9			
Heptachlorodibenzofuran	55673-89-7	0.000035	.0025
(1,2,3,4,7,8,9 HpCDF)			
Heptachlor epoxide	1024-57-3	0.016	0.066
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorobutadiene	87-68-3	0.055	5.6
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo p dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30
Indeno(1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isosafrole	120-58-1	0.081	2.6
Kepono	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	0.75 mg/l TCLP
Methopyrilene	91-80-5	0.081	1.5
Methoxychlor	72-43-5	0.25	0.18
3-Methylcholanthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methanesulfonate	66-27-3	0.018	NA

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Methyl parathion	298-00-0	0.014	4.6
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA
o-Nitroaniline	88-74-4	0.27	14
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14
5-Nitro-o-toluidine	99-55-8	0.32	28
o-Nitrophenol	88-75-5	0.028	13
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitrosodimethylamine	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	0.000063	0.005
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063	0.005
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors) ⁸	1336-36-3	0.10	10
Pentachlorobenzene	608-93-5	0.055	10
PoCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PoCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76-01-7	0.055	6.0
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16

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Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
1,3-Phenylenediamine	108-45-2	0.010	0.66
Pherate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28
Phthalic anhydride	85-44-9	0.055	28
Pronamide	23950-58-5	0.093	1.5
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex/2,4,5-TP	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Tribromomethane/Bromoform	75-25-2	0.63	15
1,2,4-Trichlorobenzene	120-82-1	0.055	19
1,1,1-Trichloroethane	71-55-6	0.054	6.0
1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichlorofluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4

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2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.11	0.10
Vinyl chloride	75-01-4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Inorganic Constituents			
Antimony	7440-36-0	1.9	1.15 mg/l TCLP
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
Barium	7440-39-3	1.2	21 mg/l TCLP
Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total) ⁴	57-12-5	1.2	590
Cyanides (Amenable) ⁴	57-12-5	0.86	30
Fluoride ⁵	16984-48-8	35	NA
Lead	7439-92-1	0.69	0.75 mg/l TCLP
Mercury - Nonwastewater from Retort	7439-97-6	NA	0.20 mg/l TCLP
Mercury - All Others	7439-97-6	0.15	0.025 mg/l TCLP
Nickel	7440-02-0	3.98	11 mg/l TCLP
Selenium ⁷	7782-49-2	0.82	5.7 mg/l TCLP
Silver	7440-22-4	0.43	0.14 mg/l TCLP
Sulfide ⁵	18496-25-8	14	NA

7E/6171 #12

Thallium	7440-28-0	1.4	0.20 mg/l TCLP
Vanadium ⁵	7440-62-2	4.3	1.6 mg/l TCLP
Zinc ⁵	7440-66-6	2.61	4.3 mg/l TCLP

Footnotes to Table UTS

1 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

2 Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

3 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

4 Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010C or 9012B, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

5 These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).

6 [Reserved]

7 This constituent is not an underlying hazardous constituent as defined at § 268.2(i) of this Part because its UTS level is greater than its TC level, thus a treatment selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

8 This standard is temporarily deferred for soil exhibiting a hazardous characteristic due to D004-D011 only.

[59 FR 48103, Sept. 19, 1994, as amended at 60 FR 302, Jan. 3, 1995; 61 FR 15654, Apr. 8, 1996; 61 FR 33690, June 28, 1996; 62 FR 7596, Feb. 19, 1997; 63 FR 24626, May 4, 1998; 63 FR 28739, May 26, 1998; 63 FR 47417, Sept. 4, 1998; 64 FR 25417, May 11, 1999; 65 FR 14475, Mar. 17, 2000; 70 FR 34590, June 14, 2005; 70 FR 9178, Feb. 24, 2005; 71 FR 40279, July 14, 2006; 75 FR 13008, Mar. 18, 2010; 76 FR 34156, June 13, 2011]



2019 Ninth Avenue
 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
BULGER-RO-101817	7J18186-01	Solid	Composite	10/18/17 11:30	10/18/17 17:53
BULGER-RO-101817	7J18186-02	Solid	Grab	10/18/17 11:30	10/18/17 17:53

7J18186: Results reported to MDL. This report replaces report issued 11/1/17. 111417 kjd/mlf
 7J18186: TCLP Semivolatiles added. This report replaces report issued 11/14/17. 112917 kjd/mlf
 7J18186: Qualifier added to semi-volatiles. This report replaces report issued 11/29/17 1138. 12/5/17rsr.

7J18186: 1,4-dichlorobenzene added to the TCLP SVOC list. This report replaces the report issued on 12/5/17.
 1/25/18smc/mlf

7J18186 Report Revised, additional QA/QC summaries added. This report replaces the report printed on 01/26/18 08:42.
 03/28/18 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
 Laboratory Director

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 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Silver	<1.68	1.68	5.59	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Aluminum	48700		2800	mg/kg dry	10/24/17 15:14	EPA 6010B/2.0	sr	I
Arsenic	13.1	4.47	11.2	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	
Barium	7310	83.9	280	mg/kg dry	10/24/17 15:14	EPA 6010B/2.0	sr	I
Beryllium	6.54	0.335	2.80	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Cadmium	4.72 J	0.671	5.59	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	
Cobalt	101		14.0	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	
Chromium	178	0.657	6.99	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Copper	178		14.0	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Iron	23000		1120	mg/kg dry	10/24/17 15:14	EPA 6010B/2.0	sr	I
Manganese	12000		280	mg/kg dry	10/24/17 15:16	EPA 6010B/2.0	sr	I

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 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Nickel	629	2.24	69.9	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Lead	118	1.54	11.2	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	
Antimony	<12.4	12.4	14.0	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	I
Selenium	12.9 J	11.5	28.0	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	
Thallium	<4.05	4.05	28.0	mg/kg dry	10/24/17 15:10	EPA 6010B/2.0	sr	I
Vanadium	55.0	3.35	28.0	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	
Zinc	1260		28.0	mg/kg dry	10/24/17 15:09	EPA 6010B/2.0	sr	I

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 20.9°C	8.67			pH Units	10/19/17 15:25	SW846-9045 D	elb	
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Calculated Analytes

Amenable Cyanide	1.08 J	0.369	1.54	mg/kg dry	10/24/17 09:33	SM20-4500 CN-C+E+G	caa	
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Chlorinated Herbicides by EPA Method 8151A

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 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<8.99	8.99	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D, F
Acifluorfen	<8.99	8.99	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
2,4-DB	<8.52	8.52	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
2,4,5-T	<6.78	6.78	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
2,4,5-TP (Silvex)	<7.65	7.65	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
Dalapon	<43.7	43.7	132	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
Dicamba	<6.89	6.89	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
Dichloroprop	<8.00	8.00	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
Dinoseb	<3.26	3.26	13.2	ug/kg dry	10/25/17 18:02	EPA 8151A	cdb	D
<i>Surrogate: 2,4-DCAA</i>		191 %	40.6-150		10/25/17 18:02	EPA 8151A	cdb	O

Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	224	3.55	140	mg/kg dry	10/25/17 05:19	EPA 9056A	bdw	
% Solids	30.1		0.100	%	10/19/17 20:00	SM 2540 G-97	pra	
Sulfide	<6.02	6.02	63.8	mg/kg dry	10/21/17 12:00	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	1.08 J	0.369	1.54	mg/kg dry	10/24/17 09:33	EPA 9014	caa	
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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 6000/7000 Series Methods

Mercury	0.139	0.0407	0.0960	mg/kg dry	10/24/17 11:06	EPA 7471B	jks	
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Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<8.06	8.06	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
alpha-BHC	<5.80	5.80	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
beta-BHC	<29.3	29.3	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
delta-BHC	<6.77	6.77	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
gamma-BHC (Lindane)	<40.6	40.6	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
Chlordane (tech)	<807	807	3220	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
4,4'-DDD	<17.7	17.7	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
4,4'-DDE	<8.06	8.06	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
4,4'-DDT	<19.3	19.3	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Dieldrin	<7.73	7.73	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Endosulfan I	<7.09	7.09	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Endosulfan II	<9.02	9.02	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Endosulfan sulfate	<25.8	25.8	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Endrin	<11.0	11.0	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
Endrin aldehyde	<12.2	12.2	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Heptachlor	<6.77	6.77	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	

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Organochlorine Pesticides by EPA Extraction Method 3541

Heptachlor epoxide	<8.06	8.06	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Methoxychlor	<14.2	14.2	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
Toxaphene	<1340	1340	3220	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
alpha-Chlordane	<27.1	27.1	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
gamma-Chlordane	<25.8	25.8	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	
Endrin ketone	<31.6	31.6	64.4	ug/kg dry	10/24/17 17:26	EPA 8081B	CDB	D
<i>Surrogate: Tetrachloro-meta-xylene</i>		88.2 %	40-157		10/24/17 17:26	EPA 8081B	CDB	
<i>Surrogate: Decachlorobiphenyl</i>		132 %	57.1-153		10/24/17 17:26	EPA 8081B	CDB	

Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.025	0.025	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1221	<0.035	0.035	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1232	<0.027	0.027	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1242	<0.009	0.009	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1248	<0.018	0.018	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1254	<0.039	0.039	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
PCB-1260	<0.029	0.029	0.060	mg/kg dry	10/23/17 23:42	EPA 8082	cdb	
<i>Surrogate: Tetrachloro-meta-xylene</i>		102 %	11-140		10/23/17 23:42	EPA 8082	cdb	
<i>Surrogate: Decachlorobiphenyl</i>		113 %	24.4-140		10/23/17 23:42	EPA 8082	cdb	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

Pyridine	<1.65	1.65	6.36	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Benzidine	<1.11	1.11	15.9	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Diphenylamine	<0.381	0.381	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Acenaphthene	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Acenaphthylene	<0.254	0.254	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Anthracene	<0.159	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzoic acid	<1.37	1.37	31.8	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzo (a) anthracene	0.318 J	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzo (b) fluoranthene	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzo (k) fluoranthene	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzo (g,h,i) perylene	<0.254	0.254	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzo (a) pyrene	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Benzyl alcohol	0.445 J	0.445	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Bis(2-chloroethoxy)methane	<0.445	0.445	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	A9, G, I
Bis(2-chloroethyl)ether	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Bis(2-chloroisopropyl)ether	<0.191	0.191	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	A9, G, I
Bis(2-ethylhexyl)phthalate	1.05 J	0.954	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
4-Bromophenyl phenyl ether	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

Butyl benzyl phthalate	<0.381	0.381	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
4-Chloroaniline	<0.413	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	I
4-Chloro-3-methylphenol	<0.286	0.286	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2-Chloronaphthalene	<0.191	0.191	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G
2-Chlorophenol	<0.159	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	I, G
4-Chlorophenyl phenyl ether	<0.413	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Chrysene	0.191 J	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Dibenz (a,h) anthracene	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Dibenzofuran	<0.0954	0.0954	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Di-n-butyl phthalate	2.07 J	0.668	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
1,2-Dichlorobenzene	<0.286	0.286	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
1,3-Dichlorobenzene	<0.159	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
1,4-Dichlorobenzene	<0.159	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
3,3'-Dichlorobenzidine	<0.286	0.286	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,4-Dichlorophenol	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Diethyl phthalate	<0.318	0.318	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,4-Dimethylphenol	<0.254	0.254	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Dimethyl phthalate	<0.191	0.191	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

4,6-Dinitro-2-methylphenol	<1.02	1.02	15.9	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,4-Dinitrophenol	<0.827	0.827	15.9	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,4-Dinitrotoluene	<0.668	0.668	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,6-Dinitrotoluene	<0.604	0.604	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Di-n-octyl phthalate	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Aniline	<0.223	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Naphthalene	<0.191	0.191	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
N-Nitrosodimethylamine	<0.413	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
3 & 4-Methylphenol	<0.286	0.286	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Acetophenone	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
1,2-Diphenylhydrazine	<0.127	0.127	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Fluoranthene	0.254 J	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Fluorene	<0.127	0.127	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Hexachlorobenzene	<0.381	0.381	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Hexachlorobutadiene	<0.413	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Hexachlorocyclopentadiene	<0.795	0.795	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Hexachloroethane	<0.381	0.381	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Indeno (1,2,3-cd) pyrene	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

Isophorone	0.540 J	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G
2-Methylnaphthalene	<0.254	0.254	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
2-Methylphenol	<0.509	0.509	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
2-Nitroaniline	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
3-Nitroaniline	<0.890	0.890	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
4-Nitroaniline	<0.731	0.731	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Nitrobenzene	<0.413	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	I
2-Nitrophenol	<0.477	0.477	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
4-Nitrophenol	<0.795	0.795	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
N-Nitrosodi-n-propylamine	<0.318	0.318	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Pentachlorophenol	<0.795	0.795	15.9	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Phenanthrene	0.191 J	0.159	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
Phenol	0.572 J	0.413	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
Pyrene	0.254 J	0.223	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
1,2,4-Trichlorobenzene	<0.350	0.350	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G, I
2,4,5-Trichlorophenol	<0.540	0.540	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	
2,4,6-Trichlorophenol	<0.509	0.509	3.18	mg/kg dry	10/24/17 17:25	EPA 8270D	cdb	G
<i>Surrogate: 2-Fluorophenol</i>		103 %	10-169		10/24/17 17:25	EPA 8270D	cdb	

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 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Surrogate: Phenol-d6	105 %		10-166		10/24/17 17:25	EPA 8270D	cdb	
Surrogate: Nitrobenzene-d5	109 %		18.8-170		10/24/17 17:25	EPA 8270D	cdb	
Surrogate: 2-Fluorobiphenyl	104 %		35.1-154		10/24/17 17:25	EPA 8270D	cdb	
Surrogate: 2,4,6-Tribromophenol	97 %		20-158		10/24/17 17:25	EPA 8270D	cdb	
Surrogate: Terphenyl-d14	114 %		52.1-160		10/24/17 17:25	EPA 8270D	cdb	

TCLP Extraction by EPA 1311

# pH @ 19.4°C	8.31			pH Units	10/24/17 09:23	EPA 1311	spp	
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TCLP Metals extracted by EPA 1311

Silver	<0.00600	0.00600	0.0200	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Arsenic	<0.0160	0.0160	0.0400	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Barium	0.356	0.0150	0.0500	mg/l	10/30/17 16:06	EPA 6010B/2.0	sr	
Beryllium	<0.00120	0.00120	0.0100	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Cadmium	<0.00245	0.00245	0.0200	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Chromium	<0.000750	0.000750	0.0250	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Mercury	<0.000590	0.000590	0.00200	mg/l	10/24/17 15:04	EPA 7471B	jks	Q

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Nickel	0.0741 J	0.0120	0.250	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Lead	<0.0120	0.0120	0.0400	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Antimony	0.0273 J	0.0190	0.0500	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Selenium	0.0242 J	0.0145	0.100	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Thallium	<0.00900	0.00900	0.100	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Vanadium	<0.0130	0.0130	0.100	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	
Zinc	<0.0110	0.0110	0.100	mg/l	10/30/17 16:08	EPA 6010B/2.0	sr	

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Benzidine	<11.0	11.0	250	ug/l	11/24/17 12:21	EPA 8270D	rsr	F
Pyridine	<13.5	13.5	100	ug/l	11/24/17 12:21	EPA 8270D	rsr	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-01 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

B2

Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
Hexachloroethane	<5.50	5.50	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
2-Methylphenol	<6.50	6.50	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
Nitrobenzene	<6.00	6.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
Pentachlorophenol	<13.5	13.5	250	ug/l	11/24/17 12:21	EPA 8270D	rsr	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	11/24/17 12:21	EPA 8270D	rsr	
Surrogate: 2-Fluorophenol	49.2 %		30.6-66.8		11/24/17 12:21	EPA 8270D	rsr	
Surrogate: Phenol-d6	33.6 %		17.9-51.5		11/24/17 12:21	EPA 8270D	rsr	
Surrogate: Nitrobenzene-d5	101 %		30.6-140		11/24/17 12:21	EPA 8270D	rsr	
Surrogate: 2-Fluorobiphenyl	99.2 %		40.6-121		11/24/17 12:21	EPA 8270D	rsr	
Surrogate: 2,4,6-Tribromophenol	106 %		50.4-131		11/24/17 12:21	EPA 8270D	rsr	
Surrogate: Terphenyl-d14	119 %		10-185		11/24/17 12:21	EPA 8270D	rsr	

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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Client Sample ID: BULGER-RO-101817

Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

Acetone	<0.328	0.328	2.12	mg/kg dry	10/23/17 20:39	EPA 8260B	mtc	
Benzene	<0.0003	0.0003	0.0046	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Toluene	0.0023 J	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Ethylbenzene	<0.0006	0.0006	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Xylenes (total)	<0.0015	0.0015	0.0230	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Isopropylbenzene	<0.0009	0.0009	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Methyl tert-butyl ether	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Naphthalene	<0.0005	0.0005	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Acrolein	<0.0099	0.0099	0.115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Acrylonitrile	<0.0010	0.0010	0.0230	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Bromodichloromethane	<0.0012	0.0012	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Bromoform	<0.0010	0.0010	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Bromomethane	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
2-Butanone	<0.0035	0.0035	0.0230	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Carbon disulfide	0.0069 J	0.0012	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Carbon tetrachloride	<0.0012	0.0012	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Chlorobenzene	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Chloroethane	<0.0011	0.0011	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

15

2-Chloroethylvinyl ether	<0.0016	0.0016	0.115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Chloroform	<0.0007	0.0007	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Chloromethane	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2-Dibromo-3-chloropropane	<0.0007	0.0007	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Dibromochloromethane	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2-Dibromoethane (EDB)	<0.0009	0.0009	0.0046	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Dibromomethane	<0.0008	0.0008	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2-Dichlorobenzene	<0.0008	0.0008	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,4-Dichlorobenzene	<0.0009	0.0009	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,3-Dichlorobenzene	<0.0008	0.0008	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Dichlorodifluoromethane	<0.0010	0.0010	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	E
1,2-Dichloroethane	<0.0005	0.0005	0.0046	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1-Dichloroethane	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
trans-1,2-Dichloroethene	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
cis-1,2-Dichloroethene	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1-Dichloroethene	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2-Dichloropropane	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
trans-1,3-Dichloropropene	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	

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Date/Time Sampled: 10/18/17 11:30

Laboratory Sample ID: 7J18186-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

15

cis-1,3-Dichloropropene	<0.0005	0.0005	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Hexachlorobutadiene	<0.0010	0.0010	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
2-Hexanone	<0.0007	0.0007	0.0230	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Iodomethane	<0.0009	0.0009	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Methylene chloride	<0.0012	0.0012	0.0461	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
4-Methyl-2-pentanone	0.0052 J	0.0003	0.0230	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Styrene	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1,2,2-Tetrachloroethane	<0.0009	0.0009	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1,1,2-Tetrachloroethane	<0.0003	0.0003	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Tetrachloroethene	<0.0007	0.0007	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2,4-Trichlorobenzene	<0.0013	0.0013	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1,1-Trichloroethane	<0.0007	0.0007	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,1,2-Trichloroethane	<0.0006	0.0006	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Trichloroethene	<0.0005	0.0005	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Trichlorofluoromethane	<0.0007	0.0007	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
1,2,3-Trichloropropane	<0.0004	0.0004	0.0115	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
Vinyl chloride	<0.0005	0.0005	0.0046	mg/kg dry	10/20/17 18:52	EPA 8260B	mtc	
<i>Surrogate: 4-Bromofluorobenzene</i>		92 %	70-130		10/20/17 18:52	EPA 8260B	mtc	

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Client Sample ID: BULGER-RO-101817

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Laboratory Sample ID: 7J18186-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

15

Surrogate: 1,2-Dichloroethane-d4	97 %		70-130		10/20/17 18:52	EPA 8260B	mtc	
Surrogate: Fluorobenzene	95 %		70-130		10/20/17 18:52	EPA 8260B	mtc	

Conventional Chemistry Parameters by SM/EPA Methods

% Solids	27.2		0.100	%	10/19/17 20:00	SM 2540 G-97	pra	
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Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control

Metals by Prep Method EPA 3050B

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7292041 - EPA 3050B									
Blank (7292041-BLK1)									
					Prepared: 10/19/17 Analyzed: 10/24/17				
Aluminum	ND		9.54	mg/kg wet					
Manganese	ND		0.954	mg/kg wet					
Antimony	ND		0.954	mg/kg wet					
Arsenic	ND		0.763	mg/kg wet					
Barium	ND		0.954	mg/kg wet					
Beryllium	ND		0.191	mg/kg wet					
Cadmium	ND		0.382	mg/kg wet					
Chromium	ND		0.477	mg/kg wet					
Cobalt	ND		0.954	mg/kg wet					
Copper	ND		0.954	mg/kg wet					
Iron	ND		3.82	mg/kg wet					
Lead	ND		0.763	mg/kg wet					
Nickel	ND		4.77	mg/kg wet					
Selenium	ND		1.91	mg/kg wet					
Silver	ND		0.382	mg/kg wet					
Thallium	ND		1.91	mg/kg wet					
Zinc	ND		1.91	mg/kg wet					
Vanadium	ND		1.91	mg/kg wet					

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Max Environmental

Project: CLARIFIER SLUDGE

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

03/28/18 12:19

Project Manager: Carl Spadaro

Number of Containers: 6

Quality Control
(Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7292041 - EPA 3050B (Continued)										
LCS (7292041-BS1)										
					Prepared: 10/19/17 Analyzed: 10/24/17					
Manganese	191		4.90	mg/kg wet	196		97	80-120		200
Aluminum	974		49.0	mg/kg wet	981		99	80-120		200
Antimony	199		4.90	mg/kg wet	196		101	80-120		200
Arsenic	74.8		3.92	mg/kg wet	78.4		95	80-120		200
Barium	196		4.90	mg/kg wet	196		100	80-120		200
Beryllium	18.8		0.981	mg/kg wet	19.6		96	80-120		200
Cadmium	37.8		1.96	mg/kg wet	39.2		96	80-120		200
Chromium	19.2		2.45	mg/kg wet	19.6		98	80-120		200
Cobalt	192		4.90	mg/kg wet	196		98	80-120		200
Copper	189		4.90	mg/kg wet	196		97	80-120		200
Iron	396		19.6	mg/kg wet	392		101	80-120		200
Lead	77.5		3.92	mg/kg wet	78.4		99	80-120		200
Nickel	192		24.5	mg/kg wet	196		98	80-120		200
Selenium	186		9.81	mg/kg wet	196		95	80-120		200
Silver	36.5		1.96	mg/kg wet	39.2		93	80-120		200
Thallium	67.4		9.81	mg/kg wet	78.4		86	80-120		200
Zinc	194		9.81	mg/kg wet	196		99	80-120		200
Vanadium	189		9.81	mg/kg wet	196		96	80-120		200

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 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental

Project: CLARIFIER SLUDGE

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

03/28/18 12:19

Project Manager: Carl Spadaro

Number of Containers: 6

Quality Control
(Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7292041 - EPA 3050B (Continued)									
Duplicate (7292041-DUP1)			Source: 7J18186-01		Prepared: 10/19/17 Analyzed: 10/24/17				
Manganese	11400		271	mg/kg dry		12000		5	20
Aluminum	45900		2710	mg/kg dry		48700		6	20
Antimony	ND		13.6	mg/kg dry		ND			20
Arsenic	12.0		10.8	mg/kg dry		13.1		9	20
Barium	6620		271	mg/kg dry		7310		10	20
Beryllium	6.29		2.71	mg/kg dry		6.54		4	20
Cadmium	4.46	J	5.42	mg/kg dry		4.72		6	20
Chromium	170		6.78	mg/kg dry		178		5	20
Cobalt	97.0		13.6	mg/kg dry		101		4	20
Copper	170		13.6	mg/kg dry		178		4	20
Iron	22000		1080	mg/kg dry		23000		4	20
Lead	114		10.8	mg/kg dry		118		4	20
Nickel	599		67.8	mg/kg dry		629		5	20
Selenium	ND		27.1	mg/kg dry		12.9		200	20
Silver	ND		5.42	mg/kg dry		ND			20
Thallium	ND		27.1	mg/kg dry		ND			20
Zinc	1200		27.1	mg/kg dry		1260		4	20
Vanadium	51.7		27.1	mg/kg dry		55.0		6	20

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 7292041 - EPA 3050B (Continued)										
Matrix Spike (7292041-MS1)		Source: 7J18186-01			Prepared: 10/19/17 Analyzed: 10/24/17					
Aluminum	46100		2830	mg/kg dry	2830	48700	NR	75-125		200
Manganese	11800		283	mg/kg dry	565	12000	NR	75-125		200
Antimony	238		14.1	mg/kg dry	565	ND	42	75-125		200
Arsenic	214		11.3	mg/kg dry	226	13.1	89	75-125		200
Barium	7630		283	mg/kg dry	565	7310	55	75-125		200
Beryllium	56.2		2.83	mg/kg dry	56.5	6.54	88	75-125		200
Cadmium	104		5.65	mg/kg dry	113	4.72	88	75-125		200
Chromium	227		7.06	mg/kg dry	56.5	178	86	75-125		200
Cobalt	571		14.1	mg/kg dry	565	101	83	75-125		200
Copper	668		14.1	mg/kg dry	565	178	87	75-125		200
Iron	22300		1130	mg/kg dry	1130	23000	NR	75-125		200
Lead	313		11.3	mg/kg dry	226	118	86	75-125		200
Nickel	1060		70.6	mg/kg dry	565	629	77	75-125		200
Selenium	506		28.3	mg/kg dry	565	12.9	87	75-125		200
Silver	104		5.65	mg/kg dry	113	ND	92	75-125		200
Thallium	153		28.3	mg/kg dry	226	ND	68	75-125		200
Zinc	1660		28.3	mg/kg dry	565	1260	70	75-125		200
Vanadium	535		28.3	mg/kg dry	565	55.0	85	75-125		200



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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles										
Blank (7296045-BLK1)										
Prepared & Analyzed: 10/20/17										
Benzene	ND		0.0040	mg/kg wet						
Toluene	ND		0.0100	mg/kg wet						
Ethylbenzene	ND		0.0100	mg/kg wet						
Xylenes (total)	ND		0.0200	mg/kg wet						
Naphthalene	ND		0.0100	mg/kg wet						
Acetone	ND		0.0200	mg/kg wet						
Acrolein	ND		0.100	mg/kg wet						
Acrylonitrile	ND		0.0200	mg/kg wet						
Bromodichloromethane	ND		0.0100	mg/kg wet						
Bromoform	ND		0.0100	mg/kg wet						
Bromomethane	ND		0.0100	mg/kg wet						
2-Butanone	ND		0.0200	mg/kg wet						
Carbon disulfide	ND		0.0100	mg/kg wet						
Carbon tetrachloride	ND		0.0100	mg/kg wet						
Chlorobenzene	ND		0.0100	mg/kg wet						
Chloroethane	ND		0.0100	mg/kg wet						
2-Chloroethylvinyl ether	ND		0.100	mg/kg wet						
Chloroform	ND		0.0100	mg/kg wet						
1,2-Dibromo-3-chloropropane	ND		0.0100	mg/kg wet						
Dibromochloromethane	ND		0.0100	mg/kg wet						
1,2-Dibromoethane (EDB)	ND		0.0040	mg/kg wet						
Dibromomethane	ND		0.0100	mg/kg wet						
1,2-Dichlorobenzene	ND		0.0100	mg/kg wet						
1,4-Dichlorobenzene	ND		0.0100	mg/kg wet						
1,3-Dichlorobenzene	ND		0.0100	mg/kg wet						

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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)										
Blank (7296045-BLK1)					Prepared & Analyzed: 10/20/17					
Dichlorodifluoromethane	ND		0.0100	mg/kg wet						
1,2-Dichloroethane	ND		0.0040	mg/kg wet						
1,1-Dichloroethane	ND		0.0100	mg/kg wet						
trans-1,2-Dichloroethene	ND		0.0100	mg/kg wet						
1,1-Dichloroethene	ND		0.0100	mg/kg wet						
1,2-Dichloropropane	ND		0.0100	mg/kg wet						
trans-1,3-Dichloropropene	ND		0.0100	mg/kg wet						
cis-1,3-Dichloropropene	ND		0.0100	mg/kg wet						
Hexachlorobutadiene	ND		0.0100	mg/kg wet						
Iodomethane	ND		0.0100	mg/kg wet						
Methylene chloride	ND		0.0400	mg/kg wet						
4-Methyl-2-pentanone	ND		0.0200	mg/kg wet						
1,1,2,2-Tetrachloroethane	ND		0.0100	mg/kg wet						
1,1,1,2-Tetrachloroethane	ND		0.0100	mg/kg wet						
Tetrachloroethene	ND		0.0100	mg/kg wet						
1,2,4-Trichlorobenzene	ND		0.0100	mg/kg wet						
1,1,1-Trichloroethane	ND		0.0100	mg/kg wet						
1,1,2-Trichloroethane	ND		0.0100	mg/kg wet						
Trichloroethene	ND		0.0100	mg/kg wet						
Trichlorofluoromethane	ND		0.0100	mg/kg wet						
1,2,3-Trichloropropane	ND		0.0100	mg/kg wet						
Vinyl chloride	ND		0.0040	mg/kg wet						
<i>Surrogate: 4-Bromofluorobenzene</i>			0.182	mg/kg wet	0.200		91	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			0.168	mg/kg wet	0.200		84	70-130		
<i>Surrogate: Fluorobenzene</i>			0.182	mg/kg wet	0.200		91	70-130		

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)									
LCS (7296045-BS1)					Prepared: 10/20/17 Analyzed: 10/23/17				
Benzene	0.047		0.0020	mg/kg wet	0.0500		94 70-130		200
Toluene	0.043		0.0050	mg/kg wet	0.0500		86 70-130		200
Ethylbenzene	0.047		0.0050	mg/kg wet	0.0500		93 70-130		200
Xylenes (total)	0.141		0.0100	mg/kg wet	0.150		94 70-130		200
Naphthalene	0.046		0.0050	mg/kg wet	0.0500		91 70-130		200
Acetone	0.097		0.0100	mg/kg wet	0.0500		194 70-130		200
Acrylonitrile	0.045		0.0100	mg/kg wet	0.0500		91 70-130		200
Bromodichloromethane	0.049		0.0050	mg/kg wet	0.0500		98 70-130		200
Bromoform	0.061		0.0050	mg/kg wet	0.0500		121 70-130		200
Bromomethane	0.048		0.0050	mg/kg wet	0.0500		95 70-130		200
2-Butanone	0.063		0.0100	mg/kg wet	0.0500		125 70-130		200
Carbon disulfide	0.048		0.0050	mg/kg wet	0.0500		97 70-130		200
Carbon tetrachloride	0.049		0.0050	mg/kg wet	0.0500		99 70-130		200
Chlorobenzene	0.050		0.0050	mg/kg wet	0.0500		100 70-130		200
Chloroethane	0.051		0.0050	mg/kg wet	0.0500		102 70-130		200
Chloroform	0.043		0.0050	mg/kg wet	0.0500		86 70-130		200
1,2-Dibromo-3-chloropropane	0.049		0.0050	mg/kg wet	0.0500		98 70-130		200
Dibromochloromethane	0.050		0.0050	mg/kg wet	0.0500		101 70-130		200
1,2-Dibromoethane (EDB)	0.047		0.0020	mg/kg wet	0.0500		94 70-130		200
Dibromomethane	0.049		0.0050	mg/kg wet	0.0500		99 70-130		200
1,2-Dichlorobenzene	0.047		0.0050	mg/kg wet	0.0500		94 70-130		200
1,4-Dichlorobenzene	0.047		0.0050	mg/kg wet	0.0500		94 70-130		200
1,3-Dichlorobenzene	0.049		0.0050	mg/kg wet	0.0500		99 70-130		200
Dichlorodifluoromethane	0.054		0.0050	mg/kg wet	0.0500		108 70-130		200

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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)										
LCS (7296045-BS1)										
Prepared: 10/20/17 Analyzed: 10/23/17										
1,2-Dichloroethane	0.042		0.0020	mg/kg wet	0.0500		83	70-130		200
1,1-Dichloroethane	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
trans-1,2-Dichloroethene	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
1,1-Dichloroethene	0.050		0.0050	mg/kg wet	0.0500		101	70-130		200
1,2-Dichloropropane	0.047		0.0050	mg/kg wet	0.0500		95	70-130		200
trans-1,3-Dichloropropene	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
cis-1,3-Dichloropropene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
Hexachlorobutadiene	0.052		0.0050	mg/kg wet	0.0500		105	70-130		200
Iodomethane	0.054		0.0050	mg/kg wet				70-130		200
Methylene chloride	0.047		0.0200	mg/kg wet	0.0500		94	70-130		200
4-Methyl-2-pentanone	0.043		0.0100	mg/kg wet	0.0500		85	70-130		200
1,1,2,2-Tetrachloroethane	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
1,1,1,2-Tetrachloroethane	0.053		0.0050	mg/kg wet	0.0500		106	70-130		200
Tetrachloroethene	0.056		0.0050	mg/kg wet	0.0500		112	70-130		200
1,2,4-Trichlorobenzene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
1,1,1-Trichloroethane	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
1,1,2-Trichloroethane	0.045		0.0050	mg/kg wet	0.0500		89	70-130		200
Trichloroethene	0.051		0.0050	mg/kg wet	0.0500		102	70-130		200
Trichlorofluoromethane	0.054		0.0050	mg/kg wet	0.0500		108	70-130		200
1,2,3-Trichloropropane	0.044		0.0050	mg/kg wet	0.0500		88	70-130		200
Vinyl chloride	0.051		0.0020	mg/kg wet	0.0500		102	70-130		200
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.0919</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>92</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.0828</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>83</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.0910</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>91</i>	<i>70-130</i>		

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Max Environmental

Project: CLARIFIER SLUDGE

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

03/28/18 12:19

Project Manager: Carl Spadaro

Number of Containers: 6

Quality Control
(Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)									
Duplicate (7296045-DUP1)		Source: 7J20060-04			Prepared & Analyzed: 10/20/17				
Benzene	ND		0.0024	mg/kg dry		ND			20
Toluene	ND		0.0061	mg/kg dry		ND			20
Ethylbenzene	ND		0.0061	mg/kg dry		ND			20
Xylenes (total)	ND		0.0122	mg/kg dry		ND			20
Naphthalene	ND		0.0061	mg/kg dry		ND			20
Acetone	ND		0.0122	mg/kg dry		ND			20
Acrolein	ND		0.0609	mg/kg dry		ND			20
Acrylonitrile	ND		0.0122	mg/kg dry		ND			20
Bromodichloromethane	ND		0.0061	mg/kg dry		ND			20
Bromoform	ND		0.0061	mg/kg dry		ND			20
Bromomethane	ND		0.0061	mg/kg dry		ND			20
2-Butanone	ND		0.0122	mg/kg dry		ND			20
Carbon disulfide	ND		0.0061	mg/kg dry		ND			20
Carbon tetrachloride	ND		0.0061	mg/kg dry		ND			20
Chlorobenzene	ND		0.0061	mg/kg dry		ND			20
Chloroethane	ND		0.0061	mg/kg dry		ND			20
2-Chloroethylvinyl ether	ND		0.0609	mg/kg dry		ND			20
Chloroform	ND		0.0061	mg/kg dry		ND			20
1,2-Dibromo-3-chloropropane	ND		0.0061	mg/kg dry		ND			20
Dibromochloromethane	ND		0.0061	mg/kg dry		ND			20
1,2-Dibromoethane (EDB)	ND		0.0024	mg/kg dry		ND			20
Dibromomethane	ND		0.0061	mg/kg dry		ND			20
1,2-Dichlorobenzene	ND		0.0061	mg/kg dry		ND			20
1,4-Dichlorobenzene	ND		0.0061	mg/kg dry		ND			20
1,3-Dichlorobenzene	ND		0.0061	mg/kg dry		ND			20

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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)										
Duplicate (7296045-DUP1)		Source: 7J20060-04			Prepared & Analyzed: 10/20/17					
Dichlorodifluoromethane	ND		0.0061	mg/kg dry		ND				20
1,2-Dichloroethane	ND		0.0024	mg/kg dry		ND				20
1,1-Dichloroethane	ND		0.0061	mg/kg dry		ND				20
trans-1,2-Dichloroethene	ND		0.0061	mg/kg dry		ND				20
1,1-Dichloroethane	ND		0.0061	mg/kg dry		ND				20
1,2-Dichloropropane	ND		0.0061	mg/kg dry		ND				20
trans-1,3-Dichloropropene	ND		0.0061	mg/kg dry		ND				20
cis-1,3-Dichloropropene	ND		0.0061	mg/kg dry		ND				20
Hexachlorobutadiene	ND		0.0061	mg/kg dry		ND				20
Iodomethane	ND		0.0061	mg/kg dry		ND				20
Methylene chloride	ND		0.0243	mg/kg dry		0.001			200	20
4-Methyl-2-pentanone	ND		0.0122	mg/kg dry		ND				20
1,1,2,2-Tetrachloroethane	ND		0.0061	mg/kg dry		ND				20
1,1,1,2-Tetrachloroethane	ND		0.0061	mg/kg dry		ND				20
Tetrachloroethene	ND		0.0061	mg/kg dry		ND				20
1,2,4-Trichlorobenzene	ND		0.0061	mg/kg dry		ND				20
1,1,1-Trichloroethane	ND		0.0061	mg/kg dry		ND				20
1,1,2-Trichloroethane	ND		0.0061	mg/kg dry		ND				20
Trichloroethene	ND		0.0061	mg/kg dry		ND				20
Trichlorofluoromethane	ND		0.0061	mg/kg dry		ND				20
1,2,3-Trichloropropane	ND		0.0061	mg/kg dry		ND				20
Vinyl chloride	ND		0.0024	mg/kg dry		ND				20
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.115</i>	<i>mg/kg dry</i>	<i>0.122</i>		<i>95</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.122</i>	<i>mg/kg dry</i>	<i>0.122</i>		<i>100</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.112</i>	<i>mg/kg dry</i>	<i>0.122</i>		<i>92</i>	<i>70-130</i>		

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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)									
Matrix Spike (7296045-MS1)			Source: 7J20060-06		Prepared & Analyzed: 10/20/17				
Benzene	0.049		0.0022	mg/kg dry	0.0560	ND	88 70-130		200
Toluene	0.051		0.0056	mg/kg dry	0.0560	ND	92 70-130		200
Ethylbenzene	0.047		0.0056	mg/kg dry	0.0560	ND	84 70-130		200
Xylenes (total)	0.139		0.0112	mg/kg dry	0.168	ND	83 70-130		200
Naphthalene	0.062		0.0056	mg/kg dry	0.0560	ND	111 70-130		200
Acetone	0.056		0.0112	mg/kg dry	0.0560	ND	100 70-130		200
Acrylonitrile	0.045		0.0112	mg/kg dry	0.0560	ND	81 70-130		200
Bromodichloromethane	0.049		0.0056	mg/kg dry	0.0560	ND	88 70-130		200
Bromoform	0.062		0.0056	mg/kg dry	0.0560	ND	111 70-130		200
Bromomethane	0.043		0.0056	mg/kg dry	0.0560	ND	77 70-130		200
2-Butanone	0.055		0.0112	mg/kg dry	0.0560	ND	98 70-130		200
Carbon disulfide	0.050		0.0056	mg/kg dry	0.0560	ND	90 70-130		200
Carbon tetrachloride	0.049		0.0056	mg/kg dry	0.0560	ND	87 70-130		200
Chlorobenzene	0.049		0.0056	mg/kg dry	0.0560	ND	88 70-130		200
Chloroethane	0.048		0.0056	mg/kg dry	0.0560	ND	85 70-130		200
Chloroform	0.044		0.0056	mg/kg dry	0.0560	ND	79 70-130		200
1,2-Dibromo-3-chloropropane	0.068		0.0056	mg/kg dry	0.0560	ND	121 70-130		200
Dibromochloromethane	0.056		0.0056	mg/kg dry	0.0560	ND	101 70-130		200
1,2-Dibromoethane (EDB)	0.060		0.0022	mg/kg dry	0.0560	ND	106 70-130		200
Dibromomethane	0.053		0.0056	mg/kg dry	0.0560	ND	95 70-130		200
1,2-Dichlorobenzene	0.047		0.0056	mg/kg dry	0.0560	ND	84 70-130		200
1,4-Dichlorobenzene	0.044		0.0056	mg/kg dry	0.0560	ND	79 70-130		200
1,3-Dichlorobenzene	0.047		0.0056	mg/kg dry	0.0560	ND	85 70-130		200
Dichlorodifluoromethane	0.034		0.0056	mg/kg dry	0.0560	ND	60 70-130		200

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296045 - Volatiles (Continued)										
Matrix Spike (7296045-MS1)		Source: 7J20060-06			Prepared & Analyzed: 10/20/17					
1,2-Dichloroethane	0.045		0.0022	mg/kg dry	0.0560	ND	80	70-130		200
1,1-Dichloroethane	0.046		0.0056	mg/kg dry	0.0560	ND	82	70-130		200
trans-1,2-Dichloroethene	0.046		0.0056	mg/kg dry	0.0560	ND	83	70-130		200
1,1-Dichloroethene	0.050		0.0056	mg/kg dry	0.0560	ND	89	70-130		200
1,2-Dichloropropane	0.048		0.0056	mg/kg dry	0.0560	ND	87	70-130		200
trans-1,3-Dichloropropene	0.050		0.0056	mg/kg dry	0.0560	ND	89	70-130		200
cis-1,3-Dichloropropene	0.051		0.0056	mg/kg dry	0.0560	ND	91	70-130		200
Hexachlorobutadiene	0.051		0.0056	mg/kg dry	0.0560	ND	91	70-130		200
Iodomethane	0.053		0.0056	mg/kg dry		ND		70-130		200
Methylene chloride	0.047		0.0224	mg/kg dry	0.0560	0.002	80	70-130		200
4-Methyl-2-pentanone	0.063		0.0112	mg/kg dry	0.0560	ND	112	70-130		200
1,1,2,2-Tetrachloroethane	0.057		0.0056	mg/kg dry	0.0560	ND	102	70-130		200
1,1,1,2-Tetrachloroethane	0.051		0.0056	mg/kg dry	0.0560	ND	91	70-130		200
Tetrachloroethene	0.058		0.0056	mg/kg dry	0.0560	ND	104	70-130		200
1,2,4-Trichlorobenzene	0.043		0.0056	mg/kg dry	0.0560	ND	77	70-130		200
1,1,1-Trichloroethane	0.049		0.0056	mg/kg dry	0.0560	ND	88	70-130		200
1,1,2-Trichloroethane	0.058		0.0056	mg/kg dry	0.0560	ND	103	70-130		200
Trichloroethene	0.054		0.0056	mg/kg dry	0.0560	ND	96	70-130		200
Trichlorofluoromethane	0.052		0.0056	mg/kg dry	0.0560	ND	93	70-130		200
1,2,3-Trichloropropane	0.053		0.0056	mg/kg dry	0.0560	ND	94	70-130		200
Vinyl chloride	0.042		0.0022	mg/kg dry	0.0560	ND	76	70-130		200
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.106</i>	<i>mg/kg dry</i>	<i>0.112</i>		<i>95</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.105</i>	<i>mg/kg dry</i>	<i>0.112</i>		<i>93</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.102</i>	<i>mg/kg dry</i>	<i>0.112</i>		<i>91</i>	<i>70-130</i>		

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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Analyses to be performed immediately upon sampling. See Definition indicated by: #

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7292026 - General Prep										
Duplicate (7292026-DUP1)			Source: 7J16027-01			Prepared & Analyzed: 10/19/17				
# pH	7.96			pH Units		7.72			3.06	10
Duplicate (7292026-DUP2)			Source: 7J16032-01			Prepared & Analyzed: 10/19/17				
# pH	7.13			pH Units		6.99			1.98	10

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296078 - EPA 8151A									
Blank (7296078-BLK1)					Prepared: 10/23/17 Analyzed: 10/25/17				
2,4-D	ND		3.33	ug/kg wet					
Acifluorfen	ND		3.33	ug/kg wet					
2,4-DB	ND		3.33	ug/kg wet					
2,4,5-T	ND		3.33	ug/kg wet					
2,4,5-TP (Silvex)	ND		3.33	ug/kg wet					
Dalapon	ND		33.3	ug/kg wet					
Dicamba	ND		3.33	ug/kg wet					
Dichloroprop	ND		3.33	ug/kg wet					
Dinoseb	ND		3.33	ug/kg wet					
<i>Surrogate: 2,4-DCAA</i>			0.165	mg/l	0.100		165	40.6-150	
LCS (7296078-BS1)					Prepared: 10/23/17 Analyzed: 10/25/17				
2,4-D	0.000104			mg/l	0.0000800		130	42.5-122	200
Acifluorfen	0.0000841			mg/l	0.0000800		105	16.8-144	200
2,4-DB	0.0000728			mg/l	0.0000800		91	17.6-149	200
2,4,5-T	0.0000917			mg/l	0.0000800		115	25.9-138	200
2,4,5-TP (Silvex)	0.0000765			mg/l	0.0000800		96	23.5-121	200
Dalapon	0.000381			mg/l	0.000800		48	10-173	200
Dicamba	0.0000791			mg/l	0.0000800		99	12.6-122	200
Dichloroprop	0.0000808			mg/l	0.0000800		101	10-151	200
Dinoseb	0.0000229			mg/l	0.0000800		29	10-86.5	200
<i>Surrogate: 2,4-DCAA</i>			0.163	mg/l	0.100		163	40.6-150	
Matrix Spike (7296078-MS1)			Source: 7J17001-01			Prepared: 10/23/17 Analyzed: 10/25/17			
2,4-D	0.0000983			mg/l	0.0000800	0.00	123	17.1-157	47.4

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 Project Manager: Carl Spadaro

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Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296078 - EPA 8151A (Continued)										
Matrix Spike (7296078-MS1)			Source: 7J17001-01			Prepared: 10/23/17 Analyzed: 10/25/17				
Acifluorfen	0.000122			mg/l	0.0000800	0.00	153	10-193		72.9
2,4-DB	0.000143			mg/l	0.0000800	0.00	179	15.3-156		42.3
2,4,5-T	0.000109			mg/l	0.0000800	0.00	136	10-156		58.3
2,4,5-TP (Silvex)	0.0000849			mg/l	0.0000800	0.00	106	10-138		46.5
Dalapon	0.000525			mg/l	0.0000800	0.00	66	10-156		38
Dicamba	0.0000924			mg/l	0.0000800	0.00	116	10-130		46
Dichloroprop	0.000179			mg/l	0.0000800	0.00	224	14.1-137		60
Dinoseb	0.0000352			mg/l	0.0000800	0.00	44	10-165		39.1
<i>Surrogate: 2,4-DCAA</i>			<i>0.168</i>	<i>mg/l</i>	<i>0.100</i>		<i>168</i>	<i>40.6-150</i>		



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Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7292087 - General Prep									
Blank (7292087-BLK1)					Prepared & Analyzed: 10/19/17				
% Solids	ND		0.100	%					
Blank (7292087-BLK2)					Prepared & Analyzed: 10/19/17				
% Solids	ND		0.100	%					
Duplicate (7292087-DUP1)					Prepared & Analyzed: 10/19/17				
% Solids	26.6		0.100	%		27.2		2.12	5
Duplicate (7292087-DUP2)					Prepared & Analyzed: 10/19/17				
% Solids	27.2		0.100	%		1.02		186	5
Batch: 7294007 - General Preparation									
Blank (7294007-BLK1)					Prepared & Analyzed: 10/21/17				
Sulfide	ND		20.0	mg/kg wet					
LCS (7294007-BS1)					Prepared & Analyzed: 10/21/17				
Sulfide	240		80.0	mg/kg wet	206	117	80-120		200
Duplicate (7294007-DUP1)					Prepared & Analyzed: 10/21/17				
Sulfide	ND		19.7	mg/kg dry		ND			10
Matrix Spike (7294007-MS1)					Prepared & Analyzed: 10/21/17				
Sulfide	240		75.0	mg/kg dry	193	ND	124	80-120	200

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 Project Number: [none] **Reported:**
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 Number of Containers: 6

Quality Control
 (Continued)

Cyanide by Preparation Method EPA 9010

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7297019 - General Prep										
Blank (7297019-BLK1)										
Cyanide (total)	ND		0.489	mg/kg wet						
Prepared & Analyzed: 10/24/17										
LCS (7297019-BS1)										
Cyanide (total)	9.91		0.488	mg/kg wet	9.77		102	85-115		200
Prepared & Analyzed: 10/24/17										
Duplicate (7297019-DUP1)										
Cyanide (total)	0.913		0.571	mg/kg dry		1.85			68.0	10
Source: 7J20184-02										



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Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7293060 - EPA 7471A										
Blank (7293060-BLK1)										
Mercury	ND		0.0299	mg/kg wet						
Prepared: 10/20/17 Analyzed: 10/24/17										
LCS (7293060-BS1)										
Mercury	0.3100		0.0301	mg/kg wet	0.304		102	85-115		200
Prepared: 10/20/17 Analyzed: 10/24/17										
Matrix Spike (7293060-MS1)										
Mercury	0.2015		0.0336	mg/kg dry	0.170	0.03026	101	70-130		20
Source: 7J20059-01 Prepared: 10/20/17 Analyzed: 10/24/17										
Matrix Spike Dup (7293060-MSD1)										
Mercury	0.2025		0.0337	mg/kg dry	0.170	0.03026	101	70-130	0.478	20
Source: 7J20059-01 Prepared: 10/20/17 Analyzed: 10/24/17										
Reference (7293060-SRM1)										
Mercury	0.3402		0.0330	mg/kg wet	0.333		102	90-110		
Prepared: 10/20/17 Analyzed: 10/24/17										

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296013 - EPA 3541									
Blank (7296013-BLK1)					Prepared: 10/20/17 Analyzed: 10/24/17				
Hexachlorobenzene	ND		2.00	ug/kg wet					
Hexachlorocyclopentadiene	ND		2.00	ug/kg wet					
Aldrin	ND		2.00	ug/kg wet					
alpha-BHC	ND		2.00	ug/kg wet					
beta-BHC	ND		2.00	ug/kg wet					
delta-BHC	ND		2.00	ug/kg wet					
gamma-BHC (Lindane)	ND		2.00	ug/kg wet					
Chlordane (tech)	ND		100	ug/kg wet					
4,4'-DDD	ND		2.00	ug/kg wet					
4,4'-DDE	ND		2.00	ug/kg wet					
4,4'-DDT	ND		2.00	ug/kg wet					
Dieldrin	ND		2.00	ug/kg wet					
Endosulfan I	ND		2.00	ug/kg wet					
Endosulfan II	ND		2.00	ug/kg wet					
Endosulfan sulfate	ND		2.00	ug/kg wet					
Endrin	ND		2.00	ug/kg wet					
Endrin aldehyde	ND		2.00	ug/kg wet					
Heptachlor	ND		2.00	ug/kg wet					
Heptachlor epoxide	ND		2.00	ug/kg wet					
Methoxychlor	ND		2.00	ug/kg wet					
Toxaphene	ND		100	ug/kg wet					
alpha-Chlordane	ND		2.00	ug/kg wet					
gamma-Chlordane	ND		2.00	ug/kg wet					
Endrin ketone	ND		2.00	ug/kg wet					
<i>Surrogate: Tetrachloro-meta-xylene</i>			17.6	ug/l	20.0		87.8	40-157	

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296013 - EPA 3541 (Continued)									
Blank (7296013-BLK1)									
					Prepared: 10/20/17 Analyzed: 10/24/17				
<i>Surrogate: Decachlorobiphenyl</i>			24.6	ug/l	20.0		123 57.1-153		
Matrix Spike (7296013-MS1)									
			Source: 7J17001-01		Prepared: 10/20/17 Analyzed: 10/24/17				
Hexachlorobenzene	17.6			ug/l	12.0	0.00	147 40.7-105		32.7
Hexachlorocyclopentadiene	10.5			ug/l	12.0	0.00	87.5 10-148		155
Aldrin	13.9			ug/l	12.0	0.00	116 35.7-85.2		25.9
alpha-BHC	16.3			ug/l	12.0	0.00	135 26.7-121		22.5
beta-BHC	18.1			ug/l	12.0	0.00	151 37.5-131		24.3
delta-BHC	12.8			ug/l	12.0	0.00	107 10.6-118		25.8
gamma-BHC (Lindane)	13.5			ug/l	12.0	0.00	112 49.8-92.5		23.1
Chlordane (tech)	ND		3360	ug/kg dry		ND	80-120		200
4,4'-DDD	11.7			ug/l	12.0	0.00	97.7 42.3-103		18.1
4,4'-DDE	11.8			ug/l	12.0	0.00	98.7 47.8-100		18
4,4'-DDT	14.0			ug/l	12.0	0.00	117 45.9-110		15.6
Dieldrin	11.6			ug/l	12.0	0.00	96.4 44-107		21.3
Endosulfan I	12.8			ug/l	12.0	0.00	107 30.5-113		27.5
Endosulfan II	13.8			ug/l	12.0	0.00	115 19.2-124		49.2
Endosulfan sulfate	22.3			ug/l	12.0	0.00	185 53.8-99.6		27.6
Endrin	13.6			ug/l	12.0	0.00	113 46.8-117		27
Endrin aldehyde	13.1			ug/l	12.0	0.00	109 37.4-125		29.4
Heptachlor	11.6			ug/l	12.0	0.00	96.8 33.8-157		19.9
Heptachlor epoxide	18.6			ug/l	12.0	0.00	155 44.2-103		18.6
Methoxychlor	22.0			ug/l	12.0	0.00	183 53.3-134		24
Toxaphene	ND		3360	ug/kg dry		ND	80-120		200
alpha-Chlordane	15.9			ug/l	12.0	0.00	132 44.7-93.3		18.3

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7296013 - EPA 3541 (Continued)										
Matrix Spike (7296013-MS1)		Source: 7J17001-01			Prepared: 10/20/17 Analyzed: 10/24/17					
gamma-Chlordane	17.8			ug/l	12.0	0.00	148	47-151		21.2
Endrin ketone	14.4			ug/l	12.0	0.00	120	48-115		26.6
<hr/>										
Surrogate: Tetrachloro-meta-xylene			15.1	ug/l	20.0		75.5	40-157		
Surrogate: Decachlorobiphenyl			23.5	ug/l	20.0		117	57.1-153		

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Project: CLARIFIER SLUDGE

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

03/28/18 12:19

Project Manager: Carl Spadaro

Number of Containers: 6

Quality Control
(Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7292014 - EPA 3541									
Blank (7292014-BLK1)					Prepared: 10/18/17 Analyzed: 10/23/17				
PCB-1016	ND		0.010	mg/kg wet					
PCB-1221	ND		0.010	mg/kg wet					
PCB-1232	ND		0.010	mg/kg wet					
PCB-1242	ND		0.010	mg/kg wet					
PCB-1248	ND		0.010	mg/kg wet					
PCB-1254	ND		0.010	mg/kg wet					
PCB-1260	ND		0.010	mg/kg wet					
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.105	mg/l	0.100		105	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.109	mg/l	0.100		109	24.4-140	
LCS (7292014-BS1)					Prepared: 10/18/17 Analyzed: 10/23/17				
PCB-1016	ND		0.010	mg/kg wet			60.9-137		200
PCB-1221	ND		0.010	mg/kg wet			60.3-143		200
PCB-1232	ND		0.010	mg/kg wet			56.2-138		200
PCB-1242	ND		0.010	mg/kg wet			55.1-135		200
PCB-1248	0.088			mg/l	0.100		88.1	57.8-140	200
PCB-1254	ND		0.010	mg/kg wet			69.4-134		200
PCB-1260	ND		0.010	mg/kg wet			58.1-140		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.108	mg/l	0.100		108	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.114	mg/l	0.100		114	24.4-140	
Matrix Spike (7292014-MS1)			Source: 7J18034-01		Prepared: 10/18/17 Analyzed: 10/23/17				
PCB-1016	ND		0.098	mg/kg dry		ND	27.6-156		38.1
PCB-1221	ND		0.098	mg/kg dry		ND	10-187		46.3
PCB-1232	ND		0.098	mg/kg dry		ND	54.6-146		47.4

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7292014 - EPA 3541 (Continued)										
Matrix Spike (7292014-MS1)		Source: 7J18034-01		Prepared: 10/18/17 Analyzed: 10/23/17						
PCB-1242	ND		0.098	mg/kg dry		ND		38.6-147		37.1
PCB-1248	0.295			mg/l	0.100	0.00	295	32.1-157		35.4
PCB-1254	ND		0.098	mg/kg dry		ND		20.5-174		30.1
PCB-1260	ND		0.098	mg/kg dry		ND		32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0928	mg/l	0.100		92.8	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0880	mg/l	0.100		88.0	24.4-140		
Matrix Spike Dup (7292014-MSD1)		Source: 7J18034-01		Prepared: 10/18/17 Analyzed: 10/23/17						
PCB-1016	ND		0.093	mg/kg dry		ND		27.6-156		38.1
PCB-1221	ND		0.093	mg/kg dry		ND		10-187		46.3
PCB-1232	ND		0.093	mg/kg dry		ND		54.6-146		47.4
PCB-1242	ND		0.093	mg/kg dry		ND		38.6-147		37.1
PCB-1248	0.243			mg/l	0.100	0.00	243	32.1-157	19.5	35.4
PCB-1254	ND		0.093	mg/kg dry		ND		20.5-174		30.1
PCB-1260	ND		0.093	mg/kg dry		ND		32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0948	mg/l	0.100		94.8	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0890	mg/l	0.100		89.0	24.4-140		



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 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541									
Blank (7296080-BLK1)					Prepared: 10/23/17 Analyzed: 10/24/17				
Diphenylamine	ND		0.333	mg/kg wet					
Pyridine	ND		0.667	mg/kg wet					
Benzidine	ND		1.67	mg/kg wet					
Acenaphthene	ND		0.333	mg/kg wet					
Acenaphthylene	ND		0.333	mg/kg wet					
Anthracene	ND		0.333	mg/kg wet					
Benzoic acid	ND		3.33	mg/kg wet					
Benzo (a) anthracene	ND		0.333	mg/kg wet					
Benzo (b) fluoranthene	ND		0.333	mg/kg wet					
Benzo (k) fluoranthene	ND		0.333	mg/kg wet					
Benzo (g,h,i) perylene	ND		0.333	mg/kg wet					
Benzo (a) pyrene	ND		0.333	mg/kg wet					
Benzyl alcohol	ND		0.333	mg/kg wet					
Bis(2-chloroethoxy)methane	ND		0.333	mg/kg wet					
Bis(2-chloroethyl)ether	ND		0.333	mg/kg wet					
Bis(2-chloroisopropyl)ether	ND		0.333	mg/kg wet					
Bis(2-ethylhexyl)phthalate	ND		0.333	mg/kg wet					
4-Bromophenyl phenyl ether	ND		0.333	mg/kg wet					
Butyl benzyl phthalate	ND		0.333	mg/kg wet					
4-Chloroaniline	ND		0.333	mg/kg wet					
4-Chloro-3-methylphenol	ND		0.333	mg/kg wet					
2-Chloronaphthalene	ND		0.333	mg/kg wet					
2-Chlorophenol	ND		0.333	mg/kg wet					
4-Chlorophenyl phenyl ether	ND		0.333	mg/kg wet					
Chrysene	ND		0.333	mg/kg wet					

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 PaDEP: PA 41-04684



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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
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 Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
Blank (7296080-BLK1)					Prepared: 10/23/17 Analyzed: 10/24/17				
Dibenz (a,h) anthracene	ND		0.333	mg/kg wet					
Dibenzofuran	ND		0.333	mg/kg wet					
Di-n-butyl phthalate	0.113	J	0.333	mg/kg wet					
1,2-Dichlorobenzene	ND		0.333	mg/kg wet					
1,3-Dichlorobenzene	ND		0.333	mg/kg wet					
1,4-Dichlorobenzene	ND		0.333	mg/kg wet					
3,3'-Dichlorobenzidine	ND		0.333	mg/kg wet					
2,4-Dichlorophenol	ND		0.333	mg/kg wet					
Diethyl phthalate	ND		0.333	mg/kg wet					
2,4-Dimethylphenol	ND		0.333	mg/kg wet					
Dimethyl phthalate	ND		0.333	mg/kg wet					
4,6-Dinitro-2-methylphenol	ND		1.67	mg/kg wet					
2,4-Dinitrophenol	ND		1.67	mg/kg wet					
2,4-Dinitrotoluene	ND		0.333	mg/kg wet					
2,6-Dinitrotoluene	ND		0.333	mg/kg wet					
Di-n-octyl phthalate	ND		0.333	mg/kg wet					
Aniline	ND		0.333	mg/kg wet					
Naphthalene	ND		0.333	mg/kg wet					
N-Nitrosodimethylamine	ND		0.333	mg/kg wet					
3 & 4-Methylphenol	ND		0.333	mg/kg wet					
Acetophenone	ND		0.333	mg/kg wet					
1,2-Diphenylhydrazine	ND		0.333	mg/kg wet					
Fluoranthene	ND		0.333	mg/kg wet					
Fluorene	ND		0.333	mg/kg wet					
Hexachlorobenzene	ND		0.333	mg/kg wet					

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
Blank (7296080-BLK1)					Prepared: 10/23/17 Analyzed: 10/24/17				
Hexachlorobutadiene	ND		0.333	mg/kg wet					
Hexachlorocyclopentadiene	ND		0.333	mg/kg wet					
Hexachloroethane	ND		0.333	mg/kg wet					
Indeno (1,2,3-cd) pyrene	ND		0.333	mg/kg wet					
Isophorone	ND		0.333	mg/kg wet					
2-Methylnaphthalene	ND		0.333	mg/kg wet					
2-Methylphenol	ND		0.333	mg/kg wet					
2-Nitroaniline	ND		0.333	mg/kg wet					
3-Nitroaniline	ND		0.333	mg/kg wet					
4-Nitroaniline	ND		0.333	mg/kg wet					
Nitrobenzene	ND		0.333	mg/kg wet					
2-Nitrophenol	ND		0.333	mg/kg wet					
4-Nitrophenol	ND		0.333	mg/kg wet					
N-Nitrosodi-n-propylamine	ND		0.333	mg/kg wet					
Pentachlorophenol	ND		1.67	mg/kg wet					
Phenanthrene	ND		0.333	mg/kg wet					
Phenol	ND		0.333	mg/kg wet					
Pyrene	ND		0.333	mg/kg wet					
1,2,4-Trichlorobenzene	ND		0.333	mg/kg wet					
2,4,5-Trichlorophenol	ND		0.333	mg/kg wet					
2,4,6-Trichlorophenol	ND		0.333	mg/kg wet					
<hr/>									
Surrogate: 2-Fluorophenol			40.3	mg/l	40.0		101	10-169	
Surrogate: Phenol-d6			40.8	mg/l	40.0		102	10-166	
Surrogate: Nitrobenzene-d5			22.2	mg/l	20.0		111	18.8-170	
Surrogate: 2-Fluorobiphenyl			21.8	mg/l	20.0		109	35.1-154	

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
Blank (7296080-BLK1)					Prepared: 10/23/17 Analyzed: 10/24/17				
Surrogate: 2,4,6-Tribromophenol			36.6	mg/l	40.0		91 20-158		
Surrogate: Terphenyl-d14			22.6	mg/l	20.0		113 52.1-160		
LCS (7296080-BS1)					Prepared: 10/23/17 Analyzed: 10/24/17				
Benzidine	11.0			mg/l	50.0		22 10-35		10
Pyridine	0.320			mg/l	50.0		0.6 10-137		10
Diphenylamine	41.0			mg/l	50.0		82 56-103		10
Acenaphthene	32.0			mg/l	50.0		64 63-126		10
Acenaphthylene	31.7			mg/l	50.0		63 63-132		10
Anthracene	43.0			mg/l	50.0		86 68-124		10
Benzoic acid	23.2			mg/l	50.0		46 31-104		10
Benzo (a) anthracene	50.2			mg/l	50.0		100 70-124		10
Benzo (b) fluoranthene	52.8			mg/l	50.0		106 76-125		10
Benzo (k) fluoranthene	49.7			mg/l	50.0		99 71-125		10
Benzo (g,h,i) perylene	40.0			mg/l	50.0		80 73-127		10
Benzo (a) pyrene	48.4			mg/l	50.0		97 71-127		10
Benzyl alcohol	9.04			mg/l	50.0		18 34-138		10
Bis(2-chloroethoxy)methane	11.9			mg/l	50.0		24 39-131		10
Bis(2-chloroethyl)ether	2.31			mg/l	50.0		5 11-149		10
Bis(2-chloroisopropyl)ether	2.79			mg/l	50.0		6 17-154		10
Bis(2-ethylhexyl)phthalate	51.4			mg/l	50.0		103 63-115		10
4-Bromophenyl phenyl ether	37.4			mg/l	50.0		75 68-121		10
Butyl benzyl phthalate	17.2		0.333	mg/kg wet			62-122		10
4-Chloroaniline	18.8			mg/l	50.0		38 34-103		10
4-Chloro-3-methylphenol	31.0			mg/l	50.0		62 62-123		10

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 (570) 494-6380
 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
LCS (7296080-BS1)									
					Prepared: 10/23/17 Analyzed: 10/24/17				
2-Chloronaphthalene	24.0			mg/l	50.0		48 57-124		10
2-Chlorophenol	2.75			mg/l	50.0		6 24-142		10
4-Chlorophenyl phenyl ether	37.0			mg/l	50.0		74 65-122		10
Chrysene	47.5			mg/l	50.0		95 71-125		10
Dibenz (a,h) anthracene	53.4			mg/l	50.0		107 74-128		10
Dibenzofuran	34.5			mg/l	50.0		69 63-118		10
Di-n-butyl phthalate	45.2			mg/l	50.0		90 72-123		10
1,2-Dichlorobenzene	1.64			mg/l	50.0		3 10-151		10
1,3-Dichlorobenzene	1.06			mg/l	50.0		2 10-156		10
1,4-Dichlorobenzene	1.23			mg/l	50.0		2 10-154		10
3,3'-Dichlorobenzidine	42.2			mg/l	50.0		84 48-107		10
2,4-Dichlorophenol	15.9			mg/l	50.0		32 50-130		10
Diethyl phthalate	40.8			mg/l	50.0		82 67-124		10
2,4-Dimethylphenol	15.4			mg/l	50.0		31 40-111		10
Dimethyl phthalate	38.4			mg/l	50.0		77 66-121		10
4,6-Dinitro-2-methylphenol	34.5			mg/l	50.0		69 10-111		10
2,4-Dinitrophenol	29.6			mg/l	50.0		59 10-111		10
2,4-Dinitrotoluene	38.9			mg/l	50.0		78 66-112		10
2,6-Dinitrotoluene	36.4			mg/l	50.0		73 57-128		10
Di-n-octyl phthalate	53.2			mg/l	50.0		106 56-119		10
Aniline	4.69			mg/l	50.0		9 16-99		10
Naphthalene	7.23			mg/l	50.0		14 32-140		10
N-Nitrosodimethylamine	0.720			mg/l	50.0		1 10-156		10
Carbazole	24.1			mg/l	50.0		48 34-61		10
3 & 4-Methylphenol	4.06		0.333	mg/kg wet			41-118		10

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 Project Number: [none] **Reported:**
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 Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
LCS (7296080-BS1)									
					Prepared: 10/23/17 Analyzed: 10/24/17				
Acetophenone	7.72			mg/l	50.0		15 27-142		10
1,2-Diphenylhydrazine	13.5		0.333	mg/kg wet			60-127		10
2,3,4,6-Tetrachlorophenol	37.5			mg/l	50.0		75 72-140		10
Fluoranthene	49.3			mg/l	50.0		99 71-128		10
Fluorene	39.0			mg/l	50.0		78 69-122		10
Hexachlorobenzene	37.5			mg/l	50.0		75 69-118		10
Hexachlorobutadiene	3.25			mg/l	50.0		6 18-146		10
Hexachlorocyclopentadiene	2.10			mg/l	50.0		4 22-155		10
Hexachloroethane	1.36			mg/l	50.0		3 10-154		10
Indeno (1,2,3-cd) pyrene	53.8			mg/l	50.0		108 73-130		10
Isophorone	20.1			mg/l	50.0		40 42-131		10
2-Methylnaphthalene	15.0			mg/l	50.0		30 47-131		10
2-Methylphenol	7.04			mg/l	50.0		14 35-119		10
2-Nitroaniline	36.7			mg/l	50.0		73 57-128		10
3-Nitroaniline	35.0			mg/l	50.0		70 60-112		10
4-Nitroaniline	39.1			mg/l	50.0		78 44-127		10
Nitrobenzene	6.50			mg/l	50.0		13 28-138		10
2-Nitrophenol	7.86			mg/l	50.0		16 31-144		10
4-Nitrophenol	40.5			mg/l	50.0		81 50-118		10
N-Nitrosodiphenylamine	13.7		0.333	mg/kg wet			54-104		10
N-Nitrosodi-n-propylamine	13.0			mg/l	50.0		26 34-135		10
Pentachlorophenol	40.7			mg/l	50.0		81 56-126		10
Phenanthrene	39.2			mg/l	50.0		78 68-118		10
Phenol	4.65			mg/l	50.0		9 32-129		10
Pyrene	46.3			mg/l	50.0		93 70-126		10

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 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)									
LCS (7296080-BS1)									
					Prepared: 10/23/17 Analyzed: 10/24/17				
1,2,4-Trichlorobenzene	5.50			mg/l	50.0		11 24-141		10
2,4,5-Trichlorophenol	32.4			mg/l	50.0		65 63-138		10
2,4,6-Trichlorophenol	30.9			mg/l	50.0		62 64-128		10

Surrogate: 2-Fluorophenol			1.11	mg/l	40.0		3 35-115		
Surrogate: Phenol-d6			3.71	mg/l	40.0		9 35-115		
Surrogate: Nitrobenzene-d5			2.84	mg/l	20.0		14 35-115		
Surrogate: 2-Fluorobiphenyl			9.60	mg/l	20.0		48 40-120		
Surrogate: 2,4,6-Tribromophenol			30.1	mg/l	40.0		75 40-120		
Surrogate: Terphenyl-d14			19.3	mg/l	20.0		97 40-120		
Matrix Spike (7296080-MS1)									
			Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17			
Benzidine	ND		16.5	mg/kg dry		ND	70-130		200
Pyridine	37.7			mg/l	50.0	0.00	75 70-130		200
Diphenylamine	57.5			mg/l	50.0	0.00	115 70-130		200
Acenaphthene	52.6			mg/l	50.0	0.00	105 70-130		200
Acenaphthylene	56.9			mg/l	50.0	0.00	114 70-130		200
Anthracene	56.1			mg/l	50.0	0.00	112 70-130		200
Benzoic acid	24.6	J	33.1	mg/kg dry		ND	70-130		200
Benzo (a) anthracene	54.1			mg/l	50.0	0.0961	108 70-130		200
Benzo (b) fluoranthene	58.0			mg/l	50.0	0.0865	116 70-130		200
Benzo (k) fluoranthene	51.7			mg/l	50.0	0.00	103 70-130		200
Benzo (g,h,i) perylene	42.4			mg/l	50.0	0.0576	85 70-130		200
Benzo (a) pyrene	51.7			mg/l	50.0	0.0576	103 70-130		200
Benzyl alcohol	51.2			mg/l	50.0	0.135	102 70-130		200
Bis(2-chloroethoxy)methane	51.9			mg/l	50.0	0.00	104 70-130		200

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Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike (7296080-MS1)		Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17					
Bis(2-chloroethyl)ether	48.4			mg/l	50.0	0.00	97	70-130		200
Bis(2-chloroisopropyl)ether	46.9			mg/l	50.0	0.00	94	70-130		200
Bis(2-ethylhexyl)phthalate	56.0			mg/l	50.0	0.317	111	70-130		200
4-Bromophenyl phenyl ether	52.6			mg/l	50.0	0.00	105	70-130		200
Butyl benzyl phthalate	189		3.31	mg/kg dry		ND		70-130		200
4-Chloroaniline	51.4			mg/l	50.0	0.00	103	70-130		200
4-Chloro-3-methylphenol	54.6			mg/l	50.0	0.00	109	70-130		200
2-Chloronaphthalene	52.1			mg/l	50.0	0.00	104	70-130		200
2-Chlorophenol	51.3			mg/l	50.0	0.00	103	70-130		200
4-Chlorophenyl phenyl ether	52.8			mg/l	50.0	0.00	106	70-130		200
Chrysene	51.0			mg/l	50.0	0.0576	102	70-130		200
Dibenz (a,h) anthracene	56.4			mg/l	50.0	0.00	113	70-130		200
Dibenzofuran	52.0			mg/l	50.0	0.00	104	70-130		200
Di-n-butyl phthalate	55.6			mg/l	50.0	0.624	110	70-130		200
1,2-Dichlorobenzene	47.7			mg/l	50.0	0.00	95	70-130		200
1,3-Dichlorobenzene	44.6			mg/l	50.0	0.00	89	70-130		200
1,4-Dichlorobenzene	46.4			mg/l	50.0	0.00	93	70-130		200
3,3'-Dichlorobenzidine	ND		3.31	mg/kg dry		ND		70-130		200
2,4-Dichlorophenol	56.6			mg/l	50.0	0.00	113	70-130		200
Diethyl phthalate	55.4			mg/l	50.0	0.0865	111	70-130		200
2,4-Dimethylphenol	56.2			mg/l	50.0	0.00	112	70-130		200
Dimethyl phthalate	53.6			mg/l	50.0	0.00	107	70-130		200
4,6-Dinitro-2-methylphenol	44.5			mg/l	50.0	0.00	89	70-130		200
2,4-Dinitrophenol	37.4			mg/l	50.0	0.00	75	70-130		200
2,4-Dinitrotoluene	51.5			mg/l	50.0	0.00	103	70-130		200

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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike (7296080-MS1)		Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17					
2,6-Dinitrotoluene	51.3			mg/l	50.0	0.00	103	70-130		200
Di-n-octyl phthalate	58.1			mg/l	50.0	0.0576	116	70-130		200
Aniline	48.5			mg/l	50.0	0.00	97	70-130		200
Naphthalene	51.4			mg/l	50.0	0.0480	103	70-130		200
N-Nitrosodimethylamine	53.5			mg/l	50.0	0.00	107	70-130		200
Acetophenone	45.8			mg/l	50.0	0.00	92	70-130		200
3 & 4-Methylphenol	177		3.31	mg/kg dry		ND		70-130		200
Total Cresol	342		6.62	mg/kg dry		ND		70-130		200
2,3,4,6-Tetrachlorophenol	52.0			mg/l	50.0	0.00	104	40-120		200
Fluoranthene	57.5			mg/l	50.0	0.0769	115	70-130		200
Fluorene	54.6			mg/l	50.0	0.00	109	70-130		200
Hexachlorobenzene	50.9			mg/l	50.0	0.00	102	70-130		200
Hexachlorobutadiene	48.9			mg/l	50.0	0.00	98	70-130		200
Hexachlorocyclopentadiene	44.2			mg/l	50.0	0.00	88	70-130		200
Hexachloroethane	47.6			mg/l	50.0	0.00	95	70-130		200
Indeno (1,2,3-cd) pyrene	57.4			mg/l	50.0	0.00	115	70-130		200
Isophorone	54.5			mg/l	50.0	0.163	109	70-130		200
2-Methylnaphthalene	49.3			mg/l	50.0	0.00	99	70-130		200
2-Methylphenol	49.9			mg/l	50.0	0.00	100	70-130		200
2-Nitroaniline	53.8			mg/l	50.0	0.00	108	70-130		200
3-Nitroaniline	50.4			mg/l	50.0	0.00	101	70-130		200
4-Nitroaniline	52.0			mg/l	50.0	0.00	104	70-130		200
Nitrobenzene	52.7			mg/l	50.0	0.00	105	70-130		200
2-Nitrophenol	53.4			mg/l	50.0	0.00	107	70-130		200
4-Nitrophenol	51.3			mg/l	50.0	0.00	103	70-130		200

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Project: CLARIFIER SLUDGE

Project Number: [none]

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03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike (7296080-MS1)		Source: 7J18186-01		Prepared: 10/23/17 Analyzed: 10/24/17						
N-Nitrosodiphenylamine	190		3.31	mg/kg dry		ND		70-130		200
N-Nitrosodi-n-propylamine	54.6			mg/l	50.0	0.00	109	70-130		200
Pentachlorophenol	51.1			mg/l	50.0	0.00	102	70-130		200
Phenanthrene	50.9			mg/l	50.0	0.0576	102	70-130		200
Phenol	49.2			mg/l	50.0	0.173	98	70-130		200
Pyrene	53.6			mg/l	50.0	0.0769	107	70-130		200
1,2,4-Trichlorobenzene	50.8			mg/l	50.0	0.00	102	70-130		200
2,4,5-Trichlorophenol	51.4			mg/l	50.0	0.00	103	70-130		200
2,4,6-Trichlorophenol	55.7			mg/l	50.0	0.00	111	70-130		200
<hr/>										
<i>Surrogate: 2-Fluorophenol</i>			40.6	mg/l	40.0		102	35-115		
<i>Surrogate: Phenol-d6</i>			41.3	mg/l	40.0		103	35-115		
<i>Surrogate: Nitrobenzene-d5</i>			22.4	mg/l	20.0		112	35-115		
<i>Surrogate: 2-Fluorobiphenyl</i>			21.1	mg/l	20.0		106	40-120		
<i>Surrogate: 2,4,6-Tribromophenol</i>			43.2	mg/l	40.0		108	40-120		
<i>Surrogate: Terphenyl-d14</i>			21.2	mg/l	20.0		106	40-120		
<hr/>										
Matrix Spike Dup (7296080-MSD1)		Source: 7J18186-01		Prepared: 10/23/17 Analyzed: 10/24/17						
Benzidine	ND		15.7	mg/kg dry		ND		70-130		200
Pyridine	2.59			mg/l	50.0	0.00	5	70-130	174	200
Diphenylamine	46.9			mg/l	50.0	0.00	94	70-130	20	200
Acenaphthene	40.8			mg/l	50.0	0.00	82	70-130	25	200
Acenaphthylene	40.4			mg/l	50.0	0.00	81	70-130	34	200
Anthracene	47.7			mg/l	50.0	0.00	95	70-130	16	200
Benzoic acid	ND		31.5	mg/kg dry		ND		70-130	200	200
Benzo (a) anthracene	50.0			mg/l	50.0	0.101	100	70-130	8	200

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 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike Dup (7296080-MSD1)		Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17					
Benzo (b) fluoranthene	53.0			mg/l	50.0	0.0909	106	70-130	9	200
Benzo (k) fluoranthene	48.6			mg/l	50.0	0.00	97	70-130	6	200
Benzo (g,h,i) perylene	39.2			mg/l	50.0	0.0606	78	70-130	8	200
Benzo (a) pyrene	47.8			mg/l	50.0	0.0606	96	70-130	8	200
Benzyl alcohol	25.9			mg/l	50.0	0.141	52	70-130	66	200
Bis(2-chloroethoxy)methane	30.2			mg/l	50.0	0.00	60	70-130	53	200
Bis(2-chloroethyl)ether	12.3			mg/l	50.0	0.00	25	70-130	119	200
Bis(2-chloroisopropyl)ether	14.8			mg/l	50.0	0.00	30	70-130	104	200
Bis(2-ethylhexyl)phthalate	52.7			mg/l	50.0	0.333	105	70-130	6	200
4-Bromophenyl phenyl ether	43.1			mg/l	50.0	0.00	86	70-130	20	200
Butyl benzyl phthalate	170		3.15	mg/kg dry		ND		70-130	11	200
4-Chloroaniline	31.3			mg/l	50.0	0.00	63	70-130	49	200
4-Chloro-3-methylphenol	41.6			mg/l	50.0	0.00	83	70-130	27	200
2-Chloronaphthalene	37.8			mg/l	50.0	0.00	76	70-130	32	200
2-Chlorophenol	16.9			mg/l	50.0	0.00	34	70-130	101	200
4-Chlorophenyl phenyl ether	42.9			mg/l	50.0	0.00	86	70-130	21	200
Chrysene	47.8			mg/l	50.0	0.0606	95	70-130	6	200
Dibenz (a,h) anthracene	52.3			mg/l	50.0	0.00	105	70-130	8	200
Dibenzofuran	41.6			mg/l	50.0	0.00	83	70-130	22	200
Di-n-butyl phthalate	50.4			mg/l	50.0	0.656	99	70-130	10	200
1,2-Dichlorobenzene	8.82			mg/l	50.0	0.00	18	70-130	138	200
1,3-Dichlorobenzene	5.76			mg/l	50.0	0.00	12	70-130	154	200
1,4-Dichlorobenzene	6.59			mg/l	50.0	0.00	13	70-130	150	200
3,3'-Dichlorobenzidine	ND		3.15	mg/kg dry		ND		70-130		200
2,4-Dichlorophenol	36.3			mg/l	50.0	0.00	73	70-130	44	200

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike Dup (7296080-MSD1)		Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17					
Diethyl phthalate	46.0			mg/l	50.0	0.0909	92	70-130	19	200
2,4-Dimethylphenol	30.1			mg/l	50.0	0.00	60	70-130	60	200
Dimethyl phthalate	43.3			mg/l	50.0	0.00	87	70-130	21	200
4,6-Dinitro-2-methylphenol	40.8			mg/l	50.0	0.00	82	70-130	9	200
2,4-Dinitrophenol	36.4			mg/l	50.0	0.00	73	70-130	3	200
2,4-Dinitrotoluene	44.2			mg/l	50.0	0.00	88	70-130	15	200
2,6-Dinitrotoluene	42.2			mg/l	50.0	0.00	84	70-130	19	200
Di-n-octyl phthalate	54.4			mg/l	50.0	0.0606	109	70-130	7	200
Aniline	16.5			mg/l	50.0	0.00	33	70-130	98	200
Naphthalene	25.6			mg/l	50.0	0.0505	51	70-130	67	200
N-Nitrosodimethylamine	4.56			mg/l	50.0	0.00	9	70-130	169	200
Acetophenone	23.8			mg/l	50.0	0.00	48	70-130	63	200
3 & 4-Methylphenol	98.6		3.15	mg/kg dry		ND		70-130	57	200
Total Cresol	180		6.30	mg/kg dry		ND		70-130	62	200
2,3,4,6-Tetrachlorophenol	43.1			mg/l	50.0	0.00	86	40-120	19	200
Fluoranthene	53.1			mg/l	50.0	0.0808	106	70-130	8	200
Fluorene	44.4			mg/l	50.0	0.00	89	70-130	20	200
Hexachlorobenzene	42.8			mg/l	50.0	0.00	86	70-130	17	200
Hexachlorobutadiene	17.1			mg/l	50.0	0.00	34	70-130	96	200
Hexachlorocyclopentadiene	6.44			mg/l	50.0	0.00	13	70-130	149	200
Hexachloroethane	7.06			mg/l	50.0	0.00	14	70-130	148	200
Indeno (1,2,3-cd) pyrene	52.8			mg/l	50.0	0.00	106	70-130	8	200
Isophorone	35.1			mg/l	50.0	0.172	70	70-130	43	200
2-Methylnaphthalene	31.8			mg/l	50.0	0.00	64	70-130	43	200
2-Methylphenol	25.7			mg/l	50.0	0.00	51	70-130	64	200

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7296080 - EPA 3541 (Continued)										
Matrix Spike Dup (7296080-MSD1)		Source: 7J18186-01			Prepared: 10/23/17 Analyzed: 10/24/17					
2-Nitroaniline	43.8			mg/l	50.0	0.00	88	70-130	20	200
3-Nitroaniline	40.0			mg/l	50.0	0.00	80	70-130	23	200
4-Nitroaniline	43.2			mg/l	50.0	0.00	86	70-130	18	200
Nitrobenzene	24.2			mg/l	50.0	0.00	48	70-130	74	200
2-Nitrophenol	27.5			mg/l	50.0	0.00	55	70-130	64	200
4-Nitrophenol	44.1			mg/l	50.0	0.00	88	70-130	15	200
N-Nitrosodiphenylamine	148		3.15	mg/kg dry		ND		70-130	25	200
N-Nitrosodi-n-propylamine	30.8			mg/l	50.0	0.00	62	70-130	56	200
Pentachlorophenol	45.7			mg/l	50.0	0.00	91	70-130	11	200
Phenanthrene	43.8			mg/l	50.0	0.0606	87	70-130	15	200
Phenol	21.6			mg/l	50.0	0.182	43	70-130	78	200
Pyrene	48.6			mg/l	50.0	0.0808	97	70-130	10	200
1,2,4-Trichlorobenzene	22.1			mg/l	50.0	0.00	44	70-130	79	200
2,4,5-Trichlorophenol	40.6			mg/l	50.0	0.00	81	70-130	23	200
2,4,6-Trichlorophenol	42.5			mg/l	50.0	0.00	85	70-130	27	200
<hr/>										
Surrogate: 2-Fluorophenol			7.48	mg/l	40.0		19	35-115		
Surrogate: Phenol-d6			18.1	mg/l	40.0		45	35-115		
Surrogate: Nitrobenzene-d5			10.6	mg/l	20.0		53	35-115		
Surrogate: 2-Fluorobiphenyl			15.6	mg/l	20.0		78	40-120		
Surrogate: 2,4,6-Tribromophenol			36.9	mg/l	40.0		92	40-120		
Surrogate: Terphenyl-d14			20.1	mg/l	20.0		101	40-120		

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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Quality Control
 (Continued)

TCLP Extraction by EPA 1311

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7296019 - General Preparation									
Blank (7296019-BLK1)									
# pH	4.84			pH Units			Prepared: 10/23/17 Analyzed: 10/24/17		
Duplicate (7296019-DUP1)									
# pH	5.61		Source: 7J18003-01	pH Units		5.27	Prepared: 10/23/17 Analyzed: 10/24/17	6.25	200

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 Project Number: [none] **Reported:**
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Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 7293066 - EPA 200 Series									
Blank (7293066-BLK1)					Prepared: 10/20/17 Analyzed: 10/24/17				
Mercury	ND		0.000200	mg/l					
Matrix Spike (7293066-MS1)					Prepared: 10/20/17 Analyzed: 10/24/17				
Mercury	0.009374		0.00200	mg/l	0.0100	ND	93.7 70-130		10
Matrix Spike Dup (7293066-MSD1)					Prepared: 10/20/17 Analyzed: 10/24/17				
Mercury	0.009367		0.00200	mg/l	0.0100	ND	93.7 70-130	0.0798	10
Batch: 7297041 - EPA 3010A TCLP/SPLP									
Blank (7297041-BLK1)					Prepared: 10/24/17 Analyzed: 10/26/17				
Antimony	0.0332	J	0.0500	mg/l					
Arsenic	ND		0.0400	mg/l					
Barium	ND		0.0500	mg/l					
Beryllium	ND		0.0100	mg/l					
Cadmium	ND		0.0200	mg/l					
Chromium	ND		0.0250	mg/l					
Lead	ND		0.0400	mg/l					
Nickel	ND		0.250	mg/l					
Selenium	0.0238	J	0.100	mg/l					
Silver	ND		0.0200	mg/l					
Thallium	ND		0.100	mg/l					
Vanadium	0.0277	J	0.100	mg/l					
Zinc	ND		0.100	mg/l					
Duplicate (7297041-DUP1)					Source: 7J24010-02 Prepared: 10/24/17 Analyzed: 10/30/17				

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03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit
Batch: 7297041 - EPA 3010A TCLP/SPLP (Continued)									
Duplicate (7297041-DUP1)		Source: 7J24010-02		Prepared: 10/24/17 Analyzed: 10/30/17					
Antimony	0.0259	J	0.0500	mg/l	0.0274			5	20
Arsenic	ND		0.0400	mg/l	ND				20
Barium	0.427		0.0500	mg/l	0.423			0.9	20
Beryllium	ND		0.0100	mg/l	ND				20
Cadmium	ND		0.0200	mg/l	ND				20
Chromium	ND		0.0250	mg/l	ND				20
Lead	ND		0.0400	mg/l	ND				20
Nickel	0.0162	J	0.250	mg/l	0.0152			6	20
Selenium	0.0150	J	0.100	mg/l	0.0240			46	20
Silver	ND		0.0200	mg/l	ND				20
Thallium	ND		0.100	mg/l	ND				20
Vanadium	0.0145	J	0.100	mg/l	0.0154			6	20
Zinc	ND		0.100	mg/l	ND				20
Matrix Spike (7297041-MS1)		Source: 7J24010-01		Prepared: 10/24/17 Analyzed: 10/30/17					
Antimony	2.20		0.0500	mg/l	2.00	0.0197	109	75-125	200
Arsenic	0.844		0.0400	mg/l	0.800	ND	106	75-125	200
Barium	2.14		0.0500	mg/l	2.00	ND	107	75-125	200
Beryllium	0.211		0.0100	mg/l	0.200	ND	105	75-125	200
Cadmium	0.425		0.0200	mg/l	0.400	ND	106	75-125	200
Chromium	0.188		0.0250	mg/l	0.200	ND	94	75-125	200
Lead	0.836		0.0400	mg/l	0.800	ND	105	75-125	200
Nickel	2.10		0.250	mg/l	2.00	ND	105	75-125	200
Selenium	2.10		0.100	mg/l	2.00	0.0174	104	75-125	200
Silver	0.415		0.0200	mg/l	0.400	ND	104	75-125	200

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 Pittsburgh PA, 15220
 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 7297041 - EPA 3010A TCLP/SPLP (Continued)										
Matrix Spike (7297041-MS1)		Source: 7J24010-01			Prepared: 10/24/17 Analyzed: 10/30/17					
Thallium	0.777		0.100	mg/l	0.800	ND	97	75-125		200
Vanadium	2.12		0.100	mg/l	2.00	ND	106	75-125		200
Zinc	2.10		0.100	mg/l	2.00	ND	105	75-125		200
Matrix Spike (7297041-MS2)		Source: 7J24010-02			Prepared: 10/24/17 Analyzed: 10/30/17					
Antimony	2.05		0.0500	mg/l	2.00	0.0274	101	75-125		200
Arsenic	0.836		0.0400	mg/l	0.800	ND	104	75-125		200
Barium	2.40		0.0500	mg/l	2.00	0.423	99	75-125		200
Beryllium	0.197		0.0100	mg/l	0.200	ND	99	75-125		200
Cadmium	0.399		0.0200	mg/l	0.400	ND	100	75-125		200
Chromium	0.174		0.0250	mg/l	0.200	ND	87	75-125		200
Lead	0.777		0.0400	mg/l	0.800	ND	97	75-125		200
Nickel	2.06		0.250	mg/l	2.00	0.0152	102	75-125		200
Selenium	2.05		0.100	mg/l	2.00	0.0240	101	75-125		200
Silver	0.413		0.0200	mg/l	0.400	ND	103	75-125		200
Thallium	0.742		0.100	mg/l	0.800	ND	93	75-125		200
Vanadium	2.03		0.100	mg/l	2.00	0.0154	101	75-125		200
Zinc	1.97		0.100	mg/l	2.00	ND	99	75-125		200



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 Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Reported:

Collector: CLIENT

03/28/18 12:19

Number of Containers: 6

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 7326034 - EPA 3510C										
Blank (7326034-BLK1)					Prepared: 11/22/17 Analyzed: 11/24/17					
Pyridine	ND		2.00	ug/l						
Benzidine	ND		5.00	ug/l						
2,4-Dinitrotoluene	ND		1.00	ug/l						
3 & 4-Methylphenol	ND		1.00	ug/l						
Hexachlorobenzene	ND		1.00	ug/l						
Hexachlorobutadiene	ND		1.00	ug/l						
Hexachloroethane	ND		1.00	ug/l						
2-Methylphenol	ND		1.00	ug/l						
Nitrobenzene	ND		1.00	ug/l						
Pentachlorophenol	ND		5.00	ug/l						
2,4,5-Trichlorophenol	ND		1.00	ug/l						
2,4,6-Trichlorophenol	ND		1.00	ug/l						
<hr/>										
Surrogate: 2-Fluorophenol			20.4	ug/l	40.0		51.1	30.6-66.8		
Surrogate: Phenol-d6			14.6	ug/l	40.0		36.4	17.9-51.5		
Surrogate: Nitrobenzene-d5			17.7	ug/l	20.0		88.6	30.6-140		
Surrogate: 2-Fluorobiphenyl			17.3	ug/l	20.0		86.7	40.6-121		
Surrogate: 2,4,6-Tribromophenol			38.5	ug/l	40.0		96.2	50.4-131		
Surrogate: Terphenyl-d14			18.3	ug/l	20.0		91.4	10-185		

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Project: CLARIFIER SLUDGE
 Project Number: [none] **Reported:**
 Collector: CLIENT 03/28/18 12:19
 Number of Containers: 6

Notes

- A9 This result is intended for end user internal monitoring purposes only. This analyte does not appear on the FLI scope of accreditation.
- B2 This sample was extracted outside the EPA holding time.
- D A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered above the acceptance range for the noted analyte.
- E A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered below the acceptance range for the noted analyte.
- F The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered above the acceptance range for the noted analyte.
- G The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered below the acceptance range for the noted analyte.
- I The spike recovery was below the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I5 The vial provided contained preservative for 5 grams of sample; however, the vial was received with greater than 130% of this amount of sample.
- J Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, the result is an estimated value.
- O The noted surrogate value was above the acceptance range.
- Q Sample was analyzed at a dilution. Reporting limits were adjusted accordingly.



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Max Environmental

651 Holiday Drive Foster Plaza #5

Pittsburgh PA, 15220

Project Manager: Carl Spadaro

Project: CLARIFIER SLUDGE

Project Number: [none]

Collector: CLIENT

Number of Containers: 6

Reported:

03/28/18 12:19

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory; and should be considered as analyzed outside the EPA holding time.

^ The following analytes are to be filtered immediately upon sampling: Hexavalent Chromium. Filtration through a 0.45 micron filter within 15 minutes of sampling is required for compliance with the Clean Water Act (CWA) for reporting of hexavalent chromium to prevent interconversion of chromium species.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

* G indicates analysis performed by Fairway Laboratories, Inc. at the Greensburg location PaDEP: 65-00392. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



2019 Ninth Avenue
 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental

Project: CLARIFIER SLUDGE

651 Holiday Drive Foster Plaza #5

Project Number: [none]

Reported:

Pittsburgh PA, 15220

Collector: CLIENT

03/28/18 12:19

Project Manager: Carl Spadaro

Number of Containers: 6

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody. Samples received at the laboratory after business hours are verified on the next business day. Discrepancies are documented on the Receiving Document.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved,

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY REQUEST FOR ANALYSIS

Please print. See back of CDC for instructions, services and conditions.

2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791



89 Kristi Rd
Pennsdc, PA 17756
Phone: (570) 494-6380

7218186
COC # 2
Page 1 of 1

Client Name: <u>Max Environmental</u>		Received on ice? <input type="checkbox"/> Y <input type="checkbox"/> N		Reportable to PADEP? <input type="checkbox"/> Yes <input type="checkbox"/> No		PW/SID # _____		LAB USE ONLY FedEx USPS Other Tracking # _____	
Address: <u>700 Max Drive</u>		Sample Temp: _____		Matrix		Solid <input type="checkbox"/>		Water <input type="checkbox"/>	
Contact: <u>Bolger, PA 15019</u>		GRAB -or- Composite		End Date		End Time		# of Containers	
Phone #: _____		GRAB <input type="checkbox"/> Composite <input type="checkbox"/>		Start Date		Start Time		VOC's	
Fax #: _____		TAT: Normal <input type="checkbox"/> Rush <input type="checkbox"/>		End Date		End Time		SVOC's, PCB's, Pest, and Hero	
Project Name: <u>Bolger Sludge Sampling</u>		Date Required: <u> </u> / <u> </u> / <u> </u>		Start Date		Start Time		Metals, Total and Amenable Cyanide	
Quote/PO #: _____		Sample Description/Location		End Date		End Time		pH, Fluoride, Sulfide	
Rush TAT subject to pre-approval and surcharge.		Bulger - RD - 101817		Start Date		Start Time		% Solids	
Date Required: <u> </u> / <u> </u> / <u> </u>		Bulger - RD - 101817		End Date		End Time		TCLP SVOCs, Metab, pH	
Sample Description/Location		X		Start Date		Start Time		Remarks	
Bulger - RD - 101817		X		End Date		End Time			
Bulger - RD - 101817		X		Start Date		Start Time			
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7J18186 #3

TABLE 1
TARGET ANALYTES
MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON and BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	Method Detection Limit ⁽²⁾
pH (9045D)			
pH	SU	-	
Pesticides (8081B)			
4,4'-DDD	mg/kg	0.087	0.041
4,4'-DDE	mg/kg	0.087	0.041
4,4'-DDT	mg/kg	0.087	0.041
Aldrin	mg/kg	0.066	0.041
alpha-BHC	mg/kg	0.066	0.041
alpha-Chlordane	mg/kg	0.26	0.041
beta-BHC	mg/kg	0.066	0.041
Chlordane (tech)	mg/kg	0.26	2.05
delta-BHC	mg/kg	0.066	0.041
Dieldrin	mg/kg	0.13	0.041
Endosulfan I	mg/kg	0.066	0.041
Endosulfan II	mg/kg	0.13	0.041
Endosulfan sulfate	mg/kg	0.13	0.041
Endrin	mg/kg	0.13	0.041
Endrin aldehyde	mg/kg	0.13	0.041
Endrin ketone	mg/kg	-	0.041
gamma-BHC (Lindane)	mg/kg	0.066	0.041
gamma-Chlordane	mg/kg	0.26	0.041
Heptachlor	mg/kg	0.066	0.041
Heptachlor epoxide	mg/kg	0.066	0.041
Methoxychlor	mg/kg	0.18	0.041
Toxaphene	mg/kg	2.6	2.05
Polychlorinated Biphenyls (8082)			
PCB-1016	mg/kg	10 ⁽³⁾	0.023
PCB-1221	mg/kg	10 ⁽³⁾	0.033
PCB-1232	mg/kg	10 ⁽³⁾	0.034
PCB-1242	mg/kg	10 ⁽³⁾	0.011
PCB-1248	mg/kg	10 ⁽³⁾	0.007
PCB-1254	mg/kg	10 ⁽³⁾	0.025
PCB-1260	mg/kg	10 ⁽³⁾	0.024
Chlorinated Herbicides (8151A)			
2,4-D	mg/kg	10	0.0157
2,4,5-T	mg/kg	7.9	0.0157
2,4,5-TP (Silvex)	mg/kg	7.9	0.0157
2,4-DB	mg/kg	-	0.0157
Acifluorfen	mg/kg	-	0.0157
Dalapon	mg/kg	-	0.158
Dicamba	mg/kg	-	0.0157
Dichloroprop	mg/kg	-	0.0157
Dinoseb	mg/kg	2.5	0.0157

7J18186 #4

TABLE 1
TARGET ANALYTES
MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON and BULGER, PA

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	Method Detection Limit ⁽²⁾
Volatile Organic Compounds (8260B)			
1,1,1,2-Tetrachloroethane	mg/kg	6	
1,1,1-Trichloroethane	mg/kg	6	
1,1,2,2-Tetrachloroethane	mg/kg	6	
1,1,2-Trichloroethane	mg/kg	6	
1,1-Dichloroethane	mg/kg	6	
1,1-Dichloroethene	mg/kg	6	
1,2,3-Trichloropropane	mg/kg	30	
1,2,4-Trichlorobenzene	mg/kg	19	
1,2-Dibromo-3-chloropropane	mg/kg	15	
1,2-Dibromoethane (EDB)	mg/kg	15	
1,2-Dichlorobenzene	mg/kg	6	
1,2-Dichloroethane	mg/kg	6	
1,2-Dichloropropane	mg/kg	18	
1,3-Dichlorobenzene	mg/kg	6	
1,4-Dichlorobenzene	mg/kg	6	
2-Butanone	mg/kg	36	
2-Hexanone	mg/kg	-	
2-Chloroethylvinyl ether	mg/kg	-	
4-Methyl-2-pentanone	mg/kg	33	
Acetone	mg/kg	160	
Acrolein	mg/kg	-	
Acrylonitrile	mg/kg	84	
Benzene	mg/kg	10	
Bromodichloromethane	mg/kg	15	
Bromoform	mg/kg	15	
Bromomethane	mg/kg	-	
Carbon disulfide	mg/kg	-	
Carbon tetrachloride	mg/kg	6	
Chlorobenzene	mg/kg	6	
Chloroethane	mg/kg	6	
Chloromethane	mg/kg	-	
Chloroform	mg/kg	6	
Chloromethane	mg/kg	-	
cis-1,2-Dichloroethene	mg/kg	-	
cis-1,3-Dichloropropene	mg/kg	18	
Dibromochloromethane	mg/kg	-	
Dibromomethane	mg/kg	15	
Dichlorodifluoromethane	mg/kg	7.2	
Ethylbenzene	mg/kg	10	
Hexachlorobutadiene	mg/kg	5.6	
Iodomethane	mg/kg	65	
Isopropylbenzene	mg/kg	-	
Methyl tert-butyl ether	mg/kg	-	
Methylene chloride	mg/kg	30	
Naphthalene	mg/kg	5.6	
Styrene	mg/kg	-	

718186 #5

**TABLE 1
TARGET ANALYTES
MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON and BULGER, PA**

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	Method Detection Limit ⁽²⁾
Volatile Organic Compounds (8260B)			
Tetrachloroethene	mg/kg	6	
Toluene	mg/kg	10	
trans-1,2-Dichloroethene	mg/kg	30	
trans-1,3-Dichloropropene	mg/kg	18	
Trichloroethene	mg/kg	6	
Trichlorofluoromethane	mg/kg	30	
Vinyl chloride	mg/kg	6	
Xylenes (total)	mg/kg	30	
Semivolatile Organic Compounds (8270D)			
1,2,4-Trichlorobenzene	mg/kg	19	
1,2-Dichlorobenzene	mg/kg	6	
1,2-Diphenylhydrazine	mg/kg	-	
1,3-Dichlorobenzene	mg/kg	6	
1,4-Dichlorobenzene	mg/kg	6	
2,4,5-Trichlorophenol	mg/kg	7.4	
2,4,6-Trichlorophenol	mg/kg	7.4	
2,4-Dichlorophenol	mg/kg	14	
2,4-Dimethylphenol	mg/kg	14	
2,4-Dinitrophenol	mg/kg	160	
2,4-Dinitrotoluene	mg/kg	140	
2,6-Dinitrotoluene	mg/kg	28	
2-Chloronaphthalene	mg/kg	5.6	
2-Chlorophenol	mg/kg	5.7	
2-Methylnaphthalene	mg/kg	-	
2-Methylphenol	mg/kg	5.6	
2-Nitroaniline	mg/kg	-	
2-Nitrophenol	mg/kg	-	
3 & 4-Methylphenol	mg/kg	5.6	
3,3'-Dichlorobenzidine	mg/kg	-	
3-Nitroaniline	mg/kg	-	
4,6-Dinitro-2-methylphenol	mg/kg	160	
4-Bromophenyl phenyl ether	mg/kg	15	
4-Chloro-3-methylphenol	mg/kg	14	
4-Chloroaniline	mg/kg	16	
4-Chlorophenyl phenyl ether	mg/kg	-	
4-Nitroaniline	mg/kg	28	
4-Nitrophenol	mg/kg	29	
Acenaphthene	mg/kg	43.4	
Acenaphthylene	mg/kg	3	
Acetophenone	mg/kg	9.7	
Aniline	mg/kg	14	
Anthracene	mg/kg	3.4	
Benzidine	mg/kg	-	
Benzo (a) anthracene	mg/kg	3.4	
Benzo (a) pyrene	mg/kg	3.4	
Benzo (b) fluoranthene	mg/kg	6.8	

7/18/96 #6

**TABLE 1
TARGET ANALYTES
MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON and BULGER, PA**

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	Method Detection Limit ⁽²⁾
Semivolatile Organic Compounds (8270D)			
Benzo (g,h,i) perylene	mg/kg	1.8	
Benzo (k) fluoranthene	mg/kg	6.8	
Benzoic acid	mg/kg	-	
Benzyl alcohol	mg/kg	-	
Bis(2-chloroethoxy)methane	mg/kg	7.2	
Bis(2-chloroethyl)ether	mg/kg	6	
Bis(2-chloroisopropyl)ether	mg/kg	7.2	
Bis(2-ethylhexyl)phthalate	mg/kg	28	
Butyl benzyl phthalate	mg/kg	28	
Chrysene	mg/kg	3.4	
Dibenz (a,h) anthracene	mg/kg	8.2	
Dibenzofuran	mg/kg	-	
Diethyl phthalate	mg/kg	28	
Dimethyl phthalate	mg/kg	28	
Di-n-butyl phthalate	mg/kg	28	
Di-n-octyl phthalate	mg/kg	28	
Diphenylamine	mg/kg	-	
Fluoranthene	mg/kg	3.4	
Fluorene	mg/kg	3.4	
Hexachlorobenzene	mg/kg	10	
Hexachlorobutadiene	mg/kg	5.6	
Hexachlorocyclopentadiene	mg/kg	2.4	
Hexachloroethane	mg/kg	30	
Indeno (1,2,3-cd) pyrene	mg/kg	3.4	
Isophorone	mg/kg	-	
Naphthalene	mg/kg	5.6	
Nitrobenzene	mg/kg	14	
N-Nitrosodimethylamine	mg/kg	-	
N-Nitrosodi-n-propylamine	mg/kg	-	
Pentachlorophenol	mg/kg	7.4	
Phenanthrene	mg/kg	5.6	
Phenol	mg/kg	6.2	
Pyrene	mg/kg	8.2	
Pyridine	mg/kg	16	
Total Cyanide (9014)			
Cyanide (total)	mg/kg	-	
Fluoride (9056A)			
Fluoride	mg/kg	-	
Sulfide (9030/9034)			
Sulfide	mg/kg	-	
% Solids (2540G)			
% Solids	%	-	
Amenable Cyanide (4500)			
Amenable Cyanide	mg/kg	-	

7J18186 #7

**TABLE 1
TARGET ANALYTES
MAX ENVIRONMENTAL TECHNOLOGIES, INC.
YUKON and BULGER, PA**

Analyte and Method	Units	Universal Treatment Standard ⁽¹⁾	Method Detection Limit ⁽²⁾
Metals (6010B/7471B)			
Antimony	mg/kg	-- ⁽⁴⁾	0.5
Arsenic	mg/kg	-- ⁽⁴⁾	0.4
Barium	mg/kg	-- ⁽⁴⁾	1
Beryllium	mg/kg	-- ⁽⁴⁾	0.1
Cadmium	mg/kg	-- ⁽⁴⁾	0.2
Chromium	mg/kg	-- ⁽⁴⁾	0.1
Lead	mg/kg	-- ⁽⁴⁾	0.2
Mercury	mg/kg	-- ⁽⁴⁾	0.02
Nickel	mg/kg	-- ⁽⁴⁾	5
Selenium	mg/kg	-- ⁽⁴⁾	0.5
Silver	mg/kg	-- ⁽⁴⁾	0.4
Thallium	mg/kg	-- ⁽⁴⁾	0.4
Vanadium	mg/kg	-- ⁽⁴⁾	1
Zinc	mg/kg	-- ⁽⁴⁾	1
TCLP Metals (1311/6010B/7471B)			
Antimony	mg/l	1.15	0.005
Arsenic	mg/l	5	0.0040
Barium	mg/l	21	0.01
Beryllium	mg/l	-	0.0010
Cadmium	mg/l	0.11	0.0020
Chromium	mg/l	0.6	0.0010
Lead	mg/l	0.75	0.0020
Mercury	mg/l	0.25	0.0002
Nickel	mg/l	11	0.050
Selenium	mg/l	5.7	0.005
Silver	mg/l	0.14	0.0040
Thallium	mg/l	-	0.004
Vanadium	mg/l	-	0.010
Zinc	mg/l	-	0.010
pH (1311)			
pH	SU	-	

NOTES

(1) 40 CFR 268.40 Universal Treatment Standards For Non-Wastewaters. Analytes for which no UTS is available are indicated with "--".

(2) Laboratory Method Detection Limits do not account for percent moisture or potential matrix interference effects. Dilutions will affect sample-specific method detection limits.

(3) UTS for PCB is the sum of all PCB Isomers

(4) No UTS for Total Metals. See TCLP results

SU - Standard units



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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
001	8A30001-01	Solid	Grab	01/25/18 09:15	01/29/18 17:20
002	8A30001-02	Solid	Grab	01/25/18 22:00	01/29/18 17:20
001	8A30001-03	Solid	Composite	01/25/18 09:48	01/29/18 17:20
002	8A30001-04	Solid	Composite	01/25/18 22:00	01/29/18 17:20

8A30001-03,-04: 8270 revised. This report replaces report issued 2/8/18 15:46. 3/21/18rsr.

8A30001: Project Name changed per client request. (AG) This report replaces report issued 3/21/18. 032618 kjd

8A30001 Report Revised, Additional QA/QC Summaries added. This report replaces the report printed on 03/26/18 08:38. 03/28/18 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
 Laboratory Director

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 Reported: 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:15

Laboratory Sample ID: 8A30001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,3,5-Trimethylbenzene	<0.580	0.580	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2,4-Trimethylbenzene	<0.516	0.516	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Benzene	<0.168	0.168	2.58	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Toluene	<0.155	0.155	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Ethylbenzene	<0.309	0.309	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Xylenes (total)	<0.825	0.825	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Isopropylbenzene	<0.528	0.528	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Methyl tert-butyl ether	<0.180	0.180	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Naphthalene	<0.284	0.284	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Acetone	<2.00	2.00	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
Acrolein	<5.54	5.54	64.4	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	D
Acrylonitrile	<0.580	0.580	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Bromobenzene	<0.219	0.219	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Bromochloromethane	<0.271	0.271	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Bromodichloromethane	<0.683	0.683	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Bromoform	<0.567	0.567	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Bromomethane	<0.245	0.245	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
2-Butanone	<1.93	1.93	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

sec-Butylbenzene	<0.412	0.412	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
tert-Butylbenzene	<0.400	0.400	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
n-Butylbenzene	<0.477	0.477	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Carbon disulfide	<0.657	0.657	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Carbon tetrachloride	<0.696	0.696	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Chlorobenzene	<0.142	0.142	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Chloroethane	<0.593	0.593	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
2-Chloroethylvinyl ether	<0.877	0.877	64.4	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Chloroform	<0.400	0.400	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Chloromethane	<0.232	0.232	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
4-Chlorotoluene	<0.451	0.451	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
2-Chlorotoluene	<0.464	0.464	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2-Dibromo-3-chloropropane	<0.374	0.374	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Dibromochloromethane	<0.206	0.206	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2-Dibromoethane (EDB)	<0.503	0.503	2.58	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Dibromomethane	<0.451	0.451	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
trans-1,4-Dichloro-2-butene	<0.451	0.451	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2-Dichlorobenzene	<0.438	0.438	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,4-Dichlorobenzene	<0.516	0.516	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,3-Dichlorobenzene	<0.425	0.425	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Dichlorodifluoromethane	<0.554	0.554	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
1,2-Dichloroethane	<0.258	0.258	2.58	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1-Dichloroethane	<0.206	0.206	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
trans-1,2-Dichloroethene	<0.245	0.245	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
cis-1,2-Dichloroethene	<0.180	0.180	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1-Dichloroethene	<0.245	0.245	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
2,2-Dichloropropane	<0.451	0.451	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,3-Dichloropropane	<0.168	0.168	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2-Dichloropropane	<0.180	0.180	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
trans-1,3-Dichloropropene	<0.193	0.193	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1-Dichloropropene	<0.245	0.245	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
cis-1,3-Dichloropropene	<0.258	0.258	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Hexachlorobutadiene	<0.580	0.580	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
2-Hexanone	<0.412	0.412	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Iodomethane	<0.490	0.490	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
p-Isopropyltoluene	<0.438	0.438	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	

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 Number of Containers: 6
 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:15

Laboratory Sample ID: 8A30001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035								
Methylene chloride	<0.670	0.670	25.8	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
4-Methyl-2-pentanone	<0.193	0.193	12.9	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
n-Propylbenzene	<0.425	0.425	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Styrene	<0.155	0.155	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1,2,2-Tetrachloroethane	<0.477	0.477	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1,1,2-Tetrachloroethane	<0.193	0.193	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Tetrachloroethene	<0.400	0.400	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2,4-Trichlorobenzene	<0.748	0.748	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2,3-Trichlorobenzene	<0.670	0.670	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1,1-Trichloroethane	<0.400	0.400	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,1,2-Trichloroethane	<0.335	0.335	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Trichloroethene	<0.271	0.271	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Trichlorofluoromethane	<0.387	0.387	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
1,2,3-Trichloropropane	<0.219	0.219	6.44	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	
Vinyl chloride	<0.271	0.271	2.58	mg/kg dry	01/30/18 13:49	EPA 8260B	bag	E
Surrogate: 4-Bromofluorobenzene	94 %		70-130		01/30/18 13:49	EPA 8260B	bag	
Surrogate: 1,2-Dichloroethane-d4	92 %		70-130		01/30/18 13:49	EPA 8260B	bag	
Surrogate: Fluorobenzene	90 %		70-130		01/30/18 13:49	EPA 8260B	bag	

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 03/28/18 12:28

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Laboratory Sample ID: 8A30001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Conventional Chemistry Parameters by SM/EPA Methods

% Solids	7.50	0.100	%	01/31/18 14:30	SM 2540 G-97	pra		
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 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,3,5-Trimethylbenzene	<0.464	0.464	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2,4-Trimethylbenzene	<0.412	0.412	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Benzene	<0.134	0.134	2.06	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Toluene	<0.124	0.124	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Ethylbenzene	<0.247	0.247	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Xylenes (total)	<0.660	0.660	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Isopropylbenzene	<0.423	0.423	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Methyl tert-butyl ether	<0.144	0.144	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Naphthalene	<0.227	0.227	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Acetone	<1.60	1.60	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
Acrolein	<4.43	4.43	51.5	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	D
Acrylonitrile	<0.464	0.464	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Bromobenzene	<0.175	0.175	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Bromochloromethane	<0.216	0.216	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Bromodichloromethane	<0.546	0.546	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Bromoform	<0.454	0.454	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Bromomethane	<0.196	0.196	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
2-Butanone	<1.55	1.55	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E

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 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	-------------------	-----------	------

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

sec-Butylbenzene	<0.330	0.330	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
tert-Butylbenzene	<0.320	0.320	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
n-Butylbenzene	<0.381	0.381	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Carbon disulfide	<0.526	0.526	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Carbon tetrachloride	<0.557	0.557	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Chlorobenzene	<0.113	0.113	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Chloroethane	<0.474	0.474	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
2-Chloroethylvinyl ether	<0.701	0.701	51.5	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Chloroform	<0.320	0.320	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Chloromethane	<0.186	0.186	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
4-Chlorotoluene	<0.361	0.361	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
2-Chlorotoluene	<0.371	0.371	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2-Dibromo-3-chloropropane	<0.299	0.299	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Dibromochloromethane	<0.165	0.165	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2-Dibromoethane (EDB)	<0.402	0.402	2.06	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Dibromomethane	<0.361	0.361	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
trans-1,4-Dichloro-2-butene	<0.361	0.361	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2-Dichlorobenzene	<0.351	0.351	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	

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 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,4-Dichlorobenzene	<0.412	0.412	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,3-Dichlorobenzene	<0.340	0.340	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Dichlorodifluoromethane	<0.443	0.443	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
1,2-Dichloroethane	<0.206	0.206	2.06	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1-Dichloroethane	<0.165	0.165	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
trans-1,2-Dichloroethene	<0.196	0.196	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
cis-1,2-Dichloroethene	<0.144	0.144	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1-Dichloroethene	<0.196	0.196	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
2,2-Dichloropropane	<0.361	0.361	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,3-Dichloropropane	<0.134	0.134	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2-Dichloropropane	<0.144	0.144	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
trans-1,3-Dichloropropene	<0.155	0.155	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1-Dichloropropene	<0.196	0.196	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
cis-1,3-Dichloropropene	<0.206	0.206	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Hexachlorobutadiene	<0.464	0.464	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
2-Hexanone	<0.330	0.330	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Iodomethane	<0.392	0.392	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
p-Isopropyltoluene	<0.351	0.351	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035								
Methylene chloride	<0.536	0.536	20.6	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
4-Methyl-2-pentanone	<0.155	0.155	10.3	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
n-Propylbenzene	<0.340	0.340	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Styrene	<0.124	0.124	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1,2,2-Tetrachloroethane	<0.381	0.381	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1,1,2-Tetrachloroethane	<0.155	0.155	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Tetrachloroethene	<0.320	0.320	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2,4-Trichlorobenzene	<0.598	0.598	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2,3-Trichlorobenzene	<0.536	0.536	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1,1-Trichloroethane	<0.320	0.320	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,1,2-Trichloroethane	<0.268	0.268	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Trichloroethene	<0.216	0.216	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Trichlorofluoromethane	<0.309	0.309	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
1,2,3-Trichloropropane	<0.175	0.175	5.15	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	
Vinyl chloride	<0.216	0.216	2.06	mg/kg dry	01/30/18 14:17	EPA 8260B	bag	E
Surrogate: 4-Bromofluorobenzene	96 %		70-130		01/30/18 14:17	EPA 8260B	bag	
Surrogate: 1,2-Dichloroethane-d4	88 %		70-130		01/30/18 14:17	EPA 8260B	bag	
Surrogate: Fluorobenzene	87 %		70-130		01/30/18 14:17	EPA 8260B	bag	

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Laboratory Sample ID: 8A30001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Conventional Chemistry Parameters by SM/EPA Methods

% Solids	8.65		0.100	%	01/31/18 14:30	SM 2540 G-97	pra	
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 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Silver	<4.92	4.92	16.4	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Aluminum	71000	53.3	410	mg/kg dry	02/01/18 23:21	EPA 6010B/2.0	rab	I, T
Arsenic	<13.1	13.1	32.8	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Barium	5480	12.3	41.0	mg/kg dry	02/01/18 23:21	EPA 6010B/2.0	rab	
Beryllium	11.6	0.984	8.20	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Cadmium	5.28 J	1.97	16.4	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Cobalt	135	9.43	41.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Chromium	270	1.93	20.5	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Copper	263	11.5	41.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Iron	22700	73.8	164	mg/kg dry	02/01/18 23:21	EPA 6010B/2.0	rab	T
Potassium	4930	390	820	mg/kg dry	02/01/18 23:21	EPA 6010B/2.0	rab	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Manganese	14100	23.0	41.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	T
Nickel	863	6.56	205	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Lead	88.4	4.51	32.8	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Antimony	<36.5	36.5	41.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	I
Selenium	<33.6	33.6	82.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Thallium	<11.9	11.9	82.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Vanadium	65.4 J	9.84	82.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	
Zinc	2020	11.5	82.0	mg/kg dry	02/01/18 23:23	EPA 6010B/2.0	rab	

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 19.4°C	8.54			pH Units	01/31/18 14:54	SW846-9045 D	elb	
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Calculated Analytes

Amenable Cyanide	3.42 J	1.64	6.84	mg/kg dry	02/06/18 10:09	SM20-4500 CN-C+E+G	caa	
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<96.8	96.8	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	
Acifluorfen	<96.8	96.8	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	D
2,4-DB	<91.7	91.7	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	F, H
2,4,5-T	<72.9	72.9	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	K
2,4,5-TP (Silvex)	<82.3	82.3	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	
Dalapon	<470	470	1420	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	D
Dicamba	<74.2	74.2	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	K
Dichloroprop	<86.1	86.1	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	K
Dinoseb	<35.1	35.1	142	ug/kg dry	02/03/18 00:08	EPA 8151A	cdb	D, K
Surrogate: 2,4-DCAA		145 %	40.6-150		02/03/18 00:08	EPA 8151A	cdb	

Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	1560	7.74	305	mg/kg dry	02/08/18 00:47	EPA 9056A	bdw	
% Solids	6.75		0.100	%	01/31/18 14:30	SM 2540 G-97	pra	
Sulfide	<26.6	26.6	282	mg/kg dry	02/01/18 09:15	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	3.42 J	1.64	6.84	mg/kg dry	02/06/18 10:09	EPA 9014	caa	
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Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 6000/7000 Series Methods

Mercury	0.147 J	0.120	0.283	mg/kg dry	02/02/18 10:36	EPA 7471B	jks	
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Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<33.7	33.7	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	D
alpha-BHC	<24.2	24.2	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
beta-BHC	<123	123	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
delta-BHC	<28.3	28.3	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	F
gamma-BHC (Lindane)	<170	170	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Chlordane (tech)	<3370	3370	13500	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
4,4'-DDD	<74.0	74.0	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
4,4'-DDE	<33.7	33.7	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
4,4'-DDT	<80.8	80.8	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	D
Dieldrin	<32.3	32.3	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Endosulfan I	<29.6	29.6	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	F
Endosulfan II	<37.7	37.7	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	D, F
Endosulfan sulfate	<108	108	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	D, F
Endrin	<45.8	45.8	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Endrin aldehyde	<51.2	51.2	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Heptachlor	<28.3	28.3	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Organochlorine Pesticides by EPA Extraction Method 3541

Heptachlor epoxide	<33.7	33.7	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Methoxychlor	<59.2	59.2	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Toxaphene	<5610	5610	13500	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
alpha-Chlordane	<113	113	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Isodrin	<26.9	26.9	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	D, F
gamma-Chlordane	<108	108	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
Endrin ketone	<132	132	269	ug/kg dry	02/02/18 04:16	EPA 8081B	CDB	
<i>Surrogate: Tetrachloro-meta-xylene</i>		149 %		40-157	02/02/18 04:16	EPA 8081B	CDB	
<i>Surrogate: Decachlorobiphenyl</i>		101 %		57.1-153	02/02/18 04:16	EPA 8081B	CDB	

Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.159	0.159	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1221	<0.223	0.223	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1232	<0.170	0.170	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1242	<0.057	0.057	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1248	<0.117	0.117	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1254	<0.251	0.251	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
PCB-1260	<0.186	0.186	0.384	mg/kg dry	02/06/18 04:07	EPA 8082	cdb	
<i>Surrogate: Tetrachloro-meta-xylene</i>		72.3 %		11-140	02/06/18 04:07	EPA 8082	cdb	

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Polychlorinated Biphenyls by EPA Extraction Method 3541

Surrogate: Decachlorobiphenyl 46.3 % 24.4-140 02/06/18 04:07 EPA 8082 cdb

Semivolatile Organic Compounds by EPA Extraction Method 3541

Benzidine	<49.4	49.4	705	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	F
Diphenylamine	<16.9	16.9	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Pyridine	<73.3	73.3	282	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Acenaphthene	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Acenaphthylene	<11.3	11.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Anthracene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzoic acid	<60.6	60.6	1410	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzo (a) anthracene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzo (b) fluoranthene	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzo (k) fluoranthene	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzo (g,h,i) perylene	<11.3	11.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Benzo (a) pyrene	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	CDB	
Benzyl alcohol	<19.7	19.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Bis(2-chloroethoxy)methane	<19.7	19.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Bis(2-chloroethyl)ether	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Bis(2-chloroisopropyl)ether	<8.46	8.46	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	A9

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 Reported: 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Bis(2-ethylhexyl)phthalate	<42.3	42.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Bromophenyl phenyl ether	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Butyl benzyl phthalate	<16.9	16.9	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Chloroaniline	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Chloro-3-methylphenol	<12.7	12.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Chloronaphthalene	<8.46	8.46	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Chlorophenol	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Chlorophenyl phenyl ether	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Chrysene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Dibenz (a,h) anthracene	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Dibenzofuran	<4.23	4.23	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Di-n-butyl phthalate	31.0 J	29.6	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
1,2-Dichlorobenzene	<12.7	12.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
1,3-Dichlorobenzene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
1,4-Dichlorobenzene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
3,3'-Dichlorobenzidine	<12.7	12.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2,4-Dichlorophenol	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Diethyl phthalate	<14.1	14.1	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	

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Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4-Dimethylphenol	<11.3	11.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Dimethyl phthalate	<8.46	8.46	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4,6-Dinitro-2-methylphenol	<45.1	45.1	705	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2,4-Dinitrophenol	<36.7	36.7	705	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2,4-Dinitrotoluene	<29.6	29.6	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2,6-Dinitrotoluene	<26.8	26.8	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Di-n-octyl phthalate	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Aniline	11.3 J	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Naphthalene	<8.46	8.46	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
N-Nitrosodimethylamine	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Acetophenone	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
3 & 4-Methylphenol	<12.7	12.7	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
1,2-Diphenylhydrazine	<5.64	5.64	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Fluoranthene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Fluorene	<5.64	5.64	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Hexachlorobenzene	<16.9	16.9	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Hexachlorobutadiene	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Hexachlorocyclopentadiene	<35.3	35.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Hexachloroethane	<16.9	16.9	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Indeno (1,2,3-cd) pyrene	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Isophorone	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Methylnaphthalene	<11.3	11.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Methylphenol	<22.6	22.6	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Nitroaniline	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
3-Nitroaniline	<39.5	39.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Nitroaniline	<32.4	32.4	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Nitrobenzene	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2-Nitrophenol	<21.2	21.2	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
4-Nitrophenol	<35.3	35.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
N-Nitrosodiphenylamine	<22.6	22.6	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
N-Nitrosodi-n-propylamine	<14.1	14.1	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Pentachlorophenol	<35.3	35.3	705	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Phenanthrene	<7.05	7.05	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Phenol	<18.3	18.3	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Pyrene	<9.87	9.87	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
1,2,4-Trichlorobenzene	<15.5	15.5	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4,5-Trichlorophenol	<24.0	24.0	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
2,4,6-Trichlorophenol	<22.6	22.6	141	mg/kg dry	02/01/18 20:18	EPA 8270D	rsr	
Surrogate: 2-Fluorophenol		94 %	10-169		02/01/18 20:18	EPA 8270D	rsr	
Surrogate: Phenol-d6		93 %	10-166		02/01/18 20:18	EPA 8270D	rsr	
Surrogate: Nitrobenzene-d5		90 %	18.8-170		02/01/18 20:18	EPA 8270D	rsr	
Surrogate: 2-Fluorobiphenyl		93 %	35.1-154		02/01/18 20:18	EPA 8270D	rsr	
Surrogate: 2,4,6-Tribromophenol		87 %	20-158		02/01/18 20:18	EPA 8270D	rsr	
Surrogate: Terphenyl-d14		92 %	52.1-160		02/01/18 20:18	EPA 8270D	rsr	

TCLP Extraction by EPA 1311

# pH @ 21.5°C	5.88			pH Units	02/01/18 07:45	EPA 1311	cjw	
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TCLP Metals extracted by EPA 1311

Silver	<0.00600	0.00600	0.0200	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	
Aluminum	3.21	0.0650	0.500	mg/l	02/04/18 09:58	EPA 6010B/2.0	sr	
Arsenic	<0.0160	0.0160	0.0400	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	
Barium	0.448	0.0150	0.0500	mg/l	02/04/18 09:58	EPA 6010B/2.0	sr	
Beryllium	0.00408 J	0.00120	0.0100	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	

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 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Cadmium	<0.00245	0.00245	0.0200	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	
Cobalt	0.117	0.00700	0.0500	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	
Chromium	0.0388	0.000750	0.0250	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	F
Copper	0.0192 J	0.00650	0.0500	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	
Iron	<0.0250	0.0250	0.200	mg/l	02/04/18 09:58	EPA 6010B/2.0	sr	
Mercury	<0.000590	0.000590	0.00200	mg/l	02/05/18 11:35	EPA 7471B	jks	Q
Potassium	8.47689	0.37	1	mg/l	02/04/18 09:57	EPA 6010B/2.0	sr	L
Manganese	12.3	0.0105	0.0500	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	T
Nickel	0.785	0.0120	0.250	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	
Lead	<0.0120	0.0120	0.0400	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	
Antimony	0.0284 J	0.0190	0.0500	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	
Selenium	0.0157 J	0.0145	0.100	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	

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 03/28/18 12:28

Client Sample ID: 001

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Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Thallium	<0.00900	0.00900	0.100	mg/l	02/05/18 11:03	EPA 6010B/2.0	sr	
Vanadium	0.0377 J	0.0130	0.100	mg/l	02/04/18 09:59	EPA 6010B/2.0	sr	
Zinc	0.474	0.0110	0.100	mg/l	02/04/18 10:00	EPA 6010B/2.0	sr	

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Benzidine	<11.0	11.0	250	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Pyridine	<13.5	13.5	100	ug/l	02/01/18 16:20	EPA 8270D	CDB	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Hexachloroethane	<5.50	5.50	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
2-Methylphenol	<6.50	6.50	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Nitrobenzene	<6.00	6.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Pentachlorophenol	<13.5	13.5	250	ug/l	02/01/18 16:20	EPA 8270D	CDB	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	

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 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 001

Date/Time Sampled: 01/25/18 09:48

Laboratory Sample ID: 8A30001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	02/01/18 16:20	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol	24.1 %		30.6-66.8		02/01/18 16:20	EPA 8270D	CDB	P
Surrogate: Phenol-d6	19.6 %		17.9-51.5		02/01/18 16:20	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5	53.0 %		30.6-140		02/01/18 16:20	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl	54.6 %		40.6-121		02/01/18 16:20	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol	62.5 %		50.4-131		02/01/18 16:20	EPA 8270D	CDB	
Surrogate: Terphenyl-d14	39.8 %		10-185		02/01/18 16:20	EPA 8270D	CDB	

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 (570) 494-6380
 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
Metals by Prep Method EPA 3050B								
Silver	<4.13	4.13	13.8	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Aluminum	44900	44.8	344	mg/kg dry	02/01/18 23:34	EPA 6010B/2.0	rab	I, T
Arsenic	<11.0	11.0	27.6	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Barium	5440	10.3	34.4	mg/kg dry	02/01/18 23:34	EPA 6010B/2.0	rab	H
Beryllium	7.66	0.827	6.89	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Cadmium	5.52 J	1.65	13.8	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Cobalt	146	7.92	34.4	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Chromium	167	1.62	17.2	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Copper	132	9.65	34.4	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Iron	12600	62.0	138	mg/kg dry	02/01/18 23:34	EPA 6010B/2.0	rab	H
Potassium	3310	327	689	mg/kg dry	02/01/18 23:34	EPA 6010B/2.0	rab	

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Metals by Prep Method EPA 3050B

Manganese	14600	19.3	34.4	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	H, T
Nickel	924	5.51	172	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Lead	44.5	3.79	27.6	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Antimony	<30.7	30.7	34.4	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	I
Selenium	<28.2	28.2	68.9	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Thallium	<9.99	9.99	68.9	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Vanadium	42.1 J	8.27	68.9	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	
Zinc	1620	9.65	68.9	mg/kg dry	02/01/18 23:36	EPA 6010B/2.0	rab	

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 19.2°C	8.77			pH Units	01/31/18 14:54	SW846-9045 D	elb	
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Calculated Analytes

Amenable Cyanide	1.75 J	1.40	5.84	mg/kg dry	02/06/18 10:09	SM20-4500 CN-C+E+G	caa	
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<66.7	66.7	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	
Acifluorfen	<66.7	66.7	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	D
2,4-DB	<63.2	63.2	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	F
2,4,5-T	<50.3	50.3	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	
2,4,5-TP (Silvex)	<56.7	56.7	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	
Dalapon	<324	324	980	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	D
Dicamba	<51.2	51.2	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	
Dichloroprop	<59.4	59.4	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	
Dinoseb	<24.2	24.2	97.9	ug/kg dry	02/03/18 01:55	EPA 8151A	cdb	D
<i>Surrogate: 2,4-DCAA</i>		60 %	40.6-150		02/03/18 01:55	EPA 8151A	cdb	

Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	1180	5.53	218	mg/kg dry	02/08/18 01:03	EPA 9056A	bdw	
% Solids	8.16		0.100	%	01/31/18 14:30	SM 2540 G-97	pra	
Sulfide	<21.2	21.2	225	mg/kg dry	02/01/18 09:15	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	1.75 J	1.40	5.84	mg/kg dry	02/06/18 10:09	EPA 9014	caa	
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 Number of Containers: 6
 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 6000/7000 Series Methods

Mercury	<0.0987	0.0987	0.233	mg/kg dry	02/02/18 10:37	EPA 7471B	jks	
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Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<23.9	23.9	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	D
alpha-BHC	<17.2	17.2	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
beta-BHC	<87.1	87.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
delta-BHC	<20.1	20.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	F
gamma-BHC (Lindane)	<121	121	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Chlordane (tech)	<2400	2400	9570	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
4,4'-DDD	<52.6	52.6	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
4,4'-DDE	<23.9	23.9	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
4,4'-DDT	<57.4	57.4	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	D
Dieldrin	<23.0	23.0	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Endosulfan I	<21.1	21.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	F
Endosulfan II	<26.8	26.8	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	D, F
Endosulfan sulfate	<76.6	76.6	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	D, F
Endrin	<32.5	32.5	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Endrin aldehyde	<36.4	36.4	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Heptachlor	<20.1	20.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Organochlorine Pesticides by EPA Extraction Method 3541

Heptachlor epoxide	<23.9	23.9	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Methoxychlor	<42.1	42.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Toxaphene	<3990	3990	9570	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
alpha-Chlordane	<80.4	80.4	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Isodrin	<19.1	19.1	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	D, F
gamma-Chlordane	<76.6	76.6	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Endrin ketone	<93.8	93.8	191	ug/kg dry	02/02/18 04:47	EPA 8081B	CDB	
Surrogate: Tetrachloro-meta-xylene		138 %		40-157	02/02/18 04:47	EPA 8081B	CDB	
Surrogate: Decachlorobiphenyl		91.9 %		57.1-153	02/02/18 04:47	EPA 8081B	CDB	

Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.168	0.168	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1221	<0.236	0.236	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1232	<0.180	0.180	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1242	<0.061	0.061	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1248	<0.124	0.124	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1254	<0.266	0.266	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
PCB-1260	<0.197	0.197	0.407	mg/kg dry	02/06/18 04:39	EPA 8082	cdb	
Surrogate: Tetrachloro-meta-xylene		83.1 %		11-140	02/06/18 04:39	EPA 8082	cdb	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Polychlorinated Biphenyls by EPA Extraction Method 3541

Surrogate: Decachlorobiphenyl 85.7 % 24.4-140 02/06/18 04:39 EPA 8082 cdb

Semivolatle Organic Compounds by EPA Extraction Method 3541

Pyridine	<55.4	55.4	213	mg/kg dry	02/01/18 20:45	EPA 8270D	CDB	
Diphenylamine	<12.8	12.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzidine	<37.3	37.3	533	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	F
Acenaphthene	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Acenaphthylene	<8.52	8.52	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Anthracene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzoic acid	<45.8	45.8	1070	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzo (a) anthracene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzo (b) fluoranthene	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzo (k) fluoranthene	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzo (g,h,i) perylene	<8.52	8.52	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzo (a) pyrene	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Benzyl alcohol	<14.9	14.9	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Bis(2-chloroethoxy)methane	<14.9	14.9	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Bis(2-chloroethyl)ether	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Bis(2-chloroisopropyl)ether	<6.39	6.39	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	A9

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Semivolatile Organic Compounds by EPA Extraction Method 3541

Bis(2-ethylhexyl)phthalate	<32.0	32.0	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4-Bromophenyl phenyl ether	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Butyl benzyl phthalate	<12.8	12.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4-Chloroaniline	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	CDB	
4-Chloro-3-methylphenol	<9.59	9.59	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Chloronaphthalene	<6.39	6.39	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Chlorophenol	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4-Chlorophenyl phenyl ether	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Chrysene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Dibenz (a,h) anthracene	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Dibenzofuran	<3.20	3.20	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Di-n-butyl phthalate	<22.4	22.4	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
1,2-Dichlorobenzene	<9.59	9.59	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
1,3-Dichlorobenzene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
1,4-Dichlorobenzene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
3,3'-Dichlorobenzidine	<9.59	9.59	107	mg/kg dry	02/01/18 20:45	EPA 8270D	CDB	
2,4-Dichlorophenol	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Diethyl phthalate	<10.7	10.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4-Dimethylphenol	<8.52	8.52	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Dimethyl phthalate	<6.39	6.39	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4,6-Dinitro-2-methylphenol	<34.1	34.1	533	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2,4-Dinitrophenol	<27.7	27.7	533	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2,4-Dinitrotoluene	<22.4	22.4	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2,6-Dinitrotoluene	<20.2	20.2	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Di-n-octyl phthalate	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Aniline	8.52 J	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Naphthalene	<6.39	6.39	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
N-Nitrosodimethylamine	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
3 & 4-Methylphenol	<9.59	9.59	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Acetophenone	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
1,2-Diphenylhydrazine	<4.26	4.26	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Fluoranthene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Fluorene	<4.26	4.26	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Hexachlorobenzene	<12.8	12.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Hexachlorobutadiene	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Hexachlorocyclopentadiene	<26.6	26.6	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	

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 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Hexachloroethane	<12.8	12.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Indeno (1,2,3-cd) pyrene	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Isophorone	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Methylnaphthalene	<8.52	8.52	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Methylphenol	<17.0	17.0	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Nitroaniline	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
3-Nitroaniline	<29.8	29.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4-Nitroaniline	<24.5	24.5	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Nitrobenzene	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2-Nitrophenol	<16.0	16.0	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
4-Nitrophenol	<26.6	26.6	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
N-Nitrosodiphenylamine	<17.0	17.0	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
N-Nitrosodi-n-propylamine	<10.7	10.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Pentachlorophenol	<26.6	26.6	533	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Phenanthrene	<5.33	5.33	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Phenol	<13.8	13.8	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Pyrene	<7.46	7.46	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
1,2,4-Trichlorobenzene	<11.7	11.7	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	

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 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4,5-Trichlorophenol	<18.1	18.1	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
2,4,6-Trichlorophenol	<17.0	17.0	107	mg/kg dry	02/01/18 20:45	EPA 8270D	rsr	
Surrogate: 2-Fluorophenol		93 %	10-169		02/01/18 20:45	EPA 8270D	rsr	
Surrogate: Phenol-d6		92 %	10-166		02/01/18 20:45	EPA 8270D	rsr	
Surrogate: Nitrobenzene-d5		88 %	18.8-170		02/01/18 20:45	EPA 8270D	rsr	
Surrogate: 2-Fluorobiphenyl		92 %	35.1-154		02/01/18 20:45	EPA 8270D	rsr	
Surrogate: 2,4,6-Tribromophenol		87 %	20-158		02/01/18 20:45	EPA 8270D	rsr	
Surrogate: Terphenyl-d14		90 %	52.1-160		02/01/18 20:45	EPA 8270D	rsr	

TCLP Extraction by EPA 1311

# pH @ 21.4°C	7.39			pH Units	02/01/18 07:45	EPA 1311	cjw	
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TCLP Metals extracted by EPA 1311

Silver	<0.00600	0.00600	0.0200	mg/l	02/04/18 10:07	EPA 6010B/2.0	sr	
Aluminum	0.0718 J	0.0650	0.500	mg/l	02/04/18 10:06	EPA 6010B/2.0	sr	
Arsenic	<0.0160	0.0160	0.0400	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Barium	0.537	0.0150	0.0500	mg/l	02/04/18 10:06	EPA 6010B/2.0	sr	
Beryllium	<0.00120	0.00120	0.0100	mg/l	02/04/18 10:07	EPA 6010B/2.0	sr	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Cadmium	<0.00245	0.00245	0.0200	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Cobalt	0.0237 J	0.00700	0.0500	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Chromium	0.0305	0.000750	0.0250	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	F
Copper	0.0129 J	0.00650	0.0500	mg/l	02/04/18 10:07	EPA 6010B/2.0	sr	
Iron	<0.0250	0.0250	0.200	mg/l	02/04/18 10:06	EPA 6010B/2.0	sr	
Mercury	<0.000590	0.000590	0.00200	mg/l	02/05/18 11:36	EPA 7471B	jks	Q
Potassium	7.64568	0.37	1	mg/l	02/04/18 10:05	EPA 6010B/2.0	sr	L
Manganese	12.5	0.0105	0.0500	mg/l	02/04/18 10:07	EPA 6010B/2.0	sr	T
Nickel	0.450	0.0120	0.250	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Lead	<0.0120	0.0120	0.0400	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Antimony	0.0256 J	0.0190	0.0500	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	
Selenium	0.0190 J	0.0145	0.100	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Thallium	<0.00900	0.00900	0.100	mg/l	02/05/18 11:11	EPA 6010B/2.0	sr	
Vanadium	0.0401 J	0.0130	0.100	mg/l	02/04/18 10:07	EPA 6010B/2.0	sr	
Zinc	0.0168 J	0.0110	0.100	mg/l	02/04/18 10:08	EPA 6010B/2.0	sr	

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Pyridine	83.5 J	13.5	100	ug/l	02/01/18 16:47	EPA 8270D	CDB	Y
Benzidine	<11.0	11.0	250	ug/l	02/01/18 16:47	EPA 8270D	CDB	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Hexachloroethane	<5.50	5.50	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
2-Methylphenol	<6.50	6.50	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Nitrobenzene	<6.00	6.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Pentachlorophenol	<13.5	13.5	250	ug/l	02/01/18 16:47	EPA 8270D	CDB	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	

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Max Environmental
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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Client Sample ID: 002

Date/Time Sampled: 01/25/18 22:00

Laboratory Sample ID: 8A30001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	02/01/18 16:47	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol	30.6 %		30.6-66.8		02/01/18 16:47	EPA 8270D	CDB	
Surrogate: Phenol-d6	23.1 %		17.9-51.5		02/01/18 16:47	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5	56.4 %		30.6-140		02/01/18 16:47	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl	64.0 %		40.6-121		02/01/18 16:47	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol	79.4 %		50.4-131		02/01/18 16:47	EPA 8270D	CDB	
Surrogate: Terphenyl-d14	60.2 %		10-185		02/01/18 16:47	EPA 8270D	CDB	

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 Reported: 03/28/18 12:28

Quality Control

Metals by Prep Method EPA 3050B

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8030043 - EPA 3050B									
Blank (8030043-BLK1)									
					Prepared: 01/30/18 Analyzed: 02/01/18				
Manganese	ND		4.75	mg/kg wet					
Aluminum	ND		47.5	mg/kg wet					
Antimony	ND		4.75	mg/kg wet					
Arsenic	ND		3.80	mg/kg wet					
Barium	ND		4.75	mg/kg wet					
Beryllium	ND		0.949	mg/kg wet					
Cadmium	ND		1.90	mg/kg wet					
Chromium	ND		2.37	mg/kg wet					
Cobalt	ND		4.75	mg/kg wet					
Copper	ND		4.75	mg/kg wet					
Iron	ND		19.0	mg/kg wet					
Lead	ND		3.80	mg/kg wet					
Nickel	ND		23.7	mg/kg wet					
Potassium	ND		94.9	mg/kg wet					
Selenium	ND		9.49	mg/kg wet					
Silver	ND		1.90	mg/kg wet					
Thallium	ND		9.49	mg/kg wet					
Zinc	ND		9.49	mg/kg wet					
Vanadium	ND		9.49	mg/kg wet					

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 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8030049 - Volatiles										
Blank (8030049-BLK1)					Prepared & Analyzed: 01/30/18					
1,3,5-Trimethylbenzene	ND		0.0050	mg/kg wet						
1,2,4-Trimethylbenzene	ND		0.0050	mg/kg wet						
Benzene	ND		0.0020	mg/kg wet						
Toluene	ND		0.0050	mg/kg wet						
Ethylbenzene	ND		0.0050	mg/kg wet						
Xylenes (total)	ND		0.0100	mg/kg wet						
Isopropylbenzene	ND		0.0050	mg/kg wet						
Methyl tert-butyl ether	ND		0.0050	mg/kg wet						
Naphthalene	ND		0.0050	mg/kg wet						
Acetone	ND		0.0100	mg/kg wet						
Acrolein	ND		0.0500	mg/kg wet						
Acrylonitrile	ND		0.0100	mg/kg wet						
Bromobenzene	ND		0.0050	mg/kg wet						
Bromochloromethane	ND		0.0050	mg/kg wet						
Bromodichloromethane	ND		0.0050	mg/kg wet						
Bromoform	ND		0.0050	mg/kg wet						
Bromomethane	ND		0.0050	mg/kg wet						
2-Butanone	ND		0.0100	mg/kg wet						
sec-Butylbenzene	ND		0.0050	mg/kg wet						
tert-Butylbenzene	ND		0.0050	mg/kg wet						
n-Butylbenzene	ND		0.0050	mg/kg wet						
Carbon disulfide	ND		0.0050	mg/kg wet						
Carbon tetrachloride	ND		0.0050	mg/kg wet						
Chlorobenzene	ND		0.0050	mg/kg wet						
Chloroethane	ND		0.0050	mg/kg wet						

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 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8030049 - Volatiles (Continued)										
Blank (8030049-BLK1)					Prepared & Analyzed: 01/30/18					
2-Chloroethylvinyl ether	ND		0.0500	mg/kg wet						
Chloroform	ND		0.0050	mg/kg wet						
Chloromethane	ND		0.0050	mg/kg wet						
4-Chlorotoluene	ND		0.0050	mg/kg wet						
2-Chlorotoluene	ND		0.0050	mg/kg wet						
1,2-Dibromo-3-chloropropane	ND		0.0050	mg/kg wet						
Dibromochloromethane	ND		0.0050	mg/kg wet						
1,2-Dibromoethane (EDB)	ND		0.0020	mg/kg wet						
Dibromomethane	ND		0.0050	mg/kg wet						
trans-1,4-Dichloro-2-butene	ND		0.0050	mg/kg wet						
1,2-Dichlorobenzene	ND		0.0050	mg/kg wet						
1,4-Dichlorobenzene	ND		0.0050	mg/kg wet						
1,3-Dichlorobenzene	ND		0.0050	mg/kg wet						
Dichlorodifluoromethane	ND		0.0050	mg/kg wet						
1,2-Dichloroethane	ND		0.0020	mg/kg wet						
1,1-Dichloroethane	ND		0.0050	mg/kg wet						
trans-1,2-Dichloroethene	ND		0.0050	mg/kg wet						
cis-1,2-Dichloroethene	ND		0.0050	mg/kg wet						
1,1-Dichloroethene	ND		0.0050	mg/kg wet						
2,2-Dichloropropane	ND		0.0050	mg/kg wet						
1,3-Dichloropropane	ND		0.0050	mg/kg wet						
1,2-Dichloropropane	ND		0.0050	mg/kg wet						
trans-1,3-Dichloropropene	ND		0.0050	mg/kg wet						
1,1-Dichloropropene	ND		0.0050	mg/kg wet						
cis-1,3-Dichloropropene	ND		0.0050	mg/kg wet						

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8030049 - Volatiles (Continued)									
Blank (8030049-BLK1)					Prepared & Analyzed: 01/30/18				
Hexachlorobutadiene	ND		0.0050	mg/kg wet					
2-Hexanone	ND		0.0100	mg/kg wet					
Iodomethane	ND		0.0050	mg/kg wet					
p-Isopropyltoluene	ND		0.0050	mg/kg wet					
Methylene chloride	ND		0.0200	mg/kg wet					
4-Methyl-2-pentanone	ND		0.0100	mg/kg wet					
n-Propylbenzene	ND		0.0050	mg/kg wet					
Styrene	ND		0.0050	mg/kg wet					
1,1,2,2-Tetrachloroethane	ND		0.0050	mg/kg wet					
1,1,1,2-Tetrachloroethane	ND		0.0050	mg/kg wet					
Tetrachloroethene	ND		0.0050	mg/kg wet					
1,2,4-Trichlorobenzene	ND		0.0050	mg/kg wet					
1,2,3-Trichlorobenzene	ND		0.0050	mg/kg wet					
1,1,1-Trichloroethane	ND		0.0050	mg/kg wet					
1,1,2-Trichloroethane	ND		0.0050	mg/kg wet					
Trichloroethene	ND		0.0050	mg/kg wet					
Trichlorofluoromethane	ND		0.0050	mg/kg wet					
1,2,3-Trichloropropane	ND		0.0050	mg/kg wet					
Vinyl chloride	ND		0.0020	mg/kg wet					
<i>Surrogate: 4-Bromofluorobenzene</i>			0.0964	mg/kg wet	0.100		96	70-130	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			0.0920	mg/kg wet	0.100		92	70-130	
<i>Surrogate: Fluorobenzene</i>			0.0921	mg/kg wet	0.100		92	70-130	
LCS (8030049-BS1)					Prepared & Analyzed: 01/30/18				
1,3,5-Trimethylbenzene	0.048		0.0050	mg/kg wet	0.0500		97	70-130	200

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Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8030049 - Volatiles (Continued)										
LCS (8030049-BS1)										
Prepared & Analyzed: 01/30/18										
1,2,4-Trimethylbenzene	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
Benzene	0.042		0.0020	mg/kg wet	0.0500		84	70-130		200
Toluene	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
Ethylbenzene	0.046		0.0050	mg/kg wet	0.0500		91	70-130		200
Xylenes (total)	0.137		0.0100	mg/kg wet	0.150		91	70-130		200
Isopropylbenzene	0.045		0.0050	mg/kg wet	0.0500		91	70-130		200
Methyl tert-butyl ether	0.043		0.0050	mg/kg wet	0.0500		86	70-130		200
Naphthalene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Acetone	0.038		0.0100	mg/kg wet	0.0500		76	70-130		200
Acrylonitrile	0.042		0.0100	mg/kg wet	0.0500		84	70-130		200
Bromobenzene	0.044		0.0050	mg/kg wet	0.0500		89	70-130		200
Bromochloromethane	0.042		0.0050	mg/kg wet	0.0500		83	70-130		200
Bromodichloromethane	0.043		0.0050	mg/kg wet	0.0500		87	70-130		200
Bromoform	0.053		0.0050	mg/kg wet	0.0500		106	70-130		200
Bromomethane	0.040		0.0050	mg/kg wet	0.0500		80	70-130		200
2-Butanone	0.041		0.0100	mg/kg wet	0.0500		82	70-130		200
sec-Butylbenzene	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
tert-Butylbenzene	0.056		0.0050	mg/kg wet	0.0500		111	70-130		200
n-Butylbenzene	0.038		0.0050	mg/kg wet	0.0500		77	70-130		200
Carbon disulfide	0.042		0.0050	mg/kg wet	0.0500		83	70-130		200
Carbon tetrachloride	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
Chlorobenzene	0.044		0.0050	mg/kg wet	0.0500		88	70-130		200
Chloroethane	0.038		0.0050	mg/kg wet	0.0500		77	70-130		200
Chloroform	0.043		0.0050	mg/kg wet	0.0500		85	70-130		200
Chloromethane	0.038		0.0050	mg/kg wet	0.0500		75	70-130		200

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Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8030049 - Volatiles (Continued)										
LCS (8030049-BS1)										
Prepared & Analyzed: 01/30/18										
4-Chlorotoluene	0.044		0.0050	mg/kg wet	0.0500		88	70-130		200
2-Chlorotoluene	0.046		0.0050	mg/kg wet	0.0500		91	70-130		200
1,2-Dibromo-3-chloropropane	0.052		0.0050	mg/kg wet	0.0500		104	70-130		200
Dibromochloromethane	0.051		0.0050	mg/kg wet	0.0500		103	70-130		200
1,2-Dibromoethane (EDB)	0.044		0.0020	mg/kg wet	0.0500		87	70-130		200
Dibromomethane	0.048		0.0050	mg/kg wet	0.0500		95	70-130		200
trans-1,4-Dichloro-2-butene	0.041		0.0050	mg/kg wet	0.0500		81	70-130		200
1,2-Dichlorobenzene	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
1,4-Dichlorobenzene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
1,3-Dichlorobenzene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Dichlorodifluoromethane	0.035		0.0050	mg/kg wet	0.0500		70	70-130		200
1,2-Dichloroethane	0.041		0.0020	mg/kg wet	0.0500		83	70-130		200
1,1-Dichloroethane	0.039		0.0050	mg/kg wet	0.0500		78	70-130		200
trans-1,2-Dichloroethene	0.037		0.0050	mg/kg wet	0.0500		73	70-130		200
cis-1,2-Dichloroethene	0.038		0.0050	mg/kg wet	0.0500		76	70-130		200
1,1-Dichloroethene	0.036		0.0050	mg/kg wet	0.0500		72	70-130		200
2,2-Dichloropropane	0.043		0.0050	mg/kg wet	0.0500		85	70-130		200
1,3-Dichloropropane	0.046		0.0050	mg/kg wet	0.0500		91	70-130		200
1,2-Dichloropropane	0.042		0.0050	mg/kg wet	0.0500		85	70-130		200
trans-1,3-Dichloropropene	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
1,1-Dichloropropene	0.040		0.0050	mg/kg wet	0.0500		81	70-130		200
cis-1,3-Dichloropropene	0.045		0.0050	mg/kg wet	0.0500		91	70-130		200
Hexachlorobutadiene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
2-Hexanone	0.038		0.0100	mg/kg wet	0.0500		76	70-130		200
Iodomethane	0.043		0.0050	mg/kg wet				70-130		200

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8030049 - Volatiles (Continued)										
LCS (8030049-BS1)										
Prepared & Analyzed: 01/30/18										
p-Isopropyltoluene	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
Methylene chloride	0.040		0.0200	mg/kg wet	0.0500		80	70-130		200
4-Methyl-2-pentanone	0.038		0.0100	mg/kg wet	0.0500		76	70-130		200
n-Propylbenzene	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
Styrene	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
1,1,2,2-Tetrachloroethane	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
1,1,1,2-Tetrachloroethane	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
Tetrachloroethene	0.051		0.0050	mg/kg wet	0.0500		101	70-130		200
1,2,4-Trichlorobenzene	0.054		0.0050	mg/kg wet	0.0500		107	70-130		200
1,2,3-Trichlorobenzene	0.045		0.0050	mg/kg wet	0.0500		91	70-130		200
1,1,1-Trichloroethane	0.041		0.0050	mg/kg wet	0.0500		83	70-130		200
1,1,2-Trichloroethane	0.051		0.0050	mg/kg wet	0.0500		102	70-130		200
Trichloroethene	0.044		0.0050	mg/kg wet	0.0500		88	70-130		200
Trichlorofluoromethane	0.038		0.0050	mg/kg wet	0.0500		77	70-130		200
1,2,3-Trichloropropane	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Vinyl chloride	0.035		0.0020	mg/kg wet	0.0500		71	70-130		200
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.0970</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>97</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.0894</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>89</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.0872</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>87</i>	<i>70-130</i>		

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Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8033071 - EPA 8151A									
Blank (8033071-BLK1)					Prepared & Analyzed: 02/02/18				
2,4-D	ND		3.33	ug/kg wet					
Acifluorfen	ND		3.33	ug/kg wet					
2,4-DB	ND		3.33	ug/kg wet					
2,4,5-T	ND		3.33	ug/kg wet					
2,4,5-TP (Silvex)	ND		3.33	ug/kg wet					
Dalapon	ND		33.3	ug/kg wet					
Dicamba	ND		3.33	ug/kg wet					
Dichloroprop	ND		3.33	ug/kg wet					
Dinoseb	ND		3.33	ug/kg wet					
<i>Surrogate: 2,4-DCAA</i>			<i>0.111</i>	<i>mg/l</i>	<i>0.100</i>		<i>111</i>	<i>40.6-150</i>	
LCS (8033071-BS1)					Prepared & Analyzed: 02/02/18				
2,4-D	0.0000613			mg/l	0.0000800		77	42.5-122	200
Acifluorfen	0.0000512			mg/l	0.0000800		64	16.8-144	200
2,4-DB	0.000124			mg/l	0.0000800		155	17.6-149	200
2,4,5-T	0.0000409			mg/l	0.0000800		51	25.9-138	200
2,4,5-TP (Silvex)	0.0000408			mg/l	0.0000800		51	23.5-121	200
Dalapon	0.00126			mg/l	0.000800		157	10-173	200
Dicamba	0.0000368			mg/l	0.0000800		46	12.6-122	200
Dichloroprop	0.0000363			mg/l	0.0000800		45	10-151	200
Dinoseb	0.0000264			mg/l	0.0000800		33	10-86.5	200
<i>Surrogate: 2,4-DCAA</i>			<i>0.118</i>	<i>mg/l</i>	<i>0.100</i>		<i>118</i>	<i>40.6-150</i>	
Matrix Spike (8033071-MS1)					Source: 8A30001-03 Prepared: 02/02/18 Analyzed: 02/03/18				
2,4-D	0.0000833			mg/l	0.0000800	0.00	104	17.1-157	47.4

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Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8033071 - EPA 8151A (Continued)									
Matrix Spike (8033071-MS1)		Source: 8A30001-03			Prepared: 02/02/18 Analyzed: 02/03/18				
Acifluorfen	0.0000863			mg/l	0.0000800	0.00	108 10-193		72.9
2,4-DB	0.000132			mg/l	0.0000800	0.00	165 15.3-156		42.3
2,4,5-T	0.0000860			mg/l	0.0000800	0.00	108 10-156		58.3
2,4,5-TP (Silvex)	0.0000582			mg/l	0.0000800	0.00	73 10-138		46.5
Dalapon	0.00163			mg/l	0.000800	0.00	204 10-156		38
Dicamba	0.0000596			mg/l	0.0000800	0.00	74 10-130		46
Dichloroprop	0.0000535			mg/l	0.0000800	0.00	67 14.1-137		60
Dinoseb	0.0000455			mg/l	0.0000800	0.00	57 10-165		39.1
<i>Surrogate: 2,4-DCAA</i>			0.233	mg/l	0.100		233 40.6-150		
Matrix Spike Dup (8033071-MSD1)		Source: 8A30001-03			Prepared: 02/02/18 Analyzed: 02/03/18				
2,4-D	0.0000696			mg/l	0.0000800	0.00	87 17.1-157	200	47.4
Acifluorfen	0.0000306			mg/l	0.0000800	0.00	38 10-193	200	72.9
2,4-DB	0.000162			mg/l	0.0000800	0.00	203 15.3-156	200	42.3
2,4,5-T	0.0000409			mg/l	0.0000800	0.00	51 10-156	200	58.3
2,4,5-TP (Silvex)	0.0000476			mg/l	0.0000800	0.00	60 10-138	200	46.5
Dalapon	0.00145			mg/l	0.000800	0.00	181 10-156	200	38
Dicamba	0.0000371			mg/l	0.0000800	0.00	46 10-130	200	46
Dichloroprop	0.0000268			mg/l	0.0000800	0.00	34 14.1-137	200	60
Dinoseb	0.0000181			mg/l	0.0000800	0.00	23 10-165	200	39.1
<i>Surrogate: 2,4-DCAA</i>			0.219	mg/l	0.100		219 40.6-150		



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Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8030069 - General Prep									
Blank (8030069-BLK1)					Prepared: 01/30/18	Analyzed: 01/31/18			
% Solids	ND		0.100	%					
Blank (8030069-BLK2)					Prepared: 01/30/18	Analyzed: 01/31/18			
% Solids	ND		0.100	%					
Batch: 8032027 - General Preparation									
Blank (8032027-BLK1)					Prepared: 02/01/18	Analyzed: 02/02/18			
Sulfide	ND		20.0	mg/kg wet					

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Quality Control
 (Continued)

Cyanide by Preparation Method EPA 9010

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8037016 - General Prep										
Blank (8037016-BLK1)										
Cyanide (total)	ND		0.470	mg/kg wet						Prepared & Analyzed: 02/06/18



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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031068 - EPA 7471A										
Blank (8031068-BLK1)										
Mercury	ND		0.0310	mg/kg wet						
					Prepared: 01/31/18 Analyzed: 02/02/18					

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031059 - EPA 3541										
Blank (8031059-BLK1)										
Prepared: 01/31/18 Analyzed: 02/02/18										
Aldrin	ND		2.00	ug/kg wet						
alpha-BHC	ND		2.00	ug/kg wet						
beta-BHC	ND		2.00	ug/kg wet						
delta-BHC	ND		2.00	ug/kg wet						
gamma-BHC (Lindane)	ND		2.00	ug/kg wet						
Chlordane (tech)	ND		100	ug/kg wet						
4,4'-DDD	ND		2.00	ug/kg wet						
4,4'-DDE	ND		2.00	ug/kg wet						
4,4'-DDT	ND		2.00	ug/kg wet						
Dieldrin	ND		2.00	ug/kg wet						
Endosulfan I	ND		2.00	ug/kg wet						
Endosulfan II	ND		2.00	ug/kg wet						
Endosulfan sulfate	ND		2.00	ug/kg wet						
Endrin	ND		2.00	ug/kg wet						
Endrin aldehyde	ND		2.00	ug/kg wet						
Heptachlor	ND		2.00	ug/kg wet						
Heptachlor epoxide	ND		2.00	ug/kg wet						
Methoxychlor	ND		2.00	ug/kg wet						
Toxaphene	ND		100	ug/kg wet						
alpha-Chlordane	ND		2.00	ug/kg wet						
Isodrin	ND		2.00	ug/kg wet						
gamma-Chlordane	ND		2.00	ug/kg wet						
Endrin ketone	ND		2.00	ug/kg wet						
<i>Surrogate: Tetrachloro-meta-xylene</i>			19.4	ug/l	20.0		96.9	40-157		
<i>Surrogate: Decachlorobiphenyl</i>			19.0	ug/l	20.0		95.2	57.1-153		

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031059 - EPA 3541 (Continued)									
LCS (8031059-BS1)					Prepared: 01/31/18 Analyzed: 02/02/18				
Aldrin	11.5			ug/l	12.0	95.5	30.3-98.1		200
alpha-BHC	12.1			ug/l	12.0	101	35.2-102		200
beta-BHC	11.7			ug/l	12.0	97.7	35.2-126		200
delta-BHC	17.7			ug/l	12.0	148	10-129		200
gamma-BHC (Lindane)	12.6			ug/l	12.0	105	40.5-107		200
Chlordane (tech)	ND		100	ug/kg wet			80-120		200
4,4'-DDD	11.2			ug/l	12.0	93.7	39-114		200
4,4'-DDE	12.3			ug/l	12.0	102	44.7-112		200
4,4'-DDT	13.2			ug/l	12.0	110	36.1-126		200
Dieldrin	10.6			ug/l	12.0	88.3	42.2-116		200
Endosulfan I	12.3			ug/l	12.0	102	10-79.2		200
Endosulfan II	12.9			ug/l	12.0	108	10-63.3		200
Endosulfan sulfate	14.6			ug/l	12.0	122	49.1-111		200
Endrin	12.9			ug/l	12.0	108	41.7-127		200
Endrin aldehyde	12.1			ug/l	12.0	101	45.3-128		200
Heptachlor	12.2			ug/l	12.0	102	32.6-143		200
Heptachlor epoxide	13.2			ug/l	12.0	110	43.8-111		200
Methoxychlor	11.9			ug/l	12.0	99.0	52.8-131		200
Toxaphene	ND		100	ug/kg wet			80-120		200
alpha-Chlordane	10.6			ug/l	12.0	88.0	38.6-106		200
gamma-Chlordane	11.4			ug/l	12.0	95.1	45.3-152		200
Isodrin	11.0			ug/l	12.0	91.7	40-27.8		200
Endrin ketone	12.1			ug/l	12.0	101	46-128		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			20.8	ug/l	20.0	104	40-157		

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031059 - EPA 3541 (Continued)									
LCS (8031059-BS1)									
Prepared: 01/31/18 Analyzed: 02/02/18									
Surrogate: Decachlorobiphenyl									
			17.8	ug/l	20.0		89.1 57.1-153		
Matrix Spike (8031059-MS1)									
Source: 8A23038-01 Prepared: 01/31/18 Analyzed: 02/02/18									
Aldrin	0.00			ug/l	12.0	0.00	35.7-85.2		25.9
alpha-BHC	0.00			ug/l	12.0	0.00	26.7-121		22.5
beta-BHC	0.00			ug/l	12.0	0.00	37.5-131		24.3
delta-BHC	0.00			ug/l	12.0	0.00	10.6-118		25.8
gamma-BHC (Lindane)	0.00			ug/l	12.0	0.00	49.8-92.5		23.1
Chlordane (tech)	ND		27700	ug/kg dry		ND	80-120		200
4,4'-DDD	0.00			ug/l	12.0	0.00	42.3-103		18.1
4,4'-DDE	0.00			ug/l	12.0	0.00	47.8-100		18
4,4'-DDT	0.00			ug/l	12.0	0.00	45.9-110		15.6
Dieldrin	0.00			ug/l	12.0	0.00	44-107		21.3
Endosulfan I	0.00			ug/l	12.0	0.00	30.5-113		27.5
Endosulfan II	0.00			ug/l	12.0	0.00	19.2-124		49.2
Endosulfan sulfate	0.00			ug/l	12.0	0.00	53.8-99.6		27.6
Endrin	0.00			ug/l	12.0	0.00	46.8-117		27
Endrin aldehyde	0.00			ug/l	12.0	0.00	37.4-125		29.4
Heptachlor	0.00			ug/l	12.0	0.00	33.8-157		19.9
Heptachlor epoxide	0.00			ug/l	12.0	0.00	44.2-103		18.6
Methoxychlor	0.00			ug/l	12.0	0.00	53.3-134		24
Toxaphene	ND		27700	ug/kg dry		ND	80-120		200
alpha-Chlordane	0.00			ug/l	12.0	0.00	44.7-93.3		18.3
Isodrin	0.00			ug/l	12.0	0.00	29.7-124		27.8
gamma-Chlordane	0.00			ug/l	12.0	0.00	47-151		21.2

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031059 - EPA 3541 (Continued)									
Matrix Spike (8031059-MS1)		Source: 8A23038-01		Prepared: 01/31/18 Analyzed: 02/02/18					
Endrin ketone	0.00			ug/l	12.0	0.00	48-115		26.6
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.00	ug/l	20.0		40-157		
<i>Surrogate: Decachlorobiphenyl</i>			0.00	ug/l	20.0		57.1-153		
Matrix Spike Dup (8031059-MSD1)		Source: 8A23038-01		Prepared: 01/31/18 Analyzed: 02/02/18					
Aldrin	0.00			ug/l	12.0	0.00	35.7-85.2		25.9
alpha-BHC	0.00			ug/l	12.0	0.00	26.7-121		22.5
beta-BHC	0.00			ug/l	12.0	0.00	37.5-131		24.3
delta-BHC	0.00			ug/l	12.0	0.00	10.6-118		25.8
gamma-BHC (Lindane)	0.00			ug/l	12.0	0.00	49.8-92.5		23.1
Chlordane (tech)	ND		29200	ug/kg dry		ND	80-120		200
4,4'-DDD	0.00			ug/l	12.0	0.00	42.3-103		18.1
4,4'-DDE	0.00			ug/l	12.0	0.00	47.8-100		18
4,4'-DDT	0.00			ug/l	12.0	0.00	45.9-110		15.6
Dieldrin	0.00			ug/l	12.0	0.00	44-107		21.3
Endosulfan I	0.00			ug/l	12.0	0.00	30.5-113		27.5
Endosulfan II	0.00			ug/l	12.0	0.00	19.2-124		49.2
Endosulfan sulfate	0.00			ug/l	12.0	0.00	53.8-99.6		27.6
Endrin	0.00			ug/l	12.0	0.00	46.8-117		27
Endrin aldehyde	0.00			ug/l	12.0	0.00	37.4-125		29.4
Heptachlor	0.00			ug/l	12.0	0.00	33.8-157		19.9
Heptachlor epoxide	0.00			ug/l	12.0	0.00	44.2-103		18.6
Methoxychlor	0.00			ug/l	12.0	0.00	53.3-134		24
Toxaphene	ND		29200	ug/kg dry		ND	80-120		200
alpha-Chlordane	0.00			ug/l	12.0	0.00	44.7-93.3		18.3

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031059 - EPA 3541 (Continued)										
Matrix Spike Dup (8031059-MSD1)		Source: 8A23038-01			Prepared: 01/31/18 Analyzed: 02/02/18					
gamma-Chlordane	0.00			ug/l	12.0	0.00		47-151		21.2
Isodrin	0.00			ug/l	12.0	0.00		29.7-124		27.8
Endrin ketone	0.00			ug/l	12.0	0.00		48-115		26.6
<i>Surrogate: Tetrachloro-meta-xylene</i>			<i>0.00</i>	<i>ug/l</i>	<i>20.0</i>			<i>40-157</i>		
<i>Surrogate: Decachlorobiphenyl</i>			<i>0.00</i>	<i>ug/l</i>	<i>20.0</i>			<i>57.1-153</i>		



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Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032102 - EPA 3541									
Blank (8032102-BLK1)					Prepared: 02/01/18 Analyzed: 02/02/18				
PCB-1016	ND		0.010	mg/kg wet					
PCB-1221	ND		0.010	mg/kg wet					
PCB-1232	ND		0.010	mg/kg wet					
PCB-1242	ND		0.010	mg/kg wet					
PCB-1248	ND		0.010	mg/kg wet					
PCB-1254	ND		0.010	mg/kg wet					
PCB-1260	ND		0.010	mg/kg wet					
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.115	mg/l	0.100		115	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.105	mg/l	0.100		105	24.4-140	
LCS (8032102-BS1)					Prepared: 02/01/18 Analyzed: 02/02/18				
PCB-1016	ND		0.010	mg/kg wet			60.9-137		200
PCB-1221	ND		0.010	mg/kg wet			60.3-143		200
PCB-1232	ND		0.010	mg/kg wet			56.2-138		200
PCB-1242	0.059			mg/l	0.100		59.2	55.1-135	200
PCB-1248	ND		0.010	mg/kg wet			57.8-140		200
PCB-1254	ND		0.010	mg/kg wet			69.4-134		200
PCB-1260	ND		0.010	mg/kg wet			58.1-140		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.119	mg/l	0.100		119	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.124	mg/l	0.100		124	24.4-140	
Matrix Spike (8032102-MS1)			Source: 8A30147-01		Prepared: 02/01/18 Analyzed: 02/05/18				
PCB-1016	ND		0.029	mg/kg dry		ND	27.6-156		38.1
PCB-1221	ND		0.029	mg/kg dry		ND	10-187		46.3
PCB-1232	ND		0.029	mg/kg dry		ND	54.6-146		47.4

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Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032102 - EPA 3541 (Continued)									
Matrix Spike (8032102-MS1)			Source: 8A30147-01		Prepared: 02/01/18		Analyzed: 02/05/18		
PCB-1242	0.064			mg/l	0.100	0.00	63.7	38.6-147	37.1
PCB-1248	ND		0.029	mg/kg dry		ND	32.1-157		35.4
PCB-1254	ND		0.029	mg/kg dry		ND	20.5-174		30.1
PCB-1260	ND		0.029	mg/kg dry		ND	32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0807	mg/l	0.100		80.7	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.0824	mg/l	0.100		82.4	24.4-140	
Matrix Spike Dup (8032102-MSD1)			Source: 8A30147-01		Prepared: 02/01/18		Analyzed: 02/06/18		
PCB-1016	ND		0.030	mg/kg dry		ND	27.6-156		38.1
PCB-1221	ND		0.030	mg/kg dry		ND	10-187		46.3
PCB-1232	ND		0.030	mg/kg dry		ND	54.6-146		47.4
PCB-1242	0.057			mg/l	0.100	0.00	57.1	38.6-147	10.9
PCB-1248	ND		0.030	mg/kg dry		ND	32.1-157		35.4
PCB-1254	ND		0.030	mg/kg dry		ND	20.5-174		30.1
PCB-1260	ND		0.030	mg/kg dry		ND	32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0790	mg/l	0.100		79.0	11-140	
<i>Surrogate: Decachlorobiphenyl</i>			0.0802	mg/l	0.100		80.2	24.4-140	



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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541										
Blank (8031062-BLK1)					Prepared: 01/31/18 Analyzed: 02/01/18					
Diphenylamine	ND		1.00	mg/kg wet						
Pyridine	ND		2.00	mg/kg wet						
Benzidine	ND		5.00	mg/kg wet						
Acenaphthene	ND		1.00	mg/kg wet						
Acenaphthylene	ND		1.00	mg/kg wet						
Anthracene	ND		1.00	mg/kg wet						
Benzoic acid	ND		10.0	mg/kg wet						
Benzo (a) anthracene	ND		1.00	mg/kg wet						
Benzo (b) fluoranthene	ND		1.00	mg/kg wet						
Benzo (k) fluoranthene	ND		1.00	mg/kg wet						
Benzo (g,h,i) perylene	ND		1.00	mg/kg wet						
Benzo (a) pyrene	ND		1.00	mg/kg wet						
Benzyl alcohol	ND		1.00	mg/kg wet						
Bis(2-chloroethoxy)methane	ND		1.00	mg/kg wet						
Bis(2-chloroethyl)ether	ND		1.00	mg/kg wet						
Bis(2-chloroisopropyl)ether	ND		1.00	mg/kg wet						
Bis(2-ethylhexyl)phthalate	ND		1.00	mg/kg wet						
4-Bromophenyl phenyl ether	ND		1.00	mg/kg wet						
Butyl benzyl phthalate	ND		1.00	mg/kg wet						
4-Chloroaniline	ND		1.00	mg/kg wet						
4-Chloro-3-methylphenol	ND		1.00	mg/kg wet						
2-Chloronaphthalene	ND		1.00	mg/kg wet						
2-Chlorophenol	ND		1.00	mg/kg wet						
4-Chlorophenyl phenyl ether	ND		1.00	mg/kg wet						
Chrysene	ND		1.00	mg/kg wet						

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
Blank (8031062-BLK1)					Prepared: 01/31/18 Analyzed: 02/01/18				
Dibenz (a,h) anthracene	ND		1.00	mg/kg wet					
Dibenzofuran	ND		1.00	mg/kg wet					
Di-n-butyl phthalate	ND		1.00	mg/kg wet					
1,2-Dichlorobenzene	ND		1.00	mg/kg wet					
1,3-Dichlorobenzene	ND		1.00	mg/kg wet					
1,4-Dichlorobenzene	ND		1.00	mg/kg wet					
3,3'-Dichlorobenzidine	ND		1.00	mg/kg wet					
2,4-Dichlorophenol	ND		1.00	mg/kg wet					
Diethyl phthalate	ND		1.00	mg/kg wet					
2,4-Dimethylphenol	ND		1.00	mg/kg wet					
Dimethyl phthalate	ND		1.00	mg/kg wet					
4,6-Dinitro-2-methylphenol	ND		5.00	mg/kg wet					
2,4-Dinitrophenol	ND		5.00	mg/kg wet					
2,4-Dinitrotoluene	ND		1.00	mg/kg wet					
2,6-Dinitrotoluene	ND		1.00	mg/kg wet					
Di-n-octyl phthalate	ND		1.00	mg/kg wet					
Aniline	0.0900	J	1.00	mg/kg wet					
Naphthalene	ND		1.00	mg/kg wet					
N-Nitrosodimethylamine	ND		1.00	mg/kg wet					
Acetophenone	ND		1.00	mg/kg wet					
3 & 4-Methylphenol	ND		1.00	mg/kg wet					
1,2-Diphenylhydrazine	ND		1.00	mg/kg wet					
Fluoranthene	ND		1.00	mg/kg wet					
Fluorene	ND		1.00	mg/kg wet					
Hexachlorobenzene	ND		1.00	mg/kg wet					

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)										
Blank (8031062-BLK1)										
Prepared: 01/31/18 Analyzed: 02/01/18										
Hexachlorobutadiene	ND		1.00	mg/kg wet						
Hexachlorocyclopentadiene	ND		1.00	mg/kg wet						
Hexachloroethane	ND		1.00	mg/kg wet						
Indeno (1,2,3-cd) pyrene	ND		1.00	mg/kg wet						
Isophorone	ND		1.00	mg/kg wet						
2-Methylnaphthalene	ND		1.00	mg/kg wet						
2-Methylphenol	ND		1.00	mg/kg wet						
2-Nitroaniline	ND		1.00	mg/kg wet						
3-Nitroaniline	ND		1.00	mg/kg wet						
4-Nitroaniline	ND		1.00	mg/kg wet						
Nitrobenzene	ND		1.00	mg/kg wet						
2-Nitrophenol	ND		1.00	mg/kg wet						
4-Nitrophenol	ND		1.00	mg/kg wet						
N-Nitrosodiphenylamine	ND		1.00	mg/kg wet						
N-Nitrosodi-n-propylamine	ND		1.00	mg/kg wet						
Pentachlorophenol	ND		5.00	mg/kg wet						
Phenanthrene	ND		1.00	mg/kg wet						
Phenol	ND		1.00	mg/kg wet						
Pyrene	ND		1.00	mg/kg wet						
1,2,4-Trichlorobenzene	ND		1.00	mg/kg wet						
2,4,5-Trichlorophenol	ND		1.00	mg/kg wet						
2,4,6-Trichlorophenol	ND		1.00	mg/kg wet						

Surrogate: 2-Fluorophenol			45.9	mg/l	40.0		115	10-169		
Surrogate: Phenol-d6			45.5	mg/l	40.0		114	10-166		
Surrogate: Nitrobenzene-d5			22.4	mg/l	20.0		112	18.8-170		

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
Blank (8031062-BLK1)					Prepared: 01/31/18 Analyzed: 02/01/18				
Surrogate: 2-Fluorobiphenyl			22.5	mg/l	20.0	113	35.1-154		
Surrogate: 2,4,6-Tribromophenol			42.3	mg/l	40.0	106	20-158		
Surrogate: Terphenyl-d14			22.4	mg/l	20.0	112	52.1-160		
LCS (8031062-BS1)					Prepared: 01/31/18 Analyzed: 02/01/18				
Benzidine	24.2		5.00	mg/kg wet	50.0	48	10-35		10
Diphenylamine	50.2		1.00	mg/kg wet	50.0	100	56-103		10
Pyridine	26.4		2.00	mg/kg wet	50.0	53	10-137		10
Acenaphthene	46.6		1.00	mg/kg wet	50.0	93	63-126		10
Acenaphthylene	51.0		1.00	mg/kg wet	50.0	102	63-132		10
Anthracene	48.6		1.00	mg/kg wet	50.0	97	68-124		10
Benzoic acid	31.8		10.0	mg/kg wet	50.0	64	31-104		10
Benzo (a) anthracene	47.7		1.00	mg/kg wet	50.0	95	70-124		10
Benzo (b) fluoranthene	46.6		1.00	mg/kg wet	50.0	93	76-125		10
Benzo (k) fluoranthene	46.2		1.00	mg/kg wet	50.0	92	71-125		10
Benzo (g,h,i) perylene	44.5		1.00	mg/kg wet	50.0	89	73-127		10
Benzo (a) pyrene	42.4		1.00	mg/kg wet	50.0	85	71-127		10
Benzyl alcohol	42.1		1.00	mg/kg wet	50.0	84	34-138		10
Bis(2-chloroethoxy)methane	44.7		1.00	mg/kg wet	50.0	89	39-131		10
Bis(2-chloroethyl)ether	42.7		1.00	mg/kg wet	50.0	85	11-149		10
Bis(2-chloroisopropyl)ether	42.7		1.00	mg/kg wet	50.0	85	17-154		10
Bis(2-ethylhexyl)phthalate	43.7		1.00	mg/kg wet	50.0	87	63-115		10
4-Bromophenyl phenyl ether	47.3		1.00	mg/kg wet	50.0	95	68-121		10
Butyl benzyl phthalate	47.7		1.00	mg/kg wet			62-122		10
4-Chloroaniline	37.2		1.00	mg/kg wet	50.0	74	34-103		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
LCS (8031062-BS1)									
					Prepared: 01/31/18 Analyzed: 02/01/18				
4-Chloro-3-methylphenol	42.9		1.00	mg/kg wet	50.0		86 62-123		10
2-Chloronaphthalene	46.3		1.00	mg/kg wet	50.0		93 57-124		10
2-Chlorophenol	45.8		1.00	mg/kg wet	50.0		92 24-142		10
4-Chlorophenyl phenyl ether	46.2		1.00	mg/kg wet	50.0		92 65-122		10
Chrysene	45.9		1.00	mg/kg wet	50.0		92 71-125		10
Dibenz (a,h) anthracene	46.6		1.00	mg/kg wet	50.0		93 74-128		10
Dibenzofuran	46.4		1.00	mg/kg wet	50.0		93 63-118		10
Di-n-butyl phthalate	44.8		1.00	mg/kg wet	50.0		90 72-123		10
1,2-Dichlorobenzene	39.3		1.00	mg/kg wet	50.0		79 10-151		10
1,3-Dichlorobenzene	38.6		1.00	mg/kg wet	50.0		77 10-156		10
1,4-Dichlorobenzene	39.0		1.00	mg/kg wet	50.0		78 10-154		10
3,3'-Dichlorobenzidine	30.7		1.00	mg/kg wet	50.0		61 48-107		10
2,4-Dichlorophenol	42.9		1.00	mg/kg wet	50.0		86 50-130		10
Diethyl phthalate	49.5		1.00	mg/kg wet	50.0		99 67-124		10
2,4-Dimethylphenol	43.0		1.00	mg/kg wet	50.0		86 40-111		10
Dimethyl phthalate	48.4		1.00	mg/kg wet	50.0		97 66-121		10
4,6-Dinitro-2-methylphenol	39.8		5.00	mg/kg wet	50.0		80 10-111		10
2,4-Dinitrophenol	29.0		5.00	mg/kg wet	50.0		58 10-111		10
2,4-Dinitrotoluene	44.3		1.00	mg/kg wet	50.0		89 66-112		10
2,6-Dinitrotoluene	45.3		1.00	mg/kg wet	50.0		91 57-128		10
Di-n-octyl phthalate	47.5		1.00	mg/kg wet	50.0		95 56-119		10
Aniline	38.4		1.00	mg/kg wet	50.0		77 16-99		10
Naphthalene	43.0		1.00	mg/kg wet	50.0		86 32-140		10
N-Nitrosodimethylamine	37.2		1.00	mg/kg wet	50.0		74 10-156		10
Acetophenone	39.7		1.00	mg/kg wet	50.0		79 27-142		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)										
LCS (8031062-BS1)										
Prepared: 01/31/18 Analyzed: 02/01/18										
3 & 4-Methylphenol	48.0		1.00	mg/kg wet				41-118		10
1,2-Diphenylhydrazine	44.6		1.00	mg/kg wet				60-127		10
Fluoranthene	49.5		1.00	mg/kg wet	50.0		99	71-128		10
Fluorene	48.4		1.00	mg/kg wet	50.0		97	69-122		10
Hexachlorobenzene	44.5		1.00	mg/kg wet	50.0		89	69-118		10
Hexachlorobutadiene	42.0		1.00	mg/kg wet	50.0		84	18-146		10
Hexachlorocyclopentadiene	42.1		1.00	mg/kg wet	50.0		84	22-155		10
Hexachloroethane	38.4		1.00	mg/kg wet	50.0		77	10-154		10
Indeno (1,2,3-cd) pyrene	46.4		1.00	mg/kg wet	50.0		93	73-130		10
Isophorone	47.6		1.00	mg/kg wet	50.0		95	42-131		10
2-Methylnaphthalene	45.3		1.00	mg/kg wet	50.0		91	47-131		10
2-Methylphenol	43.4		1.00	mg/kg wet	50.0		87	35-119		10
2-Nitroaniline	46.4		1.00	mg/kg wet	50.0		93	57-128		10
3-Nitroaniline	37.0		1.00	mg/kg wet	50.0		74	60-112		10
4-Nitroaniline	42.3		1.00	mg/kg wet	50.0		85	44-127		10
Nitrobenzene	41.3		1.00	mg/kg wet	50.0		83	28-138		10
2-Nitrophenol	41.7		1.00	mg/kg wet	50.0		83	31-144		10
4-Nitrophenol	42.9		1.00	mg/kg wet	50.0		86	50-118		10
N-Nitrosodiphenylamine	50.2		1.00	mg/kg wet				54-104		10
N-Nitrosodi-n-propylamine	45.9		1.00	mg/kg wet	50.0		92	34-135		10
Pentachlorophenol	40.6		5.00	mg/kg wet	50.0		81	56-126		10
Phenanthrene	45.3		1.00	mg/kg wet	50.0		91	68-118		10
Phenol	43.8		1.00	mg/kg wet	50.0		88	32-129		10
Pyrene	46.2		1.00	mg/kg wet	50.0		92	70-126		10
1,2,4-Trichlorobenzene	42.2		1.00	mg/kg wet	50.0		84	24-141		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
LCS (8031062-BS1)									
					Prepared: 01/31/18 Analyzed: 02/01/18				
2,4,5-Trichlorophenol	44.9		1.00	mg/kg wet	50.0		90 63-138		10
2,4,6-Trichlorophenol	45.7		1.00	mg/kg wet	50.0		91 64-128		10

Surrogate: 2-Fluorophenol			46.2	mg/l	40.0		116 35-115		
Surrogate: Phenol-d6			47.1	mg/l	40.0		118 35-115		
Surrogate: Nitrobenzene-d5			22.0	mg/l	20.0		110 35-115		
Surrogate: 2-Fluorobiphenyl			22.7	mg/l	20.0		114 40-120		
Surrogate: 2,4,6-Tribromophenol			51.3	mg/l	40.0		128 40-120		
Surrogate: Terphenyl-d14			21.4	mg/l	20.0		107 40-120		
Matrix Spike (8031062-MS1)									
			Source: 8A31005-01			Prepared: 01/31/18 Analyzed: 02/01/18			
Benzidine	0.220	J	1.72	mg/kg dry		ND	70-130		200
Pyridine	11.4		0.687	mg/kg dry	17.2	ND	66 70-130		200
Diphenylamine	16.8		0.344	mg/kg dry	17.2	ND	98 70-130		200
Acenaphthene	15.7		0.344	mg/kg dry	17.2	ND	91 70-130		200
Acenaphthylene	17.1		0.344	mg/kg dry	17.2	ND	100 70-130		200
Anthracene	16.2		0.344	mg/kg dry	17.2	ND	94 70-130		200
Benzoic acid	ND		3.44	mg/kg dry		ND	70-130		200
Benzo (a) anthracene	15.8		0.344	mg/kg dry	17.2	0.0311	92 70-130		200
Benzo (b) fluoranthene	15.3		0.344	mg/kg dry	17.2	ND	89 70-130		200
Benzo (k) fluoranthene	15.1		0.344	mg/kg dry	17.2	ND	88 70-130		200
Benzo (g,h,i) perylene	15.0		0.344	mg/kg dry	17.2	ND	87 70-130		200
Benzo (a) pyrene	13.9		0.344	mg/kg dry	17.2	ND	81 70-130		200
Benzyl alcohol	14.6		0.344	mg/kg dry	17.2	ND	85 70-130		200
Bis(2-chloroethoxy)methane	15.6		0.344	mg/kg dry	17.2	ND	91 70-130		200
Bis(2-chloroethyl)ether	14.7		0.344	mg/kg dry	17.2	ND	86 70-130		200

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
Matrix Spike (8031062-MS1)		Source: 8A31005-01		Prepared: 01/31/18		Analyzed: 02/01/18			
Bis(2-chloroisopropyl)ether	15.1		0.344	mg/kg dry	17.2	ND	88	70-130	200
Bis(2-ethylhexyl)phthalate	15.1		0.344	mg/kg dry	17.2	ND	88	70-130	200
4-Bromophenyl phenyl ether	15.9		0.344	mg/kg dry	17.2	ND	93	70-130	200
Butyl benzyl phthalate	16.7		0.344	mg/kg dry		ND		70-130	200
4-Chloroaniline	15.3		0.344	mg/kg dry	17.2	ND	89	70-130	200
4-Chloro-3-methylphenol	15.2		0.344	mg/kg dry	17.2	ND	88	70-130	200
2-Chloronaphthalene	15.5		0.344	mg/kg dry	17.2	ND	90	70-130	200
2-Chlorophenol	15.9		0.344	mg/kg dry	17.2	ND	93	70-130	200
4-Chlorophenyl phenyl ether	15.5		0.344	mg/kg dry	17.2	ND	90	70-130	200
Chrysene	15.1		0.344	mg/kg dry	17.2	ND	88	70-130	200
Dibenz (a,h) anthracene	15.0		0.344	mg/kg dry	17.2	ND	87	70-130	200
Dibenzofuran	15.5		0.344	mg/kg dry	17.2	ND	90	70-130	200
Di-n-butyl phthalate	15.3		0.344	mg/kg dry	17.2	ND	89	70-130	200
1,2-Dichlorobenzene	14.1		0.344	mg/kg dry	17.2	ND	82	70-130	200
1,3-Dichlorobenzene	14.0		0.344	mg/kg dry	17.2	ND	81	70-130	200
1,4-Dichlorobenzene	13.9		0.344	mg/kg dry	17.2	ND	81	70-130	200
3,3'-Dichlorobenzidine	ND		0.344	mg/kg dry		ND		70-130	200
2,4-Dichlorophenol	15.0		0.344	mg/kg dry	17.2	ND	87	70-130	200
Diethyl phthalate	16.9		0.344	mg/kg dry	17.2	ND	98	70-130	200
2,4-Dimethylphenol	14.7		0.344	mg/kg dry	17.2	ND	86	70-130	200
Dimethyl phthalate	16.0		0.344	mg/kg dry	17.2	ND	93	70-130	200
4,6-Dinitro-2-methylphenol	13.2		1.72	mg/kg dry	17.2	ND	77	70-130	200
2,4-Dinitrophenol	9.15		1.72	mg/kg dry	17.2	ND	53	70-130	200
2,4-Dinitrotoluene	14.7		0.344	mg/kg dry	17.2	ND	86	70-130	200
2,6-Dinitrotoluene	15.0		0.344	mg/kg dry	17.2	ND	87	70-130	200

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)										
Matrix Spike (8031062-MS1)		Source: 8A31005-01		Prepared: 01/31/18		Analyzed: 02/01/18				
Di-n-octyl phthalate	16.3		0.344	mg/kg dry	17.2	ND	95	70-130		200
Aniline	14.5		0.344	mg/kg dry	17.2	ND	85	70-130		200
Naphthalene	15.2		0.344	mg/kg dry	17.2	ND	89	70-130		200
N-Nitrosodimethylamine	13.8		0.344	mg/kg dry	17.2	ND	80	70-130		200
Acetophenone	13.7		0.344	mg/kg dry	17.2	ND	80	70-130		200
3 & 4-Methylphenol	16.6		0.344	mg/kg dry		ND		70-130		200
Fluoranthene	16.9		0.344	mg/kg dry	17.2	ND	98	70-130		200
Fluorene	16.3		0.344	mg/kg dry	17.2	ND	95	70-130		200
Hexachlorobenzene	14.9		0.344	mg/kg dry	17.2	ND	87	70-130		200
Hexachlorobutadiene	14.9		0.344	mg/kg dry	17.2	ND	87	70-130		200
Hexachlorocyclopentadiene	14.1		0.344	mg/kg dry	17.2	ND	82	70-130		200
Hexachloroethane	13.9		0.344	mg/kg dry	17.2	ND	81	70-130		200
Indeno (1,2,3-cd) pyrene	15.3		0.344	mg/kg dry	17.2	ND	89	70-130		200
Isophorone	16.7		0.344	mg/kg dry	17.2	ND	97	70-130		200
2-Methylnaphthalene	16.1		0.344	mg/kg dry	17.2	ND	94	70-130		200
2-Methylphenol	14.7		0.344	mg/kg dry	17.2	ND	86	70-130		200
2-Nitroaniline	15.7		0.344	mg/kg dry	17.2	ND	92	70-130		200
3-Nitroaniline	14.4		0.344	mg/kg dry	17.2	ND	84	70-130		200
4-Nitroaniline	14.6		0.344	mg/kg dry	17.2	ND	85	70-130		200
Nitrobenzene	14.7		0.344	mg/kg dry	17.2	ND	85	70-130		200
2-Nitrophenol	14.5		0.344	mg/kg dry	17.2	ND	85	70-130		200
4-Nitrophenol	14.4		0.344	mg/kg dry	17.2	ND	84	70-130		200
N-Nitrosodiphenylamine	16.8		0.344	mg/kg dry		ND		70-130		200
N-Nitrosodi-n-propylamine	16.2		0.344	mg/kg dry	17.2	ND	94	70-130		200
Pentachlorophenol	13.6		1.72	mg/kg dry	17.2	ND	79	70-130		200

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 Project Manager: Angela G

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 Project Number: Bulger F039 Delisting Petition
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)										
Matrix Spike (8031062-MS1)		Source: 8A31005-01		Prepared: 01/31/18 Analyzed: 02/01/18						
Phenanthrene	15.2		0.344	mg/kg dry	17.2	0.0207	88	70-130		200
Phenol	15.1		0.344	mg/kg dry	17.2	ND	88	70-130		200
Pyrene	15.6		0.344	mg/kg dry	17.2	0.0242	91	70-130		200
1,2,4-Trichlorobenzene	14.8		0.344	mg/kg dry	17.2	ND	86	70-130		200
2,4,5-Trichlorophenol	15.2		0.344	mg/kg dry	17.2	ND	89	70-130		200
2,4,6-Trichlorophenol	15.3		0.344	mg/kg dry	17.2	ND	89	70-130		200
<hr/>										
<i>Surrogate: 2-Fluorophenol</i>			47.9	mg/l	40.0		120	10-169		
<i>Surrogate: Phenol-d6</i>			47.8	mg/l	40.0		119	10-166		
<i>Surrogate: Nitrobenzene-d5</i>			23.2	mg/l	20.0		116	18.8-170		
<i>Surrogate: 2-Fluorobiphenyl</i>			22.6	mg/l	20.0		113	35.1-154		
<i>Surrogate: 2,4,6-Tribromophenol</i>			50.1	mg/l	40.0		125	20-158		
<i>Surrogate: Terphenyl-d14</i>			21.5	mg/l	20.0		107	52.1-160		
<hr/>										
Matrix Spike Dup (8031062-MSD1)		Source: 8A31005-01		Prepared: 01/31/18 Analyzed: 02/01/18						
Pyridine	12.4		0.686	mg/kg dry	17.1	ND	72	70-130	8	200
Benzidine	ND		1.71	mg/kg dry		ND		70-130	200	200
Diphenylamine	16.5		0.343	mg/kg dry	17.1	ND	96	70-130	2	200
Acenaphthene	15.2		0.343	mg/kg dry	17.1	ND	88	70-130	4	200
Acenaphthylene	16.6		0.343	mg/kg dry	17.1	ND	97	70-130	3	200
Anthracene	15.8		0.343	mg/kg dry	17.1	ND	92	70-130	3	200
Benzoic acid	ND		3.43	mg/kg dry		ND		70-130		200
Benzo (a) anthracene	15.8		0.343	mg/kg dry	17.1	0.0311	92	70-130	0.3	200
Benzo (b) fluoranthene	15.2		0.343	mg/kg dry	17.1	ND	88	70-130	0.9	200
Benzo (k) fluoranthene	14.7		0.343	mg/kg dry	17.1	ND	86	70-130	3	200
Benzo (g,h,i) perylene	13.0		0.343	mg/kg dry	17.1	ND	76	70-130	14	200

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Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
Matrix Spike Dup (8031062-MSD1)		Source: 8A31005-01		Prepared: 01/31/18 Analyzed: 02/01/18					
Benzo (a) pyrene	13.9		0.343	mg/kg dry	17.1	ND	81 70-130	0.5	200
Benzyl alcohol	14.4		0.343	mg/kg dry	17.1	ND	84 70-130	1	200
Bis(2-chloroethoxy)methane	15.1		0.343	mg/kg dry	17.1	ND	88 70-130	3	200
Bis(2-chloroethyl)ether	14.3		0.343	mg/kg dry	17.1	ND	84 70-130	3	200
Bis(2-chloroisopropyl)ether	14.9		0.343	mg/kg dry	17.1	ND	87 70-130	0.8	200
Bis(2-ethylhexyl)phthalate	15.2		0.343	mg/kg dry	17.1	ND	89 70-130	1	200
4-Bromophenyl phenyl ether	15.4		0.343	mg/kg dry	17.1	ND	90 70-130	3	200
Butyl benzyl phthalate	16.7		0.343	mg/kg dry		ND	70-130	0.3	200
4-Chloroaniline	14.5		0.343	mg/kg dry	17.1	ND	84 70-130	5	200
4-Chloro-3-methylphenol	14.9		0.343	mg/kg dry	17.1	ND	87 70-130	2	200
2-Chloronaphthalene	15.1		0.343	mg/kg dry	17.1	ND	88 70-130	3	200
2-Chlorophenol	15.5		0.343	mg/kg dry	17.1	ND	90 70-130	3	200
4-Chlorophenyl phenyl ether	15.2		0.343	mg/kg dry	17.1	ND	88 70-130	2	200
Chrysene	15.1		0.343	mg/kg dry	17.1	ND	88 70-130	0.08	200
Dibenz (a,h) anthracene	14.7		0.343	mg/kg dry	17.1	ND	86 70-130	2	200
Dibenzofuran	15.1		0.343	mg/kg dry	17.1	ND	88 70-130	3	200
Di-n-butyl phthalate	15.0		0.343	mg/kg dry	17.1	ND	87 70-130	2	200
1,2-Dichlorobenzene	13.8		0.343	mg/kg dry	17.1	ND	80 70-130	2	200
1,3-Dichlorobenzene	13.6		0.343	mg/kg dry	17.1	ND	79 70-130	3	200
1,4-Dichlorobenzene	13.6		0.343	mg/kg dry	17.1	ND	80 70-130	2	200
3,3'-Dichlorobenzidine	ND		0.343	mg/kg dry		ND	70-130		200
2,4-Dichlorophenol	14.7		0.343	mg/kg dry	17.1	ND	86 70-130	2	200
Diethyl phthalate	16.4		0.343	mg/kg dry	17.1	ND	96 70-130	3	200
2,4-Dimethylphenol	14.4		0.343	mg/kg dry	17.1	ND	84 70-130	2	200
Dimethyl phthalate	15.6		0.343	mg/kg dry	17.1	ND	91 70-130	2	200

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)									
Matrix Spike Dup (8031062-MSD1)		Source: 8A31005-01		Prepared: 01/31/18 Analyzed: 02/01/18					
4,6-Dinitro-2-methylphenol	13.2		1.71	mg/kg dry	17.1	ND	77 70-130	0.07	200
2,4-Dinitrophenol	9.76		1.71	mg/kg dry	17.1	ND	57 70-130	6	200
2,4-Dinitrotoluene	14.4		0.343	mg/kg dry	17.1	ND	84 70-130	2	200
2,6-Dinitrotoluene	14.8		0.343	mg/kg dry	17.1	ND	86 70-130	1	200
Di-n-octyl phthalate	16.1		0.343	mg/kg dry	17.1	ND	94 70-130	1	200
Aniline	13.7		0.343	mg/kg dry	17.1	ND	80 70-130	6	200
Naphthalene	14.9		0.343	mg/kg dry	17.1	ND	87 70-130	2	200
N-Nitrosodimethylamine	13.9		0.343	mg/kg dry	17.1	ND	81 70-130	1	200
3 & 4-Methylphenol	16.1		0.343	mg/kg dry		ND	70-130	4	200
Acetophenone	13.3		0.343	mg/kg dry	17.1	ND	78 70-130	3	200
Fluoranthene	16.2		0.343	mg/kg dry	17.1	ND	95 70-130	4	200
Fluorene	15.8		0.343	mg/kg dry	17.1	ND	92 70-130	3	200
Hexachlorobenzene	14.6		0.343	mg/kg dry	17.1	ND	85 70-130	2	200
Hexachlorobutadiene	14.7		0.343	mg/kg dry	17.1	ND	86 70-130	1	200
Hexachlorocyclopentadiene	13.7		0.343	mg/kg dry	17.1	ND	80 70-130	3	200
Hexachloroethane	13.9		0.343	mg/kg dry	17.1	ND	81 70-130	0.3	200
Indeno (1,2,3-cd) pyrene	15.0		0.343	mg/kg dry	17.1	ND	88 70-130	2	200
Isophorone	16.4		0.343	mg/kg dry	17.1	ND	96 70-130	2	200
2-Methylnaphthalene	15.8		0.343	mg/kg dry	17.1	ND	92 70-130	2	200
2-Methylphenol	14.3		0.343	mg/kg dry	17.1	ND	83 70-130	3	200
2-Nitroaniline	15.6		0.343	mg/kg dry	17.1	ND	91 70-130	0.8	200
3-Nitroaniline	13.9		0.343	mg/kg dry	17.1	ND	81 70-130	3	200
4-Nitroaniline	14.0		0.343	mg/kg dry	17.1	ND	82 70-130	4	200
Nitrobenzene	14.4		0.343	mg/kg dry	17.1	ND	84 70-130	2	200
2-Nitrophenol	14.3		0.343	mg/kg dry	17.1	ND	84 70-130	1	200

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 8031062 - EPA 3541 (Continued)										
Matrix Spike Dup (8031062-MSD1)		Source: 8A31005-01			Prepared: 01/31/18 Analyzed: 02/01/18					
4-Nitrophenol	14.1		0.343	mg/kg dry	17.1	ND	82	70-130	2	200
N-Nitrosodiphenylamine	16.5		0.343	mg/kg dry		ND		70-130	2	200
N-Nitrosodi-n-propylamine	16.1		0.343	mg/kg dry	17.1	ND	94	70-130	0.7	200
Pentachlorophenol	13.5		1.71	mg/kg dry	17.1	ND	79	70-130	0.7	200
Phenanthrene	14.8		0.343	mg/kg dry	17.1	0.0207	86	70-130	3	200
Phenol	14.6		0.343	mg/kg dry	17.1	ND	85	70-130	3	200
Pyrene	15.7		0.343	mg/kg dry	17.1	0.0242	91	70-130	0.3	200
1,2,4-Trichlorobenzene	14.5		0.343	mg/kg dry	17.1	ND	84	70-130	2	200
2,4,5-Trichlorophenol	14.7		0.343	mg/kg dry	17.1	ND	86	70-130	4	200
2,4,6-Trichlorophenol	14.9		0.343	mg/kg dry	17.1	ND	87	70-130	3	200
<hr/>										
Surrogate: 2-Fluorophenol			45.4	mg/l	40.0		114	10-169		
Surrogate: Phenol-d6			46.1	mg/l	40.0		115	10-166		
Surrogate: Nitrobenzene-d5			22.6	mg/l	20.0		113	18.8-170		
Surrogate: 2-Fluorobiphenyl			21.3	mg/l	20.0		106	35.1-154		
Surrogate: 2,4,6-Tribromophenol			49.2	mg/l	40.0		123	20-158		
Surrogate: Terphenyl-d14			21.0	mg/l	20.0		105	52.1-160		



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Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032042 - EPA 3010A TCLP/SPLP									
Blank (8032042-BLK1)					Prepared: 02/01/18 Analyzed: 02/04/18				
Aluminum	ND		0.500	mg/l					
Antimony	ND		0.0500	mg/l					
Arsenic	ND		0.0400	mg/l					
Barium	ND		0.0500	mg/l					
Beryllium	ND		0.0100	mg/l					
Cadmium	ND		0.0200	mg/l					
Chromium	ND		0.0250	mg/l					
Cobalt	ND		0.0500	mg/l					
Copper	ND		0.0500	mg/l					
Iron	ND		0.200	mg/l					
Lead	ND		0.0400	mg/l					
Manganese	ND		0.0500	mg/l					
Nickel	ND		0.250	mg/l					
Potassium	1.042507		1	mg/l					
Selenium	ND		0.100	mg/l					
Silver	ND		0.0200	mg/l					
Vanadium	0.0181	J	0.100	mg/l					
Zinc	ND		0.100	mg/l					

Batch: 8032086 - EPA 200 Series

Blank (8032086-BLK1)					Prepared: 02/01/18 Analyzed: 02/05/18				
Mercury	ND		0.000200	mg/l					

Batch: 8036011 - EPA 3010A TCLP/SPLP

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Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Blank (8036011-BLK1)					Prepared: 02/01/18	Analyzed: 02/05/18			
Thallium	ND		0.100	mg/l					

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Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032063 - EPA 3510C									
Blank (8032063-BLK1)					Prepared & Analyzed: 02/01/18				
Pyridine	ND		2.00	ug/l					
Benzidine	ND		5.00	ug/l					
1,4-Dichlorobenzene	ND		1.00	ug/l					
2,4-Dinitrotoluene	ND		1.00	ug/l					
3 & 4-Methylphenol	ND		1.00	ug/l					
Hexachlorobenzene	ND		1.00	ug/l					
Hexachlorobutadiene	ND		1.00	ug/l					
Hexachloroethane	ND		1.00	ug/l					
2-Methylphenol	ND		1.00	ug/l					
Nitrobenzene	ND		1.00	ug/l					
Pentachlorophenol	ND		5.00	ug/l					
2,4,5-Trichlorophenol	ND		1.00	ug/l					
2,4,6-Trichlorophenol	ND		1.00	ug/l					
<hr/>									
Surrogate: 2-Fluorophenol			10.8	ug/l	40.0		27.1 30.6-66.8		
Surrogate: Phenol-d6			8.17	ug/l	40.0		20.4 17.9-51.5		
Surrogate: Nitrobenzene-d5			12.2	ug/l	20.0		61.2 30.6-140		
Surrogate: 2-Fluorobiphenyl			12.3	ug/l	20.0		61.6 40.6-121		
Surrogate: 2,4,6-Tribromophenol			25.8	ug/l	40.0		64.4 50.4-131		
Surrogate: Terphenyl-d14			9.84	ug/l	20.0		49.2 10-185		
<hr/>									
LCS (8032063-BS1)					Prepared & Analyzed: 02/01/18				
Pyridine	14.1			ug/l	50.0		28.2 10-71		10
1,4-Dichlorobenzene	26.4			ug/l	50.0		52.8 21-65		10
2,4-Dinitrotoluene	42.3			ug/l	50.0		84.7 76-149		10
3 & 4-Methylphenol	29.1		1.00	ug/l			39-78		10

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 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032063 - EPA 3510C (Continued)									
LCS (8032063-BS1)					Prepared & Analyzed: 02/01/18				
Hexachlorobenzene	45.1			ug/l	50.0		90.3 60-108		10
Hexachlorobutadiene	28.8			ug/l	50.0		57.5 28-78		10
Hexachloroethane	24.3			ug/l	50.0		48.7 17-64		10
2-Methylphenol	27.2			ug/l	50.0		54.3 42-79		10
Nitrobenzene	35.5			ug/l	50.0		71.1 46-92		10
Pentachlorophenol	40.6			ug/l	50.0		81.1 47-127		10
2,4,5-Trichlorophenol	42.9			ug/l	50.0		85.8 57-116		10
2,4,6-Trichlorophenol	42.3			ug/l	50.0		84.6 55-125		10
<hr/>									
Surrogate: 2-Fluorophenol			15.1	ug/l	40.0		37.6 30.6-66.8		
Surrogate: Phenol-d6			11.8	ug/l	40.0		29.4 17.9-51.5		
Surrogate: Nitrobenzene-d5			15.6	ug/l	20.0		77.9 30.6-140		
Surrogate: 2-Fluorobiphenyl			16.4	ug/l	20.0		81.9 40.6-121		
Surrogate: 2,4,6-Tribromophenol			39.6	ug/l	40.0		99.0 50.4-131		
Surrogate: Terphenyl-d14			11.0	ug/l	20.0		55.0 10-185		
<hr/>									
Matrix Spike (8032063-MS1)		Source: 8A30147-01			Prepared & Analyzed: 02/01/18				
Pyridine	16.2			ug/l	50.0	0.00	32.4 13.2-70.5		49.4
1,4-Dichlorobenzene	15.3			ug/l	50.0	0.00	30.6 16.4-76.7		54.2
2,4-Dinitrotoluene	32.0			ug/l	50.0	0.00	64.0 64-115		20.6
3 & 4-Methylphenol	23.5		1.00	ug/l		ND	31.3-86.6		34.3
Hexachlorobenzene	33.2			ug/l	50.0	0.00	66.4 41.4-132		23.1
Hexachlorobutadiene	18.8			ug/l	50.0	0.00	37.6 21.8-94.1		42.9
Hexachloroethane	14.2			ug/l	50.0	0.00	28.5 14.1-74.4		58.3
2-Methylphenol	21.4			ug/l	50.0	0.00	42.8 38.5-85		32.5
Nitrobenzene	23.9			ug/l	50.0	0.00	47.8 37.8-106		28.9

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Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8032063 - EPA 3510C (Continued)									
Matrix Spike (8032063-MS1)		Source: 8A30147-01			Prepared & Analyzed: 02/01/18				
Pentachlorophenol	31.5			ug/l	50.0	0.00	63.0 60.9-128		23.6
2,4,5-Trichlorophenol	32.3			ug/l	50.0	0.00	64.5 67.7-115		21.9
2,4,6-Trichlorophenol	31.6			ug/l	50.0	0.00	63.2 60.2-107		22.7
<hr/>									
Surrogate: 2-Fluorophenol			11.6	ug/l	40.0		28.9 30.6-66.8		
Surrogate: Phenol-d6			8.89	ug/l	40.0		22.2 17.9-51.5		
Surrogate: Nitrobenzene-d5			11.1	ug/l	20.0		55.6 30.6-140		
Surrogate: 2-Fluorobiphenyl			12.7	ug/l	20.0		63.7 40.6-121		
Surrogate: 2,4,6-Tribromophenol			31.4	ug/l	40.0		78.5 50.4-131		
Surrogate: Terphenyl-d14			12.0	ug/l	20.0		59.8 10-185		
<hr/>									
Matrix Spike Dup (8032063-MSD1)		Source: 8A30147-01			Prepared & Analyzed: 02/01/18				
Pyridine	15.4			ug/l	50.0	0.00	30.8 13.2-70.5	4.94	49.4
1,4-Dichlorobenzene	17.2			ug/l	50.0	0.00	34.3 16.4-76.7	11.5	54.2
2,4-Dinitrotoluene	32.5			ug/l	50.0	0.00	65.0 64-115	1.58	20.6
3 & 4-Methylphenol	25.4		1.00	ug/l		ND	31.3-86.6	7.82	34.3
Hexachlorobenzene	33.0			ug/l	50.0	0.00	66.0 41.4-132	0.605	23.1
Hexachlorobutadiene	19.2			ug/l	50.0	0.00	38.5 21.8-94.1	2.47	42.9
Hexachloroethane	16.2			ug/l	50.0	0.00	32.4 14.1-74.4	13.0	58.3
2-Methylphenol	23.6			ug/l	50.0	0.00	47.2 38.5-85	9.77	32.5
Nitrobenzene	24.9			ug/l	50.0	0.00	49.9 37.8-106	4.30	28.9
Pentachlorophenol	31.5			ug/l	50.0	0.00	63.0 60.9-128	0.0318	23.6
2,4,5-Trichlorophenol	32.6			ug/l	50.0	0.00	65.1 67.7-115	0.925	21.9
2,4,6-Trichlorophenol	32.1			ug/l	50.0	0.00	64.1 60.2-107	1.51	22.7
<hr/>									
Surrogate: 2-Fluorophenol			13.4	ug/l	40.0		33.6 30.6-66.8		
Surrogate: Phenol-d6			10.0	ug/l	40.0		25.0 17.9-51.5		

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: Bulger F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
 Reported: 03/28/18 12:28

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8032063 - EPA 3510C (Continued)										
Matrix Spike Dup (8032063-MSD1)			Source: 8A30147-01			Prepared & Analyzed: 02/01/18				
Surrogate: Nitrobenzene-d5			11.8	ug/l	20.0		59.1	30.6-140		
Surrogate: 2-Fluorobiphenyl			13.1	ug/l	20.0		65.6	40.6-121		
Surrogate: 2,4,6-Tribromophenol			31.7	ug/l	40.0		79.3	50.4-131		
Surrogate: Terphenyl-d14			13.4	ug/l	20.0		67.0	10-185		



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Notes

- A9 This result is intended for end user internal monitoring purposes only. This analyte does not appear on the FLI scope of accreditation.
- D A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered above the acceptance range for the noted analyte.
- E A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered below the acceptance range for the noted analyte.
- F The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered above the acceptance range for the noted analyte.
- H The spike recovery was above the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I The spike recovery was below the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I4 Vials were prepared at the laboratory from the received container.
- J Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, the result is an estimated value.
- K The RPD result exceeded the quality control limits for the duplicate, Laboratory Control Sample Duplicate (LCSD), or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- L The noted analyte was detected in the method blank.
- P The noted surrogate value was below the acceptance range.
- Q Sample was analyzed at a dilution. Reporting limits were adjusted accordingly.
- T Result was over the calibration range, but within the linear dynamic range of the instrument for the noted analyte.
- Y It is the opinion of the laboratory that the result may be biased due to possible matrix interference.



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Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory; and should be considered as analyzed outside the EPA holding time.

^ The following analytes are to be filtered immediately upon sampling: Hexavalent Chromium. Filtration through a 0.45 micron filter within 15 minutes of sampling is required for compliance with the Clean Water Act (CWA) for reporting of hexavalent chromium to prevent interconversion of chromium species.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

* G indicates analysis performed by Fairway Laboratories, Inc. at the Greensburg location PaDEP: 65-00392. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody. Samples received at the laboratory after business hours are verified on the next business day. Discrepancies are documented on the Receiving Document.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved,

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.



2019 9th Ave.
P.O. Box 1925
Allioma, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

Client Page # 1 of 1

Client Name: Max Environmental
Address: 700 Max Drive
Bolgers, PA 15019
Contact: _____
Phone #: _____
Fax #: _____

Received on ice? Y N
Sample Temp: _____
PW/SID # _____

Reportable to PADEP? Yes No

LAB USE ONLY
Work Order # 9A30001
Attach # 1
FLI Page # 1 of 2
Tracking # _____
Bottle Type/Comments _____

Project Name: Bolgers WPTS Permit Renewal
Quote/PO #: _____

TAT: Normal Rush
Rush TAT subject to pre-approval and surcharge
Date Required: ___/___/___

Sample Description/Location	GRAB	Composite	Start Date	Start Time	End Date	End Time	Matrix			# of Containers	Analyses Requested	Remarks
							GRAB -or- Composite	Solid	Water			
001	X				1/25/18	0915	X		2	VOCs		
002	X				1/25/18	2200	X		1	X		
001		X			1/25/18	0948	X		2	SVOCs, PCBs, Pest. and Herb Metals, Total and Amenable Cyanide pH, Fluoride, Sulfide % Solids		
002		X			1/25/18	2200	X		1	TCLP, SVOCs, Metals, pH		

Sampled by: Bu Mack Date: 1/25/18 Time: _____
 (Signature) _____
 Received by: PC Date: 1/24/18 Time: 11:30
 Relinquished by: Eric R Date: 1/29/18 Time: 17:20
 Relinquished by: _____ Date: _____ Time: _____
 Relinquished by: _____ Date: _____ Time: _____

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse. White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Chain of Custody Receiving Document

Page 2 of 2

Lab # BA30001 #2

Receiver: JB

Date/Time of this check: 1/30/18 7:50 Client: Mr. Euv.

Received on ICE? * Sample Temperature when delivered to the Lab: 0 Acceptable? * or In cool down process? *
(Not applicable for WV compliance)

Custody Seals? N Intact? N

COC/Labels on bottles agree? * Correct containers for all the analysis requested? * Matrix: Seal D

COC #	Number and Type of BOTTLES						Other	Properly Preserved	Bacti	Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH				
001					1L		<input type="checkbox"/> *	<input type="checkbox"/> *		
002					1L		<input type="checkbox"/> *	<input type="checkbox"/> *		
001					1L	4 oz jar	<input type="checkbox"/> *	<input type="checkbox"/> *		
002					1L	4 oz jar	<input type="checkbox"/> *	<input type="checkbox"/> *		
002					1L		<input type="checkbox"/> *	<input type="checkbox"/> *		
							<input type="checkbox"/> *	<input type="checkbox"/> *		
							<input type="checkbox"/> *	<input type="checkbox"/> *		
							<input type="checkbox"/> *	<input type="checkbox"/> *		
							<input type="checkbox"/> *	<input type="checkbox"/> *		

*** DEVIATION PRESENT:**

No Ice ()

Not at Proper Temperature ()

Wrong Container ()

Missing Information: ()

CLIENT CALLED: YES () EMAIL EMU 1/30/18

By Whom: CUW Date: 1/30/18

CLIENT RESPONSE: Proceed with analysis; quality data Will Resample () Provided Information () No Response; Proceed and qualified ()

Client Contact: ANGELA Date: 1/30/18

* Comments: DID NOT RECEIVE VIALS FOR THE VOLS



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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
BULGER-CL001-032318	8C27001-01	Solid	Grab	03/23/18 10:10	03/26/18 18:40
BULGER-CL002-032318	8C27001-02	Solid	Grab	03/23/18 22:00	03/26/18 18:40
BULGER-CL001-032318	8C27001-03	Solid	Composite	03/23/18 10:38	03/26/18 18:40
BULGER-CL002-032318	8C27001-04	Solid	Composite	03/23/18 22:00	03/26/18 18:40

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
 Laboratory Director

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:10

Laboratory Sample ID: 8C27001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	-------------------	-----------	------

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

Acetone	10.3 J	2.32	15.0	mg/kg dry	03/29/18 15:26	EPA 8260B	mtc	D
Acrolein	<6.45	6.45	75.0	mg/kg dry	03/29/18 15:26	EPA 8260B	mtc	
2-Chloroethylvinyl ether	<1.02	1.02	75.0	mg/kg dry	03/29/18 15:26	EPA 8260B	mtc	
1,3,5-Trimethylbenzene	<0.0066	0.0066	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	<0.0059	0.0059	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Benzene	0.0192 J	0.0019	0.0294	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Toluene	0.0170 J	0.0018	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Ethylbenzene	<0.0035	0.0035	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Xylenes (total)	<0.0094	0.0094	0.147	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Isopropylbenzene	<0.0060	0.0060	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Methyl tert-butyl ether	<0.0021	0.0021	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Naphthalene	<0.0032	0.0032	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Acrylonitrile	<0.0066	0.0066	0.147	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Bromobenzene	<0.0025	0.0025	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Bromochloromethane	<0.0031	0.0031	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Bromodichloromethane	<0.0078	0.0078	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Bromoform	<0.0065	0.0065	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Bromomethane	<0.0028	0.0028	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	

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 (570) 494-6380
 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:10

Laboratory Sample ID: 8C27001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

2-Butanone	0.182	0.0220	0.147	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
sec-Butylbenzene	<0.0047	0.0047	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
tert-Butylbenzene	<0.0046	0.0046	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
n-Butylbenzene	<0.0054	0.0054	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Carbon disulfide	0.0404 J	0.0075	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Carbon tetrachloride	<0.0079	0.0079	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Chlorobenzene	<0.0016	0.0016	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Chloroethane	<0.0068	0.0068	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Chloroform	<0.0046	0.0046	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Chloromethane	<0.0026	0.0026	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
4-Chlorotoluene	<0.0051	0.0051	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
2-Chlorotoluene	<0.0053	0.0053	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2-Dibromo-3-chloropropane	<0.0043	0.0043	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	E
Dibromochloromethane	<0.0024	0.0024	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2-Dibromoethane (EDB)	<0.0057	0.0057	0.0294	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Dibromomethane	<0.0051	0.0051	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
trans-1,4-Dichloro-2-butene	<0.0051	0.0051	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2-Dichlorobenzene	<0.0050	0.0050	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:10

Laboratory Sample ID: 8C27001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,4-Dichlorobenzene	<0.0059	0.0059	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,3-Dichlorobenzene	<0.0048	0.0048	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Dichlorodifluoromethane	<0.0063	0.0063	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	E
1,2-Dichloroethane	<0.0029	0.0029	0.0294	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1-Dichloroethane	<0.0024	0.0024	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
trans-1,2-Dichloroethene	<0.0028	0.0028	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
cis-1,2-Dichloroethene	<0.0021	0.0021	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1-Dichloroethene	<0.0028	0.0028	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
2,2-Dichloropropane	<0.0051	0.0051	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,3-Dichloropropane	<0.0019	0.0019	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2-Dichloropropane	<0.0021	0.0021	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
trans-1,3-Dichloropropene	<0.0022	0.0022	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1-Dichloropropene	<0.0028	0.0028	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
cis-1,3-Dichloropropene	<0.0029	0.0029	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Hexachlorobutadiene	<0.0066	0.0066	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
2-Hexanone	<0.0047	0.0047	0.147	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Iodomethane	<0.0056	0.0056	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
p-Isopropyltoluene	<0.0050	0.0050	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:10

Laboratory Sample ID: 8C27001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

Methylene chloride	<0.0076	0.0076	0.294	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
4-Methyl-2-pentanone	0.0973 J	0.0022	0.147	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
n-Propylbenzene	<0.0048	0.0048	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Styrene	<0.0018	0.0018	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1,2,2-Tetrachloroethane	<0.0054	0.0054	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1,1,2-Tetrachloroethane	<0.0022	0.0022	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Tetrachloroethene	<0.0046	0.0046	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2,4-Trichlorobenzene	<0.0085	0.0085	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2,3-Trichlorobenzene	<0.0076	0.0076	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1,1-Trichloroethane	<0.0046	0.0046	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,1,2-Trichloroethane	<0.0038	0.0038	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Trichloroethene	<0.0031	0.0031	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Trichlorofluoromethane	<0.0044	0.0044	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
1,2,3-Trichloropropane	<0.0025	0.0025	0.0735	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
Vinyl chloride	<0.0031	0.0031	0.0294	mg/kg dry	03/29/18 02:47	EPA 8260B	mtc	
<i>Surrogate: 4-Bromofluorobenzene</i>		99 %	70-130		03/29/18 02:47	EPA 8260B	mtc	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	70-130		03/29/18 02:47	EPA 8260B	mtc	
<i>Surrogate: Fluorobenzene</i>		101 %	70-130		03/29/18 02:47	EPA 8260B	mtc	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:10

Laboratory Sample ID: 8C27001-01 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Conventional Chemistry Parameters by SM/EPA Methods

% Solids	6.92		0.100	%	03/28/18 15:30	SM 2540 G-97	pra	
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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

Acetone	7.17 J	1.77	11.4	mg/kg dry	03/29/18 15:54	EPA 8260B	mtc	D
Acrolein	<4.91	4.91	57.1	mg/kg dry	03/29/18 15:54	EPA 8260B	mtc	
2-Chloroethylvinyl ether	<0.777	0.777	57.1	mg/kg dry	03/29/18 15:54	EPA 8260B	mtc	
1,3,5-Trimethylbenzene	<0.0053	0.0053	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2,4-Trimethylbenzene	<0.0047	0.0047	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Benzene	0.0130 J	0.0015	0.0236	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Toluene	<0.0014	0.0014	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Ethylbenzene	<0.0028	0.0028	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Xylenes (total)	<0.0075	0.0075	0.118	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Isopropylbenzene	<0.0048	0.0048	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Methyl tert-butyl ether	<0.0017	0.0017	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Naphthalene	<0.0026	0.0026	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Acrylonitrile	<0.0053	0.0053	0.118	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Bromobenzene	<0.0020	0.0020	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Bromochloromethane	<0.0025	0.0025	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Bromodichloromethane	<0.0062	0.0062	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Bromoform	<0.0052	0.0052	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Bromomethane	<0.0022	0.0022	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

2-Butanone	0.133	0.0177	0.118	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
sec-Butylbenzene	<0.0038	0.0038	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
tert-Butylbenzene	<0.0037	0.0037	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
n-Butylbenzene	<0.0044	0.0044	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Carbon disulfide	0.103	0.0060	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Carbon tetrachloride	<0.0064	0.0064	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Chlorobenzene	<0.0013	0.0013	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Chloroethane	<0.0054	0.0054	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Chloroform	<0.0037	0.0037	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Chloromethane	<0.0021	0.0021	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
4-Chlorotoluene	<0.0041	0.0041	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
2-Chlorotoluene	<0.0042	0.0042	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2-Dibromo-3-chloropropane	<0.0034	0.0034	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	E
Dibromochloromethane	<0.0019	0.0019	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2-Dibromoethane (EDB)	<0.0046	0.0046	0.0236	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Dibromomethane	<0.0041	0.0041	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
trans-1,4-Dichloro-2-butene	<0.0041	0.0041	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2-Dichlorobenzene	<0.0040	0.0040	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

1,4-Dichlorobenzene	<0.0047	0.0047	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,3-Dichlorobenzene	<0.0039	0.0039	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Dichlorodifluoromethane	<0.0051	0.0051	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	E
1,2-Dichloroethane	<0.0024	0.0024	0.0236	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1-Dichloroethane	<0.0019	0.0019	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
trans-1,2-Dichloroethene	<0.0022	0.0022	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
cis-1,2-Dichloroethene	<0.0017	0.0017	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1-Dichloroethene	<0.0022	0.0022	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
2,2-Dichloropropane	<0.0041	0.0041	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,3-Dichloropropane	<0.0015	0.0015	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2-Dichloropropane	<0.0017	0.0017	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
trans-1,3-Dichloropropene	<0.0018	0.0018	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1-Dichloropropene	<0.0022	0.0022	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
cis-1,3-Dichloropropene	<0.0024	0.0024	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Hexachlorobutadiene	<0.0053	0.0053	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
2-Hexanone	<0.0038	0.0038	0.118	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Iodomethane	<0.0045	0.0045	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
p-Isopropyltoluene	<0.0040	0.0040	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	

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 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

14

Methylene chloride	<0.0061	0.0061	0.236	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
4-Methyl-2-pentanone	0.0884J	0.0018	0.118	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
n-Propylbenzene	<0.0039	0.0039	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Styrene	<0.0014	0.0014	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1,2,2-Tetrachloroethane	<0.0044	0.0044	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1,1,2-Tetrachloroethane	<0.0018	0.0018	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Tetrachloroethene	<0.0037	0.0037	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2,4-Trichlorobenzene	<0.0068	0.0068	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2,3-Trichlorobenzene	<0.0061	0.0061	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1,1-Trichloroethane	<0.0037	0.0037	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,1,2-Trichloroethane	<0.0031	0.0031	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Trichloroethene	<0.0025	0.0025	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Trichlorofluoromethane	<0.0035	0.0035	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
1,2,3-Trichloropropane	<0.0020	0.0020	0.0589	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
Vinyl chloride	<0.0025	0.0025	0.0236	mg/kg dry	03/29/18 03:16	EPA 8260B	mtc	
<i>Surrogate: 4-Bromofluorobenzene</i>		98 %	70-130		03/29/18 03:16	EPA 8260B	mtc	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	70-130		03/29/18 03:16	EPA 8260B	mtc	
<i>Surrogate: Fluorobenzene</i>		101 %	70-130		03/29/18 03:16	EPA 8260B	mtc	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-02 (Solid/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Conventional Chemistry Parameters by SM/EPA Methods

% Solids	8.08	0.100	%	03/28/18 15:30	SM 2540 G-97	pra		
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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Silver	<3.50	3.50	11.7	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Aluminum	64600	37.9	292	mg/kg dry	04/01/18 13:54	EPA 6010B/2.0	sr	T
Arsenic	11.2 J	9.34	23.3	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Barium	293	8.76	29.2	mg/kg dry	04/01/18 13:54	EPA 6010B/2.0	sr	
Beryllium	12.4	0.700	5.84	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Cadmium	6.02 J	1.40	11.7	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Cobalt	178	6.71	29.2	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Chromium	246	1.37	14.6	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Copper	236	8.17	29.2	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Iron	18200	52.5	117	mg/kg dry	04/01/18 13:54	EPA 6010B/2.0	sr	T
Potassium	2730	277	584	mg/kg dry	04/01/18 13:54	EPA 6010B/2.0	sr	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	-------------------	-----------	------

Metals by Prep Method EPA 3050B

Manganese	16700	16.3	29.2	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	T
Nickel	1050	4.67	146	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Lead	83.3	3.21	23.3	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Antimony	<26.0	26.0	29.2	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Selenium	<23.9	23.9	58.4	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Thallium	<8.46	8.46	58.4	mg/kg dry	04/01/18 13:57	EPA 6010B/2.0	sr	
Vanadium	45.1 J	7.00	58.4	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	
Zinc	2380	8.17	58.4	mg/kg dry	04/01/18 13:56	EPA 6010B/2.0	sr	

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 20.6°C	8.84			pH Units	03/27/18 14:02	SW846-9045 D	elb	
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Calculated Analytes

Amenable Cyanide	<2.02	2.02	8.44	mg/kg dry	04/03/18 11:57	SM20-4500 CN-C+E+G	caa	
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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<92.5	92.5	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
Acifluorfen	<12.1	12.1	56.5	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
2,4-DB	<89.3	89.3	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
2,4,5-T	<58.0	58.0	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
2,4,5-TP (Silvex)	<72.5	72.5	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
Dalapon	<319	319	566	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
Dicamba	<47.0	47.0	56.5	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
Dichloroprop	<70.1	70.1	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
Dinoseb	<76.4	76.4	113	ug/kg dry	04/11/18 14:44	EPA 8151A	CDB	
<i>Surrogate: 2,4-DCAA</i>		59 %	40.6-150		04/11/18 14:44	EPA 8151A	CDB	

Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	1590	17.2	677	mg/kg dry	03/29/18 06:43	EPA 9056A	bdw	
% Solids	5.86		0.100	%	03/28/18 15:30	SM 2540 G-97	pra	
Sulfide	<30.6	30.6	325	mg/kg dry	03/27/18 10:00	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	<2.02	2.02	8.44	mg/kg dry	04/03/18 11:57	EPA 9014	caa	
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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by EPA 6000/7000 Series Methods

Mercury	0.123	0.00985	0.0232	mg/kg dry	03/30/18 13:50	EPA 7471B	jks	
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Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<3.94	3.94	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	F, H
alpha-BHC	<2.84	2.84	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
beta-BHC	<14.4	14.4	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	D, G, K
delta-BHC	<3.31	3.31	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
gamma-BHC (Lindane)	<19.9	19.9	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	I, K
Chlordane (tech)	<395	395	1580	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
4,4'-DDD	<8.68	8.68	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
4,4'-DDE	<3.94	3.94	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
4,4'-DDT	<9.47	9.47	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Dieldrin	<3.79	3.79	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Endosulfan I	<3.47	3.47	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	F
Endosulfan II	<4.42	4.42	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	F
Endosulfan sulfate	<12.6	12.6	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	D, F, H
Endrin	<5.36	5.36	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	H
Endrin aldehyde	<5.99	5.99	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Heptachlor	<3.31	3.31	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	D, K

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Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	-------------------	-----------	------

Organochlorine Pesticides by EPA Extraction Method 3541

Heptachlor epoxide	<3.94	3.94	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Methoxychlor	<6.94	6.94	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	D
Toxaphene	<658	658	1580	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
alpha-Chlordane	<13.3	13.3	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Isodrin	<3.16	3.16	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
gamma-Chlordane	<12.6	12.6	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
Endrin ketone	<15.5	15.5	31.6	ug/kg dry	04/06/18 21:03	EPA 8081B	CDB	
<i>Surrogate: Tetrachloro-meta-xylene</i>		150 %	40-157		04/06/18 21:03	EPA 8081B	CDB	
<i>Surrogate: Decachlorobiphenyl</i>		150 %	57.1-153		04/06/18 21:03	EPA 8081B	CDB	

Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.770	0.770	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1221	<0.267	0.267	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1232	<0.204	0.204	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1242	<0.068	0.068	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1248	<0.140	0.140	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1254	<0.300	0.300	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
PCB-1260	<0.451	0.451	0.919	mg/kg dry	03/30/18 06:19	EPA 8082	CDB	
<i>Surrogate: Tetrachloro-meta-xylene</i>		66.6 %	11-140		03/30/18 06:19	EPA 8082	CDB	

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Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Polychlorinated Biphenyls by EPA Extraction Method 3541

Surrogate: Decachlorobiphenyl 77.1 % 24.4-140 03/30/18 06:19 EPA 8082 CDB

Semivolatile Organic Compounds by EPA Extraction Method 3541

Benzidine	<5.73	5.73	81.8	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	F
Diphenylamine	<1.96	1.96	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Pyridine	<8.51	8.51	32.7	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Acenaphthene	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Acenaphthylene	<1.31	1.31	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Anthracene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzoic acid	<7.04	7.04	164	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	G
Benzo (a) anthracene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzo (b) fluoranthene	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzo (k) fluoranthene	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzo (g,h,i) perylene	<1.31	1.31	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzo (a) pyrene	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Benzyl alcohol	<2.29	2.29	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Bis(2-chloroethoxy)methane	<2.29	2.29	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Bis(2-chloroethyl)ether	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Bis(2-chloroisopropyl)ether	<0.982	0.982	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	A9

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 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

www.fairwaylaboratories.com

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Bis(2-ethylhexyl)phthalate	<4.91	4.91	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Bromophenyl phenyl ether	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Butyl benzyl phthalate	<1.96	1.96	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Chloroaniline	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Chloro-3-methylphenol	<1.47	1.47	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Chloronaphthalene	<0.982	0.982	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Chlorophenol	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Chlorophenyl phenyl ether	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Chrysene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Dibenz (a,h) anthracene	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Dibenzofuran	<0.491	0.491	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Di-n-butyl phthalate	3.44 J	3.44	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
1,2-Dichlorobenzene	<1.47	1.47	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
1,3-Dichlorobenzene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
1,4-Dichlorobenzene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
3,3'-Dichlorobenzidine	<1.47	1.47	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2,4-Dichlorophenol	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Diethyl phthalate	<1.64	1.64	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4-Dimethylphenol	<1.31	1.31	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Dimethyl phthalate	<0.982	0.982	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4,6-Dinitro-2-methylphenol	<5.24	5.24	81.8	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2,4-Dinitrophenol	<4.26	4.26	81.8	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2,4-Dinitrotoluene	<3.44	3.44	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2,6-Dinitrotoluene	<3.11	3.11	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Di-n-octyl phthalate	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Aniline	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Naphthalene	<0.982	0.982	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
N-Nitrosodimethylamine	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Acetophenone	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
3 & 4-Methylphenol	<1.47	1.47	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
1,2-Diphenylhydrazine	<0.655	0.655	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Fluoranthene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Fluorene	<0.655	0.655	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Hexachlorobenzene	<1.96	1.96	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Hexachlorobutadiene	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Hexachlorocyclopentadiene	<4.09	4.09	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Hexachloroethane	<1.96	1.96	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Indeno (1,2,3-cd) pyrene	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Isophorone	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Methylnaphthalene	<1.31	1.31	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Methylphenol	<2.62	2.62	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Nitroaniline	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
3-Nitroaniline	<4.58	4.58	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Nitroaniline	<3.76	3.76	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Nitrobenzene	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2-Nitrophenol	<2.45	2.45	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
4-Nitrophenol	<4.09	4.09	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
N-Nitrosodiphenylamine	<2.62	2.62	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
N-Nitrosodi-n-propylamine	<1.64	1.64	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Pentachlorophenol	<4.09	4.09	81.8	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Phenanthrene	<0.818	0.818	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Phenol	<2.13	2.13	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Pyrene	<1.15	1.15	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
1,2,4-Trichlorobenzene	<1.80	1.80	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4,5-Trichlorophenol	<2.78	2.78	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
2,4,6-Trichlorophenol	<2.62	2.62	16.4	mg/kg dry	04/02/18 18:40	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol		82 %	10-169		04/02/18 18:40	EPA 8270D	CDB	
Surrogate: Phenol-d6		84 %	10-166		04/02/18 18:40	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5		103 %	18.8-170		04/02/18 18:40	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl		84 %	35.1-154		04/02/18 18:40	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol		92 %	20-158		04/02/18 18:40	EPA 8270D	CDB	
Surrogate: Terphenyl-d14		105 %	52.1-160		04/02/18 18:40	EPA 8270D	CDB	

TCLP Extraction by EPA 1311

# pH @ 22.6°C	5.68			pH Units	03/28/18 08:15	EPA 1311	cjw	
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TCLP Metals extracted by EPA 1311

Silver	<0.0200	0.0200		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Aluminum	3.22	0.500		mg/l	03/30/18 20:28	EPA 6010B/2.0	sr	
Arsenic	<0.0400	0.0400		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Barium	0.405	0.0500		mg/l	03/30/18 20:28	EPA 6010B/2.0	sr	
Beryllium	<0.0100	0.0100		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Cadmium	<0.0200		0.0200	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Cobalt	0.119		0.0500	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Chromium	0.0471		0.0250	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Copper	<0.0500		0.0500	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Iron	0.260		0.200	mg/l	03/30/18 20:28	EPA 6010B/2.0	sr	
Mercury	<0.000590	0.000590	0.00200	mg/l	03/29/18 14:32	EPA 7471B	jks	Q
Potassium	6.621105	0.26223	1	mg/l	03/30/18 20:28	EPA 6010B/2.0	sr	
Manganese	16.1		0.0500	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	T
Nickel	1.05		0.250	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Lead	<0.0400		0.0400	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Antimony	<0.0500		0.0500	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Selenium	<0.100		0.100	mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Thallium	<0.100	0.100		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Vanadium	<0.100	0.100		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	
Zinc	0.275	0.100		mg/l	03/30/18 20:30	EPA 6010B/2.0	sr	

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Benzidine	<11.0	11.0	250	ug/l	04/02/18 16:54	EPA 8270D	CDB	F
Pyridine	<13.5	13.5	100	ug/l	04/02/18 16:54	EPA 8270D	CDB	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Hexachloroethane	<5.50	5.50	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
2-Methylphenol	<6.50	6.50	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Nitrobenzene	<6.00	6.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Pentachlorophenol	<13.5	13.5	250	ug/l	04/02/18 16:54	EPA 8270D	CDB	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL001-032318

Date/Time Sampled: 03/23/18 10:38

Laboratory Sample ID: 8C27001-03 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	04/02/18 16:54	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol		37.8 %	30.6-66.8		04/02/18 16:54	EPA 8270D	CDB	
Surrogate: Phenol-d6		25.7 %	17.9-51.5		04/02/18 16:54	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5		64.7 %	30.6-140		04/02/18 16:54	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl		56.2 %	40.6-121		04/02/18 16:54	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol		70.4 %	50.4-131		04/02/18 16:54	EPA 8270D	CDB	
Surrogate: Terphenyl-d14		74.8 %	10-185		04/02/18 16:54	EPA 8270D	CDB	

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Max Environmental
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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Silver	<2.41	2.41	8.05	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Aluminum	46400	26.1	201	mg/kg dry	04/01/18 14:02	EPA 6010B/2.0	sr	T
Arsenic	10.1 J	6.44	16.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Barium	86.8	6.03	20.1	mg/kg dry	04/01/18 14:02	EPA 6010B/2.0	sr	
Beryllium	8.96	0.483	4.02	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Cadmium	4.51 J	0.965	8.05	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Cobalt	131	4.63	20.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Chromium	180	0.945	10.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Copper	174	5.63	20.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Iron	13500	36.2	80.5	mg/kg dry	04/01/18 14:02	EPA 6010B/2.0	sr	T
Potassium	1780	191	402	mg/kg dry	04/01/18 14:02	EPA 6010B/2.0	sr	

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Metals by Prep Method EPA 3050B

Manganese	12200	11.3	20.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	T
Nickel	759	3.22	101	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Lead	63.2	2.21	16.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Antimony	<17.9	17.9	20.1	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Selenium	17.4 J	16.5	40.2	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Thallium	6.61 J	5.83	40.2	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Vanadium	31.3 J	4.83	40.2	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	
Zinc	1720	5.63	40.2	mg/kg dry	04/01/18 14:04	EPA 6010B/2.0	sr	

Analyses to be performed immediately upon sampling. See Definition indicated by: #

# pH @ 20.4°C	8.87			pH Units	03/27/18 14:02	SW846-9045 D	elb	
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Calculated Analytes

Amenable Cyanide	<1.34	1.34	5.60	mg/kg dry	04/03/18 11:57	SM20-4500 CN-C+E+G	caa	
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Chlorinated Herbicides by EPA Method 8151A

2,4-D	<63.4	63.4	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	K
Acifluorfen	<8.32	8.32	38.7	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	K
2,4-DB	<61.2	61.2	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	K
2,4,5-T	<39.8	39.8	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	K
2,4,5-TP (Silvex)	<49.6	49.6	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	K
Dalapon	<219	219	387	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	I
Dicamba	<32.2	32.2	38.7	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	
Dichloroprop	<48.0	48.0	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	
Dinoseb	<52.3	52.3	77.4	ug/kg dry	04/11/18 15:50	EPA 8151A	CDB	
<i>Surrogate: 2,4-DCAA</i>		55 %	40.6-150		04/11/18 15:50	EPA 8151A	CDB	

Conventional Chemistry Parameters by SM/EPA Methods

Fluoride	961	10.4	409	mg/kg dry	03/29/18 06:59	EPA 9056A	bdw	
% Solids	8.51		0.100	%	03/28/18 15:30	SM 2540 G-97	pra	
Sulfide	<21.5	21.5	228	mg/kg dry	03/27/18 10:00	EPA SW846 9030/9034	pra	

Cyanide by Preparation Method EPA 9010

Cyanide (total)	<1.34	1.34	5.60	mg/kg dry	04/03/18 11:57	EPA 9014	caa	
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Metals by EPA 6000/7000 Series Methods

Mercury	0.124	0.00667	0.0157	mg/kg dry	03/30/18 13:52	EPA 7471B	jks	
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Organochlorine Pesticides by EPA Extraction Method 3541

Aldrin	<2.90	2.90	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	F
alpha-BHC	<2.09	2.09	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
beta-BHC	<10.6	10.6	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	D, G
delta-BHC	<2.44	2.44	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
gamma-BHC (Lindane)	<14.6	14.6	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Chlordane (tech)	<291	291	1160	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
4,4'-DDD	<6.39	6.39	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
4,4'-DDE	<2.90	2.90	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
4,4'-DDT	<6.97	6.97	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Dieldrin	<2.79	2.79	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Endosulfan I	<2.56	2.56	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	F
Endosulfan II	<3.25	3.25	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	F
Endosulfan sulfate	<9.29	9.29	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	D, F
Endrin	<3.95	3.95	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Endrin aldehyde	<4.41	4.41	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Heptachlor	<2.44	2.44	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	D

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Organochlorine Pesticides by EPA Extraction Method 3541

Heptachlor epoxide	<2.90	2.90	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Methoxychlor	<5.11	5.11	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	D
Toxaphene	<484	484	1160	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
alpha-Chlordane	<9.76	9.76	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Isodrin	<2.32	2.32	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
gamma-Chlordane	<9.29	9.29	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
Endrin ketone	<11.4	11.4	23.2	ug/kg dry	04/06/18 22:38	EPA 8081B	CDB	
<i>Surrogate: Tetrachloro-meta-xylene</i>		79.9 %		40-157	04/06/18 22:38	EPA 8081B	CDB	
<i>Surrogate: Decachlorobiphenyl</i>		111 %		57.1-153	04/06/18 22:38	EPA 8081B	CDB	

Polychlorinated Biphenyls by EPA Extraction Method 3541

PCB-1016	<0.460	0.460	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1221	<0.159	0.159	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1232	<0.122	0.122	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1242	<0.041	0.041	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1248	<0.083	0.083	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1254	<0.179	0.179	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
PCB-1260	<0.269	0.269	0.549	mg/kg dry	03/30/18 06:50	EPA 8082	CDB	
<i>Surrogate: Tetrachloro-meta-xylene</i>		63.2 %		11-140	03/30/18 06:50	EPA 8082	CDB	

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Polychlorinated Biphenyls by EPA Extraction Method 3541

Surrogate: Decachlorobiphenyl 74.6 % 24.4-140 03/30/18 06:50 EPA 8082 CDB

Semivolatile Organic Compounds by EPA Extraction Method 3541

Diphenylamine	<1.38	1.38	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Pyridine	<5.97	5.97	23.0	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzidine	<4.02	4.02	57.4	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	F
Acenaphthene	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Acenaphthylene	<0.919	0.919	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Anthracene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzoic acid	<4.94	4.94	115	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	G
Benzo (a) anthracene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzo (b) fluoranthene	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzo (k) fluoranthene	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzo (g,h,i) perylene	<0.919	0.919	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzo (a) pyrene	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Benzyl alcohol	<1.61	1.61	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Bis(2-chloroethoxy)methane	<1.61	1.61	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Bis(2-chloroethyl)ether	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Bis(2-chloroisopropyl)ether	<0.689	0.689	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	A9

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Semivolatile Organic Compounds by EPA Extraction Method 3541

Bis(2-ethylhexyl)phthalate	<3.44	3.44	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Bromophenyl phenyl ether	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Butyl benzyl phthalate	<1.38	1.38	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Chloroaniline	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Chloro-3-methylphenol	<1.03	1.03	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Chloronaphthalene	<0.689	0.689	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Chlorophenol	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Chlorophenyl phenyl ether	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Chrysene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Dibenz (a,h) anthracene	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Dibenzofuran	<0.344	0.344	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Di-n-butyl phthalate	<2.41	2.41	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
1,2-Dichlorobenzene	<1.03	1.03	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
1,3-Dichlorobenzene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
1,4-Dichlorobenzene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
3,3'-Dichlorobenzidine	<1.03	1.03	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2,4-Dichlorophenol	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Diethyl phthalate	<1.15	1.15	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	

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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4-Dimethylphenol	<0.919	0.919	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Dimethyl phthalate	<0.689	0.689	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4,6-Dinitro-2-methylphenol	<3.67	3.67	57.4	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2,4-Dinitrophenol	<2.99	2.99	57.4	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2,4-Dinitrotoluene	<2.41	2.41	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2,6-Dinitrotoluene	<2.18	2.18	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Di-n-octyl phthalate	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Aniline	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Naphthalene	<0.689	0.689	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
N-Nitrosodimethylamine	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
3 & 4-Methylphenol	<1.03	1.03	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Acetophenone	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
1,2-Diphenylhydrazine	<0.459	0.459	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Fluoranthene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Fluorene	<0.459	0.459	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Hexachlorobenzene	<1.38	1.38	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Hexachlorobutadiene	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Hexachlorocyclopentadiene	<2.87	2.87	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	

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 (570) 494-6380
 PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

Hexachloroethane	<1.38	1.38	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Indeno (1,2,3-cd) pyrene	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Isophorone	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Methylnaphthalene	<0.919	0.919	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Methylphenol	<1.84	1.84	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Nitroaniline	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
3-Nitroaniline	<3.21	3.21	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Nitroaniline	<2.64	2.64	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Nitrobenzene	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2-Nitrophenol	<1.72	1.72	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
4-Nitrophenol	<2.87	2.87	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
N-Nitrosodiphenylamine	<1.84	1.84	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
N-Nitrosodi-n-propylamine	<1.15	1.15	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Pentachlorophenol	<2.87	2.87	57.4	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Phenanthrene	<0.574	0.574	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Phenol	<1.49	1.49	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Pyrene	<0.804	0.804	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
1,2,4-Trichlorobenzene	<1.26	1.26	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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Semivolatile Organic Compounds by EPA Extraction Method 3541

2,4,5-Trichlorophenol	<1.95	1.95	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
2,4,6-Trichlorophenol	<1.84	1.84	11.5	mg/kg dry	04/02/18 19:07	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol		97 %	10-169		04/02/18 19:07	EPA 8270D	CDB	
Surrogate: Phenol-d6		97 %	10-166		04/02/18 19:07	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5		114 %	18.8-170		04/02/18 19:07	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl		94 %	35.1-154		04/02/18 19:07	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol		101 %	20-158		04/02/18 19:07	EPA 8270D	CDB	
Surrogate: Terphenyl-d14		113 %	52.1-160		04/02/18 19:07	EPA 8270D	CDB	

TCLP Extraction by EPA 1311

# pH @ 22°C	5.72			pH Units	03/28/18 08:15	EPA 1311	cjw	
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TCLP Metals extracted by EPA 1311

Silver	<0.0200	0.0200		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Aluminum	1.34	0.500		mg/l	03/30/18 20:36	EPA 6010B/2.0	sr	
Arsenic	<0.0400	0.0400		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Barium	0.554	0.0500		mg/l	03/30/18 20:36	EPA 6010B/2.0	sr	
Beryllium	<0.0100	0.0100		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Cadmium	<0.0200		0.0200	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Cobalt	0.118		0.0500	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Chromium	0.0504		0.0250	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Copper	<0.0500		0.0500	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Iron	<0.200		0.200	mg/l	03/30/18 20:36	EPA 6010B/2.0	sr	
Mercury	<0.000590	0.000590	0.00200	mg/l	03/29/18 14:34	EPA 7471B	jks	Q
Potassium	9.16676	0.26223	1	mg/l	03/30/18 20:35	EPA 6010B/2.0	sr	
Manganese	24.5		0.0500	mg/l	03/30/18 20:37	EPA 6010B/2.0	sr	T
Nickel	1.38		0.250	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Lead	<0.0400		0.0400	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Antimony	<0.0500		0.0500	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Selenium	<0.100		0.100	mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	

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Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Metals extracted by EPA 1311

Thallium	<0.100	0.100		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Vanadium	<0.100	0.100		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	
Zinc	0.191	0.100		mg/l	03/30/18 20:38	EPA 6010B/2.0	sr	

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Benzidine	<11.0	11.0	250	ug/l	04/03/18 11:38	EPA 8270D	CDB	F
Pyridine	<13.5	13.5	100	ug/l	04/03/18 11:38	EPA 8270D	CDB	
1,4-Dichlorobenzene	<4.00	4.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
2,4-Dinitrotoluene	<8.50	8.50	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
3 & 4-Methylphenol	<4.50	4.50	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Hexachlorobenzene	<9.00	9.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Hexachlorobutadiene	<8.00	8.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Hexachloroethane	<5.50	5.50	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
2-Methylphenol	<6.50	6.50	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Nitrobenzene	<6.00	6.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Pentachlorophenol	<13.5	13.5	250	ug/l	04/03/18 11:38	EPA 8270D	CDB	
2,4,5-Trichlorophenol	<6.00	6.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	

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 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Client Sample ID: BULGER-CL002-032318

Date/Time Sampled: 03/23/18 22:00

Laboratory Sample ID: 8C27001-04 (Solid/Composite)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Analytical Method	* Analyst	Note
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TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

2,4,6-Trichlorophenol	<6.00	6.00	50.0	ug/l	04/03/18 11:38	EPA 8270D	CDB	
Surrogate: 2-Fluorophenol		41.5 %	30.6-66.8		04/03/18 11:38	EPA 8270D	CDB	
Surrogate: Phenol-d6		27.6 %	17.9-51.5		04/03/18 11:38	EPA 8270D	CDB	
Surrogate: Nitrobenzene-d5		79.8 %	30.6-140		04/03/18 11:38	EPA 8270D	CDB	
Surrogate: 2-Fluorobiphenyl		75.1 %	40.6-121		04/03/18 11:38	EPA 8270D	CDB	
Surrogate: 2,4,6-Tribromophenol		85.0 %	50.4-131		04/03/18 11:38	EPA 8270D	CDB	
Surrogate: Terphenyl-d14		105 %	10-185		04/03/18 11:38	EPA 8270D	CDB	

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Reported:
 05/22/18 08:50

Quality Control

Metals by Prep Method EPA 3050B

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8091003 - EPA 3050B										
Blank (8091003-BLK1)										
					Prepared: 03/25/18 Analyzed: 03/30/18					
Manganese	ND		5.00	mg/kg wet						
Aluminum	ND		50.0	mg/kg wet						
Antimony	ND		5.00	mg/kg wet						
Arsenic	ND		4.00	mg/kg wet						
Barium	ND		5.00	mg/kg wet						
Beryllium	ND		1.00	mg/kg wet						
Cadmium	ND		2.00	mg/kg wet						
Chromium	ND		2.50	mg/kg wet						
Cobalt	ND		5.00	mg/kg wet						
Copper	ND		5.00	mg/kg wet						
Iron	ND		20.0	mg/kg wet						
Lead	ND		4.00	mg/kg wet						
Nickel	ND		25.0	mg/kg wet						
Potassium	ND		100	mg/kg wet						
Selenium	ND		10.0	mg/kg wet						
Silver	ND		2.00	mg/kg wet						
Thallium	ND		10.0	mg/kg wet						
Zinc	ND		10.0	mg/kg wet						
Vanadium	ND		10.0	mg/kg wet						

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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8091003 - EPA 3050B (Continued)										
LCS (8091003-BS1)										
					Prepared: 03/25/18 Analyzed: 03/30/18					
Aluminum	1030		50.0	mg/kg wet	1000		103	80-120		200
Manganese	206		5.00	mg/kg wet	200		103	80-120		200
Antimony	207		5.00	mg/kg wet	200		104	80-120		200
Arsenic	77.2		4.00	mg/kg wet	80.0		97	80-120		200
Barium	203		5.00	mg/kg wet	200		101	80-120		200
Beryllium	19.8		1.00	mg/kg wet	20.0		99	80-120		200
Cadmium	40.2		2.00	mg/kg wet	40.0		101	80-120		200
Chromium	20.2		2.50	mg/kg wet	20.0		101	80-120		200
Cobalt	202		5.00	mg/kg wet	200		101	80-120		200
Copper	201		5.00	mg/kg wet	200		101	80-120		200
Iron	408		20.0	mg/kg wet	400		102	80-120		200
Lead	80.4		4.00	mg/kg wet	80.0		101	80-120		200
Nickel	202		25.0	mg/kg wet	200		101	80-120		200
Potassium	4040		100	mg/kg wet	4000		101	80-120		200
Selenium	185		10.0	mg/kg wet	200		93	80-120		200
Silver	37.5		2.00	mg/kg wet	40.0		94	80-120		200
Thallium	81.8		10.0	mg/kg wet	80.0		102	80-120		200
Zinc	201		10.0	mg/kg wet	200		100	80-120		200
Vanadium	199		10.0	mg/kg wet	200		100	80-120		200

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 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Metals by Prep Method EPA 3050B (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8087080 - Volatiles										
Blank (8087080-BLK1)										
Prepared & Analyzed: 03/29/18										
1,3,5-Trimethylbenzene	ND		0.0050	mg/kg wet						
1,2,4-Trimethylbenzene	ND		0.0050	mg/kg wet						
Benzene	ND		0.0020	mg/kg wet						
Toluene	ND		0.0050	mg/kg wet						
Ethylbenzene	ND		0.0050	mg/kg wet						
Xylenes (total)	ND		0.0100	mg/kg wet						
Isopropylbenzene	ND		0.0050	mg/kg wet						
Methyl tert-butyl ether	ND		0.0050	mg/kg wet						
Naphthalene	ND		0.0050	mg/kg wet						
Acetone	0.007	J	0.0100	mg/kg wet						
Acrolein	ND		0.0500	mg/kg wet						
Acrylonitrile	ND		0.0100	mg/kg wet						
Bromobenzene	ND		0.0050	mg/kg wet						
Bromochloromethane	ND		0.0050	mg/kg wet						
Bromodichloromethane	ND		0.0050	mg/kg wet						
Bromoform	ND		0.0050	mg/kg wet						
Bromomethane	ND		0.0050	mg/kg wet						
2-Butanone	ND		0.0100	mg/kg wet						
sec-Butylbenzene	ND		0.0050	mg/kg wet						
tert-Butylbenzene	ND		0.0050	mg/kg wet						
n-Butylbenzene	ND		0.0050	mg/kg wet						
Carbon disulfide	ND		0.0050	mg/kg wet						
Carbon tetrachloride	ND		0.0050	mg/kg wet						
Chlorobenzene	ND		0.0050	mg/kg wet						
Chloroethane	ND		0.0050	mg/kg wet						

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 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8087080 - Volatiles (Continued)										
Blank (8087080-BLK1)					Prepared & Analyzed: 03/29/18					
2-Chloroethylvinyl ether	ND		0.0500	mg/kg wet						
Chloroform	ND		0.0050	mg/kg wet						
Chloromethane	ND		0.0050	mg/kg wet						
4-Chlorotoluene	ND		0.0050	mg/kg wet						
2-Chlorotoluene	ND		0.0050	mg/kg wet						
1,2-Dibromo-3-chloropropane	ND		0.0050	mg/kg wet						
Dibromochloromethane	ND		0.0050	mg/kg wet						
1,2-Dibromoethane (EDB)	ND		0.0020	mg/kg wet						
Dibromomethane	ND		0.0050	mg/kg wet						
trans-1,4-Dichloro-2-butene	ND		0.0050	mg/kg wet						
1,2-Dichlorobenzene	ND		0.0050	mg/kg wet						
1,4-Dichlorobenzene	ND		0.0050	mg/kg wet						
1,3-Dichlorobenzene	ND		0.0050	mg/kg wet						
Dichlorodifluoromethane	ND		0.0050	mg/kg wet						
1,2-Dichloroethane	ND		0.0020	mg/kg wet						
1,1-Dichloroethane	ND		0.0050	mg/kg wet						
trans-1,2-Dichloroethene	ND		0.0050	mg/kg wet						
cis-1,2-Dichloroethene	ND		0.0050	mg/kg wet						
1,1-Dichloroethene	ND		0.0050	mg/kg wet						
2,2-Dichloropropane	ND		0.0050	mg/kg wet						
1,3-Dichloropropane	ND		0.0050	mg/kg wet						
1,2-Dichloropropane	ND		0.0050	mg/kg wet						
trans-1,3-Dichloropropene	ND		0.0050	mg/kg wet						
1,1-Dichloropropene	ND		0.0050	mg/kg wet						
cis-1,3-Dichloropropene	ND		0.0050	mg/kg wet						

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8087080 - Volatiles (Continued)									
Blank (8087080-BLK1)					Prepared & Analyzed: 03/29/18				
Hexachlorobutadiene	ND		0.0050	mg/kg wet					
2-Hexanone	ND		0.0100	mg/kg wet					
Iodomethane	ND		0.0050	mg/kg wet					
p-Isopropyltoluene	ND		0.0050	mg/kg wet					
Methylene chloride	ND		0.0200	mg/kg wet					
4-Methyl-2-pentanone	ND		0.0100	mg/kg wet					
n-Propylbenzene	ND		0.0050	mg/kg wet					
Styrene	ND		0.0050	mg/kg wet					
1,1,2,2-Tetrachloroethane	ND		0.0050	mg/kg wet					
1,1,1,2-Tetrachloroethane	ND		0.0050	mg/kg wet					
Tetrachloroethene	ND		0.0050	mg/kg wet					
1,2,4-Trichlorobenzene	ND		0.0050	mg/kg wet					
1,2,3-Trichlorobenzene	ND		0.0050	mg/kg wet					
1,1,1-Trichloroethane	ND		0.0050	mg/kg wet					
1,1,2-Trichloroethane	ND		0.0050	mg/kg wet					
Trichloroethene	ND		0.0050	mg/kg wet					
Trichlorofluoromethane	ND		0.0050	mg/kg wet					
1,2,3-Trichloropropane	ND		0.0050	mg/kg wet					
Vinyl chloride	ND		0.0020	mg/kg wet					
<i>Surrogate: 4-Bromofluorobenzene</i>			0.0945	mg/kg wet	0.100		94	70-130	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			0.0975	mg/kg wet	0.100		98	70-130	
<i>Surrogate: Fluorobenzene</i>			0.0988	mg/kg wet	0.100		99	70-130	
LCS (8087080-BS1)					Prepared & Analyzed: 03/29/18				
1,3,5-Trimethylbenzene	0.050		0.0050	mg/kg wet	0.0500		100	70-130	200

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 651 Holiday Drive Foster Plaza #5
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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8087080 - Volatiles (Continued)										
LCS (8087080-BS1)										
Prepared & Analyzed: 03/29/18										
1,2,4-Trimethylbenzene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Benzene	0.048		0.0020	mg/kg wet	0.0500		97	70-130		200
Toluene	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
Ethylbenzene	0.049		0.0050	mg/kg wet	0.0500		97	70-130		200
Xylenes (total)	0.146		0.0100	mg/kg wet	0.150		97	70-130		200
Isopropylbenzene	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
Methyl tert-butyl ether	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
Naphthalene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
Acetone	0.052		0.0100	mg/kg wet	0.0500		105	70-130		200
Acrylonitrile	0.050		0.0100	mg/kg wet	0.0500		101	70-130		200
Bromobenzene	0.046		0.0050	mg/kg wet	0.0500		93	70-130		200
Bromochloromethane	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Bromodichloromethane	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
Bromoform	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Bromomethane	0.050		0.0050	mg/kg wet	0.0500		99	70-130		200
2-Butanone	0.047		0.0100	mg/kg wet	0.0500		94	70-130		200
sec-Butylbenzene	0.049		0.0050	mg/kg wet	0.0500		97	70-130		200
tert-Butylbenzene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
n-Butylbenzene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Carbon disulfide	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Carbon tetrachloride	0.045		0.0050	mg/kg wet	0.0500		91	70-130		200
Chlorobenzene	0.046		0.0050	mg/kg wet	0.0500		93	70-130		200
Chloroethane	0.051		0.0050	mg/kg wet	0.0500		103	70-130		200
Chloroform	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Chloromethane	0.046		0.0050	mg/kg wet	0.0500		91	70-130		200

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 651 Holiday Drive Foster Plaza #5
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Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8087080 - Volatiles (Continued)										
LCS (8087080-BS1)										
Prepared & Analyzed: 03/29/18										
4-Chlorotoluene	0.049		0.0050	mg/kg wet	0.0500		97	70-130		200
2-Chlorotoluene	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
1,2-Dibromo-3-chloropropane	0.051		0.0050	mg/kg wet	0.0500		101	70-130		200
Dibromochloromethane	0.050		0.0050	mg/kg wet	0.0500		99	70-130		200
1,2-Dibromoethane (EDB)	0.049		0.0020	mg/kg wet	0.0500		98	70-130		200
Dibromomethane	0.047		0.0050	mg/kg wet	0.0500		95	70-130		200
trans-1,4-Dichloro-2-butene	0.048		0.0050	mg/kg wet	0.0500		95	70-130		200
1,2-Dichlorobenzene	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
1,4-Dichlorobenzene	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
1,3-Dichlorobenzene	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
Dichlorodifluoromethane	0.052		0.0050	mg/kg wet	0.0500		104	70-130		200
1,2-Dichloroethane	0.048		0.0020	mg/kg wet	0.0500		96	70-130		200
1,1-Dichloroethane	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
trans-1,2-Dichloroethene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
cis-1,2-Dichloroethene	0.048		0.0050	mg/kg wet	0.0500		97	70-130		200
1,1-Dichloroethene	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
2,2-Dichloropropane	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
1,3-Dichloropropane	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
1,2-Dichloropropane	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
trans-1,3-Dichloropropene	0.050		0.0050	mg/kg wet	0.0500		100	70-130		200
1,1-Dichloropropene	0.048		0.0050	mg/kg wet	0.0500		95	70-130		200
cis-1,3-Dichloropropene	0.052		0.0050	mg/kg wet	0.0500		103	70-130		200
Hexachlorobutadiene	0.045		0.0050	mg/kg wet	0.0500		90	70-130		200
2-Hexanone	0.053		0.0100	mg/kg wet	0.0500		106	70-130		200
Iodomethane	0.049		0.0050	mg/kg wet				70-130		200

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Volatile Organic Compounds by EPA Method 8260B/Prep Method 5035 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8087080 - Volatiles (Continued)										
LCS (8087080-BS1)					Prepared & Analyzed: 03/29/18					
p-Isopropyltoluene	0.048		0.0050	mg/kg wet	0.0500		96	70-130		200
Methylene chloride	0.047		0.0200	mg/kg wet	0.0500		93	70-130		200
4-Methyl-2-pentanone	0.052		0.0100	mg/kg wet	0.0500		103	70-130		200
n-Propylbenzene	0.049		0.0050	mg/kg wet	0.0500		98	70-130		200
Styrene	0.049		0.0050	mg/kg wet	0.0500		97	70-130		200
1,1,2,2-Tetrachloroethane	0.046		0.0050	mg/kg wet	0.0500		92	70-130		200
1,1,1,2-Tetrachloroethane	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
Tetrachloroethene	0.046		0.0050	mg/kg wet	0.0500		93	70-130		200
1,2,4-Trichlorobenzene	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
1,2,3-Trichlorobenzene	0.047		0.0050	mg/kg wet	0.0500		93	70-130		200
1,1,1-Trichloroethane	0.047		0.0050	mg/kg wet	0.0500		95	70-130		200
1,1,2-Trichloroethane	0.049		0.0050	mg/kg wet	0.0500		99	70-130		200
Trichloroethene	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Trichlorofluoromethane	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
1,2,3-Trichloropropane	0.047		0.0050	mg/kg wet	0.0500		94	70-130		200
Vinyl chloride	0.042		0.0020	mg/kg wet	0.0500		84	70-130		200
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>0.0985</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>99</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>0.0979</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>98</i>	<i>70-130</i>		
<i>Surrogate: Fluorobenzene</i>			<i>0.100</i>	<i>mg/kg wet</i>	<i>0.100</i>		<i>100</i>	<i>70-130</i>		
Batch: 8088082 - Volatiles										
LCS (8088082-BS1)					Prepared & Analyzed: 03/29/18					
Acetone	0.048		0.0100	mg/kg wet	0.0500		96	70-130		200

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89 Kristi Road
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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Analyses to be performed immediately upon sampling. See Definition indicated by: #

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8086009 - General Prep										
Duplicate (8086009-DUP1)										
# pH	9.17			pH Units		9.25			0.869	10



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 05/22/18 08:50

Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8096015 - EPA 8151A									
Blank (8096015-BLK1)					Prepared: 04/06/18 Analyzed: 04/11/18				
2,4-D	ND		6.66	ug/kg wet					
Acifluorfen	ND		3.33	ug/kg wet					
2,4-DB	ND		6.66	ug/kg wet					
2,4,5-T	ND		6.66	ug/kg wet					
2,4,5-TP (Silvex)	ND		6.66	ug/kg wet					
Dalapon	ND		33.3	ug/kg wet					
Dicamba	ND		3.33	ug/kg wet					
Dichloroprop	ND		6.66	ug/kg wet					
Dinoseb	ND		6.66	ug/kg wet					
<i>Surrogate: 2,4-DCAA</i>			<i>0.0693</i>	<i>mg/l</i>	<i>0.100</i>		<i>69</i>	<i>40.6-150</i>	
LCS (8096015-BS1)					Prepared: 04/06/18 Analyzed: 04/11/18				
2,4-D	0.0820			mg/l	0.0800		102	42.5-122	200
Acifluorfen	0.0508			mg/l	0.0800		63	16.8-144	200
2,4-DB	0.0621			mg/l	0.0800		78	17.6-149	200
2,4,5-T	0.0716			mg/l	0.0800		89	25.9-138	200
2,4,5-TP (Silvex)	0.0716			mg/l	0.0800		90	23.5-121	200
Dalapon	0.399			mg/l	0.800		50	10-173	200
Dicamba	0.0634			mg/l	0.0800		79	12.6-122	200
Dichloroprop	0.0905			mg/l	0.0800		113	10-151	200
Dinoseb	0.0333			mg/l	0.0800		42	10-86.5	200
<i>Surrogate: 2,4-DCAA</i>			<i>0.0704</i>	<i>mg/l</i>	<i>0.100</i>		<i>70</i>	<i>40.6-150</i>	
Matrix Spike (8096015-MS1)			Source: 8C27001-04			Prepared: 04/06/18 Analyzed: 04/11/18			
2,4-D	0.0596			mg/l	0.0800	0.00	74	17.1-157	47.4

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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Chlorinated Herbicides by EPA Method 8151A (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 8096015 - EPA 8151A (Continued)										
Matrix Spike (8096015-MS1)		Source: 8C27001-04			Prepared: 04/06/18 Analyzed: 04/11/18					
Acifluorfen	0.0676			mg/l	0.0800	0.00	85	10-193		72.9
2,4-DB	0.0592			mg/l	0.0800	0.00	74	15.3-156		42.3
2,4,5-T	0.0707			mg/l	0.0800	0.00	88	10-156		58.3
2,4,5-TP (Silvex)	0.0614			mg/l	0.0800	0.00	77	10-138		46.5
Dalapon	0.00			mg/l	0.800	0.00		10-156		38
Dicamba	0.0582			mg/l	0.0800	0.00	73	10-130		46
Dichloroprop	0.0643			mg/l	0.0800	0.00	80	14.1-137		60
Dinoseb	0.0796			mg/l	0.0800	0.00	100	10-165		39.1
<i>Surrogate: 2,4-DCAA</i>			<i>0.0558</i>	<i>mg/l</i>	<i>0.100</i>		<i>56</i>	<i>40.6-150</i>		
Matrix Spike Dup (8096015-MSD1)		Source: 8C27001-04			Prepared: 04/06/18 Analyzed: 04/11/18					
2,4-D	0.0533			mg/l	0.0800	0.00	67	17.1-157	200	47.4
Acifluorfen	0.0811			mg/l	0.0800	0.00	101	10-193	200	72.9
2,4-DB	0.0507			mg/l	0.0800	0.00	63	15.3-156	200	42.3
2,4,5-T	0.0601			mg/l	0.0800	0.00	75	10-156	200	58.3
2,4,5-TP (Silvex)	0.0533			mg/l	0.0800	0.00	67	10-138	200	46.5
Dalapon	0.00			mg/l	0.800	0.00		10-156		38
Dicamba	0.0469			mg/l	0.0800	0.00	59	10-130	200	46
Dichloroprop	0.0569			mg/l	0.0800	0.00	71	14.1-137	200	60
Dinoseb	0.0785			mg/l	0.0800	0.00	98	10-165	200	39.1
<i>Surrogate: 2,4-DCAA</i>			<i>0.0485</i>	<i>mg/l</i>	<i>0.100</i>		<i>48</i>	<i>40.6-150</i>		

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 PaDEP: PA 41-04684



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Max Environmental
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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Conventional Chemistry Parameters by SM/EPA Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8086022 - General Preparation									
Blank (8086022-BLK1)									
Sulfide	ND		20.0	mg/kg wet					
Prepared & Analyzed: 03/27/18									
LCS (8086022-BS1)									
Sulfide	240		80.0	mg/kg wet	232	103	80-120		200
Prepared & Analyzed: 03/27/18									
Duplicate (8086022-DUP1)									
Sulfide	ND		235	mg/kg dry		ND			10
Source: 8C27001-04 Prepared & Analyzed: 03/27/18									
Matrix Spike (8086022-MS1)									
Sulfide	3010		940	mg/kg dry	2730	ND	110	80-120	200
Prepared & Analyzed: 03/27/18									
Batch: 8086051 - General Preparation									
Blank (8086051-BLK1)									
Fluoride	ND		20.0	mg/kg wet					
Prepared: 03/28/18 Analyzed: 03/29/18									
LCS (8086051-BS1)									
Fluoride	99.7		20.0	mg/kg wet	100	99.7	90-110		10
Prepared: 03/28/18 Analyzed: 03/29/18									
Batch: 8087089 - General Prep									
Blank (8087089-BLK1)									
% Solids	ND		0.100	%					
Prepared & Analyzed: 03/28/18									
Blank (8087089-BLK2)									
% Solids	ND		0.100	%					
Prepared & Analyzed: 03/28/18									

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Quality Control
 (Continued)

Cyanide by Preparation Method EPA 9010

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8093030 - General Prep										
Blank (8093030-BLK1)										
Cyanide (total)	ND		0.458	mg/kg wet				Prepared & Analyzed: 04/03/18		
LCS (8093030-BS1)										
Cyanide (total)	9.81		0.468	mg/kg wet	9.36		105	85-115		200
Duplicate (8093030-DUP1)										
Cyanide (total)	ND		0.514	mg/kg dry		ND				10

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Quality Control
 (Continued)

Metals by EPA 6000/7000 Series Methods

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8088099 - EPA 7471A										
Blank (8088099-BLK1)										
Mercury	ND		0.0317	mg/kg wet						
Prepared: 03/29/18 Analyzed: 03/30/18										
LCS (8088099-BS1)										
Mercury	0.3190		0.0321	mg/kg wet	0.324		98.3	85-115		200
Prepared: 03/29/18 Analyzed: 03/30/18										
Matrix Spike (8088099-MS1)										
Mercury	0.2043		0.0143	mg/kg dry	0.0721	0.1239	112	70-130		20
Prepared: 03/29/18 Analyzed: 03/30/18										
Matrix Spike Dup (8088099-MSD1)										
Mercury	0.2038		0.0150	mg/kg dry	0.0758	0.1239	105	70-130	0.274	20
Prepared: 03/29/18 Analyzed: 03/30/18										

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8086076 - EPA 3541										
Blank (8086076-BLK1)										
Prepared: 04/05/18 Analyzed: 04/06/18										
Aldrin	ND		2.00	ug/kg wet						
alpha-BHC	ND		2.00	ug/kg wet						
beta-BHC	ND		2.00	ug/kg wet						
delta-BHC	ND		2.00	ug/kg wet						
gamma-BHC (Lindane)	ND		2.00	ug/kg wet						
Chlordane (tech)	ND		100	ug/kg wet						
4,4'-DDD	ND		2.00	ug/kg wet						
4,4'-DDE	ND		2.00	ug/kg wet						
4,4'-DDT	ND		2.00	ug/kg wet						
Dieldrin	ND		2.00	ug/kg wet						
Endosulfan I	ND		2.00	ug/kg wet						
Endosulfan II	ND		2.00	ug/kg wet						
Endosulfan sulfate	ND		2.00	ug/kg wet						
Endrin	ND		2.00	ug/kg wet						
Endrin aldehyde	ND		2.00	ug/kg wet						
Heptachlor	ND		2.00	ug/kg wet						
Heptachlor epoxide	ND		2.00	ug/kg wet						
Methoxychlor	ND		2.00	ug/kg wet						
Toxaphene	ND		100	ug/kg wet						
alpha-Chlordane	ND		2.00	ug/kg wet						
Isodrin	ND		2.00	ug/kg wet						
gamma-Chlordane	ND		2.00	ug/kg wet						
Endrin ketone	ND		2.00	ug/kg wet						
<i>Surrogate: Tetrachloro-meta-xylene</i>			26.7	ug/l	20.0		133	40-157		
<i>Surrogate: Decachlorobiphenyl</i>			22.3	ug/l	20.0		111	57.1-153		

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8086076 - EPA 3541 (Continued)									
LCS (8086076-BS1)					Prepared: 04/05/18 Analyzed: 04/06/18				
Aldrin	12.0		2.00	ug/kg wet	12.0	100	30.3-98.1		200
alpha-BHC	9.22		2.00	ug/kg wet	12.0	76.9	35.2-102		200
beta-BHC	4.19		2.00	ug/kg wet	12.0	34.9	35.2-126		200
delta-BHC	10.3		2.00	ug/kg wet	12.0	86.0	10-129		200
gamma-BHC (Lindane)	9.91		2.00	ug/kg wet	12.0	82.6	40.5-107		200
Chlordane (tech)	ND		100	ug/kg wet			80-120		200
4,4'-DDD	10.5		2.00	ug/kg wet	12.0	87.5	39-114		200
4,4'-DDE	11.3		2.00	ug/kg wet	12.0	94.6	44.7-112		200
4,4'-DDT	12.3		2.00	ug/kg wet	12.0	102	36.1-126		200
Dieldrin	11.3		2.00	ug/kg wet	12.0	93.8	42.2-116		200
Endosulfan I	11.7		2.00	ug/kg wet	12.0	97.2	10-79.2		200
Endosulfan II	12.7		2.00	ug/kg wet	12.0	105	10-63.3		200
Endosulfan sulfate	16.3		2.00	ug/kg wet	12.0	136	49.1-111		200
Endrin	12.0		2.00	ug/kg wet	12.0	100	41.7-127		200
Endrin aldehyde	11.5		2.00	ug/kg wet	12.0	96.0	45.3-128		200
Heptachlor	10.7		2.00	ug/kg wet	12.0	89.4	32.6-143		200
Heptachlor epoxide	12.4		2.00	ug/kg wet	12.0	103	43.8-111		200
Methoxychlor	13.0		2.00	ug/kg wet	12.0	108	52.8-131		200
Toxaphene	ND		100	ug/kg wet			80-120		200
alpha-Chlordane	11.6		2.00	ug/kg wet	12.0	96.7	38.6-106		200
gamma-Chlordane	13.8		2.00	ug/kg wet	12.0	115	45.3-152		200
Isodrin	13.9		2.00	ug/kg wet	12.0	116	40-127.8		200
Endrin ketone	10.5		2.00	ug/kg wet	12.0	87.6	46-128		200
<i>Surrogate: Tetrachloro-meta-xylene</i>				18.7	ug/l	20.0	93.3	40-157	

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8086076 - EPA 3541 (Continued)									
LCS (8086076-BS1)									
Prepared: 04/05/18 Analyzed: 04/06/18									
Surrogate: Decachlorobiphenyl									
			22.5	ug/l	20.0		112 57.1-153		
Matrix Spike (8086076-MS1)									
Source: 8C27001-03 Prepared: 04/05/18 Analyzed: 04/06/18									
Aldrin	158		33.8	ug/kg dry	203	ND	78.1 35.7-85.2		25.9
alpha-BHC	159		33.8	ug/kg dry	203	ND	78.2 26.7-121		22.5
beta-BHC	191		33.8	ug/kg dry	203	ND	94.2 37.5-131		24.3
delta-BHC	184		33.8	ug/kg dry	203	ND	90.8 10.6-118		25.8
gamma-BHC (Lindane)	155		33.8	ug/kg dry	203	ND	76.2 49.8-92.5		23.1
Chlordane (tech)	ND		1690	ug/kg dry		ND	80-120		200
4,4'-DDD	168		33.8	ug/kg dry	203	ND	82.9 42.3-103		18.1
4,4'-DDE	160		33.8	ug/kg dry	203	ND	78.7 47.8-100		18
4,4'-DDT	186		33.8	ug/kg dry	203	ND	91.7 45.9-110		15.6
Dieldrin	174		33.8	ug/kg dry	203	ND	85.9 44-107		21.3
Endosulfan I	165		33.8	ug/kg dry	203	ND	81.3 30.5-113		27.5
Endosulfan II	169		33.8	ug/kg dry	203	ND	83.1 19.2-124		49.2
Endosulfan sulfate	238		33.8	ug/kg dry	203	ND	118 53.8-99.6		27.6
Endrin	217		33.8	ug/kg dry	203	ND	107 46.8-117		27
Endrin aldehyde	164		33.8	ug/kg dry	203	ND	80.7 37.4-125		29.4
Heptachlor	170		33.8	ug/kg dry	203	ND	83.8 33.8-157		19.9
Heptachlor epoxide	157		33.8	ug/kg dry	203	ND	77.5 44.2-103		18.6
Methoxychlor	244		33.8	ug/kg dry	203	ND	120 53.3-134		24
Toxaphene	ND		1690	ug/kg dry		ND	80-120		200
alpha-Chlordane	160		33.8	ug/kg dry	203	ND	78.9 44.7-93.3		18.3
Isodrin	197		33.8	ug/kg dry	203	ND	97.1 29.7-124		27.8
gamma-Chlordane	226		33.8	ug/kg dry	203	ND	111 47-151		21.2

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8086076 - EPA 3541 (Continued)									
Matrix Spike (8086076-MS1)		Source: 8C27001-03		Prepared: 04/05/18 Analyzed: 04/06/18					
Endrin ketone	142		33.8	ug/kg dry	203	ND	69.9 48-115		26.6
<i>Surrogate: Tetrachloro-meta-xylene</i>			16.2	ug/l	20.0		81.1 40-157		
<i>Surrogate: Decachlorobiphenyl</i>			23.2	ug/l	20.0		116 57.1-153		
Matrix Spike Dup (8086076-MSD1)		Source: 8C27001-03		Prepared: 04/05/18 Analyzed: 04/06/18					
Aldrin	182		33.6	ug/kg dry	202	ND	90.1 35.7-85.2	13.7	25.9
alpha-BHC	186		33.6	ug/kg dry	202	ND	92.3 26.7-121	16.0	22.5
beta-BHC	246		33.6	ug/kg dry	202	ND	122 37.5-131	25.4	24.3
delta-BHC	192		33.6	ug/kg dry	202	ND	95.5 10.6-118	4.38	25.8
gamma-BHC (Lindane)	80.3		33.6	ug/kg dry	202	ND	39.8 49.8-92.5	63.2	23.1
Chlordane (tech)	ND		1680	ug/kg dry		ND	80-120		200
4,4'-DDD	187		33.6	ug/kg dry	202	ND	92.8 42.3-103	10.6	18.1
4,4'-DDE	168		33.6	ug/kg dry	202	ND	83.2 47.8-100	4.91	18
4,4'-DDT	196		33.6	ug/kg dry	202	ND	97.1 45.9-110	5.08	15.6
Dieldrin	197		33.6	ug/kg dry	202	ND	97.6 44-107	12.2	21.3
Endosulfan I	172		33.6	ug/kg dry	202	ND	85.4 30.5-113	4.29	27.5
Endosulfan II	185		33.6	ug/kg dry	202	ND	91.7 19.2-124	9.25	49.2
Endosulfan sulfate	250		33.6	ug/kg dry	202	ND	124 53.8-99.6	4.57	27.6
Endrin	240		33.6	ug/kg dry	202	ND	119 46.8-117	10.5	27
Endrin aldehyde	176		33.6	ug/kg dry	202	ND	87.1 37.4-125	6.97	29.4
Heptachlor	241		33.6	ug/kg dry	202	ND	120 33.8-157	34.7	19.9
Heptachlor epoxide	164		33.6	ug/kg dry	202	ND	81.5 44.2-103	4.41	18.6
Methoxychlor	262		33.6	ug/kg dry	202	ND	130 53.3-134	7.39	24
Toxaphene	ND		1680	ug/kg dry		ND	80-120		200
alpha-Chlordane	165		33.6	ug/kg dry	202	ND	82.0 44.7-93.3	3.29	18.3

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Quality Control
 (Continued)

Organochlorine Pesticides by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8086076 - EPA 3541 (Continued)										
Matrix Spike Dup (8086076-MSD1)		Source: 8C27001-03		Prepared: 04/05/18 Analyzed: 04/06/18						
Isodrin	230		33.6	ug/kg dry	202	ND	114	29.7-124	15.5	27.8
gamma-Chlordane	251		33.6	ug/kg dry	202	ND	124	47-151	10.4	21.2
Endrin ketone	150		33.6	ug/kg dry	202	ND	74.3	48-115	5.50	26.6
<i>Surrogate: Tetrachloro-meta-xylene</i>			<i>18.1</i>	<i>ug/l</i>	<i>20.0</i>		<i>90.7</i>	<i>40-157</i>		
<i>Surrogate: Decachlorobiphenyl</i>			<i>23.0</i>	<i>ug/l</i>	<i>20.0</i>		<i>115</i>	<i>57.1-153</i>		



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Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8085058 - EPA 3541										
Blank (8085058-BLK1)										
Prepared: 03/27/18 Analyzed: 03/29/18										
PCB-1016	ND		0.020	mg/kg wet						
PCB-1221	ND		0.020	mg/kg wet						
PCB-1232	ND		0.020	mg/kg wet						
PCB-1242	ND		0.020	mg/kg wet						
PCB-1248	ND		0.020	mg/kg wet						
PCB-1254	ND		0.020	mg/kg wet						
PCB-1260	ND		0.020	mg/kg wet						
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0202	mg/l	0.0200		101	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0205	mg/l	0.0200		103	24.4-140		
LCS (8085058-BS1)										
Prepared: 03/27/18 Analyzed: 03/29/18										
PCB-1016	ND		0.020	mg/kg wet				60.9-137		200
PCB-1221	ND		0.020	mg/kg wet				60.3-143		200
PCB-1232	0.095			mg/l	0.100		94.7	56.2-138		200
PCB-1242	ND		0.020	mg/kg wet				55.1-135		200
PCB-1248	ND		0.020	mg/kg wet				57.8-140		200
PCB-1254	ND		0.020	mg/kg wet				69.4-134		200
PCB-1260	ND		0.020	mg/kg wet				58.1-140		200
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0213	mg/l	0.0200		106	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0218	mg/l	0.0200		109	24.4-140		
Matrix Spike (8085058-MS1)										
Source: 8C26003-01 Prepared: 03/27/18 Analyzed: 03/29/18										
PCB-1016	ND		0.021	mg/kg dry		ND		27.6-156		38.1
PCB-1221	ND		0.021	mg/kg dry		ND		10-187		46.3
PCB-1232	0.088			mg/l	0.100	0.00	88.3	54.6-146		47.4

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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018

Project Number: F039 Delisting Petition **Reported:**

Collector: CLIENT 05/22/18 08:50

Number of Containers: 6

Quality Control
 (Continued)

Polychlorinated Biphenyls by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: 8085058 - EPA 3541 (Continued)										
Matrix Spike (8085058-MS1)			Source: 8C26003-01		Prepared: 03/27/18		Analyzed: 03/29/18			
PCB-1242	ND		0.021	mg/kg dry		ND		38.6-147		37.1
PCB-1248	ND		0.021	mg/kg dry		ND		32.1-157		35.4
PCB-1254	ND		0.021	mg/kg dry		ND		20.5-174		30.1
PCB-1260	ND		0.021	mg/kg dry		ND		32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0205	mg/l	0.0200		103	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0214	mg/l	0.0200		107	24.4-140		
Matrix Spike Dup (8085058-MSD1)			Source: 8C26003-01		Prepared: 03/27/18		Analyzed: 03/29/18			
PCB-1016	ND		0.022	mg/kg dry		ND		27.6-156		38.1
PCB-1221	ND		0.022	mg/kg dry		ND		10-187		46.3
PCB-1232	0.092			mg/l	0.100	0.00	91.6	54.6-146	3.62	47.4
PCB-1242	ND		0.022	mg/kg dry		ND		38.6-147		37.1
PCB-1248	ND		0.022	mg/kg dry		ND		32.1-157		35.4
PCB-1254	ND		0.022	mg/kg dry		ND		20.5-174		30.1
PCB-1260	ND		0.022	mg/kg dry		ND		32.7-155		22.9
<i>Surrogate: Tetrachloro-meta-xylene</i>			0.0207	mg/l	0.0200		104	11-140		
<i>Surrogate: Decachlorobiphenyl</i>			0.0220	mg/l	0.0200		110	24.4-140		

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541									
Blank (8088108-BLK1)					Prepared: 03/29/18 Analyzed: 03/30/18				
Benzidine	ND		1.66	mg/kg wet					
Diphenylamine	ND		0.331	mg/kg wet					
Pyridine	ND		0.662	mg/kg wet					
Acenaphthene	ND		0.331	mg/kg wet					
Acenaphthylene	ND		0.331	mg/kg wet					
Anthracene	0.0265	J	0.331	mg/kg wet					
Benzoic acid	ND		3.31	mg/kg wet					
Benzo (a) anthracene	0.0497	J	0.331	mg/kg wet					
Benzo (b) fluoranthene	ND		0.331	mg/kg wet					
Benzo (k) fluoranthene	0.0364	J	0.331	mg/kg wet					
Benzo (g,h,i) perylene	ND		0.331	mg/kg wet					
Benzo (a) pyrene	0.0463	J	0.331	mg/kg wet					
Benzyl alcohol	ND		0.331	mg/kg wet					
Bis(2-chloroethoxy)methane	ND		0.331	mg/kg wet					
Bis(2-chloroethyl)ether	ND		0.331	mg/kg wet					
Bis(2-chloroisopropyl)ether	ND		0.331	mg/kg wet					
Bis(2-ethylhexyl)phthalate	ND		0.331	mg/kg wet					
4-Bromophenyl phenyl ether	0.0265	J	0.331	mg/kg wet					
Butyl benzyl phthalate	0.0463	J	0.331	mg/kg wet					
4-Chloroaniline	ND		0.331	mg/kg wet					
4-Chloro-3-methylphenol	ND		0.331	mg/kg wet					
2-Chloronaphthalene	ND		0.331	mg/kg wet					
2-Chlorophenol	ND		0.331	mg/kg wet					
4-Chlorophenyl phenyl ether	ND		0.331	mg/kg wet					
Chrysene	0.0331	J	0.331	mg/kg wet					

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 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)									
Blank (8088108-BLK1)					Prepared: 03/29/18 Analyzed: 03/30/18				
Dibenz (a,h) anthracene	ND		0.331	mg/kg wet					
Dibenzofuran	0.0199	J	0.331	mg/kg wet					
Di-n-butyl phthalate	0.0761	J	0.331	mg/kg wet					
1,2-Dichlorobenzene	ND		0.331	mg/kg wet					
1,3-Dichlorobenzene	ND		0.331	mg/kg wet					
1,4-Dichlorobenzene	ND		0.331	mg/kg wet					
3,3'-Dichlorobenzidine	ND		0.331	mg/kg wet					
2,4-Dichlorophenol	ND		0.331	mg/kg wet					
Diethyl phthalate	ND		0.331	mg/kg wet					
2,4-Dimethylphenol	ND		0.331	mg/kg wet					
Dimethyl phthalate	ND		0.331	mg/kg wet					
4,6-Dinitro-2-methylphenol	ND		1.66	mg/kg wet					
2,4-Dinitrophenol	ND		1.66	mg/kg wet					
2,4-Dinitrotoluene	ND		0.331	mg/kg wet					
2,6-Dinitrotoluene	ND		0.331	mg/kg wet					
Di-n-octyl phthalate	0.0298	J	0.331	mg/kg wet					
Aniline	ND		0.331	mg/kg wet					
Naphthalene	ND		0.331	mg/kg wet					
N-Nitrosodimethylamine	ND		0.331	mg/kg wet					
3 & 4-Methylphenol	ND		0.331	mg/kg wet					
Acetophenone	ND		0.331	mg/kg wet					
1,2-Diphenylhydrazine	0.0298	J	0.331	mg/kg wet					
Fluoranthene	0.0298	J	0.331	mg/kg wet					
Fluorene	0.0265	J	0.331	mg/kg wet					
Hexachlorobenzene	ND		0.331	mg/kg wet					

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)									
Blank (8088108-BLK1)					Prepared: 03/29/18 Analyzed: 03/30/18				
Hexachlorobutadiene	ND		0.331	mg/kg wet					
Hexachlorocyclopentadiene	ND		0.331	mg/kg wet					
Hexachloroethane	ND		0.331	mg/kg wet					
Indeno (1,2,3-cd) pyrene	ND		0.331	mg/kg wet					
Isophorone	ND		0.331	mg/kg wet					
2-Methylnaphthalene	ND		0.331	mg/kg wet					
2-Methylphenol	ND		0.331	mg/kg wet					
2-Nitroaniline	ND		0.331	mg/kg wet					
3-Nitroaniline	ND		0.331	mg/kg wet					
4-Nitroaniline	ND		0.331	mg/kg wet					
Nitrobenzene	ND		0.331	mg/kg wet					
2-Nitrophenol	ND		0.331	mg/kg wet					
4-Nitrophenol	ND		0.331	mg/kg wet					
N-Nitrosodiphenylamine	ND		0.331	mg/kg wet					
N-Nitrosodi-n-propylamine	ND		0.331	mg/kg wet					
Pentachlorophenol	ND		1.66	mg/kg wet					
Phenanthrene	0.0364	J	0.331	mg/kg wet					
Phenol	ND		0.331	mg/kg wet					
Pyrene	0.0298	J	0.331	mg/kg wet					
1,2,4-Trichlorobenzene	ND		0.331	mg/kg wet					
2,4,5-Trichlorophenol	ND		0.331	mg/kg wet					
2,4,6-Trichlorophenol	ND		0.331	mg/kg wet					
<i>Surrogate: 2-Fluorophenol</i>			38.2	mg/l	40.0		96	10-169	
<i>Surrogate: Phenol-d6</i>			38.2	mg/l	40.0		95	10-166	
<i>Surrogate: Nitrobenzene-d5</i>			22.1	mg/l	20.0		111	18.8-170	

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Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)										
Blank (8088108-BLK1)					Prepared: 03/29/18 Analyzed: 03/30/18					
Surrogate: 2-Fluorobiphenyl			17.5	mg/l	20.0		88	35.1-154		
Surrogate: 2,4,6-Tribromophenol			40.2	mg/l	40.0		100	20-158		
Surrogate: Terphenyl-d14			20.4	mg/l	20.0		102	52.1-160		
LCS (8088108-BS1)					Prepared: 03/29/18 Analyzed: 03/30/18					
Pyridine	34.8			mg/l	50.0		70	10-137		10
Diphenylamine	50.6			mg/l	50.0		101	56-103		10
Benzidine	24.0			mg/l	50.0		48	10-35		10
Acenaphthene	43.8			mg/l	50.0		88	63-126		10
Acenaphthylene	48.7			mg/l	50.0		97	63-132		10
Anthracene	50.4			mg/l	50.0		101	68-124		10
Benzoic acid	14.4			mg/l	50.0		29	31-104		10
Benzo (a) anthracene	49.8			mg/l	50.0		100	70-124		10
Benzo (b) fluoranthene	51.0			mg/l	50.0		102	76-125		10
Benzo (k) fluoranthene	47.1			mg/l	50.0		94	71-125		10
Benzo (g,h,i) perylene	44.0			mg/l	50.0		88	73-127		10
Benzo (a) pyrene	48.2			mg/l	50.0		96	71-127		10
Benzyl alcohol	46.0			mg/l	50.0		92	34-138		10
Bis(2-chloroethoxy)methane	45.1			mg/l	50.0		90	39-131		10
Bis(2-chloroethyl)ether	36.6			mg/l	50.0		73	11-149		10
Bis(2-chloroisopropyl)ether	42.0			mg/l	50.0		84	17-154		10
Bis(2-ethylhexyl)phthalate	49.0			mg/l	50.0		98	63-115		10
4-Bromophenyl phenyl ether	50.9			mg/l	50.0		102	68-121		10
Butyl benzyl phthalate	44.1			mg/l	50.0		88	62-122		10
4-Chloroaniline	32.3			mg/l	50.0		65	34-103		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)									
LCS (8088108-BS1)									
					Prepared: 03/29/18 Analyzed: 03/30/18				
4-Chloro-3-methylphenol	49.3			mg/l	50.0		99 62-123		10
2-Chloronaphthalene	42.8			mg/l	50.0		86 57-124		10
2-Chlorophenol	47.0			mg/l	50.0		94 24-142		10
4-Chlorophenyl phenyl ether	45.3			mg/l	50.0		91 65-122		10
Chrysene	44.8			mg/l	50.0		90 71-125		10
Dibenz (a,h) anthracene	49.7			mg/l	50.0		99 74-128		10
Dibenzofuran	43.5			mg/l	50.0		87 63-118		10
Di-n-butyl phthalate	45.8			mg/l	50.0		92 72-123		10
1,2-Dichlorobenzene	40.8			mg/l	50.0		82 10-151		10
1,3-Dichlorobenzene	41.4			mg/l	50.0		83 10-156		10
1,4-Dichlorobenzene	41.3			mg/l	50.0		83 10-154		10
3,3'-Dichlorobenzidine	36.4			mg/l	50.0		73 48-107		10
2,4-Dichlorophenol	49.6			mg/l	50.0		99 50-130		10
Diethyl phthalate	43.6			mg/l	50.0		87 67-124		10
2,4-Dimethylphenol	46.4			mg/l	50.0		93 40-111		10
Dimethyl phthalate	46.4			mg/l	50.0		93 66-121		10
4,6-Dinitro-2-methylphenol	20.0			mg/l	50.0		40 10-111		10
2,4-Dinitrophenol	9.61			mg/l	50.0		19 10-111		10
2,4-Dinitrotoluene	46.1			mg/l	50.0		92 66-112		10
2,6-Dinitrotoluene	43.5			mg/l	50.0		87 57-128		10
Di-n-octyl phthalate	50.0			mg/l	50.0		100 56-119		10
Aniline	36.6			mg/l	50.0		73 16-99		10
Naphthalene	45.4			mg/l	50.0		91 32-140		10
N-Nitrosodimethylamine	40.8			mg/l	50.0		82 10-156		10
Acetophenone	35.2			mg/l	50.0		70 27-142		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)										
LCS (8088108-BS1)										
					Prepared: 03/29/18 Analyzed: 03/30/18					
3 & 4-Methylphenol	45.9			mg/l	50.0		92	41-118		10
1,2-Diphenylhydrazine	43.2			mg/l	50.0		86	60-127		10
Fluoranthene	51.2			mg/l	50.0		102	71-128		10
Fluorene	46.3			mg/l	50.0		93	69-122		10
Hexachlorobenzene	49.4			mg/l	50.0		99	69-118		10
Hexachlorobutadiene	48.3			mg/l	50.0		97	18-146		10
Hexachlorocyclopentadiene	40.1			mg/l	50.0		80	22-155		10
Hexachloroethane	41.0			mg/l	50.0		82	10-154		10
Indeno (1,2,3-cd) pyrene	49.4			mg/l	50.0		99	73-130		10
Isophorone	44.5			mg/l	50.0		89	42-131		10
2-Methylnaphthalene	49.1			mg/l	50.0		98	47-131		10
2-Methylphenol	45.7			mg/l	50.0		91	35-119		10
2-Nitroaniline	42.6			mg/l	50.0		85	57-128		10
3-Nitroaniline	35.7			mg/l	50.0		71	60-112		10
4-Nitroaniline	41.1			mg/l	50.0		82	44-127		10
Nitrobenzene	45.1			mg/l	50.0		90	28-138		10
2-Nitrophenol	50.8			mg/l	50.0		102	31-144		10
4-Nitrophenol	39.4			mg/l	50.0		79	50-118		10
N-Nitrosodiphenylamine	50.6			mg/l	50.0		101	54-104		10
N-Nitrosodi-n-propylamine	44.8			mg/l	50.0		90	34-135		10
Pentachlorophenol	33.8			mg/l	50.0		68	56-126		10
Phenanthrene	46.4			mg/l	50.0		93	68-118		10
Phenol	43.3			mg/l	50.0		87	32-129		10
Pyrene	46.8			mg/l	50.0		94	70-126		10
1,2,4-Trichlorobenzene	47.4			mg/l	50.0		95	24-141		10

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Quality Control
 (Continued)

Semivolatile Organic Compounds by EPA Extraction Method 3541 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8088108 - EPA 3541 (Continued)										
LCS (8088108-BS1)										
					Prepared: 03/29/18 Analyzed: 03/30/18					
2,4,5-Trichlorophenol	43.8			mg/l	50.0		88	63-138		10
2,4,6-Trichlorophenol	44.6			mg/l	50.0		89	64-128		10

Surrogate: 2-Fluorophenol			37.0	mg/l	40.0		92	35-115		
Surrogate: Phenol-d6			36.7	mg/l	40.0		92	35-115		
Surrogate: Nitrobenzene-d5			17.8	mg/l	20.0		89	35-115		
Surrogate: 2-Fluorobiphenyl			17.8	mg/l	20.0		89	40-120		
Surrogate: 2,4,6-Tribromophenol			42.9	mg/l	40.0		107	40-120		
Surrogate: Terphenyl-d14			19.3	mg/l	20.0		97	40-120		



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 PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8086091 - EPA 200 Series									
Blank (8086091-BLK1)									
Mercury	ND		0.000200	mg/l					
					Prepared: 03/27/18 Analyzed: 03/29/18				
LCS (8086091-BS1)									
Mercury	0.001917		0.000200	mg/l	0.00200	ND	95.8 85-115		200
					Prepared: 03/27/18 Analyzed: 03/29/18				
Matrix Spike (8086091-MS1)									
Mercury	0.01021		0.00200	mg/l	0.0100	ND	102 70-130		10
					Prepared: 03/27/18 Analyzed: 03/29/18				
Matrix Spike Dup (8086091-MSD1)									
Mercury	0.01047		0.00200	mg/l	0.0100	ND	105 70-130	2.56	10
					Prepared: 03/27/18 Analyzed: 03/29/18				
Batch: 8087091 - EPA 3010A TCLP/SPLP									
Blank (8087091-BLK1)									
					Prepared: 03/28/18 Analyzed: 03/30/18				
Aluminum	ND		0.500	mg/l					
Antimony	ND		0.0500	mg/l					
Arsenic	ND		0.0400	mg/l					
Barium	ND		0.0500	mg/l					
Beryllium	ND		0.0100	mg/l					
Cadmium	ND		0.0200	mg/l					
Chromium	ND		0.0250	mg/l					
Cobalt	ND		0.0500	mg/l					
Copper	ND		0.0500	mg/l					
Iron	ND		0.200	mg/l					
Lead	ND		0.0400	mg/l					
Manganese	ND		0.0500	mg/l					

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Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8087091 - EPA 3010A TCLP/SPLP (Continued)									
Blank (8087091-BLK1)					Prepared: 03/28/18 Analyzed: 03/30/18				
Nickel	ND		0.250	mg/l					
Potassium	ND		1	mg/l					
Selenium	ND		0.100	mg/l					
Silver	ND		0.0200	mg/l					
Thallium	ND		0.100	mg/l					
Vanadium	ND		0.100	mg/l					
Zinc	ND		0.100	mg/l					
LCS (8087091-BS1)					Prepared: 03/28/18 Analyzed: 03/30/18				
Aluminum	11.0		0.500	mg/l	10.0		110 80-120		200
Antimony	2.22		0.0500	mg/l	2.00		111 80-120		200
Arsenic	0.847		0.0400	mg/l	0.800		106 80-120		200
Barium	2.19		0.0500	mg/l	2.00		109 80-120		200
Beryllium	0.212		0.0100	mg/l	0.200		106 80-120		200
Cadmium	0.440		0.0200	mg/l	0.400		110 80-120		200
Chromium	0.216		0.0250	mg/l	0.200		108 80-120		200
Cobalt	2.11		0.0500	mg/l	2.00		106 80-120		200
Copper	2.21		0.0500	mg/l	2.00		110 80-120		200
Iron	4.30		0.200	mg/l	4.00		108 80-120		200
Lead	0.849		0.0400	mg/l	0.800		106 80-120		200
Manganese	2.13		0.0500	mg/l	2.00		106 80-120		200
Nickel	2.12		0.250	mg/l	2.00		106 80-120		200
Potassium	44.06787		1	mg/l	40.0		110 80-120		200
Selenium	2.00		0.100	mg/l	2.00		100 80-120		200
Silver	0.400		0.0200	mg/l	0.400		100 80-120		200

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
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Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8087091 - EPA 3010A TCLP/SPLP (Continued)										
LCS (8087091-BS1)										
					Prepared: 03/28/18 Analyzed: 03/30/18					
Thallium	0.822		0.100	mg/l	0.800		103	80-120		200
Vanadium	2.17		0.100	mg/l	2.00		109	80-120		200
Zinc	2.23		0.100	mg/l	2.00		112	80-120		200
Duplicate (8087091-DUP1)										
			Source: 8C28019-01			Prepared: 03/28/18 Analyzed: 03/30/18				
Aluminum	ND		0.500	mg/l		ND				20
Antimony	ND		0.0500	mg/l		ND				20
Arsenic	ND		0.0400	mg/l		ND				20
Barium	16.0		0.0500	mg/l		19.0			17	20
Beryllium	ND		0.0100	mg/l		ND				20
Cadmium	ND		0.0200	mg/l		ND				20
Chromium	ND		0.0250	mg/l		ND				20
Cobalt	ND		0.0500	mg/l		ND				20
Copper	0.0370		0.0500	mg/l		0.0341			8	20
Iron	61.3		0.200	mg/l		72.5			17	20
Lead	ND		0.0400	mg/l		ND				20
Manganese	0.487		0.0500	mg/l		0.603			21	20
Nickel	ND		0.250	mg/l		ND				20
Potassium	0.958018	J	1	mg/l		1.234897			25	20
Selenium	0.0270		0.100	mg/l		ND			200	20
Silver	ND		0.0200	mg/l		ND				20
Thallium	ND		0.100	mg/l		ND				20
Vanadium	ND		0.100	mg/l		0.00825			200	20
Zinc	0.484		0.100	mg/l		0.595			21	20
Matrix Spike (8087091-MS1)										
			Source: 8C28019-01			Prepared: 03/28/18 Analyzed: 03/30/18				

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Metals extracted by EPA 1311 (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limit	RPD	RPD Limit
Batch: 8087091 - EPA 3010A TCLP/SPLP (Continued)										
Matrix Spike (8087091-MS1)		Source: 8C28019-01			Prepared: 03/28/18 Analyzed: 03/30/18					
Aluminum	11.6		0.500	mg/l	10.0	ND	116	75-125		200
Antimony	2.28		0.0500	mg/l	2.00	ND	114	75-125		200
Arsenic	0.885		0.0400	mg/l	0.800	ND	111	75-125		200
Barium	21.6		0.0500	mg/l	2.00	19.0	129	75-125		200
Beryllium	0.222		0.0100	mg/l	0.200	ND	111	75-125		200
Cadmium	0.461		0.0200	mg/l	0.400	ND	115	75-125		200
Chromium	0.231		0.0250	mg/l	0.200	ND	116	75-125		200
Cobalt	2.18		0.0500	mg/l	2.00	ND	109	75-125		200
Copper	2.36		0.0500	mg/l	2.00	0.0341	116	75-125		200
Iron	78.3		0.200	mg/l	4.00	72.5	145	75-125		200
Lead	0.886		0.0400	mg/l	0.800	ND	111	75-125		200
Manganese	2.79		0.0500	mg/l	2.00	0.603	109	75-125		200
Nickel	2.21		0.250	mg/l	2.00	ND	110	75-125		200
Potassium	49.18444		1	mg/l	40.0	1.234897	120	75-125		200
Selenium	2.12		0.100	mg/l	2.00	ND	106	75-125		200
Silver	0.420		0.0200	mg/l	0.400	ND	105	75-125		200
Thallium	0.855		0.100	mg/l	0.800	ND	107	75-125		200
Vanadium	2.28		0.100	mg/l	2.00	0.00825	114	75-125		200
Zinc	2.87		0.100	mg/l	2.00	0.595	114	75-125		200

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8092029 - EPA 3510C									
Blank (8092029-BLK1)					Prepared & Analyzed: 04/02/18				
Pyridine	ND		2.00	ug/l					
Benzidine	ND		5.00	ug/l					
1,4-Dichlorobenzene	ND		1.00	ug/l					
2,4-Dinitrotoluene	ND		1.00	ug/l					
3 & 4-Methylphenol	ND		1.00	ug/l					
Hexachlorobenzene	ND		1.00	ug/l					
Hexachlorobutadiene	ND		1.00	ug/l					
Hexachloroethane	ND		1.00	ug/l					
2-Methylphenol	ND		1.00	ug/l					
Nitrobenzene	ND		1.00	ug/l					
Pentachlorophenol	ND		5.00	ug/l					
2,4,5-Trichlorophenol	ND		1.00	ug/l					
2,4,6-Trichlorophenol	ND		1.00	ug/l					
<hr/>									
<i>Surrogate: 2-Fluorophenol</i>			16.1	ug/l	40.0		40.2 30.6-66.8		
<i>Surrogate: Phenol-d6</i>			10.8	ug/l	40.0		27.0 17.9-51.5		
<i>Surrogate: Nitrobenzene-d5</i>			13.6	ug/l	20.0		68.2 30.6-140		
<i>Surrogate: 2-Fluorobiphenyl</i>			11.3	ug/l	20.0		56.6 40.6-121		
<i>Surrogate: 2,4,6-Tribromophenol</i>			31.9	ug/l	40.0		79.8 50.4-131		
<i>Surrogate: Terphenyl-d14</i>			15.9	ug/l	20.0		79.4 10-185		
<hr/>									
LCS (8092029-BS1)					Prepared & Analyzed: 04/02/18				
Pyridine	19.0			ug/l	50.0		38.0 10-71		10
1,4-Dichlorobenzene	29.9			ug/l	50.0		59.8 21-65		10
2,4-Dinitrotoluene	41.9			ug/l	50.0		83.8 76-149		10
3 & 4-Methylphenol	30.4			ug/l	50.0		60.9 39-78		10

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 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8092029 - EPA 3510C (Continued)									
LCS (8092029-BS1)					Prepared & Analyzed: 04/02/18				
Hexachlorobenzene	43.8			ug/l	50.0		87.5 60-108		10
Hexachlorobutadiene	32.6			ug/l	50.0		65.2 28-78		10
Hexachloroethane	27.8			ug/l	50.0		55.6 17-64		10
2-Methylphenol	31.8			ug/l	50.0		63.5 42-79		10
Nitrobenzene	37.5			ug/l	50.0		75.0 46-92		10
Pentachlorophenol	36.4			ug/l	50.0		72.7 47-127		10
2,4,5-Trichlorophenol	38.8			ug/l	50.0		77.6 57-116		10
2,4,6-Trichlorophenol	39.3			ug/l	50.0		78.6 55-125		10
<hr/>									
Surrogate: 2-Fluorophenol			17.1	ug/l	40.0		42.7 30.6-66.8		
Surrogate: Phenol-d6			11.2	ug/l	40.0		28.0 17.9-51.5		
Surrogate: Nitrobenzene-d5			15.3	ug/l	20.0		76.6 30.6-140		
Surrogate: 2-Fluorobiphenyl			15.3	ug/l	20.0		76.6 40.6-121		
Surrogate: 2,4,6-Tribromophenol			40.1	ug/l	40.0		100 50.4-131		
Surrogate: Terphenyl-d14			15.5	ug/l	20.0		77.4 10-185		
<hr/>									
Matrix Spike (8092029-MS1)			Source: 8C29014-01			Prepared & Analyzed: 04/02/18			
Pyridine	14.2			ug/l	50.0	0.00	28.5 13.2-70.5		49.4
1,4-Dichlorobenzene	29.3			ug/l	50.0	0.00	58.6 16.4-76.7		54.2
2,4-Dinitrotoluene	36.2			ug/l	50.0	0.00	72.4 64-115		20.6
3 & 4-Methylphenol	28.4			ug/l	50.0	0.00	56.8 31.3-86.6		34.3
Hexachlorobenzene	38.6			ug/l	50.0	0.00	77.3 41.4-132		23.1
Hexachlorobutadiene	44.4			ug/l	50.0	0.00	88.8 21.8-94.1		42.9
Hexachloroethane	29.6			ug/l	50.0	0.00	59.2 14.1-74.4		58.3
2-Methylphenol	28.8			ug/l	50.0	0.00	57.7 38.5-85		32.5
Nitrobenzene	42.2			ug/l	50.0	0.00	84.3 37.8-106		28.9

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 Project Number: F039 Delisting Petition
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Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: 8092029 - EPA 3510C (Continued)									
Matrix Spike (8092029-MS1)		Source: 8C29014-01			Prepared & Analyzed: 04/02/18				
Pentachlorophenol	37.0			ug/l	50.0	0.00	74.1 60.9-128		23.6
2,4,5-Trichlorophenol	35.1			ug/l	50.0	0.00	70.3 67.7-115		21.9
2,4,6-Trichlorophenol	39.1			ug/l	50.0	0.00	78.2 60.2-107		22.7

<i>Surrogate: 2-Fluorophenol</i>			15.4	ug/l	40.0		38.5 30.6-66.8		
<i>Surrogate: Phenol-d6</i>			10.9	ug/l	40.0		27.2 17.9-51.5		
<i>Surrogate: Nitrobenzene-d5</i>			17.4	ug/l	20.0		87.0 30.6-140		
<i>Surrogate: 2-Fluorobiphenyl</i>			14.0	ug/l	20.0		70.0 40.6-121		
<i>Surrogate: 2,4,6-Tribromophenol</i>			35.8	ug/l	40.0		89.5 50.4-131		
<i>Surrogate: Terphenyl-d14</i>			13.9	ug/l	20.0		69.4 10-185		

Matrix Spike Dup (8092029-MSD1)		Source: 8C29014-01			Prepared & Analyzed: 04/02/18				
Pyridine	15.8			ug/l	50.0	0.00	31.5 13.2-70.5	10.1	49.4
1,4-Dichlorobenzene	30.2			ug/l	50.0	0.00	60.5 16.4-76.7	3.09	54.2
2,4-Dinitrotoluene	38.9			ug/l	50.0	0.00	77.8 64-115	7.16	20.6
3 & 4-Methylphenol	30.6			ug/l	50.0	0.00	61.3 31.3-86.6	7.59	34.3
Hexachlorobenzene	41.2			ug/l	50.0	0.00	82.4 41.4-132	6.41	23.1
Hexachlorobutadiene	44.8			ug/l	50.0	0.00	89.7 21.8-94.1	0.919	42.9
Hexachloroethane	30.2			ug/l	50.0	0.00	60.3 14.1-74.4	1.87	58.3
2-Methylphenol	31.8			ug/l	50.0	0.00	63.7 38.5-85	9.89	32.5
Nitrobenzene	43.4			ug/l	50.0	0.00	86.7 37.8-106	2.78	28.9
Pentachlorophenol	40.5			ug/l	50.0	0.00	81.0 60.9-128	9.00	23.6
2,4,5-Trichlorophenol	36.8			ug/l	50.0	0.00	73.6 67.7-115	4.64	21.9
2,4,6-Trichlorophenol	41.2			ug/l	50.0	0.00	82.5 60.2-107	5.25	22.7

<i>Surrogate: 2-Fluorophenol</i>			18.3	ug/l	40.0		45.8 30.6-66.8		
<i>Surrogate: Phenol-d6</i>			12.6	ug/l	40.0		31.5 17.9-51.5		

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 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Quality Control
 (Continued)

TCLP Semivolatile Organic Compounds by EPA 1311/Extraction Method 3510C (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: 8092029 - EPA 3510C (Continued)										
Matrix Spike Dup (8092029-MSD1)			Source: 8C29014-01			Prepared & Analyzed: 04/02/18				
Surrogate: Nitrobenzene-d5			20.5	ug/l	20.0		102	30.6-140		
Surrogate: 2-Fluorobiphenyl			17.2	ug/l	20.0		85.9	40.6-121		
Surrogate: 2,4,6-Tribromophenol			43.9	ug/l	40.0		110	50.4-131		
Surrogate: Terphenyl-d14			18.5	ug/l	20.0		92.4	10-185		



2019 Ninth Avenue
 PO Box 1925
 Altoona, PA 16603
 (814) 946-4306
 NELAP: PA 07-062, VA 460212

89 Kristi Road
 Pennsdale, PA 17756
 (570) 494-6380
 PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Max Environmental
 651 Holiday Drive Foster Plaza #5
 Pittsburgh PA, 15220
 Project Manager: Angela G

Project: Clarifier Sludge 2018
 Project Number: F039 Delisting Petition
 Collector: CLIENT
 Number of Containers: 6
Reported:
 05/22/18 08:50

Notes

- A9 This result is intended for end user internal monitoring purposes only. This analyte does not appear on the FLI scope of accreditation.
- D A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered above the acceptance range for the noted analyte.
- E A Continuing Calibration Verification (CCV) analyzed with the analytical batch recovered below the acceptance range for the noted analyte.
- F The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered above the acceptance range for the noted analyte.
- G The Laboratory Control Sample (LCS) analyzed with this preparation batch recovered below the acceptance range for the noted analyte.
- H The spike recovery was above the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I The spike recovery was below the acceptance range for the Matrix Spike (MS) and/or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- I4 Vials were prepared at the laboratory from the received container.
- J Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, the result is an estimated value.
- K The RPD result exceeded the quality control limits for the duplicate, Laboratory Control Sample Duplicate (LCSD), or Matrix Spike Duplicate (MSD) sample analyzed with the preparation batch.
- Q Sample was analyzed at a dilution. Reporting limits were adjusted accordingly.
- T Result was over the calibration range, but within the linear dynamic range of the instrument for the noted analyte.



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 05/22/18 08:50

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Unless otherwise noted, all results for solids are reported on a dry weight basis.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory; and should be considered as analyzed outside the EPA holding time.

^ The following analytes are to be filtered immediately upon sampling: Hexavalent Chromium. Filtration through a 0.45 micron filter within 15 minutes of sampling is required for compliance with the Clean Water Act (CWA) for reporting of hexavalent chromium to prevent interconversion of chromium species.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

* G indicates analysis performed by Fairway Laboratories, Inc. at the Greensburg location PaDEP: 65-00392. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Max Environmental

651 Holiday Drive Foster Plaza #5

Pittsburgh PA, 15220

Project Manager: Angela G

Project: Clarifier Sludge 2018

Project Number: F039 Delisting Petition

Collector: CLIENT

Number of Containers: 6

Reported:

05/22/18 08:50

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody. Samples received at the laboratory after business hours are verified on the next business day. Discrepancies are documented on the Receiving Document.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved,

Fairway Laboratories, Inc.

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.



2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

Client Page # 1 of 1

LAB USE ONLY

Work Order #
8027001

Attach # 1

FLI Page # 1 of 2

Tracking #

Bottle Type/Comments

Client Name: Max Environmental
Address: 700 Max Drive
Bulger PA 15019
Contact: Carl Spadaco
Phone #: (412) 445-9789
Fax #:
Project Name: E039 Relisting Petition
Quote/PO #:

TAT: Normal Rush
Rush TAT subject to pre-approval and surcharge.
Date Required: / /

GRAB Composite

Received on ice? Y N
Sample Temp: _____
Reportable to PADEP? Yes
PWSID # _____

GRAB -or- Composite
Composite Start End
Start Date Time End Date Time
Solid Water Other
of Containers

Analyses Requested
VOLs
SVOCs, PCBs, Pest and Chlorinated Herb
TAL Metals, Total and Ammonia Cyanide
pH, Fluoride, Sulfide
% Solids
TCLP, SVOCs, Metals, pH

Sample Description/Location	GRAB	Composite	Start Date	Start Time	End Date	End Time	Solid	Water	Other	# of Containers	Remarks
1 Bulger - C1001 - 032318	X		3/23/18	10:10						1	
2 Bulger - C1002 - 032318	X		3/23/18	12:00						1	
3 Bulger - C1001 - 032318	X		3/23/18	10:38						2	
4 Bulger - C1002 - 032318	X		3/23/18	12:00						2	

Sampled by: Paul Brock
(Signature)

Date: 3/23/18
Time: _____

Received by: Paul Brock
(Signature)

Date: 3/26/18
Time: 13:30

Relinquished by: Paul Brock
(Signature)

Date: 3/26/18
Time: 18:40

Received by: Paul Brock
(Signature)

Date: 3/26/18
Time: 18:40

Relinquished by: _____

Date: _____
Time: _____

Received by: _____

Date: _____
Time: _____

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Chain of Custody Receiving Document

Page 2 of 2

Receiver: CB

Date/Time of this check: 3/21/18 6:20

Client: MAX ENV

Lab # 8027001 #2

Received on ICE? * Sample Temperature when delivered to the Lab: 2.1 Acceptable? * or In cool down process? *

Custody Seals? N Intact? N

(Not applicable for WV compliance)

COC/Labels on bottles agree? * Correct containers for all the analysis requested? * Matrix: SOLID

COC #	Number and Type of BOTTLES						Other	Properly Preserved	Bacti	Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH				
1							<input type="checkbox"/> *			
2					2		<input checked="" type="checkbox"/> * 4 OR JAR			
3					2				N/A	
4										

*** DEVIATION PRESENT:**

No Ice ()

Not at Proper Temperature ()

Wrong Container ()

Missing Information: ()

CLIENT CALLED: YES ()

By Whom: _____ Date: _____

CLIENT RESPONSE:

Proceed with analysis; quality data ()

Will Resample ()

Provided Information ()

No Response; Proceed and qualified ()

Client Contact: _____ Date: _____

* Comments: OK PER CLIENT PROJECT NOTES TO RUD W/O VIALS JOY TO MAKE @ LAB IF NECESSARY.

Key Environmental, Inc.

DATE: December 13, 2017

FROM: Kendra Chintella

SUBJECT: Max Environmental Clarifier Sludge

SAMPLE DELIVERY GROUP (SDG): 7J18186

SAMPLES: BULGER-RO-101817

ANALYSES: Method 9045 (pH), 4500-CN (Amenable Cyanide), 8151A (Herbicides), 9056A (Fluoride) 9030/9034 (Sulfide), 2540 (Percent Solids), 9014 (Total Cyanide), 6010B/7471B (Metals/TCLP Metals), 8081B (Pesticides), 8082 (PCBs), 8270D (SVOCs/TCLP SVOCs), 1311 (TCLP pH), 8260B (VOCs)

LABORATORY: Fairway Laboratories, Altoona

The data contained in this SDG were evaluated with regard to the following parameters:

- Data Completeness
Noncompliances: No laboratory control samples were provided for TCLP mercury, TCLP metals, or TCLP SVOCs from the laboratory.
- Holding Times
Noncompliances: None
- Laboratory Blank Contamination
Noncompliances: Di-n-butyl phthalate, antimony, selenium, and vanadium were detected in the method blank. See page 2 for details.
- Surrogate Recovery
Noncompliances: The surrogate recovery of 2,4-DCAA was above the recovery limits in sample BULGER-RO. No action was taken on this basis.
- Matrix Spike/Matrix Spike Duplicate
Noncompliances: The MS recoveries of 2,4-DB, dichloroprop, sulfide, hexachlorobenzene, aldrin, alpha-BHC, beta-BHC, gamma-BHC, 4,4'-DDT, endosulfan sulfate, heptachlor epoxide, methoxychlor, alpha-chlordane, and endrin ketone were above the recovery limits. The MS recoveries of barium, antimony, thallium, zinc, dichlorodifluoromethane fell below the recovery limits. The MSD recoveries of pyridine, benzyl alcohol, bis(2-chloroethoxy)methane, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, 4-chloroaniline, 2-chlorophenol, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2,4-dimethylphenol, aniline, naphthalene, n-nitrosodimethylamine, acetophenone, hexachlorobutadiene, hexachlorocyclopentadiene, hexachloroethane, 2-methylnaphthalene, 2-methylphenol, nitrobenzene, 2-nitrophenol, n-nitrosodi-n-propylamine, phenol and 1,2,4-trichlorobenzene fell below the recovery limits. The MS/MSD recoveries of PCB-1248 was above the recovery limits. No action was taken on this basis.
- Laboratory Control Sample
Noncompliances: The LCS recoveries of pyridine, benzyl alcohol, bis(2-chloroethoxy)methane, bis(2-chloroethyl)ether, bis(2-chloroisopropyl)ether, 2-chloronaphthalene, 2-chlorophenol, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2,4-dichlorophenol, 2,4-dimethylphenol, aniline, naphthalene, n-nitrosodimethylamine, acetophenone, hexachlorobutadiene,

hexachlorocyclopentadiene, hexachloroethane, isophorone, 2-methylnaphthalene, 2-methylphenol, nitrobenzene, 2-nitrophenol, n-nitrosodi-n-propylamine, phenol, 1,2,4-trichlorobenzene, and 2,4,6-trichlorophenol fell below the recovery limits. The LCS recoveries of acetone, 2,4-D were above the recovery limits. No action was taken on this basis.

- Laboratory Duplicate Sample
Noncompliances: The RPDs for total cyanide and TCLP selenium were above the recovery limits. No data qualification was necessary as this is a batch laboratory duplicate sample and not associated with the reported sample results.

Laboratory Blank Contamination:

The following analytes were detected in the method blank at the following concentrations:

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Blank Action Level</u>
Di-n-butyl phthalate	0.113 J mg/kg	0.565 mg/kg
Antimony, TCLP	0.0332 J mg/l	0.166 mg/l
Selenium, TCLP	0.0238 J mg/l	0.119 mg/l
Vanadium, TCLP	0.0277 J mg/l	0.1385 mg/l

An action level of 5X the maximum concentration was used to evaluate the sample data for laboratory blank contamination. Associated samples with concentrations below the blank action level were qualified "U" for laboratory blank contamination.

Key Environmental, Inc.

DATE: April 20, 2018

FROM: Kendra Chintella

SUBJECT: Max Environmental Clarifier Sludge

SAMPLE DELIVERY GROUP (SDG): 8A30001

SAMPLES: 001, 002(Duplicate of 001)

ANALYSES: Method 9045 (pH), 4500-CN (Amenable Cyanide), 8151A (Herbicides), 9056A (Fluoride) 9030/9034 (Sulfide), 2540 (Percent Solids), 9014 (Total Cyanide), 6010B/7471B (Metals/TCLP Metals), 8081B (Pesticides), 8082 (PCBs), 8270D (SVOCs/TCLP SVOCs), 1311 (TCLP pH), 8260B (VOCs)

LABORATORY: Fairway Laboratories, Altoona

The data contained in this SDG were evaluated with regard to the following parameters:

- Data Completeness
Noncompliances: No laboratory control samples were provided for metals, sulfide, cyanide, mercury, TCLP metals, or TCLP mercury from the laboratory.
- Holding Times
Noncompliances: None
- Laboratory Blank Contamination
Noncompliances: Aniline, potassium, and vanadium were detected in the method blank. See page 2 for details.
- Field Duplicate Precision
Noncompliances: See page 2 for details.
- Surrogate Recovery
Noncompliances: The surrogate recovery of 2-fluorophenol fell below the recovery limits in sample 001. No action was taken on this basis.
- Matrix Spike/Matrix Spike Duplicate
Noncompliances: The MS/MSD recoveries of 2,4-DB and dalapon were above the recovery limits. The MS recovery of pyridine fell below the recovery limits. The MS/MSD recoveries of 2,4-dinitrophenol and TCLP 2,4,5-trichlorophenol fell below the recovery limits. No action was taken on this basis.
- Laboratory Control Sample
Noncompliances: The LCS recoveries of 2,4-DB, delta-BHC, endosulfan I, endosulfan, II, endosulfan sulfate, benzidine were above the recovery limits. No action was taken on this basis.
- Laboratory Duplicate Sample
Noncompliances: Laboratory duplicate samples were not provided from the laboratory.

Laboratory Blank Contamination:

The following analytes were detected in the method blank at the following concentrations:

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Blank Action Level</u>
Aniline	0.09 J mg/kg	0.45 mg/kg
Potassium, TCLP	1.04 mg/l	5.2 mg/l
Vanadium, TCLP	0.0181 J mg/l	0.0905 mg/l

An action level of 5X the maximum concentration was used to evaluate the sample data for laboratory blank contamination. Associated samples with concentrations below the blank action level were qualified "U" for laboratory blank contamination.

Field Duplicate Precision:

FIELD DUPLICATE PRECISION					
ANALYTE	001	QUAL	002	QUAL	RPD
Aluminum	71000		44900		45.04
Aluminum, TCLP	3.21		0.0718	J	191.25*
Aniline	11.3	J	8.52	J	28.05
Antimony, TCLP	0.0284	J	0.0256	J	10.37
Barium	5480		5440		0.73
Barium, TCLP	0.448		0.537		18.07
Beryllium	11.6		7.66		40.91
Beryllium, TCLP	0.00408	J	0.0012	U	NC
Cadmium	5.28	J	5.52	J	4.44
Chromium	270		167		47.14
Chromium, TCLP	0.0388		0.0305		23.95
Cobalt	135		146		7.83
Cobalt, TCLP	0.117		0.0237	J	132.62*
Copper	263		132		66.33*
Copper, TCLP	0.0192	J	0.0129	J	39.25
Cyanide, amenable	3.42	J	1.75	J	64.60*
Cyanide, total	3.42	J	1.75	J	64.60*
Di-n-butyl phthalate	31	J	22.4	U	NC
Fluoride	1560		1180		27.74
Iron	22700		12600		57.22*
Lead	88.4		44.5		66.06*
Manganese	14100		14600		3.48
Manganese, TCLP	12.3		12.5		1.61
Mercury	0.147	J	0.0987	U	NC
Nickel	863		924		6.83
Nickel, TCLP	0.785		0.45		54.25*
pH	8.54		8.77		2.66
pH, TCLP	5.88		7.39		22.76
Potassium	4930		3310		39.32
Potassium, TCLP	8.48		7.65		10.29
Pyridine, TCLP	13.5	U	83.5	J	NC
Selenium, TCLP	0.0157	J	0.019	J	19.02
Vanadium	65.4	J	42.1	J	43.35

Vanadium, TCLP	0.0377	J	0.0401	J	6.17
Zinc	2020		1620		21.98
Zinc, TCLP	0.474		0.0168	J	186.31*

NC – not calculated due to nondetect result

* - RPD is greater than 50%, associated samples are qualified as estimated, "J," due to laboratory or field sampling imprecision

Key Environmental, Inc.

DATE: May 21, 2018

FROM: Kendra Chintella

SUBJECT: Max Environmental Clarifier Sludge

SAMPLE DELIVERY GROUP (SDG): 8C27001

SAMPLES: BULGER-CL001-032318, BULGER-CL002-032318(Duplicate of BULGER-CL001)

ANALYSES: Method 9045 (pH), 4500-CN (Amenable Cyanide), 8151A (Herbicides), 9056A (Fluoride) 9030/9034 (Sulfide), 2540 (Percent Solids), 9014 (Total Cyanide), 6010B/7471B (Metals/TCLP Metals), 8081B (Pesticides), 8082 (PCBs), 8270D (SVOCs/TCLP SVOCs), 1311 (TCLP pH), 8260B (VOCs)

LABORATORY: Fairway Laboratories, Altoona

The data contained in this SDG were evaluated with regard to the following parameters:

- Data Completeness
Noncompliances: None
- Holding Times
Noncompliances: None
- Laboratory Blank Contamination
Noncompliances: Acetone, anthracene, benzo(a)anthracene, benzo(k)fluoranthene, benzo(a)pyrene, 4-bromophenyl phenyl ether, butyl benzyl phthalate, chrysene, dibenzofuran, di-n-butyl phthalate, di-n-octyl phthalate, 1,2-diphenylhydrazine, fluoranthene, fluorene, phenanthrene, and pyrene were detected in the method blank. See page 2 for details.
- Field Duplicate Precision
Noncompliances: See page 2 for details.
- Surrogate Recovery
Noncompliances: None
- Matrix Spike/Matrix Spike Duplicate
Noncompliances: The MS/MSD recovery of endosulfan sulfate were above the recovery limits. The MSD recoveries of aldrin and endrin were above the recovery limits. The MSD recovery of gamma-BHC fell below the recovery limits. The MS recoveries of TCLP barium and TCLP iron were above the recovery limits. The RPDs of beta-BHC, gamma-BHC, and heptachlor were above the recovery limits. No action was taken on this basis.
- Laboratory Control Sample
Noncompliances: The LCS recoveries of aldrin, endosulfan I, endosulfan II, endosulfan sulfate, and benzidine were above the recovery limits. The LCS recoveries of beta-BHC and benzoic acid fell below the recovery limits. No action was taken on this basis.

- Laboratory Duplicate Sample
 Noncompliances: The RPDs for TCLP manganese, TCLP potassium, and TCLP zinc were above the recovery limits. No data qualification was necessary as this is a batch laboratory duplicate sample and not associated with the reported sample results.

Laboratory Blank Contamination:

The following analytes were detected in the method blank at the following concentrations:

<u>Analyte</u>	<u>Maximum Concentration</u>	<u>Blank Action Level</u>
Acetone	0.007 J mg/kg	0.035 mg/kg
Anthracene	0.0265 J mg/kg	0.1325 mg/kg
Benzo(a)anthracene	0.0497 J mg/kg	0.2485 mg/kg
Benzo(k)fluoranthene	0.0364 J mg/kg	0.182 mg/kg
Benzo(a)pyrene	0.0463 J mg/kg	0.2315 mg/kg
4-Bromophenyl phenyl ether	0.0265 J mg/kg	0.1325 mg/kg
Butyl benzyl phthalate	0.0463 J mg/kg	0.2315 mg/kg
Chrysene	0.0331 J mg/kg	0.1655 mg/kg
Dibenzofuran	0.0199 J mg/kg	0.0995 mg/kg
Di-n-butyl phthalate	0.0761 J mg/kg	0.3805 mg/kg
Di-n-octyl phthalate	0.0298 J mg/kg	0.149 mg/kg
1,2-Diphenylhydrazine	0.0298 J mg/kg	0.149 mg/kg
Fluoranthene	0.0298 J mg/kg	0.149 mg/kg
Fluorene	0.0265 J mg/kg	0.1325 mg/kg
Phenanthrene	0.0364 J mg/kg	0.182 mg/kg
Pyrene	0.0298 J mg/kg	0.149 mg/kg

An action level of 5X the maximum concentration was used to evaluate the sample data for laboratory blank contamination. Associated samples with concentrations below the blank action level were qualified "U" for laboratory blank contamination.

Field Duplicate Precision:

FIELD DUPLICATE PRECISION					
ANALYTE	CL001	QUAL	CL002	QUAL	RPD
2-Butanone	0.182		0.133		31.11
4-Methyl-2-pentanone	0.0973	J	0.0884	J	9.59
Acetone	10.3	J	7.17	J	35.83
Aluminum	64600		46400		32.79
Aluminum, TCLP	3.22		1.34		82.46*
Arsenic	11.2	J	10.1	J	10.33
Barium	293		86.8		108.58*
Barium, TCLP	0.405		0.554		31.07
Benzene	0.0192	J	0.013	J	38.51
Beryllium	12.4		8.96		32.21
Cadmium	6.02	J	4.51	J	28.68
Carbon disulfide	0.0404	J	0.103		87.31*
Chromium	246		180		30.99
Chromium, TCLP	0.0471		0.0504		6.77
Cobalt	178		131		30.42
Cobalt, TCLP	0.119		0.118		0.84

Copper	236		174		30.24
Di-n-butyl phthalate	3.44	J	2.41	U	NC
Fluoride	1590		961		49.31
Iron	18200		13500		29.65
Iron, TCLP	0.26		0.2	U	NC
Lead	83.3		63.2		27.44
Manganese	16700		12200		31.14
Manganese, TCLP	16.1		24.5		41.38
Mercury	0.123		0.124		0.81
Nickel	1050		759		32.17
Nickel, TCLP	1.05		1.38		27.16
pH	8.84		8.87		0.34
pH, TCLP	5.68		5.72		0.70
Potassium	2730		1780		42.13
Potassium, TCLP	6.62		9.17		32.30
Selenium	23.9	U	17.4	J	NC
Thallium	8.46	U	6.61	J	NC
Toluene	0.017	J	0.0014	U	NC
Vanadium	45.1	J	31.3	J	36.13
Zinc	2380		1720		32.20
Zinc, TCLP	0.275		0.191		36.05

NC – not calculated due to nondetect result

* - RPD is greater than 50%, associated samples are qualified as estimated, "J," due to laboratory or field sampling imprecision

APPENDIX G

LABORATORY EQUIPMENT LIST

Quality Assurance Manual

Departments: Microbiology Organics Inorganics



Company Headquarters
Main Laboratory
2019 9th Avenue
P. O. Box 1925
Altoona, PA 16603

Phone: (814)946-4306
Fax: (814)946-8791

Michael P. Tyler
President
Laboratory Director

Michelle Fye
QA Officer
Laboratory Supervisor

Signature/Date: _____

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Section I – Major Equipment/ Instrumentation

Equipment	Serial Number	Year
GCMS- Volatiles		
Agilent Technologies GC/MS HP 6890 Series	US00028872	1998
Agilent Technologies GC/MS HP 6890N Series	US10235072	2002
Agilent Technologies GC 6890 Series	US00042389	2013
Agilent Technologies 5973Network MS Detector	US21863858	2002
Agilent Technologies 5973 MS Detector	US91922602	1998
Agilent Technologies MS 5973N	US10461779	2013
OI Analytical Concentrator 4660	K617466039P	2016
OI Analytical Concentrator 4660	K442466216P	2016
OI Model 4660 Sample Concentrator	D535466018P	2006
OI Model 4660 Sample Concentrator	D535466019P	2006
OI Eclipse Model 4660 Sample Concentrator	H242466152P	2013
OI Eclipse Model 4660 Sample Concentrator	K617466039P	
EST Archon Autosampler	12969	1999
EST Archon Autosampler	13661	2002
EST Archon Autosampler	13684	2002
OI Analytical Autosampler	13879	2003
OI Model 4552 Autosampler	13513	2008
OI Archon Model 4552 Autosampler	US12350003	2013
OI 4100 Autosampler	C53841410	2016
Agilent Technologies GC 6890 N Series	US10322072	2008
Auto Sampler Turbomatrix 40	HS1111166	2011
Clarus 680	680S11111604	2011
Agilent Technologies GC 6890 N Series GRO	US10322072	2008
O-I Analytical 4552 Auto Sampler GRO	13513	2008
Tekmar Purge Trap/ Condensor System	T0692452490	2000
GCMS- Semi Volatiles		
Perkin Elmer Autosystem XLGC	610N1100901	2002
Perkin Elmer Clarus 500	650N4022701	2003
Perkin Elmer Clarus 500 (Glycol)	650S09100504	2011
GlasCol combo-Mantle (soxlet)		1999
Foss Soxtec 2055	537220608	2006
DryVap-Horizon Technology	1077	2006
Agilent Technologies 5975 C	US83120181	2009
Agilent Technologies 7693 Auto Sampler	CN946502140	2009
Agilent Technologies GC 7890 Series	US10833011	2009
Agilent Technologies GC 7890B PCB1 (G3440B)	CN17493190	2018
Agilent Technologies GC 7890B Herb2 (G3440B)	CN17493191	2018

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LabConco RapidVap	090199134	2010
Agilent (DRO2) GC/FID	CN15483035	2016
Agilent 7693 Auto Sampler	CN15240052	2016

Section I – Major Equipment/ Instrumentation, continued:

Equipment	Serial Number	Year
METALS		
Perkin Elmer FIMS 100 Mercury analyzer	101S3020401	2004
Perkin Elmer Optima 7300DV Inductively Coupled Plasma	077C1040701	2013
Perkin Elmer SciEx Elon DRC II Inductively Coupled Plasma Mass Spec	AI00110504	2005
CPI Mod Block		2000
CPI Mod Block	SYST-0530-0000	2012
SCP Mod Block	MSX0308300579	2008
CPI Mod Block	51125602.17	2012
Poly Science Chiller (ICP)	108600639	
Perkin Elmer Chiller (GFAA)	31955101702	
Perkin Elmer DRCII ICPMS	AI00110504	2016
OG/TPH		
Horizon Spedex Controller	97-155	1999
Horizon Spedex 4790 Analyzer	05-0600	2006
Horizon Spedex 4790 Analyzer	05-0601	2006
Horizon Spedex 4790	03-0435	2004
Speed Vap-Horizon Technology	052075	2006
Horizon SPE-DEX 4790 Analyzer	13-1916	2013
Ion Chromatograph		
Dionex ICS-2100 Ion Chromatograph	Detector	064556
	Machine	10110178
AS40 Auto Sampler		08070204
Dionex ICS-1500 Ion Chromatograph	Detector	08070182
	Machine	08060950
Dionex ICS-1100 Ion Chromatograph	Machine	12070730
AS-AP Auto Sampler		15062369
Balances		
Mettler AB204S Balance	1122453720	2003
Scout Pro electronic balance 2000g	7122350254	2003
Mettler PL 202-S Top Load Balance		2006
Mettler ML204 (0.1mg)	B31137295	2013
Fisher (0.01g)	B224010836	2013
Precisa Balance XB220A SCS	5001139	2015
Oven/Incubators/Cooler		
Fisher Isotemp 500 Hot Oven	485	1993
Fisher Hot Oven 625G	912N0219	1999
Bally (Walk in) 3678-4 Cooler	DX9103909-01	2002

Thermo Scientific Precision Model 815 Incubator (BOD)	300193185	2018
Fisher ISOTEMP Model 304 Incubator (BOD)	FBDJ51274	2006
Barnstead Thermolyn A1300 Muffle Furnace	112430	2002
Tafco (Walk in) Cooler	10-872-TB	2011
Fisher Isotemp 600 Series Oven	610646-321	2011
Fisher ISOTEMP Model 3720A (BOD)	300054429	2016

MICRO

VWR 155 Incubator	0900198	1997
Quantitray Model 2x Sealer (IDEXX)	01628	2002
Precision Scientific Water Bath	603101847	2005
Market Forge Sterilomatic Autoclave		
Thermo Precision Water Bath 2860	205885-431	2010

Water Purification

Barnstead RoPure	1266100355182	2010
Barnstead Nanopore Diamond Analytical Ultrapure	1190031152057	2004

Miscellaneous Equipment

Gampe Custom Tumbler System (X2)		
Gelman Sciences ZHE System #15220	108324-003	2001
Genesy 10 Vis Spectrophotometer	205H007001	2004
Orion EA940 Expandable Ion Analyzer (Back-up Unit)	3102	2000
Teledyne Tekmar TOC Fusion TOC Analyzer	US17362026	2018
Turbidimeter Micro 100	603015	1999
YSI 5000 Series Dissolved Oxygen Meter	07K101751	2007
VWR Dylastir Magnetic Stir		
Frigidaire Ultra II Glass Washing Station	TH20142278	
YSI 3100 Conductivity Meter	02B0871	1999
Foss TKN Tecator Digestor Auto	520008333	2009
Foss TKN Tecator Digestor Auto	520042979	2010
VWR Ultrasonic Cleaner Model 50HT	01HS 38 220	2005
Compressor – Ingersoll 60 Gallon	1012270256	
Manitowac Q130 Ice Machine Model Qy0134A	020364913	2002
Koehler Instrument Company – Ignitability model K16200	R02291288	2004
Analog Heat Block – VWR (HAA)	060721029	2006
Glastron Enviro-MIDI Distillation Unit	2097	2003
Oakton ISE meter pH 2500 series	30156	1999
Bosch Automatic Dishwasher	11X513	2008
HACH BOD Meter HQ440d Multi Plus Probe	120300068709	2012
Orion Versa Star 4 Channels pH/ISE/Conductivity Meter	V01147	2012
BioScience COD Reactor	COD-B0270	2014
Mantech Titrasip AutoTitrator	MT-1B5-974	2016
Mantech Automax 73 AutoSampler	191G5107	2016

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Section I – Major Equipment/ Instrumentation, continued:

Equipment		Serial Number	Year
Hoods			
Kewaunee Scientific Hood Air Flow - Air Alert 300	5'	Metals Hood 116600	
Kewaunee Scientific Hood Air Flow - Air Alert 300	5'	Phenol Hood	
Labconco Chemical Fume Hood	4'	TKN Hood	2010
Labconco Protector Laboratory Hood	6'	Semi Extraction 060960608	
Labconco Chemical Fume Hood	4'	Acid Wash	
Kewaunee Scientific Hood Air Flow	8'	Dry Vap R137894	2008

Minor Equipment

ISE Probes:
Cyanide
Ammonia
Fluoride
Nitrate
Automatic Pipeters (X7)

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APPENDIX H

DELISTING RISK ASSESSMENT SOFTWARE (DRAS) ANALYSIS

APPENDIX H: TOXICITY EVALUATION USING HAZARDOUS WASTE DELISTING RISK ASSESSMENT SOFTWARE (DRAS)

BACKGROUND

For this petition, the Hazardous Waste Delisting Risk Assessment Software (DRAS) was used to assess the toxicity of the Bulger Waste to human and environmental health. This software uses built-in fate and transport models in conjunction with established health-based metrics to produce site-specific benchmarks useful for delisting a given waste.

As a risk assessment tool, DRAS imparts many benefits. Primarily, it is a USEPA validated method specifically designed for delisting waste. Thus, the consistency and reliability of the software have already been established in prior testing. The software is also simple to use, requiring few user inputs which ultimately minimizes user-induced error. DRAS then clearly presents the results in a format that is directly applicable to delistings under Title 40 of the Code of Federal Regulations (CFR), Section 260.22. These results are presented in conjunction with the other waste properties to support the delisting of the Yukon waste.

The DRAS software used was version 3.035, downloaded from the EPA DRAS webpage (<https://www.epa.gov/hw/hazardous-waste-delisting-risk-assessment-software-dras>) in March 2018. The software was last updated in September 2010.

DATA PRE-PROCESSING

The average results of all the sampling events were used as input for DRAS. By calculating an average or expected chemical concentration, the DRAS calculation can produce a risk assessment that integrates seasonal and temporal variations in the chemical concentrations. Using the average also allows the integration of measurements that fall below the laboratory detection limit (non-detects) with those that were detected.

To calculate the average, all non-detects were assigned a value of the detection limit divided by 2. However, if the detection limit divided by 2 was greater than the maximum measured concentration, that particular value was determined to be a laboratory outlier and removed from subsequent analysis. The results for the duplicate samples collected on 1/25/2018 and 3/23/2018 were averaged to give one value using one half the detection limit for non-detects, and then the mean of all the data from all seven dates was calculated. The resulting average concentrations are shown in Tables H-1 through H-6.

DRAS requires two values for each chemical: total concentrations (mg/kg) and toxicity characteristic leaching procedure (TCLP) concentrations (mg/L). Total concentrations of 19 metals, 119 organics (volatile and semivolatile organic compounds, polychlorinated biphenyls, pesticides, and chlorinated herbicides) and three select anions of the Bulger sludge were directly measured by using validated EPA methods. The averages of these values were calculated as described in the preceding paragraph and used as input in DRAS. Except for antimony and silver, all of the analyzed metals were detected in at least one of the sludge samples. On the other hand, only 18 volatile and semivolatile organic compounds were detected in the 6 samples taken. No pesticides, chlorinated herbicides or polychlorinated biphenyls were

detected. These undetected organics were henceforth not considered chemicals of concern and were not included in the DRAS analysis.

TCLP analysis was performed for all 19 metals and 13 of the semivolatile organic compounds. TCLP analysis yielded detectable concentrations for all but five of the metals (arsenic, cadmium, silver, thallium and vanadium). For these metals the average of TCLP detection limits divided by 2 was used for the DRAS model. Only one semivolatile organic compound, pyridine, was detected by TCLP analysis in one of the 1/25/18 duplicates. Pyridine was not detected in the total analysis so the average of the pyridine detection limits divided by 2 was used for the DRAS model. The other 12 semivolatile organic compounds were not detected in the sludge (total concentration) sample. Because these compounds were not detected by any method, they are not expected to pose a risk to environmental health and so these were not included in the DRAS analysis.

Most organic compounds detected in the sludge could not be subjected to TCLP analysis. Thus, the following conservative approach was used to estimate leachate concentrations based on the sludge total concentrations. In the TCLP analysis, the sludge sample is leached with an acid or alkaline solution at a 1:20 ratio of sample to solvent. Assuming 100% of the chemical is transferred to the solution, leachate concentrations of the organic compounds detected in the sludge matrix would be 20 times less than what was detected in the sludge. This assumption produces the worst-case leachate scenario and was thus most protective of environmental health. Therefore, for all organic compounds and anions for which there is no TCLP data, the TCLP concentration was determined to be $\frac{1}{20}th$ the average total concentration of each organic compound detected in the sludge samples. These values were entered as being at the laboratory detection limit and are noted as TCLP estimates in the results tables.

DRAS INPUTS

The Bulger facility was modeled as generating 600 cubic yards of waste each year for an active life of 20 years. The cancer risk level was 1E-6 and the Hazard Quotient (HQ) was set to 1. The default risk-based information was used for each chemical.

Although most compound concentrations could be entered directly into DRAS, a few compounds required special notice:

- The mercury fish pathway concentrations were set equal to the mercury concentrations as required by DRAS.
- The laboratory analyses quantified both total cyanide and amenable cyanide. Both these concentrations were the same for each sample so either one was used for the DRAS analysis.
- Aluminum and sulfide in the sludge were quantified by laboratory analysis. However, these compounds were not available in DRAS and are not present in concentrations likely to affect human health. Thus these compounds were not considered chemicals of concern and were not included in the DRAS analysis.

DRAS RESULTS AND DISCUSSION

Three sets of DRAS pathway-specific chemical risk analyses are presented in at the end of this chapter: (1) non-carcinogenic hazard quotients; (2) lifetime incremental cancer risks; and (3) maximum allowable chemical concentrations. DRAS calculates these values for both potential surface exposures using the

measured chemical total concentrations and potential groundwater exposures using measured or estimated TCLP concentrations. Thus, the results are 6 analyses, presented in Tables H-1 through H-6, and discussed below.

The non-carcinogenic risks for the surface and groundwater exposure pathways are presented in Tables H-1 and H-2 respectively. The maximum projected risks are noted below. These values are significantly below 1.0 and are thus not likely to present a risk to environmental health.

- Hazard index for surface exposure pathways (total concentrations): 1.32E-2
- Hazard index for groundwater exposure pathways (TCLP concentrations): 2.41E-1

The aggregate carcinogenic risks for the surface and groundwater pathways are presented in Tables H-3 and H-4. The aggregate values are summarized as follows. The risk associated with benzidine is also presented for comparison. The incremental cancer risk for both surface and groundwater exposures are very low, less than 1E-5.

- Cancer risk for surface exposure pathways (total concentrations): 3.31E-8
- Cancer risk for groundwater exposure pathways (TCLP concentrations): 1.42E-6

The DRAS calculated maximum allowable sludge and leachate concentrations are shown in Tables H-5 and H-6. These values are based on all surface and groundwater pathways considered by DRAS. Except for one exceptions, all metal, organic and anion maximum and average concentrations are significantly below the maximum allowable concentrations, often by several orders of magnitude. The data shows that these metals, organics and anions in the sludge samples are far below the EPA health-based criteria.

One arsenic TCLP data point measured 0.0793 mg/L, slightly above the delisting level of 0.0738 mg/L. However of the 8 samples taken over 12 months, arsenic was only detected in one other sample at a concentration of 0.028 mg/L. Thus, the average arsenic leachate concentrations over time is expected to be far below the delisting levels.

Only one constituent, TCLP arsenic, yielded a result greater than its delisting limit. However, it must be noted that arsenic was not detected in any of the TCLP samples. Instead, the average of the TCLP detection limits was 0.0121 mg/L, slightly above the delisting level of 0.0103 mg/L. This apparent exceedance is considered purely artificial given that arsenic was not in fact detected in any of the TCLP extracts analyzed. Thus, the average arsenic leachate concentrations over time is expected to be far below the delisting levels.

CONCLUSIONS

As shown by the preceding information, only low concentrations of metals, organic constituents and cyanide were consistently detected in the analyses. Therefore, the data collected over a year indicates that the chemicals of concern in the Bulger sludge are significantly below the EPA standards that provide protection of human health and the environment under the described waste management program. For the aforementioned reasons, and others considered in this petition, Max Environmental has concluded that the Bulger sludge is suitable for disposal in a nonhazardous waste landfill.

Table H-1. Surface exposure non-carcinogenic risks as calculated by DRAS using sludge average total concentrations. The aggregate hazard quotient was determined to be 1.32E-2.

Chemical Name	Average Total Concentration (mg/kg)	Surface Pathway-Specific Hazard Quotients					Aggregate Hazard Quotient
		Water Ingestion	Particulate Inhalation	Fish Ingestion	Soil Ingestion	Volatile Inhalation	
Metals							
Antimony	1.08E+01	1.79E-07	---	7.39E-06	6.98E-07	---	8.27E-06
Arsenic	8.21E+00	1.82E-07	---	2.14E-05	7.08E-07	---	2.22E-05
Barium	5.52E+03	1.83E-07	1.52E-04	1.20E-04	7.14E-07	---	2.72E-04
Beryllium	8.68E+00	2.88E-08	5.97E-06	1.83E-06	1.12E-07	---	7.94E-06
Cadmium	4.76E+00	6.33E-08	---	5.91E-05	2.46E-07	---	5.94E-05
Chromium	2.06E+02	4.56E-07	---	4.69E-07	1.78E-06	---	2.70E-06
Cobalt	1.32E+02	2.92E-06	3.03E-04	---	1.14E-05	---	3.17E-04
Copper	1.94E+02	3.22E-08	---	2.36E-05	1.25E-07	---	2.37E-05
Iron	1.88E+04	4.17E-07	---	---	1.62E-06	---	2.04E-06
Lead	9.57E+01	---	---	---	---	---	---
Manganese	1.36E+04	3.77E-06	3.74E-03	---	1.47E-05	---	3.76E-03
Mercury (Total)	1.25E-01	2.77E-09	5.73E-09	---	1.08E-08	8.36E-12	1.93E-08
Mercury (Fish Pathway Only)	1.25E-01	---	---	4.36E-03	---	---	4.36E-03
Nickel	7.98E+02	2.65E-07	---	2.13E-05	1.03E-06	---	2.26E-05
Selenium	1.29E+01	1.71E-08	---	2.28E-06	6.67E-08	---	2.36E-06
Silver	1.30E+00	1.73E-09	---	1.56E-07	6.72E-09	---	1.65E-07
Thallium	4.06E+00	4.09E-07	---	4.21E-03	1.59E-06	---	4.21E-03
Vanadium	4.82E+01	6.41E-08	---	6.60E-08	2.49E-07	---	3.79E-07
Zinc	1.65E+03	3.66E-08	---	7.75E-05	1.42E-07	---	7.77E-05
Volatile Organic Compounds							
2-Butanone	7.55E-02	8.36E-13	2.12E-13	8.43E-13	3.25E-12	3.76E-11	4.27E-11
4-Methyl-2-pentanone	4.90E-02	4.07E-12	2.24E-13	2.44E-11	1.58E-11	1.22E-11	5.68E-11
Benzene	7.88E-03	1.31E-11	3.60E-12	3.30E-10	5.09E-11	7.83E-10	1.18E-09
Carbon disulfide	3.35E-02	2.23E-12	6.58E-13	4.03E-11	8.66E-12	5.89E-10	6.41E-10
Chloroform	2.04E-03	1.36E-12	2.83E-13	5.03E-12	5.28E-12	1.18E-10	1.30E-10
Toluene	6.08E-03	5.05E-13	1.67E-14	3.64E-11	1.97E-12	1.41E-12	4.03E-11

Semivolatile Organic Compounds							
Aniline (benzeneamine)	2.71E+00	2.57E-09	3.73E-08	7.54E-09	1.00E-08	5.56E-08	1.13E-07
Benz(a)anthracene	2.80E-01	---	---	---	---	---	---
Benzyl alcohol	4.45E-01	5.92E-12	3.50E-12	2.46E-11	2.30E-11	9.22E-13	5.80E-11
Bis(2-ethylhexyl)phthalate	3.60E+00	1.20E-09	7.07E-10	1.14E-09	4.65E-09	7.84E-15	7.70E-09
Chrysene	1.91E-01	---	---	---	---	---	---
Di-n-butyl phthalate	8.22E+00	5.46E-10	---	1.54E-06	2.13E-09	---	1.54E-06
Fluoranthene	2.44E-01	4.05E-11	2.40E-11	8.30E-07	1.58E-10	3.61E-16	8.30E-07
Isophorone	5.28E-01	1.75E-11	---	2.08E-10	6.83E-11	---	2.94E-10
Phenanthrene	1.91E+00	---	---	---	---	---	---
Phenol	5.72E-01	1.27E-11	---	9.90E-11	4.93E-11	---	1.61E-10
Pyrene	2.54E-01	5.63E-11	---	4.82E-07	2.19E-10	---	4.82E-07
Pyridine	9.76E+00	6.49E-08	---	1.23E-07	2.52E-07	---	4.40E-07
Anions							
Cyanide	1.17E+00	3.89E-10	2.30E-10	2.54E-07	1.51E-09	1.51E-08	2.71E-07
Fluoride	8.51E+02	9.43E-08	---	---	3.67E-07	---	4.61E-07
TOTAL		9.19E-06	4.20E-03	8.91E-03	3.58E-05	7.23E-08	1.32E-02

Table H-2. Groundwater exposure non-carcinogenic risks as calculated by DRAS using average TCLP average concentrations or estimated TCLP values. The aggregate hazard quotient was determined to be 2.41E-1.

Chemical Name	TCLP Concentration (mg/L)		Groundwater Pathway Specific Hazard				Aggregate Hazard Quotient
	Average	Estimated	Ingestion	Inhalation	Dermal Absorption - Adult	Dermal Absorption - Child	
Metals							
Antimony	3.47E-02	---	1.05E-02	---	2.62E-05	6.57E-05	1.06E-02
Arsenic	1.21E-02	---	4.86E-03	---	1.21E-05	3.04E-05	4.89E-03
Barium	4.84E-01	---	2.91E-04	---	7.28E-07	1.82E-06	2.93E-04
Beryllium	1.55E-03	---	8.70E-05	---	2.18E-07	5.45E-07	8.76E-05
Cadmium	3.76E-03	---	8.91E-04	---	2.23E-06	5.57E-06	8.96E-04
Chromium	2.37E-02	---	5.32E-04	---	1.33E-06	3.33E-06	5.36E-04
Cobalt	6.46E-02	---	2.48E-02	---	6.20E-05	1.55E-04	2.50E-02
Copper	1.05E-02	---	2.02E-05	---	5.04E-08	1.26E-07	2.03E-05
Iron	7.08E-02	---	5.78E-09	---	1.45E-11	3.62E-11	5.82E-09
Lead	1.31E-02	---	---	---	---	---	---
Manganese	1.15E+01	---	6.00E-02	---	1.50E-04	3.75E-04	6.03E-02
Mercury (Total)	4.56E-04	---	7.08E-05	5.51E-04	1.77E-07	4.43E-07	6.22E-04
Mercury (Fish Pathway Only)	4.56E-04	---	---	---	---	---	---
Nickel	4.95E-01	---	3.00E-03	---	7.49E-06	1.87E-05	3.01E-03
Selenium	1.36E-02	---	3.20E-04	---	8.00E-07	2.00E-06	3.22E-04
Silver	5.00E-03	---	4.63E-05	---	1.16E-07	2.90E-07	4.66E-05
Thallium	1.93E-02	---	3.50E-02	---	8.75E-05	2.19E-04	3.52E-02
Vanadium	9.72E-03	---	1.64E-04	---	4.09E-07	1.02E-06	1.65E-04
Zinc	1.27E-01	---	4.91E-05	---	1.23E-07	3.07E-07	4.94E-05
Volatile Organic Compounds							
2-Butanone	---	3.78E-03	8.96E-07	6.94E-08	6.67E-09	1.45E-08	9.80E-07
4-Methyl-2-pentanone	---	2.45E-03	4.36E-06	2.02E-07	1.19E-07	2.60E-07	4.82E-06
Benzene	---	3.94E-04	1.40E-05	1.22E-05	2.07E-06	4.52E-06	3.07E-05
Carbon disulfide	---	1.67E-03	2.06E-06	2.43E-06	2.41E-07	5.26E-07	5.01E-06
Chloroform	---	1.02E-04	1.41E-06	8.91E-07	1.11E-07	2.41E-07	2.54E-06
Toluene	---	3.04E-04	5.51E-07	5.45E-08	2.03E-07	4.41E-07	1.05E-06

Semivolatile Organic Compounds							
Aniline (benzeneamine)	---	1.35E-01	2.74E-03	1.04E-03	5.58E-05	1.21E-04	3.90E-03
Benz(a)anthracene	---	1.40E-02	---	---	---	---	---
Benzyl alcohol	---	2.23E-02	6.34E-06	1.29E-08	1.44E-07	3.14E-07	6.67E-06
Bis(2-ethylhexyl)phthalate	---	1.80E-01	1.97E-32	1.01E-35	4.12E-32	8.97E-32	1.09E-31
Chrysene	---	1.96E-02	---	---	---	---	---
Di-n-butyl phthalate	---	4.11E-01	3.02E-04	---	6.31E-04	1.37E-03	1.68E-03
Fluoranthene	---	1.22E-02	2.30E-05	1.04E-06	1.87E-04	4.08E-04	4.32E-04
Isophorone	---	2.64E-02	1.88E-05	---	8.92E-07	1.94E-06	2.07E-05
Phenanthrene	---	9.55E-03	---	---	---	---	---
Phenol	---	2.86E-02	1.36E-05	---	6.14E-07	1.34E-06	1.49E-05
Pyrene	---	1.27E-02	1.36E-05	---	1.08E-04	2.35E-04	2.48E-04
Pyridine	1.95E-02		2.77E-03	---	3.78E-05	8.24E-05	2.86E-03
Anions							
Cyanide	---	5.85E-02	4.16E-04	---	---	---	4.16E-04
Fluoride	---	4.26E+01	8.94E-02	---	---	---	8.94E-02
TOTAL			2.36E-01	1.61E-03	1.38E-03	3.11E-03	2.41E-01

Table H-3. Surface exposure carcinogenic risks as calculated by DRAS using sludge average total concentrations. The aggregate cancer risk was determined to be 3.31E-8.

Chemical Name	Average Total Concentration (mg/kg)	Surface Pathway-Specific Lifetime Incremental Cancer Risks					Aggregate Cancer Risk
		Water Ingestion	Particulate Inhalation	Fish Ingestion	Soil Ingestion	Volatile Inhalation	
Metals							
Antimony	1.08E+01	---	---	---	---	---	---
Arsenic	8.21E+00	4.20E-11	2.42E-10	3.84E-09	3.60E-11	---	4.16E-09
Barium	5.52E+03	---	---	---	---	---	---
Beryllium	8.68E+00	---	1.43E-10	---	---	---	1.43E-10
Cadmium	4.76E+00	---	5.87E-11	---	---	---	5.87E-11
Chromium	2.06E+02	---	1.69E-08	---	---	---	1.69E-08
Cobalt	1.32E+02	---	8.13E-09	---	---	---	8.13E-09
Copper	1.94E+02	---	---	---	---	---	---
Iron	1.88E+04	---	---	---	---	---	---
Lead	9.57E+01	---	---	---	---	---	---
Manganese	1.36E+04	---	---	---	---	---	---
Mercury (Total)	1.25E-01	---	---	---	---	---	---
Mercury (Fish Pathway Only)	1.25E-01	---	---	---	---	---	---
Nickel	7.98E+02	---	1.31E-09	---	---	---	1.31E-09
Selenium	1.29E+01	---	---	---	---	---	---
Silver	1.30E+00	---	---	---	---	---	---
Thallium	4.06E+00	---	---	---	---	---	---
Vanadium	4.82E+01	---	---	---	---	---	---
Zinc	1.65E+03	---	---	---	---	---	---
Volatile Organic Compounds							
2-Butanone	7.55E-02	---	---	---	---	---	---
4-Methyl-2-pentanone	4.90E-02	---	---	---	---	---	---
Benzene	7.88E-03	1.48E-15	4.16E-16	2.91E-14	1.27E-15	9.05E-14	1.23E-13
Carbon disulfide	3.35E-02	---	---	---	---	---	---
Chloroform	2.04E-03	---	3.23E-16	---	---	1.35E-13	1.36E-13
Toluene	6.08E-03	---	---	---	---	---	---

Semivolatile Organic Compounds							
Aniline (benzeneamine)	2.71E+00	5.27E-14	---	1.20E-13	4.51E-14	---	2.18E-13
Benz(a)anthracene	2.80E-01	6.98E-13	1.70E-13	2.39E-09	5.97E-13	4.91E-20	2.39E-09
Benzyl alcohol	4.45E-01	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate	3.60E+00	1.72E-13	9.86E-14	1.27E-13	1.47E-13	1.09E-18	5.45E-13
Chrysene	1.91E-01	4.76E-15	1.16E-15	1.66E-11	4.07E-15	4.63E-18	1.66E-11
Di-n-butyl phthalate	8.22E+00	---	---	---	---	---	---
Fluoranthene	2.44E-01	---	---	---	---	---	---
Isophorone	5.28E-01	1.80E-15	---	1.66E-14	1.54E-15	---	2.00E-14
Phenanthrene	1.91E+00	---	---	---	---	---	---
Phenol	5.72E-01	---	---	---	---	---	---
Pyrene	2.54E-01	---	---	---	---	---	---
Pyridine	9.76E+00	---	---	---	---	---	---
Anions							
Cyanide	1.17E+00	---	---	---	---	---	---
Fluoride	8.51E+02	---	---	---	---	---	---
TOTAL		4.30E-11	2.68E-08	6.25E-09	3.68E-11	2.26E-13	3.31E-08

Table H-4. Groundwater exposure carcinogenic risks as calculated by DRAS using average TCLP average concentrations or estimated TCLP values. The aggregate cancer risk was determined to be 1.42E-6.

Chemical Name	TCLP concentration (mg/L)		Groundwater Pathway-Specific Lifetime Incremental Cancer Risk				Aggregate Cancer Risk
	Average	Estimated	Ingestion	Inhalation	Dermal Absorption - Adult	Dermal Absorption - Child	
Metals							
Antimony	3.47E-02	---	---	---	---	---	---
Arsenic	1.21E-02	---	1.17E-06	---	2.29E-09	1.14E-09	1.18E-06
Barium	4.84E-01	---	---	---	---	---	---
Beryllium	1.55E-03	---	---	---	---	---	---
Cadmium	3.76E-03	---	---	---	---	---	---
Chromium	2.37E-02	---	---	---	---	---	---
Cobalt	6.46E-02	---	---	---	---	---	---
Copper	1.05E-02	---	---	---	---	---	---
Iron	7.08E-02	---	---	---	---	---	---
Lead	1.31E-02	---	---	---	---	---	---
Manganese	1.15E+01	---	---	---	---	---	---
Mercury (Total)	4.56E-04	---	---	---	---	---	---
Mercury (Fish Pathway Only)	4.56E-04	---	---	---	---	---	---
Nickel	4.95E-01	---	---	---	---	---	---
Selenium	1.36E-02	---	---	---	---	---	---
Silver	5.00E-03	---	---	---	---	---	---
Thallium	1.93E-02	---	---	---	---	---	---
Vanadium	9.72E-03	---	---	---	---	---	---
Zinc	1.27E-01	---	---	---	---	---	---
Volatile Organic Compounds							
2-Butanone	---	3.78E-03	---	---	---	---	---
4-Methyl-2-pentanone	---	2.45E-03	---	---	---	---	---
Benzene	---	3.94E-04	1.58E-09	1.45E-09	1.82E-10	7.95E-11	3.22E-09
Carbon disulfide	---	1.67E-03	---	---	---	---	---
Chloroform	---	1.02E-04	---	1.05E-09	---	---	1.05E-09
Toluene	---	3.04E-04	---	---	---	---	---

Semivolatile Organic Compounds							
Aniline (benzeneamine)	---	1.35E-01	5.62E-08	---	8.90E-10	3.88E-10	5.71E-08
Benz(a)anthracene	---	1.40E-02	1.20E-08	8.95E-11	1.64E-07	7.16E-08	1.76E-07
Benzyl alcohol	---	2.23E-02	---	---	---	---	---
Bis(2-ethylhexyl)phthalate	---	1.80E-01	2.84E-36	1.44E-39	4.61E-36	2.01E-36	7.45E-36
Chrysene	---	1.96E-02	1.67E-10	4.21E-13	2.29E-09	9.99E-10	2.46E-09
Di-n-butyl phthalate	---	4.11E-01	---	---	---	---	---
Fluoranthene	---	1.22E-02	---	---	---	---	---
Isophorone	---	2.64E-02	1.93E-09	---	7.13E-11	3.11E-11	2.00E-09
Phenanthrene	---	9.55E-03	---	---	---	---	---
Phenol	---	2.86E-02	---	---	---	---	---
Pyrene	---	1.27E-02	---	---	---	---	---
Pyridine	1.95E-02	---	---	---	---	---	---
Anions							
Cyanide	---	5.85E-02	---	---	---	---	---
Fluoride	---	4.26E+01	---	---	---	---	---
TOTAL			1.25E-06	2.59E-09	1.70E-07	7.42E-08	1.42E-06

Table H-5. Maximum allowable (limiting) sludge concentrations as calculated by DRAS. The measured concentrations are provided for reference.

Chemical Name	Total Concentration (mg/kg)		Surface Pathway Specific Maximum Allowable Concentrations (mg/kg)					Limiting Concentration (mg/kg)
	Maximum	Average	Water Ingestion	Particulate Inhalation	Fish Ingestion	Soil Ingestion	Volatile Inhalation	
Metals								
Antimony	U	1.08E+01	6.02E+07	---	1.46E+06	1.55E+07	---	1.46E+06
Arsenic	1.31E+01	8.21E+00	1.95E+05	3.40E+04	2.14E+03	2.28E+05	---	2.14E+03
Barium	9.14E+03	5.52E+03	3.01E+10	3.63E+07	4.62E+07	7.73E+09	---	3.63E+07
Beryllium	1.24E+01	8.68E+00	3.01E+08	6.09E+04	4.75E+06	7.73E+07	---	6.09E+04
Cadmium	6.02E+00	4.76E+00	7.52E+07	8.11E+04	8.06E+04	1.93E+07	---	8.06E+04
Chromium	2.70E+02	2.06E+02	4.51E+08	1.22E+04	4.39E+08	1.16E+08	---	1.22E+04
Cobalt	1.78E+02	1.32E+02	4.51E+07	1.62E+04	---	1.16E+07	---	1.62E+04
Copper	2.63E+02	1.94E+02	6.02E+09	---	8.23E+06	1.55E+09	---	8.23E+06
Iron	2.30E+04	1.88E+04	4.51E+10	---	---	1.16E+10	---	1.16E+10
Lead	1.25E+02	9.57E+01	---	1.39E+07	---	4.94E+07	---	1.39E+07
Manganese	1.67E+04	1.36E+04	3.61E+09	3.63E+06	---	9.28E+08	---	3.63E+06
Mercury (Total)	1.47E-01	1.25E-01	4.51E+07	2.18E+07	---	1.16E+07	1.50E+10	1.16E+07
Mercury (Fish Pathway Only)	1.47E-01	1.25E-01	---	---	2.87E+01	---	---	2.87E+01
Nickel	1.05E+03	7.98E+02	3.01E+09	6.09E+05	3.75E+07	7.73E+08	---	6.09E+05
Selenium	1.74E+01	1.29E+01	7.52E+08	---	5.66E+06	1.93E+08	---	5.66E+06
Silver	U	1.30E+00	7.52E+08	---	8.33E+06	1.93E+08	---	8.33E+06
Thallium	6.61E+00	4.06E+00	9.93E+06	---	9.64E+02	2.55E+06	---	9.64E+02
Vanadium	6.54E+01	4.82E+01	7.52E+08	---	7.31E+08	1.93E+08	---	1.93E+08
Zinc	2.38E+03	1.65E+03	4.51E+10	---	2.13E+07	1.16E+10	---	2.13E+07
Volatile Organic Compounds								
2-Butanone	1.82E-01	7.55E-02	9.03E+10	3.56E+11	8.96E+10	2.32E+10	2.01E+09	2.01E+09
4-Methyl-2-pentanone	9.73E-02	4.90E-02	1.20E+10	2.19E+11	2.00E+09	3.09E+09	4.03E+09	2.00E+09
Benzene	1.92E-02	7.88E-03	5.33E+06	1.89E+07	2.71E+05	6.22E+06	8.71E+04	8.71E+04
Carbon disulfide	1.03E-01	3.35E-02	1.50E+10	5.09E+10	8.32E+08	3.87E+09	5.69E+07	5.69E+07
Chloroform	3.70E-03	2.04E-03	1.50E+09	6.31E+06	4.06E+08	3.87E+08	1.51E+04	1.51E+04
Toluene	1.70E-02	6.08E-03	1.20E+10	3.63E+11	1.67E+08	3.09E+09	4.33E+09	1.67E+08

Semivolatile Organic Compounds								
Aniline (benzeneamine)	1.13E+01	2.71E+00	5.14E+07	7.27E+07	2.25E+07	6.00E+07	4.87E+07	2.25E+07
Benz(a)anthracene	3.18E-01	2.80E-01	4.01E+05	1.65E+06	1.17E+02	4.69E+05	5.70E+12	1.17E+02
Benzyl alcohol	4.45E-01	4.45E-01	7.52E+10	1.27E+11	1.81E+10	1.93E+10	4.83E+11	1.81E+10
Bis(2-ethylhexyl)phthalate	7.67E+00	3.60E+00	2.09E+07	3.65E+07	2.83E+07	2.44E+07	3.29E+12	2.09E+07
Chrysene	1.91E-01	1.91E-01	4.01E+07	1.65E+08	1.15E+04	4.69E+07	4.12E+10	1.15E+04
Di-n-butyl phthalate	3.10E+01	8.22E+00	1.50E+10	---	5.34E+06	3.87E+09	---	5.34E+06
Fluoranthene	2.54E-01	2.44E-01	6.02E+09	1.02E+10	2.94E+05	1.55E+09	6.77E+14	2.94E+05
Isophorone	5.40E-01	5.28E-01	2.93E+08	---	3.17E+07	3.42E+08	---	3.17E+07
Phenanthrene	1.91E-01	1.91E+00	---	---	---	---	---	---
Phenol	5.72E-01	5.72E-01	4.51E+10	---	5.78E+09	1.16E+10	---	5.78E+09
Pyrene	2.54E-01	2.54E-01	4.51E+09	---	5.27E+05	1.16E+09	---	5.27E+05
Pyridine	U	9.76E+00	1.50E+08	---	7.95E+07	3.87E+07	---	3.87E+07
Anions								
Cyanide	3.42E+00	1.17E+00	3.01E+09	5.09E+09	4.61E+06	7.73E+08	7.76E+07	4.61E+06
Fluoride	1.59E+03	8.51E+02	9.03E+09	---	---	2.32E+09	---	2.32E+09

U – Compound was analyzed for but not detected

Table H-6. Maximum allowable (limiting) leachate concentrations as calculated by DRAS. Each measured or estimated TCLP concentration and DRAS calculated dilution attenuation factor (DAF) is provided for reference.

Chemical Name	TCLP Concentration (mg/L)			Groundwater Pathway-Specific Maximum Allowable Concentration (mg/L)				MCL (mg/L)	Limiting concentration (mg/L)	Waste Volume Adjusted DAF	Delisting Level (mg/L)
	Maximum	Average	Estimated	Ingestion	Inhalation	Dermal Absorption - Adult	Dermal Absorption- Child				
Metals											
Antimony	7.32E-02	3.47E-02	---	1.50E-02	---	6.01E+00	2.40E+00	6.00E-03	6.00E-03	2.19E+02	1.31E+00
Arsenic	U	1.21E-02	---	4.87E-05	---	2.50E-02	5.00E-02	1.00E-02	4.87E-05	5.15E+02	1.03E-02
Barium	6.07E-01	4.84E-01	---	7.51E+00	---	3.00E+03	1.20E+03	2.00E+00	2.00E+00	2.16E+02	4.33E+02
Beryllium	4.08E-03	1.55E-03	---	7.51E-02	---	3.00E+01	1.20E+01	4.00E-03	4.00E-03	4.14E+03	9.48E-01
Cadmium	U	3.76E-03	---	1.88E-02	---	7.51E+00	3.00E+00	5.00E-03	5.00E-03	2.21E+02	1.11E+00
Chromium	5.04E-02	2.37E-02	---	1.13E-01	---	4.51E+01	1.80E+01	1.00E-01	1.00E-01	2.31E+02	2.23E+01
Cobalt	1.19E-01	6.46E-02	---	1.13E-02	---	4.51E+00	1.80E+00	---	1.13E-02	2.28E+02	2.54E+00
Copper	1.92E-02	1.05E-02	---	1.50E+00	---	6.01E+02	2.40E+02	1.30E+00	1.30E+00	2.25E+02	2.90E+02
Iron	2.60E-01	7.08E-02	---	1.13E+01	---	4.51E+03	1.80E+03	---	1.13E+01	1.09E+06	1.22E+07
Lead	2.02E-02	1.31E-02	---	1.50E-02	---	---	---	1.50E-02	1.50E-02	5.63E+02	6.64E+00
Manganese	2.45E+01	1.15E+01	---	9.01E-01	---	3.60E+02	1.44E+02	---	9.01E-01	2.18E+02	1.95E+02
Mercury (Total)	9.37E-04	4.56E-04	---	1.13E-02	1.45E-03	4.51E+00	1.80E+00	2.00E-03	1.45E-03	5.70E+02	8.26E-01
Mercury (Fish Pathway Only)	9.37E-04	4.56E-04	---	---	---	---	---	---	---	---	---
Nickel	1.38E+00	4.95E-01	---	7.51E-01	---	3.00E+02	1.20E+02	---	7.51E-01	2.14E+02	1.60E+02
Selenium	1.90E-02	1.36E-02	---	1.88E-01	---	7.51E+01	3.00E+01	5.00E-02	5.00E-02	2.19E+02	1.09E+01
Silver	U	5.00E-03	---	1.88E-01	---	7.51E+01	3.00E+01	---	1.88E-01	5.14E+02	8.98E+01
Thallium	U	1.93E-02	---	2.48E-03	---	9.91E-01	3.96E-01	2.00E-03	2.00E-03	2.23E+02	4.45E-01
Vanadium	U	9.72E-03	---	1.88E-01	---	7.51E+01	3.00E+01	---	1.88E-01	2.20E+02	4.03E+01
Zinc	4.74E-01	1.27E-01	---	1.13E+01	---	4.51E+03	1.80E+03	---	1.13E+01	2.17E+02	2.45E+03
Volatile Organic Compounds											
2-Butanone	---	---	3.78E-03	2.25E+01	2.91E+02	3.02E+03	1.39E+03	---	2.25E+01	1.87E+02	4.22E+03
4-Methyl-2-pentanone	---	---	2.45E-03	3.00E+00	6.48E+01	1.10E+02	5.04E+01	---	3.00E+00	1.87E+02	5.62E+02
Benzene	---	---	3.94E-04	1.33E-03	1.45E-03	1.15E-02	2.65E-02	5.00E-03	1.33E-03	1.87E+02	2.49E-01
Carbon disulfide	---	---	1.67E-03	3.75E+00	3.17E+00	3.20E+01	1.47E+01	---	3.17E+00	2.16E+02	6.86E+02
Chloroform	---	---	1.02E-04	3.75E-01	5.03E-04	4.77E+00	2.19E+00	8.00E-02	5.03E-04	1.93E+02	9.73E-02
Toluene	---	---	3.04E-04	3.00E+00	3.04E+01	8.17E+00	3.75E+00	1.00E+00	1.00E+00	1.84E+02	1.84E+02

Semivolatile Organic Compounds											
Aniline (benzeneamine)	---	---	1.35E-01	1.28E-02	6.95E-01	8.10E-01	1.86E+00	---	1.28E-02	1.87E+02	2.40E+00
Benz(a)anthracene	---	---	1.40E-02	1.00E-04	1.34E-02	7.29E-06	1.67E-05	---	7.29E-06	1.17E+04	8.52E-02
Benzyl alcohol	---	---	2.23E-02	1.88E+01	9.24E+03	8.26E+02	3.79E+02	---	1.88E+01	1.87E+02	3.52E+03
Bis(2-ethylhexyl)phthalate	---	---	1.80E-01	5.22E-03	1.03E+01	3.21E-03	7.36E-03	6.00E-03	3.21E-03	1.22E+31	3.90E+28
Chrysene	---	---	1.96E-02	1.00E-02	3.97E+00	7.29E-04	1.67E-03	---	7.29E-04	1.17E+04	8.52E+00
Di-n-butyl phthalate	---	---	4.11E-01	3.75E+00	---	1.80E+00	8.26E-01	---	8.26E-01	3.62E+02	2.99E+02
Fluoranthene	---	---	1.22E-02	1.50E+00	3.32E+01	1.85E-01	8.49E-02	---	8.49E-02	3.53E+02	2.99E+01
Isophorone	---	---	2.64E-02	7.31E-02	---	1.98E+00	4.54E+00	---	7.31E-02	1.87E+02	1.37E+01
Phenanthrene	---	---	9.55E-03	---	---	---	---	---	---	---	---
Phenol	---	---	2.86E-02	1.13E+01	---	2.49E+02	1.14E+02	---	1.13E+01	1.87E+02	2.11E+03
Pyrene	---	---	1.27E-02	1.13E+00	---	1.42E-01	6.50E-02	---	6.50E-02	8.32E+02	5.41E+01
Pyridine	8.35E-02	1.95E-02	---	3.75E-02	---	2.75E+00	1.26E+00	---	3.75E-02	1.87E+02	7.03E+00
Anions											
Cyanide	---	---	5.85E-02	7.51E-01	---	---	---	2.00E-01	2.00E-01	1.87E+02	3.75E+01
Fluoride	---	---	4.26E+01	2.25E+00	---	---	---	4.00E+00	2.25E+00	2.13E+02	4.79E+02

U – Compound was analyzed for but not detected

APPENDIX I

**GROUNDWATER MONITORING FORMS
(PROVIDED ON CD IN HARD COPY)**

Date Prepared/Revised 1/30/2018
DEP USE ONLY
Date Received

FORM 14R
RESIDUAL WASTE LANDFILLS
AND DISPOSAL IMPOUNDMENTS
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 14R, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General References: Section 288.254, 289.264

SECTION A. SITE IDENTIFIER

Applicant/permittee: MAX Environmental Technologies, Inc.

Site Name: MAX Env. Tech., Inc. -- Yukon

Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: KISELICH Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: N/A Longitude: N/A

Depth to Water Level: _____ ft. Measured from: Land Surface TOC

Casing Stick Up: _____ ft. Elevation of Water Level: _____ ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 2:30:00 PM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22029-05 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments: Residential Well

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Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: MSS-1
 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township
Sampling Point: Latitude: N/A Longitude: N/A
Depth to Water Level: [] ft. Measured from: Land Surface TOC
Casing Stick Up: [] ft. Elevation of Water Level: [] ft./MSL
Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.
Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged: 0
Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns
Spring Flow Rate: 1 GPM
Sample Date(mm/dd/yy): 11/22/2017 Sample Collection Time: 10:00:00 AM
Sample Collectors Name: JT
Sample Collector's Affiliation: Cribbs & Associates, Inc.
Laboratory(ies) Performing Analysis: Fairway Labs
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s): 07-0062
Lab Sample Number: 7K24026-01 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Site Name:
Facility ID (as issued by DEP):

SECTION B. FACILITY INFORMATION
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Facility ID (as issued by DEP): PAD004835146

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Monitoring Point Number: PC-2 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream
Location: County Westmoreland Municipality: South Huntingdon Township
Sampling Point: Latitude: 40D13'0.3" Longitude: 79D41'37.0"
Depth to Water Level: 53.32 ft. Measured from: Land Surface TOC
Casing Stick Up: 3.2 ft. Elevation of Water Level: 900.18 ft./MSL
Sampling Depth: 53.32 ft. Volume of Water Column: 0 gal.
Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged: 3.1
Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns
Spring Flow Rate: 0 GPM
Sample Date(mm/dd/yy): 11/8/2017 Sample Collection Time: 12:10:00 PM
Sample Collectors Name: JT
Sample Collector's Affiliation: Cribbs & Associates, Inc.
Laboratory(ies) Performing Analysis: Fairway Labs
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s): 07-0062
Lab Sample Number: 7K09207-03 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

**FORM 14R
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QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: PC-3 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'57.7" Longitude: 79D41'55.1"

Depth to Water Level: 87.9 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.2 ft. Elevation of Water Level: 831.50 ft./MSL

Sampling Depth: 87.94 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 2.2

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/9/2017 Sample Collection Time: 9:30:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K24025-01 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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General References: Section 288.254, 289.264
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Site Name:
Facility ID (as issued by DEP):

SECTION B. FACILITY INFORMATION
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Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7K09207-04 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: PC-9 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'1.8" Longitude: 79D41'52.7"

Depth to Water Level: 65.43 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.91 ft. Elevation of Water Level: 839.67 ft./MSL

Sampling Depth: 68.96 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 2.2

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/8/2017 Sample Collection Time: 9:30:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K09207-01 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Applicant/permittee:
Site Name:
Facility ID (as issued by DEP):

SECTION B. FACILITY INFORMATION
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7J16103-01 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments: Open Mine Void

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Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: PW-1 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'0.1" Longitude: 79D41'46.5"

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: 2.27 ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/9/2017 Sample Collection Time: 10:30:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K10117-01 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments: Open mine void

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SECTION B. FACILITY INFORMATION

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Monitoring Point Number: PW-1 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'0.1" Longitude: 79D41'46.5"

Depth to Water Level: ft. Measured from: Land Surface TOC

Casing Stick Up: 2.27 ft. Elevation of Water Level: ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 10:30:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-04 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments: Open Mine Void

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Monitoring Point Number: PW-2 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'55.3" Longitude: 79D41'57.0"

Depth to Water Level: 99.02 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.96 ft. Elevation of Water Level: 827.18 ft./MSL

Sampling Depth: 99.88 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.6

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 10/16/2017 Sample Collection Time: 10:40:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7J16103-02 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: PW-2 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'55.3" Longitude: 79D41'57.0"

Depth to Water Level: 98.43 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.96 ft. Elevation of Water Level: 827.77 ft./MSL

Sampling Depth: 99.51 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0.83

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/9/2017 Sample Collection Time: 10:20:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K10117-02 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

**FORM 14R
RESIDUAL WASTE LANDFILLS
AND DISPOSAL IMPOUNDMENTS
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General References: Section 288.254, 289.264

SECTION A. SITE IDENTIFIER

Applicant/permittee: MAX Environmental Technologies, Inc.
Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: PW-2 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'55.3" Longitude: 79D41'57.0"

Depth to Water Level: 98.27 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.96 ft. Elevation of Water Level: 827.93 ft./MSL

Sampling Depth: 98.34 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0.41

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 10:05:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-03 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

**FORM 14R
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General References: Section 288.254, 289.264

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Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: PW-3 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'0.9" Longitude: 79D41'47.5"

Depth to Water Level: 43.16 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.98 ft. Elevation of Water Level: 878.54 ft./MSL

Sampling Depth: 44.94 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 3

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 10/16/2017 Sample Collection Time: 10:15:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7J16103-03 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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General References: Section 288.254, 289.264

SECTION A. SITE IDENTIFIER

Applicant/permittee: MAX Environmental Technologies, Inc.
Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: PW-3 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'0.9" Longitude: 79D41'47.5"

Depth to Water Level: 56.72 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.98 ft. Elevation of Water Level: 864.98 ft./MSL

Sampling Depth: 57.75 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.2

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/9/2017 Sample Collection Time: 11:30:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K10117-03 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
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Monitoring Point Number: PW-3 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D13'0.9" Longitude: 79D41'47.5"

Depth to Water Level: 53.11 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.98 ft. Elevation of Water Level: 868.59 ft./MSL

Sampling Depth: 53.31 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0.52

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 11:30:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-05 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Facility ID (as issued by DEP): PAD004835146

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Monitoring Point Number: RC-1 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'48.3" Longitude: 79D41'54.0"

Depth to Water Level: 67.94 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.46 ft. Elevation of Water Level: 941.06 ft./MSL

Sampling Depth: 70.36 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 3.1

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 10/16/2017 Sample Collection Time: 12:30:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7J16103-06 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: RC-1 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'48.3" Longitude: 79D41'54.0"

Depth to Water Level: 63.68 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.46 ft. Elevation of Water Level: 945.32 ft./MSL

Sampling Depth: 67.52 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0.2

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/9/2017 Sample Collection Time: 1:30:00 PM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K10117-04 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: RC-1 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'48.3" Longitude: 79D41'54.0"

Depth to Water Level: 62.51 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.46 ft. Elevation of Water Level: 946.49 ft./MSL

Sampling Depth: 62.57 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.6

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 9:20:00 AM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-01 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
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Site Name:
Facility ID (as issued by DEP):

SECTION B. FACILITY INFORMATION
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Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

**FORM 14R
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7K10117-05 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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SECTION A. SITE IDENTIFIER

Applicant/permittee: MAX Environmental Technologies, Inc.
Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: RC-2 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'42.7" Longitude: 79D41'54.0"

Depth to Water Level: 80.42 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.9 ft. Elevation of Water Level: 966.12 ft./MSL

Sampling Depth: 90.48 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 3.2

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 12:45:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-07 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
RESIDUAL WASTE LANDFILLS
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Applicant/permittee:
Site Name:
Facility ID (as issued by DEP):

SECTION B. FACILITY INFORMATION
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Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments: Permanent pump in well
25 gallons purged

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SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: RC-6A Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'45.1" Longitude: 79D42'4.4"

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: 2.29 ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 1:15:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22029-03 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: RC-6A Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'45.1" Longitude: 79D42'4.4"

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: 2.29 ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 1:15:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-08 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: REINSTADTLE Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: N/A Longitude: N/A

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: [] ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 2:15:00 PM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22029-04 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments: Residential Well

**FORM 14R
RESIDUAL WASTE LANDFILLS
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QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General References: Section 288.254, 289.264

SECTION A. SITE IDENTIFIER

Applicant/permittee: MAX Environmental Technologies, Inc.
Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: S-A Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC

Casing Stick Up: ft. Elevation of Water Level: ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 30 GPM

Sample Date(mm/dd/yy): 11/22/2017 Sample Collection Time: 12:00:00 PM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis:

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K24026-07 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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General References: Section 288.254, 289.264

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Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: S-B Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC

Casing Stick Up: ft. Elevation of Water Level: ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 112 GPM

Sample Date(mm/dd/yy): 11/22/2017 Sample Collection Time: 11:50:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K24026-06 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: S-C Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC

Casing Stick Up: ft. Elevation of Water Level: ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 45 GPM

Sample Date(mm/dd/yy): 11/22/2017 Sample Collection Time: 11:35:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K24026-05 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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SECTION B. FACILITY INFORMATION
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns

Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:

Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:

Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Facility ID (as issued by DEP): PAD004835146

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Monitoring Point Number: S-F Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC

Casing Stick Up: ft. Elevation of Water Level: ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0.5 GPM

Sample Date(mm/dd/yy): 11/22/2017 Sample Collection Time: 11:30:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K24026-04 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Facility ID (as issued by DEP): PAD004835146

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Monitoring Point Number: W-11 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'44.2" Longitude: 79D41'42.4"

Depth to Water Level: 27.41 ft. Measured from: Land Surface TOC

Casing Stick Up: 1.86 ft. Elevation of Water Level: 930.63 ft./MSL

Sampling Depth: 61.48 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 3.1

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 11/8/2017 Sample Collection Time: 3:40:00 PM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7K09207-07 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
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Site Name:
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7L22029-02 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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SECTION B. FACILITY INFORMATION
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Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7K09207-05 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments:

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Site Name: MAX Env. Tech., Inc. -- Yukon
Facility ID (as issued by DEP): PAD004835146

SECTION B. FACILITY INFORMATION

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Monitoring Point Number: W-4 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'44.7" Longitude: 79D41'51.7"

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: 0.98 ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 10/16/2017 Sample Collection Time: 1:00:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7J16103-05 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments: Pumped dry prior to sampling
35 gallons purged

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Monitoring Point Number: W-4 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'44.7" Longitude: 79D41'51.7"

Depth to Water Level: [] ft. Measured from: Land Surface TOC

Casing Stick Up: 0.98 ft. Elevation of Water Level: [] ft./MSL

Sampling Depth: 0.00 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 0

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 3:20:00 PM

Sample Collectors Name: TV

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22028-06 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
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SECTION B. FACILITY INFORMATION

Monitoring wells must be designed and constructed in accordance with Department standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (DD MM' SS.S")

Monitoring Point Number: W-5 Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Westmoreland Municipality: South Huntingdon Township

Sampling Point: Latitude: 40D12'58.2" Longitude: 79D41'53.5"

Depth to Water Level: 45.6 ft. Measured from: Land Surface TOC

Casing Stick Up: 2.06 ft. Elevation of Water Level: 876.00 ft./MSL

Sampling Depth: 112.81 ft. Volume of Water Column: 0 gal.

Total Well Depth: 0.00 ft. Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 2.1

Sample Field Filtered (must be 0.45 micron)? Yes No

Sample Lab Filtered? Yes No Lab Filter Pore Size: 0 microns

Spring Flow Rate: 0 GPM

Sample Date(mm/dd/yy): 12/20/2017 Sample Collection Time: 11:15:00 AM

Sample Collectors Name: JT

Sample Collector's Affiliation: Cribbs & Associates, Inc.

Laboratory(ies) Performing Analysis: Fairway Labs

Were any holding times exceeded? Yes No If yes, please explain in comments field.

Lab Certification Number(s): 07-0062

Lab Sample Number: 7L22029-01 Final Lab Analysis Completion Date:

Name/Affiliation of Person who Filled out Form:

Comments:

FORM 14R
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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:

Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:

Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7J16103-04 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments: Pumped dry prior to sampling
25 gallons purged

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Monitoring Point Number: Well Spring Stream Other
 Upgradient/Upstream Downgradient/Downstream

Location: County Municipality:
Sampling Point: Latitude: Longitude:

Depth to Water Level: ft. Measured from: Land Surface TOC
Casing Stick Up: ft. Elevation of Water Level: ft./MSL
Sampling Depth: ft. Volume of Water Column: gal.
Total Well Depth: ft. Sampling Method: Pumped Bailed Grab
Well Purged: Yes No Well Volumes Purged:

Sample Field Filtered (must be 0.45 micron)? Yes No
Sample Lab Filtered? Yes No Lab Filter Pore Size: microns
Spring Flow Rate: GPM
Sample Date(mm/dd/yy): Sample Collection Time:
Sample Collectors Name:
Sample Collector's Affiliation:
Laboratory(ies) Performing Analysis:
Were any holding times exceeded? Yes No If yes, please explain in comments field.
Lab Certification Number(s):
Lab Sample Number: 7L22028-02 Final Lab Analysis Completion Date:
Name/Affiliation of Person who Filled out Form:
Comments: Pumped dry prior to sampling
30 gallons purged

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.932

I.D. No.	PAD004835146
Monitoring Point No.	KISELICH
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		29.1	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.932	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		7.45	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		235	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids		108	160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)		<77	9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

1.412

I.D. No.	PAD004835146
Monitoring Point No.	MSS-1
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		9.67	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		1.412	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		7.46	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1050	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

1.655

I.D. No.	PAD004835146
Monitoring Point No.	PC-1
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.978	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		168	9251
Fluoride		0.229	340.2
Iron, Total			6010
Iron, Dissolved		2.25	6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved		1050	6010
Nitrate-Nitrogen		1.655	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		3.62	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved		71.6	6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1490	9050
Sulfate		475	9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon		2.02	9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)		<30	9020
Phenolics		<0.02	
Nickel (Dissolved)		0.0845	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.248

I.D. No.	PAD004835146
Monitoring Point No.	PC-2
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL		VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			<0.1	350.1
Bicarbonate (as CaCO3)				310.1
Calcium, Total				6010
Calcium, Dissolved				6010
Chemical Oxygen Demand				410.4
Chloride			2.16	9251
Fluoride			0.222	340.2
Iron, Total				6010
Iron, Dissolved			8.48	6010
Magnesium, Total				6010
Magnesium, Dissolved				6010
Manganese (ug/l), Total				6010
Manganese (ug/l), Dissolved			930	6010
Nitrate-Nitrogen			0.248	9200
Nitrate-Nitrite				
pH (standard units), Field				
pH (standard units), Laboratory			3	9040
Potassium, Total				6010
Potassium, Dissolved				6010
Sodium, Total				6010
Sodium, Dissolved			5.53	6010
Specific Conductance (umhos/cm),Field				9050
Specific Conductance (umhos/cm),Laboratory			1090	9050
Sulfate			396	9038
Total Alkalinity				310.1
Total Dissolved Solids				160.1
Total Organic Carbon			1.55	9060
Turbidity (NTU)				180.1
Cyanide (Total)			<0.01	
Total Organic Halogens (ug/l)			34.9	9020
Phenolics			<0.02	
Nickel (Dissolved)			0.084	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

60.7

I.D. No.	PAD004835146
Monitoring Point No.	PC-3
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		3000	9251
Fluoride		1.56	340.2
Iron, Total			6010
Iron, Dissolved		7.19	6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved		12.6	6010
Nitrate-Nitrogen		60.7	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		8.5	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved		285	6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1490	9050
Sulfate		1610	9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)		0.559	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.53

I.D. No.	PAD004835146
Monitoring Point No.	PC-8
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.993	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		106	9251
Fluoride		0.225	340.2
Iron, Total			6010
Iron, Dissolved		4.96	6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved		958	6010
Nitrate-Nitrogen		0.53	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		7.02	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved		49	6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1330	9050
Sulfate		497	9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon		1.85	9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)		74.2	9020
Phenolics		<0.02	
Nickel (Dissolved)		0.0708	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.762

I.D. No.	PAD004835146
Monitoring Point No.	PC-9
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		<0.1	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		66.3	9251
Fluoride		0.111	340.2
Iron, Total			6010
Iron, Dissolved		0.295	6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved		<238	6010
Nitrate-Nitrogen		0.762	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved		31.8	6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1010	9050
Sulfate		361	9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon		2.19	9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)		158	9020
Phenolics		<0.02	
Nickel (Dissolved)		<0.05	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

5.552

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		388	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		5.552	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		2.96	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		2750	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

3.134

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		163	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		3.134	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		3.62	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1350	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

6.274

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		381	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		6.274	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		2.99	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		2840	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.96

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		8.53	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.96	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		6.53	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		712	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.34

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		5.35	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.34	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		7.04	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		611	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

0.666

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		7.21	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.666	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		6.64	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		473	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

5.54

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		389	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		5.54	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		2.96	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		2750	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

1.856

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		143	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		1.856	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		6.68	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1440	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.878

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		267	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.878	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		5.7	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1960	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		7.67	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		1360	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		8.5	350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		1490	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		6.525	350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		1450	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		10.5	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		541	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	11/9/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		6.605	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		549	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		4.495	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		524	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

0.574

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.273	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		23.4	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.574	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		8.5	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1490	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.694

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		<0.1	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		25.4	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.694	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		8.38	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1570	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.154	350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride			9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

<0.033

I.D. No.	PAD004835146
Monitoring Point No.	REINSTADTLER
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		14.1	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		<0.033	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		8.18	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		877	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids		248	160.1
Total Organic Carbon		<0.5	9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)		<77	9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

1.252

I.D. No.	PAD004835146
Monitoring Point No. S-A	
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		13.7	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		1.252	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

1.994

I.D. No.	PAD004835146
Monitoring Point No. S-B	
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		64.8	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		1.994	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

0.9

I.D. No.	PAD004835146
Monitoring Point No. S-C	
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		34.9	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.9	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

0.77

I.D. No.	PAD004835146
Monitoring Point No. S-E	
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		34.9	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.77	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
 QUARTERLY WATER QUALITY ANALYSES

0.934

I.D. No.	PAD004835146
Monitoring Point No. S-F	
Sample Date	11/22/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen			350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		<2	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.934	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

<0.033

I.D. No.	PAD004835146
Monitoring Point No.	W-10
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen	32	0.265	350.1
Bicarbonate (as CaCO3)	609	551	310.1
Calcium, Total	270		6010
Calcium, Dissolved	237	2.09	6010
Chemical Oxygen Demand	50	<15	410.4
Chloride	250	18.9	9251
Fluoride	12	7.68	340.2
Iron, Total	2.1		6010
Iron, Dissolved	1.8	<0.04	6010
Magnesium, Total	40000		6010
Magnesium, Dissolved	32000	635	6010
Manganese (ug/l), Total	0.415		6010
Manganese (ug/l), Dissolved	0.36	24.3	6010
Nitrate-Nitrogen	10	<0.033	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory	6.4 - 9.4	8.67	9040
Potassium, Total	9.7		6010
Potassium, Dissolved	8.4	0.822	6010
Sodium, Total	390		6010
Sodium, Dissolved	338	279	6010
Specific Conductance (umhos/cm),Field	1718		9050
Specific Conductance (umhos/cm),Laboratory	1718	1170	9050
Sulfate	660	34.5	9038
Total Alkalinity	670	596	310.1
Total Dissolved Solids	1258	722	160.1
Total Organic Carbon	5.5	0.702	9060
Turbidity (NTU)	55	2.63	180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

<0.033

I.D. No.	PAD004835146
Monitoring Point No.	W-11
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen	32	1.024	350.1
Bicarbonate (as CaCO3)	609	344	310.1
Calcium, Total	270		6010
Calcium, Dissolved	237	19.8	6010
Chemical Oxygen Demand	50	<15	410.4
Chloride	250	23.1	9251
Fluoride	12	1.2	340.2
Iron, Total	2.1		6010
Iron, Dissolved	1.8	0.0588	6010
Magnesium, Total	40000		6010
Magnesium, Dissolved	32000	5250	6010
Manganese (ug/l), Total	0.415		6010
Manganese (ug/l), Dissolved	0.36	17.7	6010
Nitrate-Nitrogen	10	<0.033	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory	6.4 - 9.4	8.36	9040
Potassium, Total	9.7		6010
Potassium, Dissolved	8.4	1.24	6010
Sodium, Total	390		6010
Sodium, Dissolved	338	279	6010
Specific Conductance (umhos/cm),Field	1718		9050
Specific Conductance (umhos/cm),Laboratory	1718	861	9050
Sulfate	660	81.6	9038
Total Alkalinity	670	351	310.1
Total Dissolved Solids	1258	522	160.1
Total Organic Carbon	5.5	<0.5	9060
Turbidity (NTU)	55	2.51	180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

<0.033

I.D. No.	PAD004835146
Monitoring Point No.	W-12
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen	32	0.449	350.1
Bicarbonate (as CaCO3)	609	514	310.1
Calcium, Total	270		6010
Calcium, Dissolved	237	<2.5	6010
Chemical Oxygen Demand	50	61.2	410.4
Chloride	250	3.27	9251
Fluoride	12	3.67	340.2
Iron, Total	2.1		6010
Iron, Dissolved	1.8	<0.2	6010
Magnesium, Total	40000		6010
Magnesium, Dissolved	32000	<1000	6010
Manganese (ug/l), Total	0.415		6010
Manganese (ug/l), Dissolved	0.36	<50	6010
Nitrate-Nitrogen	10	<0.033	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory	6.4 - 9.4	8.55	9040
Potassium, Total	9.7		6010
Potassium, Dissolved	8.4	2.13	6010
Sodium, Total	390		6010
Sodium, Dissolved	338	244	6010
Specific Conductance (umhos/cm),Field	1718		9050
Specific Conductance (umhos/cm),Laboratory	1718	1050	9050
Sulfate	660	17.2	9038
Total Alkalinity	670	568	310.1
Total Dissolved Solids	1258	642	160.1
Total Organic Carbon	5.5	4.7	9060
Turbidity (NTU)	55	11.2	180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

0.356

I.D. No.	PAD004835146
Monitoring Point No.	W-2
Sample Date	11/8/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.293	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		22.7	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen		0.356	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		7.87	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		865	9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.626	350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride			9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		1.495	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride			9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

<0.033

I.D. No.	PAD004835146
Monitoring Point No. W-5	
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		0.339	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		4.09	9251
Fluoride		8.81	340.2
Iron, Total			6010
Iron, Dissolved		<0.2	6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved		<50	6010
Nitrate-Nitrogen		<0.033	9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory		8.46	9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved		416	6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory		1580	9050
Sulfate		<2	9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon		0.78	9060
Turbidity (NTU)			180.1
Cyanide (Total)		<0.01	
Total Organic Halogens (ug/l)		<77	9020
Phenolics		<0.02	
Nickel (Dissolved)		<0.25	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	10/16/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		2.721	350.1
Bicarbonate (as CaCO3)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		543	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
QUARTERLY WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	12/20/2017

PARAMTERS

1-Q. Inorganics (Enter all data in mg/l except as noted)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Ammonia-Nitrogen		1.453	350.1
Bicarbonate (as CaCO ₃)			310.1
Calcium, Total			6010
Calcium, Dissolved			6010
Chemical Oxygen Demand			410.4
Chloride		544	9251
Fluoride			340.2
Iron, Total			6010
Iron, Dissolved			6010
Magnesium, Total			6010
Magnesium, Dissolved			6010
Manganese (ug/l), Total			6010
Manganese (ug/l), Dissolved			6010
Nitrate-Nitrogen			9200
Nitrate-Nitrite			
pH (standard units), Field			
pH (standard units), Laboratory			9040
Potassium, Total			6010
Potassium, Dissolved			6010
Sodium, Total			6010
Sodium, Dissolved			6010
Specific Conductance (umhos/cm),Field			9050
Specific Conductance (umhos/cm),Laboratory			9050
Sulfate			9038
Total Alkalinity			310.1
Total Dissolved Solids			160.1
Total Organic Carbon			9060
Turbidity (NTU)			180.1
Cyanide (Total)			
Total Organic Halogens (ug/l)			9020
Phenolics			
Nickel (Dissolved)			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	KISELICH
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane		<1	8260
1,1-Dichloroethane		<1	8260
1,1-Dichloroethene		<1	8260
1,2-Dichloroethane		<1	8260
cis-1,2-Dichloroethene		<1	8260
trans-1,2-Dichloroethene		<1	8260
Ethyl Benzene			8260
Methylene chloride		<1	8260
Tetrachloroethene		<1	8260
Toluene			8260
1,1,1-Trichloroethane		<1	8260
Trichloroethene		<1	8260
Vinyl chloride		<1	8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	MSS-1
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-1
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-2
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-3
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-8
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-9
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	11/9/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	REINSTADTLER
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane		<1	8260
1,1-Dichloroethane		<1	8260
1,1-Dichloroethene		<1	8260
1,2-Dichloroethane		<1	8260
cis-1,2-Dichloroethene		<1	8260
trans-1,2-Dichloroethene		<1	8260
Ethyl Benzene			8260
Methylene chloride		<1	8260
Tetrachloroethene		<1	8260
Toluene			8260
1,1,1-Trichloroethane		<1	8260
Trichloroethene		<1	8260
Vinyl chloride		<1	8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-A
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-B
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-C
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-E
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-F
Sample Date	11/22/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-10
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:	5	<1	8260
1,2-Dibromoethane	2.5	<1	8260
1,1-Dichloroethane	2.5	<1	8260
1,1-Dichloroethene	7	<1	8260
1,2-Dichloroethane	5	<1	8260
cis-1,2-Dichloroethene	70	<1	8260
trans-1,2-Dichloroethene	100	<1	8260
Ethyl Benzene	700	<1	8260
Methylene chloride	5	<1	8260
Tetrachloroethene	5	<1	8260
Toluene	1000	<1	8260
1,1,1-Trichloroethane	200	<1	8260
Trichloroethene	5	<1	8260
Vinyl chloride	2.5	<1	8260
Xylene:	10000	<2	8260
Naphthalene		<1	
TPH-DRO		<0.3	
TPH-GRO		<0.1	

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-11
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:	5	<1	8260
1,2-Dibromoethane	2.5	<1	8260
1,1-Dichloroethane	2.5	<1	8260
1,1-Dichloroethene	7	<1	8260
1,2-Dichloroethane	5	<1	8260
cis-1,2-Dichloroethene	70	<1	8260
trans-1,2-Dichloroethene	100	<1	8260
Ethyl Benzene	700	<1	8260
Methylene chloride	5	<1	8260
Tetrachloroethene	5	<1	8260
Toluene	1000	<1	8260
1,1,1-Trichloroethane	200	<1	8260
Trichloroethene	5	<1	8260
Vinyl chloride	2.5	<1	8260
Xylene:	10000	<2	8260
Naphthalene		<1	
TPH-DRO		<0.3	
TPH-GRO		<0.1	

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-12
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:	5	<1	8260
1,2-Dibromoethane	2.5	<1	8260
1,1-Dichloroethane	2.5	<1	8260
1,1-Dichloroethene	7	<1	8260
1,2-Dichloroethane	5	<1	8260
cis-1,2-Dichloroethene	70	<1	8260
trans-1,2-Dichloroethene	100	<1	8260
Ethyl Benzene	700	<1	8260
Methylene chloride	5	<1	8260
Tetrachloroethene	5	<1	8260
Toluene	1000	<1	8260
1,1,1-Trichloroethane	200	<1	8260
Trichloroethene	5	<1	8260
Vinyl chloride	2.5	<1	8260
Xylene:	10000	<2	8260
Naphthalene		<1	
TPH-DRO		0.52	
TPH-GRO		<0.1	

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-2
Sample Date	11/8/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-5
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	10/16/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	12/20/2017

PARAMTERS

1-A.. Organics (Enter all data in ug/l)

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Benzene:			8260
1,2-Dibromoethane			8260
1,1-Dichloroethane			8260
1,1-Dichloroethene			8260
1,2-Dichloroethane			8260
cis-1,2-Dichloroethene			8260
trans-1,2-Dichloroethene			8260
Ethyl Benzene			8260
Methylene chloride			8260
Tetrachloroethene			8260
Toluene			8260
1,1,1-Trichloroethane			8260
Trichloroethene			8260
Vinyl chloride			8260
Xylene:			8260
Naphthalene			
TPH-DRO			
TPH-GRO			

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	KISELICH
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	MSS-1
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-1
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		<10	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		<5	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<20	6010
Silver, Total			6010
Silver, Dissolved		<4	6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-2
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		<10	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		5.05	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<20	6010
Silver, Total			6010
Silver, Dissolved		<4	6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-3
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		15.1	6010
Barium, Total			6010
Barium, Dissolved		26.3	6010
Cadmium, Total			6010
Cadmium, Dissolved		9.31	6010
Chromium, Total			6010
Chromium, Dissolved		19.2	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<20	6010
Silver, Total			6010
Silver, Dissolved		15	6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-8
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		118	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		<5	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<20	6010
Silver, Total			6010
Silver, Dissolved		<4	6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PC-9
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		<10	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		<5	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<20	6010
Silver, Total			6010
Silver, Dissolved		<4	6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-1
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-2
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	PW-3
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-1
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	11/9/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved		2050	6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-2
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved		1870	6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		132	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		<5	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<40	6010
Barium, Total			6010
Barium, Dissolved		138	6010
Cadmium, Total			6010
Cadmium, Dissolved		<20	6010
Chromium, Total			6010
Chromium, Dissolved		<25	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<40	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	RC-6A
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	REINSTADTLER
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-A
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-B
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-C
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-E
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	S-F
Sample Date	11/22/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-10
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total	70		6010
Arsenic, Dissolved	50	<8	6010
Barium, Total	2000		6010
Barium, Dissolved	2000	102	6010
Cadmium, Total	5		6010
Cadmium, Dissolved	6	<4	6010
Chromium, Total	100		6010
Chromium, Dissolved	100	<5	6010
Copper, Total	1300		6010
Copper, Dissolved	1300	<10	6010
Lead, Total	45		6010
Lead, Dissolved	15	<8	6010
Mercury, Total			7470
Mercury, Dissolved	2	<0.2	7470
Selenium, Total	50		6010
Selenium, Dissolved	50	<20	6010
Silver, Total	100		6010
Silver, Dissolved	100	<4	6010
Zinc, Total	5000		6010
Zinc, Dissolved	5000	<20	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-11
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total	70		6010
Arsenic, Dissolved	50	<8	6010
Barium, Total	2000		6010
Barium, Dissolved	2000	95.5	6010
Cadmium, Total	5		6010
Cadmium, Dissolved	6	<4	6010
Chromium, Total	100		6010
Chromium, Dissolved	100	<5	6010
Copper, Total	1300		6010
Copper, Dissolved	1300	<10	6010
Lead, Total	45		6010
Lead, Dissolved	15	<8	6010
Mercury, Total			7470
Mercury, Dissolved	2	<0.2	7470
Selenium, Total	50		6010
Selenium, Dissolved	50	<20	6010
Silver, Total	100		6010
Silver, Dissolved	100	<4	6010
Zinc, Total	5000		6010
Zinc, Dissolved	5000	<20	6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-12
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total	70		6010
Arsenic, Dissolved	50	<40	6010
Barium, Total	2000		6010
Barium, Dissolved	2000	<50	6010
Cadmium, Total	5		6010
Cadmium, Dissolved	6	<20	6010
Chromium, Total	100		6010
Chromium, Dissolved	100	<25	6010
Copper, Total	1300		6010
Copper, Dissolved	1300	<50	6010
Lead, Total	45		6010
Lead, Dissolved	15	<40	6010
Mercury, Total			7470
Mercury, Dissolved	2	<0.2	7470
Selenium, Total	50		6010
Selenium, Dissolved	50	<100	6010
Silver, Total	100		6010
Silver, Dissolved	100	<20	6010
Zinc, Total	5000		6010
Zinc, Dissolved	5000	<100	6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-2
Sample Date	11/8/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<8	6010
Barium, Total			6010
Barium, Dissolved		14.8	6010
Cadmium, Total			6010
Cadmium, Dissolved		<4	6010
Chromium, Total			6010
Chromium, Dissolved		<5	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<8	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-4
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-5
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved		<40	6010
Barium, Total			6010
Barium, Dissolved		<50	6010
Cadmium, Total			6010
Cadmium, Dissolved		<20	6010
Chromium, Total			6010
Chromium, Dissolved		<25	6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved		<40	6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved		<100	6010
Silver, Total		<20	6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

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ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	10/16/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

FORM 14R
ANNUAL WATER QUALITY ANALYSES

I.D. No.	PAD004835146
Monitoring Point No.	W-6
Sample Date	12/20/2017

2-A. Metals (Enter all data in ug/l). If initial background analyses or four consecutive annual analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	MANDATORY ABATEMENT TRIGGER LEVEL	VALUE	ANALYSIS METHOD NUMBER
Arsenic, Total			6010
Arsenic, Dissolved			6010
Barium, Total			6010
Barium, Dissolved			6010
Cadmium, Total			6010
Cadmium, Dissolved			6010
Chromium, Total			6010
Chromium, Dissolved			6010
Copper, Total			6010
Copper, Dissolved			6010
Lead, Total			6010
Lead, Dissolved			6010
Mercury, Total			7470
Mercury, Dissolved			7470
Selenium, Total			6010
Selenium, Dissolved			6010
Silver, Total			6010
Silver, Dissolved			6010
Zinc, Total			6010
Zinc, Dissolved			6010

Please indicate detection limit if analyte is not detected.

Outliers

Current Quarter Starting: 10/1/2017 Ending: 12/31/2017

<i>Well</i>	<i>Sample Date</i>	<i>Horizon</i>	<i>Outlier</i>	<i>Value</i>	<i>Well Ucl</i>	<i>Background UCL</i>	<i>MATL</i>	<i>Consent Order Level</i>
RC-1	10/16/2017	RC	Ammonia Nitrogen	7.67	444.24870		N/A	0.50
RC-1	10/16/2017	RC	Chloride	1360	10734.93000		N/A	125.00
RC-1	11/9/2017	RC	Ammonia Nitrogen	8.5	444.24870		N/A	0.50
RC-1	11/9/2017	RC	Chloride	1490	10734.93000		N/A	125.00
RC-1	12/20/2017	RC	Ammonia Nitrogen	6.525	444.24870		N/A	0.50
RC-1	12/20/2017	RC	Chloride	1450	10734.93000		N/A	125.00
RC-2	10/16/2017	RC	Ammonia Nitrogen	10.5	444.24870		N/A	0.50
RC-2	10/16/2017	RC	Chloride	541	10734.93000		N/A	125.00
RC-2	11/9/2017	RC	Ammonia Nitrogen	6.605	444.24870		N/A	0.50
RC-2	11/9/2017	RC	Barium Dissolved	2.05	37.86895		N/A	0.50
RC-2	11/9/2017	RC	Chloride	549	10734.93000		N/A	125.00
RC-2	12/20/2017	RC	Ammonia Nitrogen	4.495	444.24870		N/A	0.50
RC-2	12/20/2017	RC	Barium Dissolved	1.87	37.86895		N/A	0.50
RC-2	12/20/2017	RC	Chloride	524	10734.93000		N/A	125.00
W-10	11/8/2017	PL	Alkalinity	596	1531.83300	336.07960	670.00000	N/A
W-10	11/8/2017	PL	Alkalinity Bicarbonate	551	939.65320	308.50610	609.00000	N/A
W-10	11/8/2017	PL	PH Laboratory	8.67	82.85132	8.46555	6.4 - 9.4	N/A
W-10	11/8/2017	PL	Sodium Dissolved	279	482.31070	13.22773	338.00000	N/A
W-11	11/8/2017	PL	Alkalinity	351	1531.83300	336.07960	670.00000	N/A
W-11	11/8/2017	PL	Alkalinity Bicarbonate	344	939.65320	308.50610	609.00000	N/A
W-11	11/8/2017	PL	Chloride	23.1	10734.93000	20.05345	250.00000	N/A
W-11	11/8/2017	PL	Sodium Dissolved	279	308.13310	13.22773	338.00000	N/A
W-12	12/20/2017	PL	Alkalinity	568	1531.83300	336.07960	670.00000	N/A
W-12	12/20/2017	PL	Alkalinity Bicarbonate	514	939.65320	308.50610	609.00000	N/A
W-12	12/20/2017	PL	PH Laboratory	8.55	82.85132	8.46555	6.4 - 9.4	N/A
W-12	12/20/2017	PL	Sodium Dissolved	244	426.52110	13.22773	338.00000	N/A
W-12	12/20/2017	PL	Total Organic Carbon	4.7	56.19525	4.46510	5.50000	N/A

Notes:

All values are measured in mg/L except for the following:
pH - s.u. Conductance - µmhos Turbidity - NTU TOX and VOCs - µg/L

pH is compared to both Well UCL and LCL. The value printed is either the UCL or LCL, whichever value resulted in the statistical outlier.

<i>Well</i>	<i>Sample Date</i>	<i>Horizon</i>	<i>Outlier</i>	<i>Value</i>	<i>Well Ucl</i>	<i>Background UCL</i>	<i>MATL</i>	<i>Consent Order Level</i>
W-4	10/16/2017	PL	Ammonia Nitrogen	0.626	444.24870	5.91089	N/A	0.50
W-4	12/20/2017	PL	Ammonia Nitrogen	1.495	444.24870	5.91089	N/A	0.50
W-5	12/20/2017	PL	Sodium Dissolved	416	745.79140	13.22773	N/A	N/A
W-6	10/16/2017	PL	Ammonia Nitrogen	2.721	444.24870	5.91089	N/A	0.50
W-6	10/16/2017	PL	Chloride	543	10734.93000	20.05345	N/A	125.00
W-6	12/20/2017	PL	Ammonia Nitrogen	1.453	444.24870	5.91089	N/A	0.50
W-6	12/20/2017	PL	Chloride	544	10734.93000	20.05345	N/A	125.00

Notes:

All values are measured in mg/L except for the following:
pH - s.u. Conductance - µmhos Turbidity - NTU TOX and VOCs - µg/L

pH is compared to both Well UCL and LCL. The value printed is either the UCL or LCL, whichever value resulted in the statistical outlier.