TETRA TECH

TECHNICAL MEMORANDUM

To:	**Nevada Environmental Response Trust**
Cc:	Nevada Division of Environmental Protection United States Environmental Protection Agency
From:	Dana Grady
Date:	January 25, 2021
Subject:	**Las Vegas Wash Bioremediation Pilot Study Monthly Progress Report**

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum which summarizes Tetra Tech's progress during December 2020 toward successfully implementing the Las Vegas Wash Bioremediation Pilot Study.

Task Progress Update: December 2020

Task M19 – Las Vegas Wash Pilot Study

- Current Status
    - Field Activities
        - Baseline groundwater sampling of all Phase 1 monitoring wells and all newly installed Phase 2 injection, extraction, and monitoring wells began on September 28, 2020 and was completed on October 9, 2020. A layout map and construction details of all injection, monitoring, and extraction wells are provided as Figures 1 through 4 and Table 1. Groundwater analytical results from the baseline sampling event are provided in Table 2.
        - Surface water sampling was performed prior to injection activities on October 16, 2020 and October 29, 2020. Surface water sampling was again performed on December 10, 2020 and December 11, 2020, which coincided with active injections in the upgradient pilot study area. Surface water samples from downgradient of the Las Vegas Wash Pilot Study area will continue to be collected on a monthly basis in coordination with the long-term monthly surface water sampling program. It should be noted that although limited surface water sampling will be periodically conducted downgradient of the study area, reducing perchlorate concentrations in surface water is not an objective of this pilot study. However, noteworthy results related to the pilot study will be summarized in future monthly progress reports as warranted.
        - Mobilization and set-up activities associated with the first injection event began on November 30, 2020. Injections in all three remediation zones were performed from

Tetra Tech, Inc.
150 S. 4th Street, Unit A, Henderson, NV 89015
Tel 702-854-2295 tetratech.com

December 7, 2020 to December 23, 2020. Demobilization activities began on December 28, 2020 and will conclude in early January 2021. Two photo logs were submitted during the injection process to document site activities, both of which are provided as Attachment 1 to this monthly progress report. Data collected during the first injection event is currently being processed and will be provided in the February monthly progress report.

        - During injection activities, groundwater samples were collected from each remediation zone and analyzed for tracer dye by Ozark Underground Laboratories. Analytical data will be provided in future monthly progress reports as data become available.
        - The first biweekly effectiveness monitoring groundwater sampling event for Zone 2 monitoring wells screened in the alluvium was conducted from December 21, 2020 to December 23, 2020. Groundwater analytical results will be provided in future monthly progress reports as data become available.
    - Access and Permitting
        - All access agreements and permits are now in place for all projected pilot study activities.
- Schedule and Progress Updates
    - The first monthly effectiveness monitoring event is scheduled for the week of January 11, 2021.
    - The second biweekly effectiveness monitoring event (Zone 2 alluvium only) is scheduled for the week of January 25, 2021.
- Health and Safety
    - There were no safety incidents related to Task M19 during December 2020.
    - Safety measures continue to be implemented to minimize potential exposure to COVID-19, including the use of face coverings, gloves, and hand sanitizer, as well as protocols for monitoring temperatures, minimizing the number of people on site at one time, and evaluating tasks to increase physical distance between personnel.

CERTIFICATION

Las Vegas Wash Bioremediation Pilot Study Monthly Progress Report

Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada

Nevada Environmental Response Trust (NERT) Representative Certification
I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Not Individually, but Solely
as President of the Trustee

Signature: _____, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

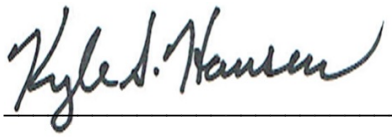
Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: 1/25/21

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided: Las Vegas Wash Bioremediation Pilot Study Monthly Progress Report, Nevada Environmental Response Trust Site, Henderson, Nevada.



January 25, 2021

Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

Date

Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2022

Figures

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Notes:
1. Monitoring and injection well names are shown without prefix LVWPS.
2. For information on injection well labels see Zone 1-3 figures.

MW216
LNDMW1
MW215A/B
NERT4.51S1
MW219A/B/C
MW214
MW210A/B/C/D/E
MW218A/B/C
MW209/A/B/C
MW211
MW220A/B
MW213
MW-20
MW205B/C
NERT4.71S1
MW207
WMW4.9S
A2-MW16A/B
MW212A/B/C/D
U1-MW03B
MW217A/B/C
A1-MW10/U1-MW10A/B
MW204/B/C
MW203A/B/C
A2-MW15A/B
MW223A/B/C
MW208A/B
A3-MW12/U3-MW12A/B
A3-MW10/U3-MW10A/B
U3-MW05B
A1-MW04/U1-MW04A/B
U1-MW01A/B
A1-MW09/U1-MW09A/B
MW206A/B/C/D/E
U2/A2-MW17A/B/C
U2/A2-MW12A/B
MW221A/B
A3-MW11/U3-MW11A/B/C
A3-MW06/U3-MW06A/B
NERT4.93S
U1-MW08A/B
A2-MW11A/B/C
U2/A2-MW13A/B
U3-MW04B
U3-MW03A/B/C
U1-MW02A/B
EW05
MW222A/B/C
MW202
A1-MW06/U1-MW06A/B
U2/A2-MW08A/B/C
U2/A2-MW14A/B
U2-MW10
EW01
EW04
EW03
U2-MW07
NERT5.11S1
A1-MW07/U1-MW07
U2-MW20
A3-MW08/U3-MW08A/B
EW02
U2-MW19
MW-25
MW201A/B
DBMW-20
U2-MW05/A2-MW05A/B
U3-MW13A/B
A1-MW05/U1-MW05A/B
U2-MW09/A2-MW09A/B
U2-MW04/A2-MW04A/B
A3-MW02/U3-MW02A/B
MW-13
U2-MW03/A2-MW03A/B
U3-MW09
MW-18
MW225A/B
U2-MW18
A3-MW07/U3-MW07A/B
U2-MW01/A2-MW01A/B
U2-MW02/A2-MW02A/B
U3-MW01B
MW224A/B/C
U2-MW06
MW-02
Henderson
Landfill Site
LVWPS-MW226A/B
MW-10
MW-11
MW-12
MW-04
N
0
300
600
Feet

Legend
- Existing Monitoring Well
- Extraction Well
- UMCf/UMCf-cg Injection Well
- Alluvial Monitoring Well
- UMCf/UMCf-cg Monitoring Well
- Dose Response Well

Imagery Source: Esri World Map, October 2019.

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TETRA TECH
www.tetratech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

LAS VEGAS WASH BIOREMEDIATION PILOT STUDY
HENDERSON, NEVADA

LAS VEGAS WASH BIOREMEDIATION PILOT STUDY LAYOUT

Project No.:	117-7502019
Date:	NOVEMBER 10, 2020
Designed By:	ES

Figure No.
1

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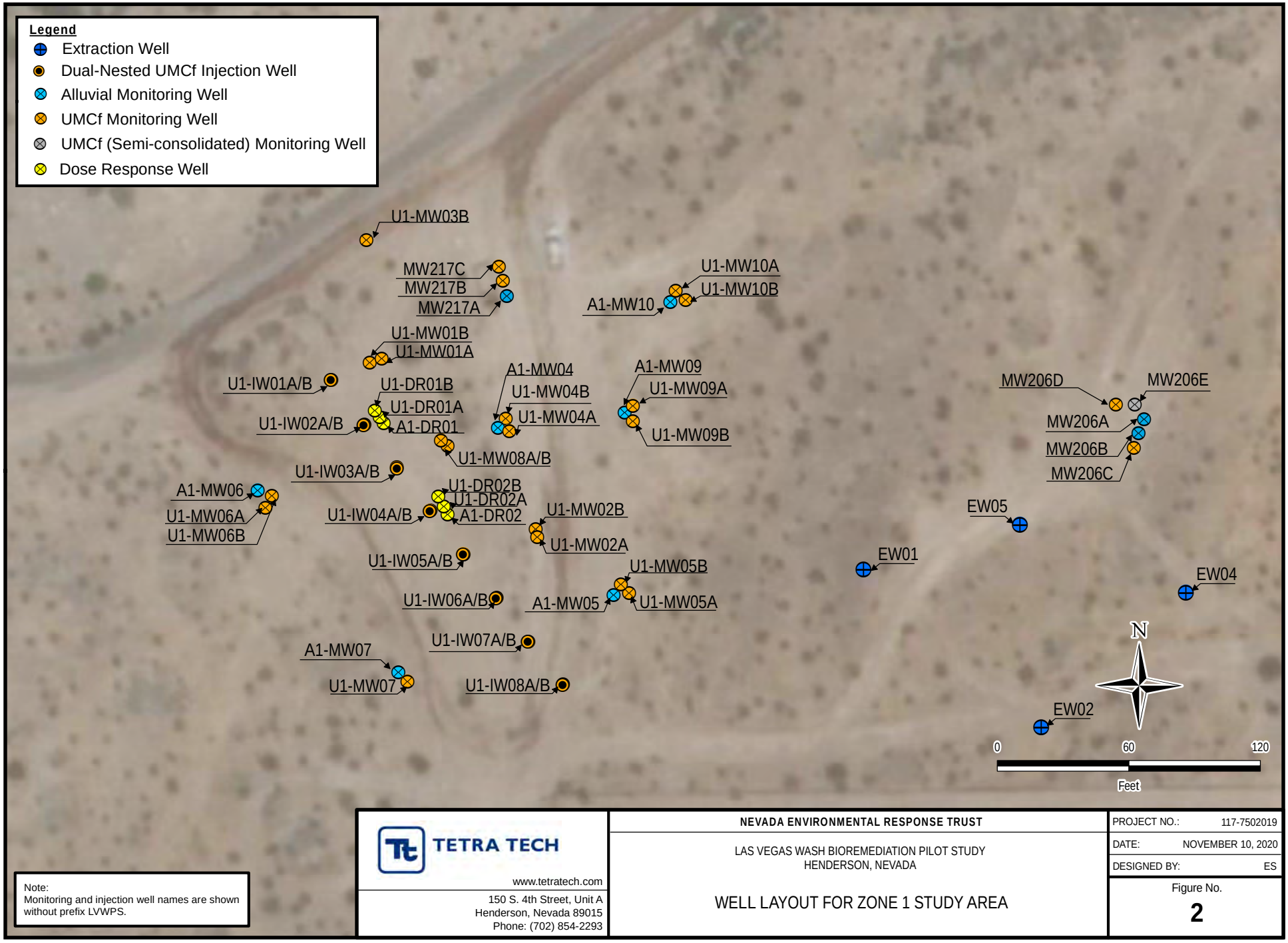

Note:
Monitoring and injection well names are shown without prefix LVWPS.

TETRA TECH
www.tetratech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

LAS VEGAS WASH BIOREMEDIATION PILOT STUDY
HENDERSON, NEVADA

WELL LAYOUT FOR ZONE 1 STUDY AREA

PROJECT NO.:	117-7502019
DATE:	NOVEMBER 10, 2020
DESIGNED BY:	ES

Figure No.
2

C:\Users\ELLYN.SWENSON\LVW Monitoring Well Installation Figures\BL04 Groundwater Contours\Zone1_UMCfContours_1110.mxd

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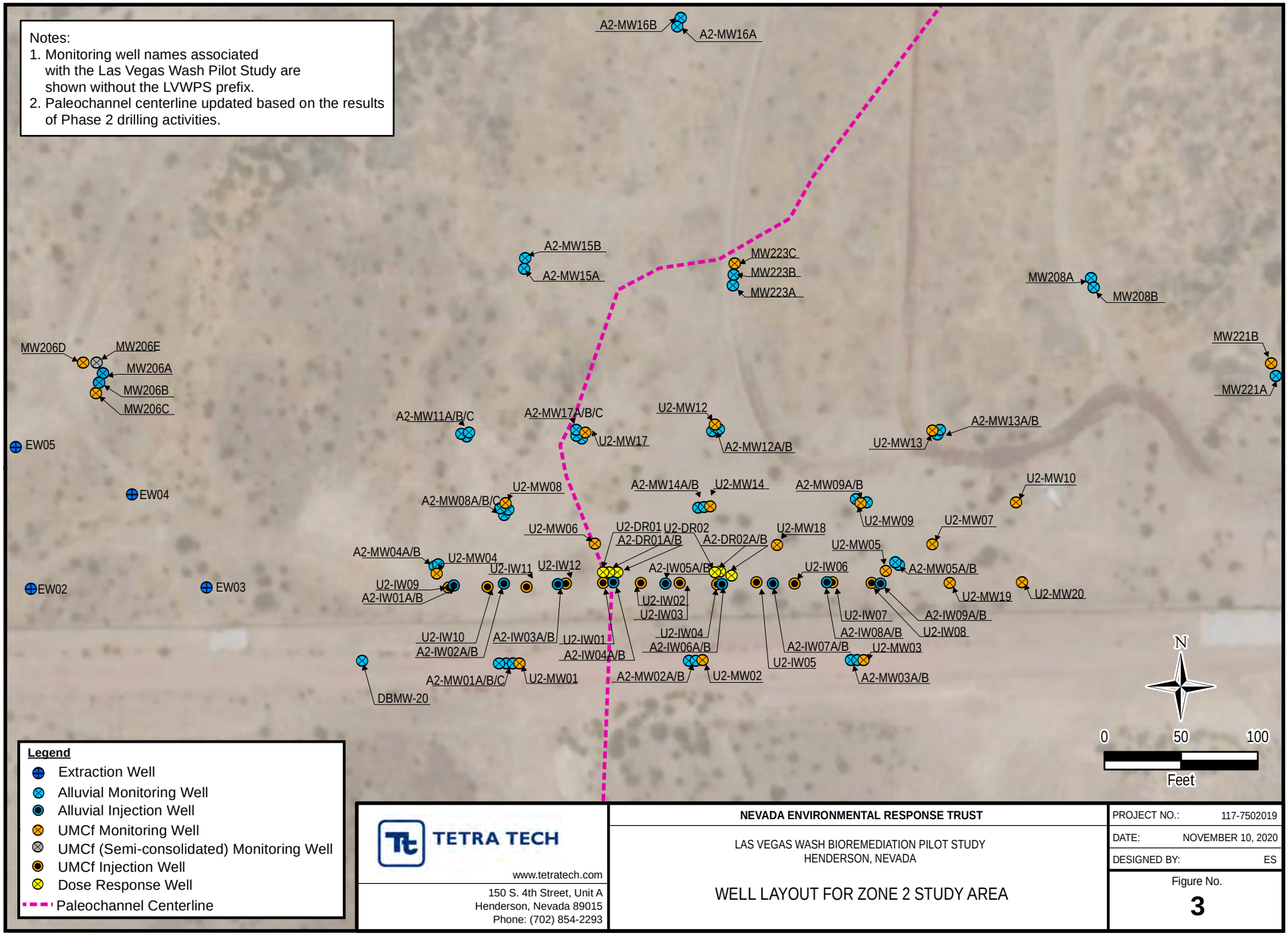

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TETRA TECH
www.tetratech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

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LAS VEGAS WASH BIOREMEDIATION PILOT STUDY
HENDERSON, NEVADA

WELL LAYOUT FOR ZONE 2 STUDY AREA

PROJECT NO.:	117-7502019
DATE:	NOVEMBER 10, 2020
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Figure No.
3

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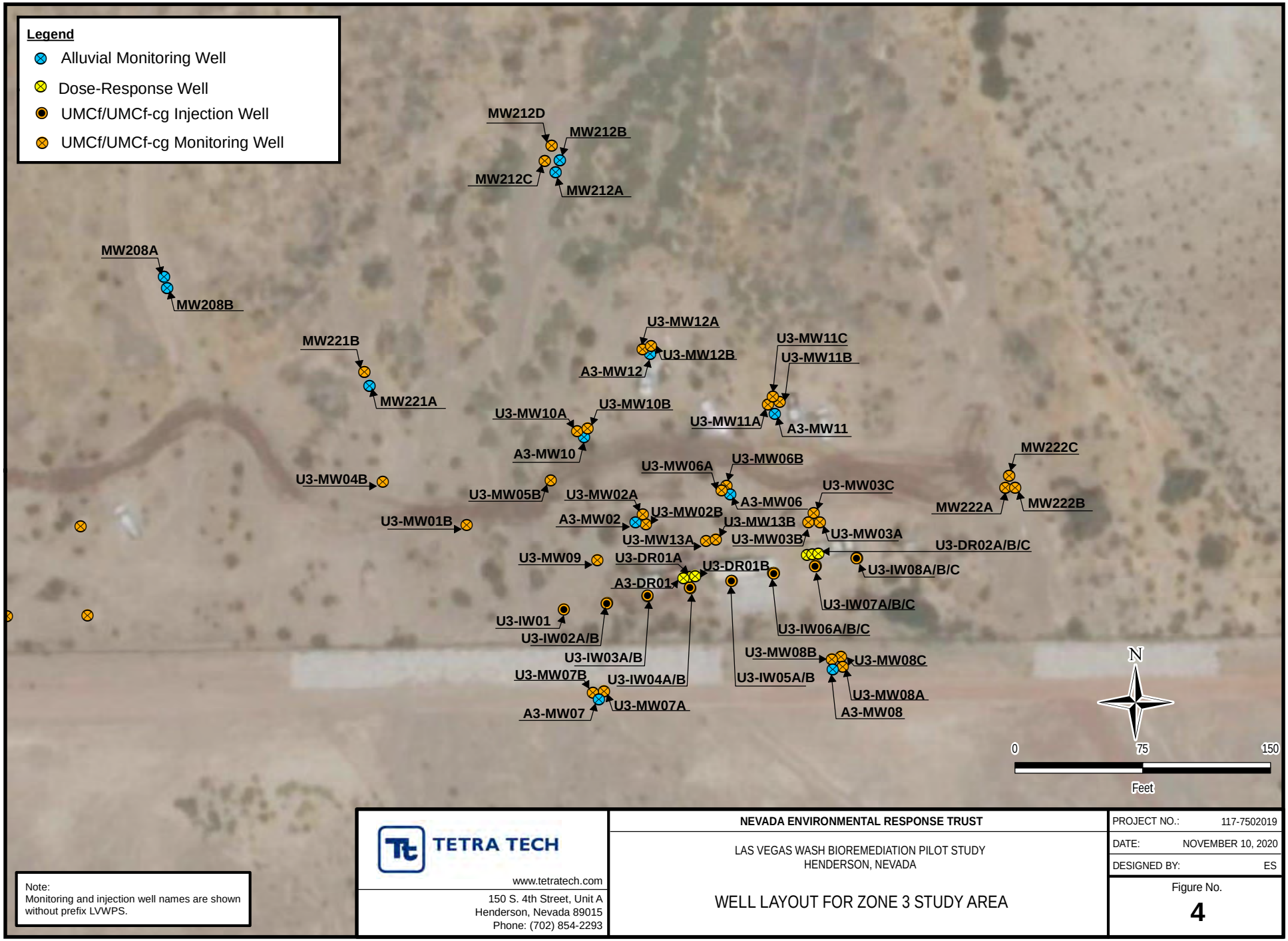

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www.tetratech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

LAS VEGAS WASH BIOREMEDIATION PILOT STUDY
HENDERSON, NEVADA

WELL LAYOUT FOR ZONE 3 STUDY AREA

PROJECT NO.:	117-7502019
DATE:	NOVEMBER 10, 2020
DESIGNED BY:	ES

Figure No.
4

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Tables

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Table 1
Phase 2 Well Construction Details
Las Vegas Wash Bioremediation Pilot Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water[1]	Construction Type	Construction Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC			inches		inches	feet bgs	inches	feet	feet bgs	feet bgs	feet bgs
Zone 1 Study Area																	
LVWPS-A1-DR01	Alluvium	26735024.80	838207.19	1524.18	1523.98	29.38	Single	Schedule 40 PVC	0.020	#3	6	83.5	2	20	83	82.5	62.8
LVWPS-A1-DR02	Alluvium	26734983.35	838236.38	1524.57	1524.20	29.54	Single	Schedule 40 PVC	0.020	#3	6	79.0	2	20	78.5	78	58.3
LVWPS-A1-MW04	Alluvium	26735022.91	838259.32	1529.32	1529.30	34.87	Single	Schedule 40 PVC	0.020	#3	6	92.5	2	20	89.5	89	69.3
LVWPS-A1-MW05	Alluvium	26734946.32	838312.17	1530.88	1530.55	36.10	Single	Schedule 40 PVC	0.020	#3	6	95.0	2	20	89.5	89	69.3
LVWPS-A1-MW06	Alluvium	26734994.26	838149.70	1523.90	1523.76	28.80	Single	Schedule 40 PVC	0.020	#3	6	85.0	2	20	79.5	79	59.3
LVWPS-A1-MW07	Alluvium	26734911.17	838213.86	1525.06	1524.99	30.15	Single	Schedule 40 PVC	0.020	#3	6	80.0	2	20	78.5	78	58.3
LVWPS-A1-MW09	Alluvium	26735029.71	838317.19	1529.61	1529.43	35.62	Single	Schedule 40 PVC	0.020	#3	6	107.0	2	20	106	105.5	85.8
LVWPS-A1-MW10	Alluvium	26735080.18	838337.96	1527.26	1527.07	33.55	Single	Schedule 40 PVC	0.020	#3	6	91.5	2	20	91	90.5	70.8
LVWPS-U1-DR01A	UMCf	26735027.64	838205.37	1524.09	1524.00	29.15	Single	Schedule 40 PVC	0.010	#2/16	6	116.5	2	25	115.5	115	90.3
LVWPS-U1-DR01B	UMCf	26735030.53	838203.16	1524.07	1523.94	28.89	Single	Schedule 80 PVC	0.010	#2/16	6	152.5	2	30	151.5	151	121.3
LVWPS-U1-DR02A	UMCf	26734986.83	838234.68	1524.02	1523.92	29.15	Single	Schedule 40 PVC	0.010	#2/16	6	117.5	2	30	117	116.5	86.8
LVWPS-U1-DR02B	UMCf	26734991.38	838232.08	1523.92	1523.71	28.63	Single	Schedule 80 PVC	0.010	#2/16	6	153.5	2	30	153	152.5	122.8
LVWPS-U1-IW01A	UMCf	26735044.59	838183.29	1523.67	1523.72	28.91	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	155.0	2	25	114	113.5	88.8
LVWPS-U1-IW01B	UMCf	26735044.44	838182.98	1523.67	1523.65	28.76		Schedule 40 PVC	0.010	#2/16			2	25	145.5	145	120.3
LVWPS-U1-IW02A	UMCf	26735024.11	838198.37	1524.46	1524.39	29.41	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	155.0	2	25	115.5	115	90.3
LVWPS-U1-IW02B	UMCf	26735023.96	838198.03	1524.46	1524.43	29.42		Schedule 40 PVC	0.010	#2/16			2	30	151.5	151	121.3
LVWPS-U1-IW03A	UMCf	26735004.66	838213.18	1523.88	1523.55	28.59	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	155.0	2	25	119	118.5	93.8
LVWPS-U1-IW03B	UMCf	26735004.34	838213.12	1523.88	1523.53	28.40		Schedule 40 PVC	0.010	#2/16			2	25	150.5	150	125.3
LVWPS-U1-IW04A	UMCf	26734984.96	838228.48	1523.90	1523.65	28.89	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	155.0	2	30	117	116.5	86.8
LVWPS-U1-IW04B	UMCf	26734984.86	838228.18	1523.90	1523.59	28.49		Schedule 40 PVC	0.010	#2/16			2	30	153	152.5	122.8
LVWPS-U1-IW05A	UMCf	26734965.08	838243.71	1524.36	1524.25	29.45	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	155.0	2	25	114	113.5	88.8
LVWPS-U1-IW05B	UMCf	26734965.09	838243.38	1524.36	1524.23	29.21		Schedule 40 PVC	0.010	#2/16			2	25	145.5	145	120.3
LVWPS-U1-IW06A	UMCf	26734945.21	838258.76	1524.91	1525.12	30.40	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	157.5	2	25	113	112.5	87.8
LVWPS-U1-IW06B	UMCf	26734945.02	838258.36	1524.91	1525.07	30.06		Schedule 40 PVC	0.010	#2/16			2	30	149.5	149	119.3
LVWPS-U1-IW07A	UMCf	26734925.20	838273.28	1529.08	1528.30	33.50	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	160.0	2	25	121	120.5	95.8
LVWPS-U1-IW07B	UMCf	26734925.28	838272.95	1529.08	1528.66	33.46		Schedule 40 PVC	0.010	#2/16			2	25	152.5	152	127.3
LVWPS-U1-IW08A	UMCf	26734905.81	838289.00	1529.69	1530.71	35.85	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	170.0	2	30	125.5	125	95.3
LVWPS-U1-IW08B	UMCf	26734905.38	838288.84	1529.69	1530.83	35.70		Schedule 40 PVC	0.010	#2/16			2	25	157	156.5	131.8
LVWPS-U1-MW01A	UMCf	26735054.25	838206.27	1526.30	1526.15	31.60	Single	Schedule 40 PVC	0.010	#2/16	6	116.0	2	25	115.5	115	90.3
LVWPS-U1-MW01B	UMCf	26735052.48	838200.84	1525.78	1525.85	30.95	Single	Schedule 80 PVC	0.010	#2/16	8	157.5	4	20	153.5	153	133.5
LVWPS-U1-MW02A	UMCf	26734972.90	838277.36	1529.90	1529.61	35.00	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	25	119.5	119	94.3
LVWPS-U1-MW02B	UMCf	26734976.53	838276.51	1529.75	1529.63	34.81	Single	Schedule 80 PVC	0.010	#2/16	8	165.0	4	25	162	161.5	136.9
LVWPS-U1-MW03B	UMCf	26735108.31	838199.29	1527.13	1527.06	32.32	Single	Schedule 80 PVC	0.010	#2/16	8	165.0	4	20	154.5	154	134.5
LVWPS-U1-MW04A	UMCf	26735021.39	838264.46	1529.55	1529.35	34.82	Single	Schedule 40 PVC	0.010	#2/16	6	126.5	2	25	124.5	124	99.3
LVWPS-U1-MW04B	UMCf	26735026.82	838262.94	1529.47	1529.33	34.59	Single	Schedule 80 PVC	0.010	#2/16	8	175.0	4	25	165	164.5	139.9
LVWPS-U1-MW05A	UMCf	26734947.22	838319.22	1530.32	1529.93	35.52	Single	Schedule 40 PVC	0.010	#2/16	6	122.0	2	25	121	120.5	95.8
LVWPS-U1-MW05B	UMCf	26734951.22	838315.42	1530.45	1530.30	35.40	Single	Schedule 80 PVC	0.010	#2/16	8	172.5	4	25	162	161.5	136.9
LVWPS-U1-MW06A	UMCf	26734986.21	838153.16	1523.81	1523.70	28.56	Single	Schedule 40 PVC	0.010	#2/16	6	106.5	2	20	105.5	105	85.3
LVWPS-U1-MW06B	UMCf	26734991.82	838156.18	1524.09	1523.73	28.51	Single	Schedule 40 PVC	0.010	#2/16	6	143.0	2	25	134.5	134	109.3
LVWPS-U1-MW07	UMCf	26734907.19	838218.01	1525.17	1524.96	30.16	Single	Schedule 40 PVC	0.010	#2/16	6	140.0	2	25	111.5	111	86.3
LVWPS-U1-MW08A	UMCf	26735014.52	838236.36	1524.11	1523.97	29.20	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	25	119	118.5	93.8
LVWPS-U1-MW08B	UMCf	26735017.13	838233.33	1523.84	1523.74	28.75	Single	Schedule 80 PVC	0.010	#2/16	6	151.0	2	25	150.5	150	125.3
LVWPS-U1-MW09A	UMCf	26735032.96	838320.87	1529.36	1529.11	35.12	Single	Schedule 40 PVC	0.010	#2/16	6	126.0	2	10	125.5	125	115.3
LVWPS-U1-MW09B	UMCf	26735025.78	838320.98	1529.37	1529.08	34.62	Single	Schedule 80 PVC	0.010	#2/16	6	156.0	2	25	155.5	155	130.3
LVWPS-U1-MW10A	UMCf	26735085.42	838340.44	1527.11	1527.02	33.20	Single	Schedule 40 PVC	0.010	#2/16	6	125.0	2	25	124.5	124	99.3
LVWPS-U1-MW10B	UMCf	26735081.08	838344.98	1527.40	1527.21	32.98	Single	Schedule 80 PVC	0.010	#2/16	6	160.0	2	25	155.5	155	130.3
Zone 2 Study Area																	
LVWPS-A2-DR01A	Alluvium	26734896.39	838889.65	1524.78	1524.77	31.90	Single	Schedule 40 PVC	0.020	#3	6	72.0	2	35	71.5	71	36.3
LVWPS-A2-DR01B	Alluvium	26734896.42	838884.23	1524.80	1524.57	31.75	Single	Schedule 40 PVC	0.020	#3	6	113.0	2	35	112.5	112	77.3

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Table 1
Phase 2 Well Construction Details
Las Vegas Wash Bioremediation Pilot Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water[1]	Construction Type	Construction Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC			inches		inches	feet bgs	inches	feet	feet bgs	feet bgs	feet bgs
LVWPS-A2-DR02A	Alluvium	26734894.17	838964.08	1524.91	1524.65	32.00	Single	Schedule 40 PVC	0.020	#3	6	52.5	2	15	52	51.5	36.8
LVWPS-A2-DR02B	Alluvium	26734896.56	838956.61	1524.91	1524.90	32.09	Single	Schedule 40 PVC	0.020	#3	6	78.5	2	20	78	77.5	57.8
LVWPS-A2-IW01A	Alluvium	26734887.97	838782.98	1530.17	1529.79	36.44	Dual-Nested	Schedule 40 PVC	0.020	#3	10	105.0	2	25	66.5	66	41.3
LVWPS-A2-IW01B	Alluvium	26734888.00	838782.65	1530.17	1529.78	36.64		Schedule 40 PVC	0.020	#3			2	25	98	97.5	72.8
LVWPS-A2-IW02A	Alluvium	26734888.97	838815.84	1529.49	1529.01	35.88	Dual-Nested	Schedule 40 PVC	0.020	#3	10	110.0	2	30	69	68.5	38.8
LVWPS-A2-IW02B	Alluvium	26734889.05	838815.49	1529.49	1529.03	36.22		Schedule 40 PVC	0.020	#3			2	25	100.5	100	75.3
LVWPS-A2-IW03A	Alluvium	26734888.88	838851.00	1527.28	1526.93	33.94	Dual-Nested	Schedule 40 PVC	0.020	#3	10	115.0	2	30	67.5	67	37.3
LVWPS-A2-IW03B	Alluvium	26734889.18	838850.83	1527.28	1526.93	33.94		Schedule 40 PVC	0.020	#3			2	30	104	103.5	73.8
LVWPS-A2-IW04A	Alluvium	26734889.81	838887.08	1524.70	1524.57	31.70	Dual-Nested	Schedule 40 PVC	0.020	#3	10	115.0	2	35	71.5	71	36.3
LVWPS-A2-IW04B	Alluvium	26734890.02	838886.74	1524.70	1524.61	31.80		Schedule 40 PVC	0.020	#3			2	35	112.5	112	77.3
LVWPS-A2-IW05A	Alluvium	26734889.15	838921.04	1524.89	1524.86	32.05	Dual-Nested	Schedule 40 PVC	0.020	#3	10	105.0	2	25	63	62.5	37.8
LVWPS-A2-IW05B	Alluvium	26734889.30	838920.74	1524.89	1524.83	31.94		Schedule 40 PVC	0.020	#3			2	25	94	93.5	68.8
LVWPS-A2-IW06A	Alluvium	26734888.81	838957.92	1524.94	1524.91	32.20	Dual-Nested	Schedule 40 PVC	0.020	#3	10	80.0	2	15	52	51.5	36.8
LVWPS-A2-IW06B	Alluvium	26734888.84	838957.55	1524.94	1524.89	32.10		Schedule 40 PVC	0.020	#3			2	20	78	77.5	57.8
LVWPS-A2-IW07A	Alluvium	26734889.27	838991.11	1524.39	1524.31	31.57	Dual-Nested	Schedule 40 PVC	0.020	#3	10	85.0	2	15	50.5	50	35.3
LVWPS-A2-IW07B	Alluvium	26734889.32	838990.81	1524.39	1524.34	31.57		Schedule 40 PVC	0.020	#3			2	20	76.5	76	56.3
LVWPS-A2-IW08A	Alluvium	26734889.80	839026.35	1524.85	1524.74	32.10	Dual-Nested	Schedule 40 PVC	0.020	#3	10	90.0	2	20	56	55.5	35.8
LVWPS-A2-IW08B	Alluvium	26734889.91	839026.04	1524.85	1524.80	32.15		Schedule 40 PVC	0.020	#3			2	20	82	81.5	61.8
LVWPS-A2-IW09A	Alluvium	26734889.16	839061.18	1525.33	1525.37	32.68	Dual-Nested	Schedule 40 PVC	0.020	#3	10	85.0	2	15	52	51.5	36.8
LVWPS-A2-IW09B	Alluvium	26734889.14	839060.89	1525.33	1525.37	32.69		Schedule 40 PVC	0.020	#3			2	15	74	73.5	58.8
LVWPS-A2-MW01A	Alluvium	26734838.04	838817.08	1526.61	1526.29	33.07	Single	Schedule 40 PVC	0.020	#3	6	61	2	20	60.5	60	40.3
LVWPS-A2-MW01B	Alluvium	26734837.91	838821.64	1526.61	1526.16	33.09	Single	Schedule 40 PVC	0.020	#3	6	91	2	20	90.5	90	70.3
LVWPS-A2-MW02A	Alluvium	26734839.33	838936.61	1527.83	1527.49	34.66	Single	Schedule 40 PVC	0.020	#3	6	61	2	20	60.5	60	40.3
LVWPS-A2-MW02B	Alluvium	26734839.33	838940.48	1527.88	1527.62	34.55	Single	Schedule 40 PVC	0.020	#3	6	91	2	20	90.5	90	70.3
LVWPS-A2-MW03A	Alluvium	26734839.87	839041.77	1528.00	1527.72	34.95	Single	Schedule 40 PVC	0.020	#3	6	60	2	20	58.5	58	38.3
LVWPS-A2-MW03B	Alluvium	26734839.96	839046.05	1528.02	1527.68	34.90	Single	Schedule 40 PVC	0.020	#3	6	85	2	20	84.5	84	64.3
LVWPS-A2-MW04A	Alluvium	26734900.17	838770.49	1527.54	1527.55	34.24	Single	Schedule 40 PVC	0.020	#3	6	64.5	2	20	64	63.5	43.8
LVWPS-A2-MW04B	Alluvium	26734901.60	838772.88	1528.17	1527.86	34.91	Single	Schedule 40 PVC	0.020	#3	6	96.0	2	20	95.5	95	75.3
LVWPS-A2-MW05A	Alluvium	26734901.04	839073.31	1524.49	1524.18	31.50	Single	Schedule 40 PVC	0.020	#3	6	53.0	2	15	52	51.5	36.8
LVWPS-A2-MW05B	Alluvium	26734903.12	839070.97	1524.49	1524.29	31.68	Single	Schedule 40 PVC	0.020	#3	6	75.0	2	15	74	73.5	58.8
LVWPS-A2-MW08A	Alluvium	26734933.48	838815.75	1529.44	1529.35	36.36	Single	Schedule 40 PVC	0.020	#3	6	56.0	2	15	55.5	55	40.3
LVWPS-A2-MW08B	Alluvium	26734937.17	838818.51	1529.20	1528.84	35.90	Single	Schedule 40 PVC	0.020	#3	6	81.3	2	20	80	79.5	59.8
LVWPS-A2-MW08C	Alluvium	26734938.06	838813.32	1529.24	1528.93	36.25	Single	Schedule 40 PVC	0.020	#3	6	110.0	2	20	106.5	106	86.3
LVWPS-A2-MW09A	Alluvium	26734942.12	839052.25	1523.77	1523.56	30.91	Single	Schedule 40 PVC	0.020	#3	6	56.0	2	20	55	54.5	34.8
LVWPS-A2-MW09B	Alluvium	26734943.95	839045.22	1523.85	1523.67	31.31	Single	Schedule 40 PVC	0.020	#3	6	85.0	2	20	79	78.5	58.8
LVWPS-A2-MW11A	Alluvium	26734984.76	838791.31	1528.05	1528.00	35.10	Single	Schedule 40 PVC	0.020	#3	6	61.5	2	20	60.5	60	40.3
LVWPS-A2-MW11B	Alluvium	26734986.77	838787.83	1528.01	1527.79	35.06	Single	Schedule 40 PVC	0.020	#3	6	86.0	2	20	85.5	85	65.3
LVWPS-A2-MW11C	Alluvium	26734987.49	838793.00	1528.09	1527.81	35.36	Single	Schedule 40 PVC	0.020	#3	6	114.0	2	20	110.5	110	90.3
LVWPS-A2-MW12A	Alluvium	26734988.20	838951.66	1523.08	1522.85	30.24	Single	Schedule 40 PVC	0.020	#3	6	46.0	2	10	45	44.5	34.9

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Table 1
Phase 2 Well Construction Details
Las Vegas Wash Bioremediation Pilot Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water[1]	Construction Type	Construction Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC			inches		inches	feet bgs	inches	feet	feet bgs	feet bgs	feet bgs
LVWPS-A2-MW12B	Alluvium	26734989.46	838955.96	1523.15	1522.94	30.48	Single	Schedule 40 PVC	0.020	#3	6	75.0	2	20	69.5	69	49.3
LVWPS-A2-MW13A	Alluvium	26734986.06	839098.37	1523.62	1523.23	31.00	Single	Schedule 40 PVC	0.020	#3	6	62.0	2	20	61.5	61	41.3
LVWPS-A2-MW13B	Alluvium	26734989.09	839099.95	1523.60	1523.40	31.44	Single	Schedule 40 PVC	0.020	#3	6	90.0	2	20	86.6	86.1	66.4
LVWPS-A2-MW14A	Alluvium	26734938.41	838942.48	1524.15	1523.84	31.16	Single	Schedule 40 PVC	0.020	#3	6	51.5	2	15	51	50.5	35.8
LVWPS-A2-MW14B	Alluvium	26734938.74	838946.20	1524.51	1524.32	31.70	Single	Schedule 40 PVC	0.020	#3	6	80.0	2	20	75	74.5	54.8
LVWPS-A2-MW15A	Alluvium	26735094.04	838828.85	1521.20	1520.95	28.70	Single	Schedule 40 PVC	0.020	#3	6	61.0	2	20	60	59.5	39.8
LVWPS-A2-MW15B	Alluvium	26735101.30	838829.49	1521.68	1521.37	29.34	Single	Schedule 40 PVC	0.020	#3	6	110.0	2	20	90.5	90	70.3
LVWPS-A2-MW16A	Alluvium	26735252.27	838928.69	1520.47	1520.73	29.34	Single	Schedule 40 PVC	0.020	#3	6	56.0	2	20	56	55.5	35.8
LVWPS-A2-MW16B	Alluvium	26735258.00	838931.03	1520.25	1520.51	29.21	Single	Schedule 40 PVC	0.020	#3	6	90.0	2	20	80.5	80	60.3
LVWPS-A2-MW17A	Alluvium	26734983.57	838866.47	1526.43	1526.35	33.65	Single	Schedule 40 PVC	0.020	#3	6	61.5	2	20	60.5	60	40.3
LVWPS-A2-MW17B	Alluvium	26734985.17	838863.03	1526.25	1526.26	33.65	Single	Schedule 40 PVC	0.020	#3	6	86.0	2	20	85.5	85	65.3
LVWPS-A2-MW17C	Alluvium	26734989.37	838862.92	1526.03	1525.81	33.86	Single	Schedule 40 PVC	0.020	#3	6	115.5	2	20	110.5	110	90.3
LVWPS-U2-DR01	UMCf	26734896.14	838880.43	1524.84	1524.74	32.06	Single	Schedule 40 PVC	0.010	#2/16	6	142.0	2	20	141.5	141	121.3
LVWPS-U2-DR02	UMCf	26734896.48	838953.23	1524.85	1524.76	32.25	Single	Schedule 40 PVC	0.010	#2/16	6	109.5	2	25	109	108.5	83.8
LVWPS-U2-IW01	UMCf	26734889.36	838880.42	1524.71	1524.63	32.09	Single	Schedule 40 PVC	0.010	#2/16	6	155.0	2	20	141.5	141	121.2
LVWPS-U2-IW02	UMCf	26734889.50	838905.01	1525.09	1525.07	32.55	Single	Schedule 40 PVC	0.010	#2/16	6	145.0	2	25	141.5	141	116.2
LVWPS-U2-IW03	UMCf	26734889.40	838930.38	1524.99	1524.91	32.25	Single	Schedule 40 PVC	0.010	#2/16	6	125.0	2	25	124.5	124	99.2
LVWPS-U2-IW04	UMCf	26734888.87	838954.79	1524.89	1524.84	32.10	Single	Schedule 40 PVC	0.010	#2/16	6	145.0	2	25	109	108.5	83.7
LVWPS-U2-IW05	UMCf	26734889.80	838980.34	1524.54	1524.54	32.80	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	30	118	117.5	87.7
LVWPS-U2-IW06	UMCf	26734889.08	839005.30	1524.82	1524.70	32.52	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	15	104.5	104	89.2
LVWPS-U2-IW07	UMCf	26734889.76	839029.85	1524.95	1524.98	32.40	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	15	106.5	106	91.2
LVWPS-U2-IW08	UMCf	26734889.41	839055.50	1525.34	1525.29	32.72	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	25	109	108.5	83.7
LVWPS-U2-IW09	UMCf	26734886.72	838779.73	1529.53	1529.26	36.22	Single	Schedule 40 PVC	0.010	#2/16	6	130.0	2	25	128.5	128	103.2
LVWPS-U2-IW10	UMCf	26734887.07	838805.16	1529.51	1529.59	36.72	Single	Schedule 40 PVC	0.010	#2/16	6	135.0	2	20	129.5	129	109.3
LVWPS-U2-IW11	UMCf	26734886.91	838830.51	1528.30	1528.02	35.26	Single	Schedule 40 PVC	0.010	#2/16	6	135.0	2	25	134.2	133.7	108.9
LVWPS-U2-IW12	UMCf	26734889.28	838856.13	1526.66	1526.14	33.53	Single	Schedule 40 PVC	0.010	#2/16	6	139.0	2	25	138	137.5	112.8
LVWPS-U2-MW01	UMCf	26734837.77	838825.83	1526.69	1526.40	33.42	Single	Schedule 40 PVC	0.010	#2/16	6	125	2	20	117.5	117	97.3
LVWPS-U2-MW02	UMCf	26734839.36	838945.11	1527.94	1527.68	35.20	Single	Schedule 40 PVC	0.010	#2/16	6	126	2	25	125.5	125	100.3
LVWPS-U2-MW03	UMCf	26734839.69	839050.30	1527.99	1527.66	34.91	Single	Schedule 40 PVC	0.010	#2/16	6	115	2	20	110.5	110	90.3
LVWPS-U2-MW04	UMCf	26734895.79	838771.90	1528.66	1528.35	35.35	Single	Schedule 40 PVC	0.010	#2/16	6	130.0	2	25	128.5	128	103.2
LVWPS-U2-MW05	UMCf	26734897.24	839064.72	1524.94	1524.76	32.20	Single	Schedule 40 PVC	0.010	#2/16	6	110.0	2	25	108.5	108	83.2
LVWPS-U2-MW06	UMCf	26734914.99	838875.13	1525.48	1524.89	32.40	Single	Schedule 40 PVC	0.010	#2/16	6	142.5	2	20	142	141.5	121.8
LVWPS-U2-MW07	UMCf	26734914.74	839095.07	1524.53	1524.37	31.82	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	20	108.5	108	88.2
LVWPS-U2-MW08	UMCf	26734941.29	838816.82	1529.11	1528.75	36.21	Single	Schedule 40 PVC	0.010	#2/16	6	135.0	2	20	133.5	133	113.2
LVWPS-U2-MW09	UMCf	26734941.56	839048.32	1523.83	1523.62	31.61	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	20	105.2	104.7	84.9
LVWPS-U2-MW10	UMCf	26734942.01	839149.60	1525.67	1525.57	34.12	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	20	110.5	110	90.2
LVWPS-U2-MW12	UMCf	26734992.74	838953.32	1523.09	1522.89	31.20	Single	Schedule 40 PVC	0.010	#2/16	6	110.0	2	25	108.5	108	83.2
LVWPS-U2-MW13	UMCf	26734988.97	839095.12	1523.52	1523.42	31.89	Single	Schedule 40 PVC	0.010	#2/16	6	120.0	2	15	110	109.5	94.7
LVWPS-U2-MW14	UMCf	26734939.25	838950.26	1524.77	1524.30	32.70	Single	Schedule 40 PVC	0.010	#2/16	6	110.0	2	25	108.5	108	83.2
LVWPS-U2-MW17	UMCf	26734987.32	838868.87	1526.17	1525.88	34.19	Single	Schedule 40 PVC	0.010	#2/16	6	137.7	2	20	137	136.5	117
LVWPS-U2-MW18	UMCf	26734914.05	838993.79	1524.16	1524.09	32.53	Single	Schedule 40 PVC	0.010	#2/16	6	114.0	2	25	113.5	113	88.3
LVWPS-U2-MW19	UMCf	26734889.37	839106.34	1525.18	1525.07	32.71	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	20	111.5	111	91.2
LVWPS-U2-MW20	UMCf	26734889.93	839153.61	1525.44	1525.24	32.98	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	20	108.5	108	88.2
LVWPS-BH01	---	26734872.28	838780.13	1530.46	---	---	Soil Boring	---	---	---	6	105.0	---	---	---	---	---
Zone 3 Study Area																	
LVWPS-A3-DR01	Alluvium	26734911.52	839503.33	1522.87	1522.71	30.41	Single	Schedule 40 PVC	0.020	#3	6	76.5	2	20	76	75.5	55.8
LVWPS-A3-MW02	Alluvium	26734944.12	839475.20	1522.61	1522.39	30.30	Single	Schedule 40 PVC	0.020	#3	6	85.0	2	20	73	72.5	52.8
LVWPS-A3-MW06	Alluvium	26734960.45	839530.77	1522.32	1521.99	30.03	Single	Schedule 40 PVC	0.020	#3	6	76.0	2	20	75.5	75	55.3
LVWPS-A3-MW07	Alluvium	26734843.39	839449.63	1525.17	1525.06	32.48	Single	Schedule 40 PVC	0.020	#3	6	75	2	20	75	74.5	54.8
LVWPS-A3-MW08	Alluvium	26734864.46	839588.62	1525.58	1525.30	32.90	Single	Schedule 40 PVC	0.020	#3	6	110	2	20	105	104.5	84.8

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Phase 2 Well Construction Details
Las Vegas Wash Bioremediation Pilot Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water[1]	Construction Type	Construction Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC			inches		inches	feet bgs	inches	feet	feet bgs	feet bgs	feet bgs
LVWPS-A3-MW10	Alluvium	26734994.40	839445.10	1521.78	1521.72	30.06	Single	Schedule 40 PVC	0.020	#3	6	77.0	2	20	76.5	76	56.3
LVWPS-A3-MW11	Alluvium	26735007.80	839556.93	1521.33	1521.36	29.41	Single	Schedule 40 PVC	0.020	#3	6	80.0	2	20	74	73.5	53.8
LVWPS-A3-MW12	Alluvium	26735042.88	839483.87	1520.86	1520.75	29.13	Single	Schedule 40 PVC	0.020	#3	6	80.0	2	20	79.5	79	59.3
LVWPS-U3-DR01A	UMCf-cg	26734912.10	839506.61	1522.95	1522.72	30.55	Single	Schedule 40 PVC	0.010	#2/16	6	124.5	2	30	123.5	123	93.3
LVWPS-U3-DR01B	UMCf-cg	26734912.55	839510.18	1522.84	1522.69	30.71	Single	Schedule 80 PVC	0.010	#2/16	6	160.0	2	30	159.5	159	129.3
LVWPS-U3-DR02A	UMCf-cg	26734924.88	839575.78	1523.27	1523.13	30.96	Single	Schedule 40 PVC	0.010	#2/16	6	112.5	2	25	111.5	111	86.3
LVWPS-U3-DR02B	UMCf-cg	26734925.39	839579.10	1523.15	1522.98	31.05	Single	Schedule 40 PVC	0.010	#2/16	6	144.0	2	25	143	142.5	117.8
LVWPS-U3-DR02C	UMCf-cg	26734925.79	839582.56	1523.10	1522.90	31.03	Single	Schedule 80 PVC	0.010	#2/16	6	175.0	2	25	174.5	174	149.3
LVWPS-U3-IW01	UMCf-cg	26734893.19	839433.14	1522.95	1525.61	34.12	Single	Schedule 40 PVC	0.010	#2/16	10	118.0	2	35	115.5	115	80.2
LVWPS-U3-IW02A	UMCf-cg	26734896.96	839458.60	1522.81	1524.20	33.32	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	128.0	2	20	99.5	99	79.3
LVWPS-U3-IW02B	UMCf-cg	26734896.77	839458.31	1522.81	1524.22	32.78		Schedule 40 PVC	0.010	#2/16			2	20	125	124.5	104.8
LVWPS-U3-IW03A	UMCf-cg	26734901.01	839482.33	1522.92	1524.25	32.31	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	144.0	2	25	103	102.5	77.8
LVWPS-U3-IW03B	UMCf-cg	26734901.38	839482.28	1522.92	1524.33	32.61		Schedule 40 PVC	0.010	#2/16			2	30	139.5	139	109.3
LVWPS-U3-IW04A	UMCf-cg	26734905.65	839507.50	1523.09	1522.80	30.46	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	160.0	2	30	123.5	123	93.3
LVWPS-U3-IW04B	UMCf-cg	26734905.89	839507.21	1523.09	1522.81	30.87		Schedule 40 PVC	0.010	#2/16			2	30	159.5	159	129.3
LVWPS-U3-IW05A	UMCf-cg	26734909.80	839531.81	1522.62	1522.80	31.46	Dual-Nested	Schedule 40 PVC	0.010	#2/16	10	175.0	2	35	126.5	126	91.3
LVWPS-U3-IW05B	UMCf-cg	26734909.78	839531.47	1522.62	1522.80	30.58		Schedule 40 PVC	0.010	#2/16			2	35	168	167.5	132.8
LVWPS-U3-IW06A	UMCf-cg	26734914.65	839556.40	1522.79	1522.83	30.52	Triple-Nested	Schedule 40 PVC	0.010	#2/16	10	175.0	2	25	111.5	111	86.3
LVWPS-U3-IW06B	UMCf-cg	26734914.56	839556.00	1522.79	1522.89	30.68		Schedule 40 PVC	0.010	#2/16			2	25	143	142.5	117.8
LVWPS-U3-IW06C	UMCf-cg	26734914.32	839556.27	1522.79	1522.85	31.02		Schedule 40 PVC	0.010	#2/16			2	25	174.5	174	149.3
LVWPS-U3-IW07A	UMCf-cg	26734918.75	839580.97	1523.32	1523.03	30.80	Triple-Nested	Schedule 40 PVC	0.010	#2/16	10	175.0	2	25	111.5	111	86.3
LVWPS-U3-IW07B	UMCf-cg	26734918.38	839580.95	1523.32	1523.03	31.02		Schedule 40 PVC	0.010	#2/16			2	25	143	142.5	117.8
LVWPS-U3-IW07C	UMCf-cg	26734918.60	839580.61	1523.32	1523.03	31.02		Schedule 40 PVC	0.010	#2/16			2	25	174.5	174	149.3
LVWPS-U3-IW08A	UMCf-cg	26734923.35	839605.13	1523.23	1523.11	30.87	Triple-Nested	Schedule 40 PVC	0.010	#2/16	10	175.0	2	25	111.5	111	86.3
LVWPS-U3-IW08B	UMCf-cg	26734923.06	839605.34	1523.23	1523.09	31.08		Schedule 40 PVC	0.010	#2/16			2	25	143	142.5	117.8
LVWPS-U3-IW08C	UMCf-cg	26734923.00	839604.97	1523.23	1523.10	31.05		Schedule 40 PVC	0.010	#2/16			2	25	174.5	174	149.3
LVWPS-U3-MW01B	UMCf-cg	26734942.69	839376.18	1522.54	1522.41	30.90	Single	Schedule 80 PVC	0.010	#2/16	8	107.5	4	20	103.8	103.3	83.8
LVWPS-U3-MW02A	UMCf-cg	26734948.75	839479.60	1522.40	1522.13	30.42	Single	Schedule 40 PVC	0.010	#2/16	6	98.5	2	15	97.5	97	82.3
LVWPS-U3-MW02B	UMCf-cg	26734943.22	839481.31	1522.50	1522.21	30.76	Single	Schedule 80 PVC	0.010	#2/16	8	130.0	4	20	123	122.5	103
LVWPS-U3-MW03A	UMCf-cg	26734944.17	839583.42	1522.80	1522.68	30.60	Single	Schedule 40 PVC	0.010	#2/16	6	112.5	2	25	111.5	111	86.3
LVWPS-U3-MW03B	UMCf-cg	26734944.11	839576.72	1522.86	1522.49	30.68	Single	Schedule 80 PVC	0.010	#2/16	8	179.0	4	25	176.2	175.7	151.1
LVWPS-U3-MW03C	UMCf-cg	26734949.67	839579.79	1522.47	1522.21	30.32	Single	Schedule 40 PVC	0.010	#2/16	6	143.5	2	25	143	142.5	117.8
LVWPS-U3-MW04B	UMCf-cg	26734968.11	839326.96	1522.25	1521.92	30.36	Single	Schedule 80 PVC	0.010	#2/16	8	102.5	4	20	98.2	97.7	78.2
LVWPS-U3-MW05B	UMCf-cg	26734968.70	839425.48	1522.17	1521.98	30.50	Single	Schedule 80 PVC	0.010	#2/16	8	112.5	4	20	105.2	104.7	85.2
LVWPS-U3-MW06A	UMCf-cg	26734962.99	839525.84	1522.04	1521.91	30.10	Single	Schedule 40 PVC	0.010	#2/16	6	116.5	2	25	115.5	115	90.3
LVWPS-U3-MW06B	UMCf-cg	26734965.59	839528.63	1522.18	1521.92	30.20	Single	Schedule 80 PVC	0.010	#2/16	8	152.5	4	25	150.4	149.9	125.3
LVWPS-U3-MW07A	UMCf-cg	26734843.54	839454.21	1525.21	1524.95	32.40	Single	Schedule 40 PVC	0.010	#2/16	6	100	2	15	98	97.5	82.8
LVWPS-U3-MW07B	UMCf-cg	26734843.26	839458.27	1525.26	1524.93	32.87	Single	Schedule 40 PVC	0.010	#2/16	6	126	2	20	125	124.5	104.8
LVWPS-U3-MW08A	UMCf-cg	26734863.82	839592.64	1525.64	1525.45	33.40	Single	Schedule 40 PVC	0.010	#2/16	6	145	2	25	143	142.5	117.8
LVWPS-U3-MW08B	UMCf-cg	26734863.16	839597.03	1525.70	1525.28	33.21	Single	Schedule 80 PVC	0.010	#2/16	6	175	2	25	174.5	174	149.3
LVWPS-U3-MW09	UMCf-cg	26734922.06	839452.86	1522.74	1525.38	34.00	Single	Schedule 40 PVC	0.010	#2/16	6	115.0	2	25	108	107.5	82.8
LVWPS-U3-MW10A	UMCf-cg	26734997.78	839440.95	1521.78	1521.47	30.09	Single	Schedule 40 PVC	0.010	#2/16	6	97.0	2	10	95.5	95	85.3
LVWPS-U3-MW10B	UMCf-cg	26734999.52	839447.11	1521.68	1521.55	30.14	Single	Schedule 40 PVC	0.010	#2/16	6	130.0	2	20	121.5	121	101.3
LVWPS-U3-MW11A	UMCf-cg	26735013.48	839552.91	1521.42	1521.39	29.79	Single	Schedule 40 PVC	0.010	#2/16	6	107.5	2	20	106.5	106	86.3
LVWPS-U3-MW11B	UMCf-cg	26735014.90	839559.83	1521.28	1521.35	29.91	Single	Schedule 40 PVC	0.010	#2/16	6	138.0	2	25	137.5	137	112.3
LVWPS-U3-MW11C	UMCf-cg	26735017.93	839555.86	1521.33	1521.20	29.83	Single	Schedule 80 PVC	0.010	#2/16	6	170.0	2	20	163.4	163	143.3
LVWPS-U3-MW12A	UMCf-cg	26735045.73	839479.41	1521.01	1520.83	29.40	Single	Schedule 40 PVC	0.010	#2/16	6	109.5	2	20	108.5	108	88.3
LVWPS-U3-MW12B	UMCf-cg	26735047.74	839484.29	1520.91	1520.74	29.36	Single	Schedule 40 PVC	0.010	#2/16	6	140.0	2	25	138.5	138	113.3
LVWPS-U3-MW13A	UMCf-cg	26734933.25	839516.75	1522.40	1522.24	30.21	Single	Schedule 40 PVC	0.010	#2/16	6	122.5	2	25	121.5	121	96.3
LVWPS-U3-MW13B	UMCf-cg	26734934.09	839522.37	1522.01	1521.91	30.00	Single	Schedule 40 PVC	0.010	#2/16	6	155.0	2	15	148	147.5	132.8

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Table 1
Phase 2 Well Construction Details
Las Vegas Wash Bioremediation Pilot Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water[1]	Construction Type	Construction Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC			inches		inches	feet bgs	inches	feet	feet bgs	feet bgs	feet bgs
Extraction Wells																	
LVWPS-EW01	Alluvium	26734957.94	838426.21	1530.03	1529.74	35.74	Single	Schedule 40 PVC with Stainless Steel Wire Wrap Screen	0.020	12-20	10	95.0	6	40	85	84.5	44.8
LVWPS-EW02	Alluvium	26734885.98	838507.29	1523.66	1523.25	29.20	Single	Schedule 40 PVC with Stainless Steel Wire Wrap Screen	0.020	12-20	10	61.0	6	30	58.5	58	28.3
LVWPS-EW03	Alluvium	26734886.94	838621.90	1523.14	1522.70	28.95	Single	Schedule 40 PVC with Stainless Steel Wire Wrap Screen	0.020	12-20	10	81.0	6	30	70.5	70	40.3
LVWPS-EW04	Alluvium	26734947.54	838573.33	1522.40	1521.92	28.20	Single	Schedule 40 PVC with Stainless Steel Wire Wrap Screen	0.020	12-20	10	47.0	6	20	46.5	46	26.3
LVWPS-EW05	Alluvium	26734978.54	838497.51	1529.76	1529.42	35.60	Single	Schedule 40 PVC with Stainless Steel Wire Wrap Screen	0.020	12-20	10	81.0	6	30	80.5	80	50.3

Notes
amsl - above mean sea level
bgs - below ground surface
bTOC - below top of casing
PVC - polyvinyl chloride
UMCf - Upper Muddy Creek formation
UMCf-cg - Upper Muddy Creek formation - coarse grained facies
UMCf/Horse Springs- Alternating layers of UMCf, semi-consolidated UMCf, and reworked Horse Springs formation.
UMCf (Semi-Cons) - Semi-consolidated Upper Muddy Creek formation
--- Not Applicable
1. Depth to water measurements collected in October 2020.
2. Well names including IW indicate an injection well. Well names including DR indicate a dose response well. Well names including MW indicate a monitoring well. Well names including EW indicate an extraction well.

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0			SM5310B	FIELD TESTS								Dissolved Gases by RSK-175	Dissolved Metals by SW6010B	
						Perchlorate	Chlorate	Nitrate (as N)	Nitrite (as N)	Sulfate	Total Organic Carbon	Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity	Methane	Calcium	Chromium
						µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU	µg/L	mg/L	mg/L
Extraction	LVWPS-EW01	9/29/2020	N	Qal	44.8 - 84.5	2,900	13,000	23	----	2,200	1.6	6.283	2.76	----	-23.4	7.17	----	26.2	-6.0	----	----	----
Extraction	LVWPS-EW02	9/29/2020	N	Qal	28.3 - 58.0	2,900	5,500	20	----	2,100	1.9	5.614	4.29	----	-11.3	7.24	----	25.6	86.7	----	----	----
Extraction	LVWPS-EW03	9/30/2020	N	Qal	40.3 - 70.0	3,100	5,000	18	----	2,100	1.7	4.379	4.09	----	-34.5	7.34	----	22.0	9.8	----	----	----
Extraction	LVWPS-EW04	9/30/2020	N	Qal	26.3 - 46.0	2,800	5,200	20	----	2,100	2.0	4.449	4.35	----	-36.2	7.31	----	22.5	62.3	----	----	----
Extraction	LVWPS-EW05	9/29/2020	N	Qal	50.3 - 80.0	2,800	11,000	23	----	2,100	1.8	5.964	2.32	----	-11.7	7.11	----	25.4	84.2	----	----	----
Extraction	LVWPS-EW05	9/29/2020	FD	Qal	50.3 - 80.0	2,800	11,000	23	----	2,100	1.7	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206A	9/30/2020	N	Qal	39.8 - 59.5	3,400 J-	8,500	23	----	----	----	4.892	3.77	----	-37.6	7.32	----	24.9	2.8	----	----	----
Extraction	LVWPS-MW206B	9/30/2020	N	Qal	69.9 - 89.5	2,800	16,000	10	----	----	----	5.314	1.84	----	-69.7	7.23	----	27.2	0.0	----	----	----
Extraction	LVWPS-MW206C	9/30/2020	N	UMCf	100.3 - 120.0	4,900 J-	6,000	3.4	----	----	----	4.959	2.70	----	-86.3	7.50	----	29.7	54.9	----	----	----
Extraction	LVWPS-MW206D	10/6/2020	N	UMCf	125.3 - 145.0	9.5	<10	<0.014	----	----	----	6.841	2.08	----	-285.6	7.39	----	27.4	181.2	----	----	----
Extraction	LVWPS-MW206E	10/5/2020	N	UMCf (Semi-Cons)	195.5 - 205.0	39	<100	<0.014	----	----	----	13.150	2.11	----	-198.0	7.35	----	24.8	1.6	----	----	----
General Vicinity	LVWPS-MW201A	9/28/2020	N	Qal	28.2 - 47.8	1,800	11,000	13	----	----	----	4.033	0.59	----	199.0	7.17	----	24.6	0.6	----	----	----
General Vicinity	LVWPS-MW201B	9/28/2020	N	UMCf	60.1 - 79.8	610	560	0.55	----	----	----	15.874	1.13	----	83.7	7.62	----	26.4	116.5	----	----	----
General Vicinity	LVWPS-MW202	9/29/2020	N	Qal	41.8 - 61.5	1,100	6,000	12	----	----	----	3.702	0.80	----	-96.0	7.36	----	24.5	-6.2	----	----	----
General Vicinity	LVWPS-MW203A	9/30/2020	N	Qal	34.8 - 54.5	120	<40	9.3	----	----	----	2.200	0.74	----	215.1	7.34	----	24.0	2.4	----	----	----
General Vicinity	LVWPS-MW203A	9/30/2020	FD	Qal	34.8 - 54.5	120	<40	9.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW203B	9/30/2020	N	UMCf	75.1 - 94.7	2.6 J-	<40	<0.014	----	----	----	19.019	0.88	----	-27.1	7.53	----	23.8	17.9	----	----	----
General Vicinity	LVWPS-MW203C	9/30/2020	N	UMCf (Semi-Cons)	100.3 - 120.0	<0.31	<20	<0.014	----	----	----	40.583	0.65	----	-130.9	7.76	----	24.3	210.6	----	----	----
General Vicinity	LVWPS-MW204	9/28/2020	N	Qal	50.3 - 70.0	1,600	10,000	14	----	1,300	1.4	4.252	1.84	----	69.1	7.06	----	24.1	-1.4	----	----	----
General Vicinity	LVWPS-MW204	9/28/2020	FD	Qal	50.3 - 70.0	1,600	10,000	14	----	1,300	1.3	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW204B	9/28/2020	N	UMCf	101.5 - 121.2	12,000	22,000	15	----	1,800	0.75	6.199	2.92	----	-81.5	7.22	----	28.1	139.7	----	----	----
General Vicinity	LVWPS-MW204C	10/7/2020	N	UMCf (Semi-Cons)	150.5 - 170.0	46	<100	<0.028	----	----	----	39.994	2.40	----	-219.6	9.35	----	21.3	7.8	----	----	----
General Vicinity	LVWPS-MW205B	9/28/2020	N	Qal	64.9 - 84.6	1,300	6,300	12	----	----	----	2.971	0.50	----	192.1	7.20	----	24.5	0.8	----	----	----
General Vicinity	LVWPS-MW205C	9/29/2020	N	Qal	100.3 - 120.0	790	2,700	11	----	----	----	2.597	0.87	----	206.6	7.29	----	22.2	1.3	----	----	----
General Vicinity	LVWPS-MW207	9/28/2020	N	Qal	68.1 - 87.8	2,200	14,000	18	----	1,800	1.5	5.342	1.55	----	216.3	6.97	----	26.3	-6.9	----	----	----
General Vicinity	LVWPS-MW209	10/6/2020	N	Qal	71.3 - 91.0	2,700	8,500	22	----	2,200	1.6	4.681	4.40	----	193.8	7.09	----	20.8	6.9	----	----	----
General Vicinity	LVWPS-MW209	10/6/2020	FD	Qal	71.3 - 91.0	2,800	9,000	22	----	2,200	1.6	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209A	10/6/2020	N	Qal	35.3 - 55.0	2,800	6,800	21	----	2,200	1.7	4.903	4.72	----	168.5	7.08	----	22.3	76.8	----	----	----
General Vicinity	LVWPS-MW209B	10/6/2020	N	UMCf-cg	110.3 - 130.0	2,700	8,300	21	----	----	----	4.983	4.30	----	200.3	7.07	----	22.9	66.7	----	----	----
General Vicinity	LVWPS-MW209C	10/7/2020	N	UMCf-cg	151.0 - 170.5	8,500	12,000	14	----	----	----	6.291	2.44	----	-122.4	7.02	----	25.4	8.4	----	----	----
General Vicinity	LVWPS-MW210A	10/6/2020	N	Qal	35.3 - 55.0	2,600	12,000	20	----	1,800	1.5	4.962	2.44	----	174.6	7.03	----	24.6	3.3	----	----	----
General Vicinity	LVWPS-MW210B	10/6/2020	N	Qal	70.1 - 89.8	2,800	9,700	22	----	2,100	1.6	5.219	3.60	----	104.0	7.04	----	24.4	7.7	----	----	----
General Vicinity	LVWPS-MW210C	10/1/2020	N	UMCf-cg	100.3 - 120.0	10,000 J-	17,000	15	----	----	----	6.168	2.59	----	-80.5	7.06	----	26.9	72.1	----	----	----
General Vicinity	LVWPS-MW210D	10/7/2020	N	UMCf-cg	130.4 - 140.0	8,500	10,000	3.8	----	----	----	6.960	3.24	----	-96.4	7.00	----	31.6	453.0	----	----	----
General Vicinity	LVWPS-MW210E	10/7/2020	N	UMCf-cg	145.5 - 165.0	4,400	7,100	2.2	----	----	----	6.935	2.19	----	-163.3	6.90	----	28.2	9.3	----	----	----
General Vicinity	LVWPS-MW211	9/30/2020	N	Qal	50.0 - 69.7	2,000	3,200	14	----	2,100	1.1	4.694	6.33	----	-115.6	7.08	----	26.2	1.9	----	----	----
General Vicinity	LVWPS-MW213	10/1/2020	N	Qal	40.1 - 59.8	170	260	3.2	----	----	----	3.862	4.96	----	-19.4	7.33	----	28.6	7.4	----	----	----
General Vicinity	LVWPS-MW213	10/1/2020	FD	Qal	40.1 - 59.8	140	270	3.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW214	10/7/2020	N	Qal	34.4 - 44.0	2,500	3,700	14	----	----	----	4.478	5.16	----	235.5	7.23	----	25.5	2.4	----	----	----
General Vicinity	LVWPS-MW215A	10/8/2020	N	Qal	13.5 - 33.2	2,600 J-	9,700	17	----	----	----	3.937	1.26	----	216.6	7.12	----	25.9	3.9	----	----	----
General Vicinity	LVWPS-MW215B	10/9/2020	N	Horse Springs	40.7 - 45.3	2,600	6,700	11	----	----	----	3.347	1.46	----	231.0	7.17	----	22.5	38.9	----	----	----
General Vicinity	LVWPS-MW216	10/7/2020	N	Qal	10.4 - 20.0	1,100	930	4.0	----	----	----	5.497	0.66	----	88.5	7.07	----	26.1	656.1	----	----	----
General Vicinity	LVWPS-MW216	10/7/2020	FD	Qal	10.4 - 20.0	1,100	940	4.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW218A	10/5/2020	N	Qal	35.3 - 55.0	5,100	14,000	20	----	1,900	1.4	4.754	4.72	----	-68.2	7.04	----	25.4	22.3	----	----	----
General Vicinity	LVWPS-MW218B	10/2/2020	N	UMCf/UMCf-cg	100.3 - 120.0	8,400	13,000	16	----	----	----	4.439	5.83	----	261.8	7.05	----	22.7	74.1	----	----	----
General Vicinity	LVWPS-MW218C	10/2/2020	N	UMCf/UMCf-cg	136.0 - 155.5	5,300	7,200	4.3	----	----	----	5.971	1.78	----	76.9	7.22	----	23.2	16.0	----	----	----
General Vicinity	LVWPS-MW219A	10/9/2020	N	Qal	35.1 - 49.8	3,500	8,500	19	----	----	----	4.466	5.78	----	140.4	7.32	----	25.4	3.4	----	----	----
General Vicinity	LVWPS-MW219B	10/9/2020	N	UMCf/Horse Springs	75.3 - 95.0	2.2	<100	<0.014	----	----	----	4.815	3.23	----	-17.6	7.08	----	27.8	1907.8	----	----	----
General Vicinity	LVWPS-MW219C	10/9/2020	N	UMCf/Horse Springs	115.5 - 135.0	53	<10	0.045 J	----	----	----	5.550	2.43	----	-157.4	6.84	----	27.5	31.6	----	----	----
General Vicinity	LVWPS-MW220A	10/5/2020	N	Qal	60.3 - 80.0	3,100	9,400	21	----	2,100	1.6	4.524	3.77	----	60.0	7.15	----	23.2	2.4	----	----	----
General Vicinity	LVWPS-MW220B	10/7/2020	N	UMCf-cg	134.5 - 154.0	4,200	10,000	12	----	----	----	5.186	2.66	----	-116.6	7.02	----	26.4	7.6	----	----	----
General Vicinity	LVWPS-MW225A	10/7/2020	N	Qal	49.3 - 69.0	2,300	5,200	22	----	----	----	3.771	4.35	----	-19.1	7.14	----	22.2	7.0	----	----	----
General Vicinity	LVWPS-MW225A	10/7/2020	FD	Qal	49.3 - 69.0	2,300	5,200	22	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW225B	10/7/2020	N	UMCf	90.5 - 110.0	4,000	5,100	3.3	----	----	----	4.183	1.92	----	-91.2	7.44	----	23.1	5.4	----	----	----
General Vicinity	LVWPS-MW226A	10/1/2020	N	Qal	40.3 - 55.0	2,800	5,100	19	----	----	----	4.800	3.71	----	221.4	7.22	----	23.3	3.5	----	----	----
General Vicinity	LVWPS-MW226A	10/1/2020	FD	Qal	40.3 - 55.0	2,300	4,900	19	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW226B	10/1/2020	N	UMCf (Semi-Cons)	77.5 - 97.0	37	<100	<0.014	----	----	----	49.862	0.79	----	-94.2	7.44	----	23.5	5.6	----	----	----
Zone 1	LVWPS-A1-MW04	9/30/2020	N	Qal	69.3 - 89.0	2,000	12,000	15	<0.021	1,600	1.5	4.851	2.26	0.0 U	169.8	7.10	0.0 U	25.3	13.4	<0.63	410	0.017
Zone 1	LVWPS-A1-MW05	9/30/2020	N	Qal	69.3 - 89.0	2,900	16,000	19	----	2,000	1.6	5.120	2.90	----	-165.2	6.86	----	22.7	-0.7	----	----	----
Zone 1	LVWPS-A1-MW06	9/29/2020	N	Qal	59.3 - 79.0	1,900	9,000	13	<0.021	1,300	1.4	3.260	1.16	0.0 U	219.8	7.11	0.0 U	25.2	0.1	<0.63	340	0.012
Zone 1	LVWPS-A1-MW07	9/30/2020	N	Qal	58.3 - 78.0	2,900	16,000	19	----	1,900	1.6	4.712	1.43	----	89.7	7.05	----	25.3	3.0	----	----	----
Zone 1	LVWPS-A1-MW09	9/30/2020	N	Qal	85.8 - 105.5	2,700	15,000	16	----	1,600	1.6	4.172	1.17	----	111.1	7.08	----	24.2	21.7	----	----	----
Zone 1	LVWPS-A1-MW10	10/1/2020	N	Qal	70.8 - 90.5	4,400 J-	14,000	16	<0.021	1,600	1.4	4.756	1.13	0.0 U	120.7	7.04	0.0 U	25.3	0.2	<0.63	430	0.019
Zone 1	LVWPS-A1-MW10	10/1/2020	FD	Qal	70.8 - 90.5	3,700	14,000	16	<0.021	1,700	1.5	----	----	----	----	----	----	----	----	<0.63	470	0.020
Zone 1	LVWPS-MW217A	9/30/2020	N	Qal	51.3 - 71.0	2,200	11,000	15	----	1,500	1.4	4.360	2.60	----	-213.2	6.89	----	24.3	1.0	----	----	----
Zone 1	LVWPS-MW217B	9/30/2020	N	UMCf	100.3 - 120.0	7,300	14,000	15	----	1,600	1.0	4.950	2.53	----	-235.7	7.04	----	25.4	100.2	----	----	----

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0			SM5310B	FIELD TESTS								Dissolved Gases by RSK-175	Dissolved Metals by SW6010B	
						Perchlorate	Chlorate	Nitrate (as N)	Nitrite (as N)	Sulfate	Total Organic Carbon	Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity	Methane	Calcium	Chromium
						µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU	µg/L	mg/L	mg/L
Zone 1	LVWPS-MW217C	10/5/2020	N	UMCf	155.5 - 175.0	6,200	10,000	12	----	1,600	1.5	4.093	2.53	----	-124.5	7.21	----	21.5	10.6	----	----	----
Zone 1	LVWPS-U1-IW01A	9/29/2020	N	UMCf	88.8 - 113.5	9,700	18,000	14	----	----	----	7.007	0.86	----	378.5	7.18	----	24.4	261.4	----	----	----
Zone 1	LVWPS-U1-IW01B	9/29/2020	N	UMCf	120.3 - 145.0	7,800	13,000	13	----	----	----	7.263	0.80	----	340.7	7.20	----	26.5	36.0	----	----	----
Zone 1	LVWPS-U1-IW02A	9/30/2020	N	UMCf	90.3 - 115.0	2,200	5,000	11	----	----	----	6.458	0.68	----	295.0	7.20	----	22.8	21.0	----	----	----
Zone 1	LVWPS-U1-IW02B	9/30/2020	N	UMCf	121.3 - 151.0	3,400	6,900	9.8	----	----	----	7.424	1.82	----	326.5	7.16	----	24.2	73.3	----	----	----
Zone 1	LVWPS-U1-IW03A	9/30/2020	N	UMCf	93.8 - 118.5	2,500	5,200	13	----	----	----	6.678	0.68	----	173.4	7.24	----	24.6	38.5	----	----	----
Zone 1	LVWPS-U1-IW03B	9/30/2020	N	UMCf	125.3 - 150.0	1,400	3,900	10	----	----	----	6.482	2.18	----	295.6	7.19	----	28.8	25.8	----	----	----
Zone 1	LVWPS-U1-IW04A	9/28/2020	N	UMCf	86.8 - 116.5	3,500	6,600	12	----	----	----	4.616	0.53	----	352.6	7.26	----	26.1	60.1	----	----	----
Zone 1	LVWPS-U1-IW04A	9/28/2020	FD	UMCf	86.8 - 116.5	3,500	6,600	12	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW04B	9/28/2020	N	UMCf	122.8 - 152.5	3,400	4,800	11	----	----	----	5.000	2.37	----	354.1	7.27	----	30.9	4.8	----	----	----
Zone 1	LVWPS-U1-IW05A	9/29/2020	N	UMCf	88.8 - 113.5	2,100	4,300	10	----	----	----	5.363	0.51	----	322.3	7.24	----	23.2	69.5	----	----	----
Zone 1	LVWPS-U1-IW05B	9/29/2020	N	UMCf	120.3 - 145.0	2,500	5,100	11	----	----	----	6.379	1.34	----	369.3	7.23	----	27.1	48.4	----	----	----
Zone 1	LVWPS-U1-IW06A	9/30/2020	N	UMCf	87.8 - 112.5	2,400	3,600	8.5	----	----	----	8.435	1.60	----	62.9	7.20	----	29.4	165.2	----	----	----
Zone 1	LVWPS-U1-IW06B	9/30/2020	N	UMCf	119.3 - 149.0	2,500	3,900	10	----	----	----	8.593	2.07	----	279.5	7.23	----	29.1	89.4	----	----	----
Zone 1	LVWPS-U1-IW07A	10/1/2020	N	UMCf	95.8 - 120.5	3,100	4,500	9.5	----	----	----	7.374	3.39	----	303.7	7.17	----	22.6	1516.2	----	----	----
Zone 1	LVWPS-U1-IW07B	10/1/2020	N	UMCf	127.3 - 152.0	4,300	4,900	9.5	----	----	----	7.542	2.21	----	322.3	7.20	----	23.5	63.0	----	----	----
Zone 1	LVWPS-U1-IW08A	10/1/2020	N	UMCf	95.3 - 125.0	4,000	7,500	9.7	----	----	----	8.983	1.60	----	209.8	7.14	----	27.9	180.0	----	----	----
Zone 1	LVWPS-U1-IW08B	10/1/2020	N	UMCf	131.8 - 156.5	4,900	6,700	11	----	----	----	8.889	1.92	----	346.3	7.11	----	29.5	311.9	----	----	----
Zone 1	LVWPS-U1-MW01A	9/28/2020	N	UMCf	90.3 - 115.0	6,100	11,000	14	----	1,600	1.0	4.948	1.98	----	83.5	7.12	----	26.4	172.6	----	----	----
Zone 1	LVWPS-U1-MW01B	9/28/2020	N	UMCf	133.5 - 153.0	7,100	12,000	13	----	1,800	1.2 J-	6.232	1.72	----	75.6	7.13	----	32.1	3.6	----	----	----
Zone 1	LVWPS-U1-MW02A	9/29/2020	N	UMCf	94.3 - 119.0	4,200	7,600	12	----	1,600	1.2	4.803	4.60	----	103.8	7.17	----	25.6	112.9	----	----	----
Zone 1	LVWPS-U1-MW02B	10/7/2020	N	UMCf	136.9 - 161.5	2,400	4,100	11	----	8,300	1.1	4.302	2.35	----	-109.5	7.14	----	22.7	5.1	----	----	----
Zone 1	LVWPS-U1-MW03B	9/29/2020	N	UMCf	134.5 - 154.0	4,300	7,800	14	----	1,400	1.5	3.241	6.71	----	89.5	7.38	----	34.9	10.8	----	----	----
Zone 1	LVWPS-U1-MW04A	9/30/2020	N	UMCf	99.3 - 124.0	4,500	9,100	13	<0.021	1,600	1.0	4.988	0.84	0.0 U	174.2	7.24	0.0 U	25.0	15.4	<0.63	390	0.024
Zone 1	LVWPS-U1-MW04B	10/1/2020	N	UMCf	139.9 - 164.5	4,200	9,200	13	0.096	1,700	2.1	5.503	1.75	0.0 U	182.8	7.26	0.0 U	31.5	6.1	<0.63	400	0.023
Zone 1	LVWPS-U1-MW05A	9/29/2020	N	UMCf	95.8 - 120.5	10,000	15,000	14	----	1,900	1.0	5.810	2.23	----	-167.5	7.17	----	26.8	28.7	----	----	----
Zone 1	LVWPS-U1-MW05B	9/29/2020	N	UMCf	136.9 - 161.5	5,100	8,800	13	----	1,800	1.2	5.892	1.71	----	-187.0	7.26	----	31.8	82.3	----	----	----
Zone 1	LVWPS-U1-MW06A	9/29/2020	N	UMCf	85.3 - 105.0	1,100	3,300	11	<0.021	970	1.5	1.969	0.98	0.0 U	190.4	7.24	0.0 U	24.5	49.7	<0.63	230	0.0060
Zone 1	LVWPS-U1-MW06B	9/29/2020	N	UMCf	109.3 - 134.0	1,700	3,800	11	0.11	1,000	1.7	2.372	1.03	0.0 U	198.0	7.32	0.0 U	28.0	130.9	<0.63	250	0.0030 J
Zone 1	LVWPS-U1-MW07	9/30/2020	N	UMCf	86.3 - 111.0	4,100	7,700	5.6	----	2,000	0.84	5.197	3.78	----	93.3	7.36	----	29.3	1033.7	----	----	----
Zone 1	LVWPS-U1-MW08A	9/30/2020	N	UMCf	93.8 - 118.5	4,700	7,300	13	----	1,500	1.7	4.328	2.21	----	-222.4	7.13	----	24.0	120.3	----	----	----
Zone 1	LVWPS-U1-MW08B	9/30/2020	N	UMCf	125.3 - 150.0	2,800	5,500	10	----	1,400	1.3	4.432	3.10	----	-172.1	7.08	----	27.1	109.6	----	----	----
Zone 1	LVWPS-U1-MW09A	9/30/2020	N	UMCf	115.3 - 125.0	7,500	12,000	13	----	1,900	1.8	5.080	1.62	----	93.9	7.17	----	28.4	60.2	----	----	----
Zone 1	LVWPS-U1-MW09B	9/30/2020	N	UMCf	130.3 - 155.0	6,400	11,000	9.6	----	1,900	0.89	5.384	1.80	----	84.8	7.25	----	30.6	154.2	----	----	----
Zone 1	LVWPS-U1-MW10A	10/2/2020	N	UMCf	99.3 - 124.0	9,200	16,000	9.9	<0.021	2,000	0.55	5.262	3.77	0.0 U	192.1	7.23	0.0 U	24.6	142.1	<0.63	500	0.066
Zone 1	LVWPS-U1-MW10B	10/2/2020	N	UMCf	130.3 - 155.0	4,600	5,100	3.8	<0.021	1,800	0.53	4.870	1.68	0.0 U	202.8	7.29	0.0 U	25.8	136.8	<0.63	460	0.015
Zone 2	LVWPS-A2-IW01A	10/1/2020	N	Qal	41.3 - 66.0	3,300	5,100	19	----	----	----	8.703	4.10	----	382.2	7.07	----	24.4	18.0	----	----	----
Zone 2	LVWPS-A2-IW01A	10/1/2020	FD	Qal	41.3 - 66.0	3,300	5,000	19	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW01B	10/1/2020	N	Qal	72.8 - 97.5	2,300	5,400	20	----	----	----	8.826	4.23	----	383.7	7.06	----	25.0	7.9	----	----	----
Zone 2	LVWPS-A2-IW02A	10/1/2020	N	Qal	38.8 - 68.5	2,900	5,200	18	----	----	----	9.188	4.29	----	376.1	7.06	----	26.2	7.9	----	----	----
Zone 2	LVWPS-A2-IW02B	10/2/2020	N	Qal	75.3 - 100.0	3,800	6,100	20	----	----	----	5.360	4.44	----	342.0	6.85	----	22.6	18.0	----	----	----
Zone 2	LVWPS-A2-IW03A	10/2/2020	N	Qal	37.3 - 67.0	3,300	5,400	20	----	----	----	5.657	4.44	----	379.0	6.85	----	23.6	102.5	----	----	----
Zone 2	LVWPS-A2-IW03B	10/2/2020	N	Qal	73.8 - 103.5	3,400	5,500	18	----	----	----	5.550	4.30	----	397.6	6.85	----	23.5	9.3	----	----	----
Zone 2	LVWPS-A2-IW03B	10/2/2020	FD	Qal	73.8 - 103.5	2,700	5,400	18	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW04A	10/2/2020	N	Qal	36.3 - 71.0	2,700	5,600	20	----	----	----	5.890	4.43	----	410.0	6.81	----	24.2	8.7	----	----	----
Zone 2	LVWPS-A2-IW04B	10/2/2020	N	Qal	77.3 - 112.0	3,200	5,000	18	----	----	----	6.099	5.05	----	406.2	6.87	----	25.7	7.5	----	----	----
Zone 2	LVWPS-A2-IW05A	10/2/2020	N	Qal	37.8 - 62.5	4,800	6,200	19	----	----	----	6.098	4.44	----	416.6	6.81	----	25.3	50.2	----	----	----
Zone 2	LVWPS-A2-IW05B	10/2/2020	N	Qal	68.8 - 93.5	4,400	5,300	19	----	----	----	6.213	4.47	----	418.0	6.87	----	25.8	464.5	----	----	----
Zone 2	LVWPS-A2-IW06A	10/5/2020	N	Qal	36.8 - 51.5	3,700	5,900	18	----	----	----	9.035	5.36	----	333.7	6.71	----	22.0	32.7	----	----	----
Zone 2	LVWPS-A2-IW06B	10/5/2020	N	Qal	57.8 - 77.5	4,600	4,900	18	----	----	----	9.564	4.75	----	373.3	6.84	----	24.2	6.3	----	----	----
Zone 2	LVWPS-A2-IW07A	10/5/2020	N	Qal	35.3 - 50.0	3,100	5,500	21	----	----	----	9.716	4.76	----	397.5	6.79	----	24.4	410.3	----	----	----
Zone 2	LVWPS-A2-IW07A	10/5/2020	FD	Qal	35.3 - 50.0	2,800	5,600	20	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW07B	10/5/2020	N	Qal	56.3 - 76.0	2,700	4,500	16	----	----	----	8.838	5.14	----	401.2	6.88	----	24.4	6.6	----	----	----
Zone 2	LVWPS-A2-IW08A	10/5/2020	N	Qal	35.8 - 55.5	3,500	4,800	20	----	----	----	9.800	4.79	----	409.1	6.78	----	25.7	11.2	----	----	----
Zone 2	LVWPS-A2-IW08B	10/5/2020	N	Qal	61.8 - 81.5	2,100	3,600	13	----	----	----	8.207	5.54	----	399.0	6.95	----	25.6	6.5	----	----	----
Zone 2	LVWPS-A2-IW09A	10/5/2020	N	Qal	36.8 - 51.5	2,000	3,000	13	----	----	----	8.047	5.36	----	416.0	6.83	----	25.1	6.8	----	----	----
Zone 2	LVWPS-A2-IW09B	10/6/2020	N	Qal	58.8 - 73.5	1,500	2,300	9.1	----	----	----	3.804	6.22	----	319.1	7.04	----	23.4	3.0	----	----	----
Zone 2	LVWPS-A2-MW01A	10/8/2020	N	Qal	40.3 - 60.0	2,900	5,500	20	----	2,200	1.8	4.469	4.48	----	189.3	7.31	----	23.1	16.1	----	----	----
Zone 2	LVWPS-A2-MW01A	10/8/2020	FD	Qal	40.3 - 60.0	2,900	5,600	19	----	2,200	1.8	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW01B	10/8/2020	N	Qal	70.3 - 90.0	3,100	5,200	18	----	2,100	1.7	4.749	4.49	----	157.5	7.29	----	24.2	11.7	----	----	----
Zone 2	LVWPS-A2-MW02A	10/8/2020	N	Qal	40.3 - 60.0	3,700	6,500	18	<0.021	2,600	1.3	5.325	4.19	0.0 U	259.1	7.16	0.0 U	23.6	7.1	<0.63	550	0.016
Zone 2	LVWPS-A2-MW02A	10/8/2020	FD	Qal	40.3 - 60.0	3,800	6,600	18	<0.021	2,600	1.3	----	----	----	----	----	----	----	----	<0.63	550	0.016
Zone 2	LVWPS-A2-MW02B	10/8/2020	N	Qal	70.3 - 90.0	2,300	3,900	14	<0.021	2,100	1.2	4.228	5.81	0.0 U	271.6	7.28	0.0 U	24.3	3.3	<0.63	450	0.011
Zone 2	LVWPS-A2-MW03A	10/9/2020	N	Qal	38.3 - 58.0	1,300	2,000	9.2	----	1,800	0.63	3.170	6.82	----	20.7	7.67	----	23.4	5.5	----	----	----
Zone 2	LVWPS-A2-MW03A	10/9/2020	FD	Qal	38.3 - 58.0	1,300	2,000	9.1	----	1,800	0.70	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW03B	10/9/2020	N	Qal	64.3 - 84.0	2,000	3,700	12	----	2,000	0.92	3.931	6.21	----	0.4	7.62	----	24.0	11.1	----	----	----
Zone 2	LVWPS-A2-MW04A	10/2/2020	N	Qal	43.8 - 63.5	4,100 J	5,300	19	----	2,100	1.7	5.152	5.60	----	133.5	7.23	----	25.6	8.8	----	----	----
Zone 2	LVWPS-A2-MW04A	10/2/2020	FD	Qal	43.8 - 63.5	2,900 J	5,200	19	----	2,100	1.7	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW04B	10/2/2020	N	Qal	75.3 - 95.0	3,400	7,300	22	----	2,200	1.7	5.255	3.65	----	128.7	7.18	----	25.1	1585.2	----	----	----
Zone 2	LVWPS-A2-MW05A	10/5/2020	N	Qal	36.8 - 51.5	2,400	3,900	14	----	2,200	1.1	4.201	6.22	----	-68.0	7.14	----	24.0	10.9	----	----	----

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0			SM5310B	FIELD TESTS								Dissolved Gases by RSK-175	Dissolved Metals by SW6010B	
						Perchlorate	Chlorate	Nitrate (as N)	Nitrite (as N)	Sulfate	Total Organic Carbon	Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity	Methane	Calcium	Chromium
						µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU	µg/L	mg/L	mg/L
Zone 2	LVWPS-A2-MW05B	10/5/2020	N	Qal	58.8 - 73.5	1,900	2,300	8.7	----	2,000	0.66	3.450	7.24	----	-56.4	7.37	----	24.9	2.4	----	----	----
Zone 2	LVWPS-A2-MW08A	9/30/2020	N	Qal	40.3 - 55.0	2,700	2,100	20	----	2,100	1.9 J+	5.016	5.27	----	-137.7	6.99	----	24.2	82.6	----	----	----
Zone 2	LVWPS-A2-MW08B	10/1/2020	N	Qal	59.8 - 79.5	3,800	6,000	21	----	2,000	1.8	4.848	5.25	----	-132.9	7.22	----	22.6	139.5	----	----	----
Zone 2	LVWPS-A2-MW08C	10/1/2020	N	Qal	86.3 - 106.0	4,100	7,200	21	----	2,200	1.7	5.087	4.92	----	-134.0	7.19	----	23.5	171.6	----	----	----
Zone 2	LVWPS-A2-MW09A	10/9/2020	N	Qal	34.8 - 54.5	3,400	5,500	17	----	2,500	1.4	5.583	5.63	----	12.9	6.99	----	24.8	0.1	----	----	----
Zone 2	LVWPS-A2-MW09B	10/9/2020	N	Qal	58.8 - 78.5	1,600	2,100	8.8	----	2,000	0.60	3.723	7.44	----	10.6	7.34	----	25.5	2.2	----	----	----
Zone 2	LVWPS-A2-MW11A	10/2/2020	N	Qal	40.3 - 60.0	3,100	5,300	19	----	2,100	1.7	4.703	4.72	----	138.8	7.21	----	22.3	1.8	----	----	----
Zone 2	LVWPS-A2-MW11A	10/2/2020	FD	Qal	40.3 - 60.0	3,100	5,100	19	----	2,100	1.7	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW11B	10/2/2020	N	Qal	65.3 - 85.0	2,900	7,200	21	----	2,100	1.7	4.935	4.18	----	135.2	7.18	----	22.6	6.5	----	----	----
Zone 2	LVWPS-A2-MW11C	10/2/2020	N	Qal	90.3 - 110.0	3,500	11,000	23	----	2,100	1.6	5.308	3.91	----	138.5	7.14	----	24.1	412.2	----	----	----
Zone 2	LVWPS-A2-MW12A	10/6/2020	N	Qal	34.9 - 44.5	4,400	5,300	18	<0.021	2,100	1.7	4.970	4.83	0.0 U	196.2	7.14	0.0 U	24.5	219.8	<0.63	480	0.017
Zone 2	LVWPS-A2-MW12B	10/7/2020	N	Qal	49.3 - 69.0	4,000	5,600	19	<0.021	2,300	1.6	4.931	4.82	0.0 U	281.2	7.18	0.0 U	22.8	129.7	<0.63	520	0.014
Zone 2	LVWPS-A2-MW13A	10/1/2020	N	Qal	41.3 - 61.0	1,200	2,100	10	----	1,800	0.76	3.986	6.60	----	112.6	7.31	----	26.2	39.8	----	----	----
Zone 2	LVWPS-A2-MW13B	10/1/2020	N	Qal	66.4 - 86.1	2,200	4,300	15	----	2,200	1.2	5.033	5.76	----	112.3	7.25	----	26.7	36.4	----	----	----
Zone 2	LVWPS-A2-MW14A	10/6/2020	N	Qal	35.8 - 50.5	2,600	5,400	19	----	2,200	1.7	5.545	5.77	----	-8.4	7.08	----	22.1	-0.2	----	----	----
Zone 2	LVWPS-A2-MW14A	10/6/2020	FD	Qal	35.8 - 50.5	2,700	5,100	19	----	2,200	1.7	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW14B	10/6/2020	N	Qal	54.8 - 74.5	2,800	5,400	18	----	2,300	1.6	5.793	5.42	----	-24.3	7.10	----	22.6	90.5	----	----	----
Zone 2	LVWPS-A2-MW15A	10/7/2020	N	Qal	39.8 - 59.5	3,400	5,100	20	----	2,100	1.7	4.002	4.55	----	-32.6	7.19	----	25.4	27.2	----	----	----
Zone 2	LVWPS-A2-MW15B	10/8/2020	N	Qal	70.3 - 90.0	3,200	9,000	22	----	2,300	1.7	4.319	3.90	----	19.4	7.33	----	22.0	1.0	----	----	----
Zone 2	LVWPS-A2-MW16A	10/9/2020	N	Qal	35.8 - 55.5	3,500	5,800	22	----	2,100	1.6	4.001	5.17	----	127.7	7.27	----	22.1	3.1	----	----	----
Zone 2	LVWPS-A2-MW16B	10/9/2020	N	Qal	60.3 - 80.0	3,600	9,000	22	----	2,200	1.5	4.222	4.45	----	142.0	7.27	----	22.3	3.1	----	----	----
Zone 2	LVWPS-A2-MW16B	10/9/2020	FD	Qal	60.3 - 80.0	3,400	9,100	22	----	2,200	1.6	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW17A	10/1/2020	N	Qal	40.3 - 60.0	2,500	5,300	19	----	2,100	1.7	4.686	4.90	----	147.1	7.19	----	22.7	11.6	----	----	----
Zone 2	LVWPS-A2-MW17B	10/1/2020	N	Qal	65.3 - 85.0	2,700	5,700	21	----	2,100	1.7	4.769	4.83	----	126.1	7.21	----	23.6	146.1	----	----	----
Zone 2	LVWPS-A2-MW17C	10/1/2020	N	Qal	90.3 - 110.0	2,200	3,700	14	----	2,100	1.1	4.629	5.67	----	113.5	7.30	----	26.4	26.0	----	----	----
Zone 2	LVWPS-MW208A	10/9/2020	N	Qal	39.9 - 59.5	1,900	2,900	12	----	2,100	0.93	3.947	5.77	----	0.7	7.39	----	25.0	2.1	----	----	----
Zone 2	LVWPS-MW208B	10/9/2020	N	Qal	65.3 - 85.0	2,100	3,200	12	----	2,000	1.0	3.976	5.90	----	-9.9	7.50	----	26.3	6.6	----	----	----
Zone 2	LVWPS-MW221A	10/6/2020	N	Qal	50.3 - 70.0	990 J-	710	8.4	----	1,500 J+	0.51 J-	3.535	7.60	----	-33.2	7.32	----	25.1	8.1	----	----	----
Zone 2	LVWPS-MW221B	10/6/2020	N	UMCf/UMCf-cg	83.7 - 103.2	6,600	11,000	5.8	----	1,500 J+	0.54	5.182	3.09	----	-112.8	7.80	----	26.9	6.0	----	----	----
Zone 2	LVWPS-MW223A	10/6/2020	N	Qal	45.3 - 65.0	3,300	5,900	17	<0.021	2,400	1.4	5.295	4.57	0.0 U	203.2	7.10	0.0 U	22.9	5.9	<0.63	540	0.015
Zone 2	LVWPS-MW223A	10/6/2020	FD	Qal	45.3 - 65.0	3,900	5,800	17	<0.021	2,400	1.4	----	----	----	----	----	----	----	----	<0.63	540	0.015
Zone 2	LVWPS-MW223B	10/6/2020	N	Qal	70.3 - 90.0	3,300	6,100	20	<0.021	2,100	1.8	4.778	4.26	0.0 U	199.1	7.15	0.0 U	23.8	65.6	<0.63	500	0.018
Zone 2	LVWPS-MW223C	10/7/2020	N	UMCf	95.5 - 110.0	5,700	7,700	14	<0.021	2,100	1.1	4.803	2.77	0.0 U	269.1	7.28	0.0 U	23.7	5.7	<0.63	480	0.016
Zone 2	LVWPS-MW224A	10/7/2020	N	Qal	55.3 - 75.0	2,300	2,900	11	----	2,000	0.90	3.299	6.09	----	-27.6	7.40	----	24.4	697.4	----	----	----
Zone 2	LVWPS-MW224B	10/7/2020	N	UMCf	106.8 - 126.5	200	220	0.63	----	----	----	5.849	1.48	----	-158.5	7.51	----	26.3	93.7	----	----	----
Zone 2	LVWPS-MW224C	10/8/2020	N	UMCf (Semi-Cons)	174.5 - 194.0	30	<100	0.068	----	----	----	18.062	2.10	----	-233.7	8.25	----	26.4	1.6	----	----	----
Zone 2	LVWPS-U2-IW01	10/8/2020	N	UMCf	121.2 - 141.0	8,100	12,000	9.0	----	----	----	4.695	3.48	----	-16.3	7.73	----	21.8	120.0	----	----	----
Zone 2	LVWPS-U2-IW01	10/8/2020	FD	UMCf	121.2 - 141.0	6,900	11,000	8.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW02	10/8/2020	N	UMCf	116.2 - 141.0	8,100	12,000	8.7	----	----	----	5.424	3.80	----	-51.1	7.73	----	23.6	70.2	----	----	----
Zone 2	LVWPS-U2-IW03	10/8/2020	N	UMCf	99.2 - 124.0	7,100	11,000	12	----	----	----	5.108	2.66	----	-59.5	7.68	----	25.3	224.4	----	----	----
Zone 2	LVWPS-U2-IW04	10/8/2020	N	UMCf	83.7 - 108.5	3,900	6,500	19	----	----	----	5.367	4.10	----	-63.0	7.68	----	27.9	149.4	----	----	----
Zone 2	LVWPS-U2-IW05	10/8/2020	N	UMCf	87.7 - 117.5	8,500	14,000	12	----	----	----	5.187	4.95	----	-39.1	7.59	----	28.9	238.4	----	----	----
Zone 2	LVWPS-U2-IW06	10/8/2020	N	UMCf	89.2 - 104.0	10,000	17,000	14	----	----	----	5.492	3.46	----	-59.6	7.67	----	29.6	256.3	----	----	----
Zone 2	LVWPS-U2-IW07	10/6/2020	N	UMCf	91.2 - 106.0	6,000	8,700	5.7	----	----	----	4.761	1.85	----	31.4	7.48	----	22.9	215.6	----	----	----
Zone 2	LVWPS-U2-IW08	10/6/2020	N	UMCf	83.7 - 108.5	12,000	20,000	17	----	----	----	6.115	5.08	----	-14.3	7.50	----	24.1	117.6	----	----	----
Zone 2	LVWPS-U2-IW09	10/6/2020	N	UMCf	103.2 - 128.0	35	63 J	0.11	----	----	----	7.394	2.85	----	-60.9	7.62	----	29.3	54.4	----	----	----
Zone 2	LVWPS-U2-IW10	10/6/2020	N	UMCf	109.3 - 129.0	400	150	<0.014	----	----	----	5.918	3.48	----	-144.9	7.45	----	27.8	126.8	----	----	----
Zone 2	LVWPS-U2-IW11	10/6/2020	N	UMCf	108.9 - 133.7	1,400	2,400	2.6	----	----	----	5.793	3.31	----	-97.5	7.57	----	30.4	62.8	----	----	----
Zone 2	LVWPS-U2-IW12	10/8/2020	N	UMCf	112.8 - 137.5	5,900	8,300	11	----	----	----	5.302	4.65	----	-30.6	7.22	----	23.8	58.0	----	----	----
Zone 2	LVWPS-U2-MW01	10/8/2020	N	UMCf	97.3 - 117.0	360	450	0.89	----	2,500	0.36 J	4.752	1.63	----	96.6	7.86	----	22.6	47.0	----	----	----
Zone 2	LVWPS-U2-MW02	10/8/2020	N	UMCf	100.3 - 125.0	5,200	8,300	6.2	0.12	1,800	0.64	4.995	8.10	0.0 U	263.0	7.64	0.0 U	25.6	350.0	<0.63	430	0.0059
Zone 2	LVWPS-U2-MW03	10/9/2020	N	UMCf	90.3 - 110.0	2,100	3,400	11	----	2,000	0.98	3.820	3.53	----	-43.5	7.80	----	24.4	85.2	----	----	----
Zone 2	LVWPS-U2-MW04	10/6/2020	N	UMCf	103.2 - 128.0	160	260	0.27	----	3,000	0.27 J	7.432	0.93	----	27.7	7.65	----	26.3	160.3	----	----	----
Zone 2	LVWPS-U2-MW05	10/5/2020	N	UMCf	83.2 - 108.0	9,300	15,000	8.4	----	1,300	0.41 J	4.528	4.35	----	-103.8	7.68	----	28.6	174.5	----	----	----
Zone 2	LVWPS-U2-MW06	10/1/2020	N	UMCf	121.8 - 141.5	4,100	7,300	9.5	----	1,900	0.94	5.692	2.79	----	-186.0	7.44	----	27.9	100.1	----	----	----
Zone 2	LVWPS-U2-MW07	10/2/2020	N	UMCf	88.2 - 108.0	1,600	2,600	10	----	1,900	0.74	3.989	5.79	----	-33.4	7.71	----	25.5	49.3	----	----	----
Zone 2	LVWPS-U2-MW08	10/1/2020	N	UMCf	113.2 - 133.0	4,600	8,100	17	----	2,100	1.5	5.401	2.63	----	-188.7	7.38	----	26.8	73.3	----	----	----
Zone 2	LVWPS-U2-MW09	10/9/2020	N	UMCf	84.9 - 104.7	12,000	18,000	17	----	2,200	1.1	6.265	2.06	----	397.4	7.28	----	25.2	23.9	----	----	----
Zone 2	LVWPS-U2-MW10	10/2/2020	N	UMCf	90.2 - 110.0	6,000	8,900	15	----	2,200	1.1	5.642	4.16	----	-43.8	7.49	----	27.3	175.9	----	----	----
Zone 2	LVWPS-U2-MW12	10/7/2020	N	UMCf	83.2 - 108.0	8,800	12,000	18	<0.021	2,000	1.1	5.251	4.13	0.0 U	272.0	7.28	0.0 U	23.1	112.6	<0.63	460	0.046
Zone 2	LVWPS-U2-MW13	10/2/2020	N	UMCf	94.7 - 109.5	5,400	11,000	17	----	2,100	1.2	5.413	3.58	----	-27.2	7.67	----	23.3	366.4	----	----	----
Zone 2	LVWPS-U2-MW13	10/2/2020	FD	UMCf	94.7 - 109.5	5,800	11,000	17	----	2,300	1.4	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW14	10/6/2020	N	UMCf	83.2 - 108.0	11,000	360	17	----	2,000	0.78	6.259	5.18	----	-43.9	7.24	----	23.2	12.8	----	----	----
Zone 2	LVWPS-U2-MW17	10/1/2020	N	UMCf	117.0 - 136.5	4,500	10,000	11	----	1,700	0.66	6.093	2.28	----	86.6	7.29	----	30.0	37.5	----	----	----
Zone 2	LVWPS-U2-MW18	10/5/2020	N	UMCf	88.3 - 113.0	8,400	10,000	18	----	2,200	1.3	5.360	4.49	----	-88.0	7.26	----	25.6	246.1	----	----	----
Zone 2	LVWPS-U2-MW19	10/2/2020	N	UMCf	91.2 - 111.0	12,000	14,000	14	----	2,100	1.0	5.846	3.29	----	-57.0	7.67	----	26.3	138.1	----	----	----
Zone 2	LVWPS-U2-MW20	10/2/2020	N	UMCf	88.2 - 108.0	6,000	13,000	12	----	2,200	1.5	6.043	1.38	----	-94.1	7.49	----	27.4	150.7	----	----	----
Zone 3	LVWPS-A3-MW02	10/5/2020	N	Qal	52.8 - 72.5	100	150	7.0	<0.021	900	0.29 J	2.396	6.42	0.0 U	271.8	7.56	0.0 U	25.1	7.7	<0.63	200	0.021
Zone 3	LVWPS-A3-MW06	10/5/2020	N	Qal	55.3 - 75.0	110	150	9.0	----	1,300	0.45 J	3.200	7.24	----	111.1	7.53	----	24.1	8.3	----	----	----
Zone 3	LVWPS-A3-MW07	10/8/2020	N	Qal	54.8 - 74.5	100	210	6.4	<0.021	1,100	0.45 J	2.637	6.98	0.0 U	260.6	7.71	0.0 U	26.2	656.0	<0.63	200	0.020

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0			SM5310B	FIELD TESTS								Dissolved Gases by RSK-175	Dissolved Metals by SW6010B	
						Perchlorate	Chlorate	Nitrate (as N)	Nitrite (as N)	Sulfate	Total Organic Carbon	Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity	Methane	Calcium	Chromium
						µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU	µg/L	mg/L	mg/L
Zone 3	LVWPS-A3-MW08	10/8/2020	N	Qal	84.8 - 104.5	120	180	8.5	----	1,600	0.81	3.675	4.73	----	109.9	8.22	----	28.5	133.5	----	----	----
Zone 3	LVWPS-A3-MW10	10/5/2020	N	Qal	56.3 - 76.0	200	200	7.5	----	870	0.26 J	2.356	7.31	----	184.8	7.61	----	25.3	8.3	----	----	----
Zone 3	LVWPS-A3-MW11	10/7/2020	N	Qal	53.8 - 73.5	78	160	9.2	----	1,600	0.96	3.326	8.50	----	110.7	7.58	----	23.5	44.6	----	----	----
Zone 3	LVWPS-A3-MW12	10/5/2020	N	Qal	59.3 - 79.0	200	270	7.2	<0.021	1,200	0.40 J	2.915	6.48	0.0 U	238.1	7.52	0.0 U	23.7	4.4	<0.63	230	0.022
Zone 3	LVWPS-MW212A	10/5/2020	N	Qal	34.3 - 54.0	390	460	8.5	----	1,200	0.47 J	2.523	6.73	----	5.0	7.60	----	25.0	5.8	----	----	----
Zone 3	LVWPS-MW212B	10/5/2020	N	Qal	59.8 - 79.5	170	200	7.7	----	980	0.32 J	2.313	6.48	----	-10.4	7.65	----	26.8	68.2	----	----	----
Zone 3	LVWPS-MW212C	10/5/2020	N	UMCf-cg	100.3 - 120.0	7,800	11,000	8.4	----	----	----	5.619	4.32	----	-45.3	7.36	----	26.8	32.3	----	----	----
Zone 3	LVWPS-MW212D	10/8/2020	N	UMCf-cg	125.5 - 145.0	6,800	11,000	10	----	----	----	5.650	5.60	----	-0.2	7.25	----	21.6	5.3	----	----	----
Zone 3	LVWPS-MW222A	10/2/2020	N	UMCf/UMCf-cg	80.3 - 100.0	2,900	3,800	4.1	----	----	----	4.379	2.97	----	-37.8	7.74	----	22.9	70.9	----	----	----
Zone 3	LVWPS-MW222B	10/7/2020	N	UMCf-cg	150.3 - 170.0	1,500	1,200	1.6	----	----	----	3.538	3.10	----	-107.3	7.52	----	25.8	65.6	----	----	----
Zone 3	LVWPS-MW222C	10/2/2020	N	UMCf-cg	214.0 - 233.5	1,500	1,300	2.4	----	----	----	3.990	2.25	----	-232.0	7.68	----	30.0	1.0	----	----	----
Zone 3	LVWPS-U3-IW01	10/9/2020	N	UMCf-cg	80.2 - 115.0	3,100	4,900	8.3	----	----	----	4.023	5.57	----	382.0	7.41	----	25.8	176.9	----	----	----
Zone 3	LVWPS-U3-IW02A	10/6/2020	N	UMCf-cg	79.3 - 99.0	10,000	15,000	14	----	----	----	6.091	4.02	----	390.0	6.92	----	24.9	37.3	----	----	----
Zone 3	LVWPS-U3-IW02B	10/6/2020	N	UMCf-cg	104.8 - 124.5	5,200	9,700	9.4	----	----	----	5.331	3.61	----	394.0	6.93	----	26.0	52.9	----	----	----
Zone 3	LVWPS-U3-IW03A	10/6/2020	N	UMCf-cg	77.8 - 102.5	1,800	3,500	8.3	----	----	----	4.178	3.56	----	368.4	7.08	----	26.8	122.0	----	----	----
Zone 3	LVWPS-U3-IW03B	10/6/2020	N	UMCf-cg	109.3 - 139.0	1,600	3,200	7.9	----	----	----	4.317	4.91	----	389.4	7.10	----	29.0	68.3	----	----	----
Zone 3	LVWPS-U3-IW04A	10/7/2020	N	UMCf-cg	93.3 - 123.0	210	390	7.7	----	----	----	3.518	5.74	----	332.8	7.27	----	24.4	22.9	----	----	----
Zone 3	LVWPS-U3-IW04B	10/7/2020	N	UMCf-cg	129.3 - 159.0	680	1,100	5.8	----	----	----	3.843	3.71	----	334.7	7.25	----	27.0	918.9	----	----	----
Zone 3	LVWPS-U3-IW05A	10/7/2020	N	UMCf-cg	91.3 - 126.0	230	380	7.8	----	----	----	3.620	5.74	----	376.6	7.27	----	25.2	71.5	----	----	----
Zone 3	LVWPS-U3-IW05B	10/7/2020	N	UMCf-cg	132.8 - 167.5	530	870	7.4	----	----	----	3.954	5.83	----	385.5	7.28	----	29.3	204.0	----	----	----
Zone 3	LVWPS-U3-IW06A	10/7/2020	N	UMCf-cg	86.3 - 111.0	340	540	7.6	----	----	----	3.705	5.89	----	379.3	7.30	----	25.8	158.3	----	----	----
Zone 3	LVWPS-U3-IW06B	10/8/2020	N	UMCf-cg	117.8 - 142.5	5,700	1,800	7.6	----	----	----	3.874	4.72	----	329.6	7.36	----	24.1	58.9	----	----	----
Zone 3	LVWPS-U3-IW06C	10/8/2020	N	UMCf-cg	149.3 - 174.0	3,800	4,100	8.1	----	----	----	4.467	5.71	----	-25.5	7.38	----	26.9	4.8	----	----	----
Zone 3	LVWPS-U3-IW07A	10/8/2020	N	UMCf-cg	86.3 - 111.0	1,400	2,000	7.1	----	----	----	4.340	3.57	----	379.9	7.37	----	24.8	87.1	----	----	----
Zone 3	LVWPS-U3-IW07B	10/8/2020	N	UMCf-cg	117.8 - 142.5	9,400	15,000	9.0	----	----	----	6.659	0.80	----	263.4	7.40	----	25.7	192.0	----	----	----
Zone 3	LVWPS-U3-IW07C	10/9/2020	N	UMCf-cg	149.3 - 174.0	7,300	14,000	8.0	----	----	----	5.967	0.73	----	98.4	8.49	----	24.2	314.0	----	----	----
Zone 3	LVWPS-U3-IW08A	10/8/2020	N	UMCf-cg	86.3 - 111.0	1,900	2,600	5.8	----	----	----	5.047	0.79	----	337.4	7.33	----	25.5	102.9	----	----	----
Zone 3	LVWPS-U3-IW08A	10/8/2020	FD	UMCf-cg	86.3 - 111.0	1,900	2,600	5.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW08B	10/8/2020	N	UMCf-cg	117.8 - 142.5	15,000	21,000	12	----	----	----	8.238	0.94	----	389.6	7.31	----	26.6	73.3	----	----	----
Zone 3	LVWPS-U3-IW08C	10/9/2020	N	UMCf-cg	149.3 - 174.0	2,400	3,500	2.3	----	----	----	4.139	0.66	----	277.2	7.60	----	24.7	163.9	----	----	----
Zone 3	LVWPS-U3-MW01B	10/5/2020	N	UMCf-cg	83.8 - 103.3	2,000	1,800	0.24	----	1,700	6.3	4.344	2.06	----	-190.2	7.39	----	27.4	10.1	----	----	----
Zone 3	LVWPS-U3-MW02A	10/5/2020	N	UMCf-cg	82.3 - 97.0	3,000	770	5.7	<0.021	1,400	0.54	3.727	2.01	0.0 U	265.9	7.42	0.0 U	26.0	93.7	<0.63	300	0.015
Zone 3	LVWPS-U3-MW02B	10/5/2020	N	UMCf-cg	103.0 - 122.5	8,400	12,000	10	0.075	2,000	2.1	5.818	1.70	0.0 U	223.8	7.30	0.0 U	29.8	6.4	<0.63	610	0.023
Zone 3	LVWPS-U3-MW03A	10/2/2020	N	UMCf-cg	86.3 - 111.0	3,300	4,500	7.5	----	2,800	0.57 J-	6.305	6.40	----	-119.2	7.46	----	27.1	766.8	----	----	----
Zone 3	LVWPS-U3-MW03A	10/2/2020	FD	UMCf-cg	86.3 - 111.0	3,500	4,500	7.5	----	2,800	0.62 J-	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW03B	10/2/2020	N	UMCf-cg	151.1 - 175.7	3,800	13,000	9.1	----	1,900	0.41 J	6.173	3.23	----	-154.9	7.54	----	24.1	-0.2	----	----	----
Zone 3	LVWPS-U3-MW03C	10/1/2020	N	UMCf-cg	117.8 - 142.5	4,900	12,000	7.7	----	1,900	0.32 J	6.312	2.96	----	-182.3	7.48	----	29.4	78.7	----	----	----
Zone 3	LVWPS-U3-MW04B	10/2/2020	N	UMCf-cg	78.2 - 97.7	120	67 J	<0.014	----	1,600	6.8	3.934	2.03	----	-278.9	7.87	----	26.0	17.3	----	----	----
Zone 3	LVWPS-U3-MW05B	10/2/2020	N	UMCf-cg	85.2 - 104.7	9.4	<10	<0.014	----	1,900	8.4	4.669	2.07	----	-285.9	7.83	----	28.6	15.5	----	----	----
Zone 3	LVWPS-U3-MW06A	10/5/2020	N	UMCf-cg	90.3 - 115.0	9,900	15,000	13	----	1,700	0.48 J	4.882	5.05	----	125.0	7.56	----	22.1	89.0	----	----	----
Zone 3	LVWPS-U3-MW06B	10/7/2020	N	UMCf-cg	125.3 - 149.9	630	1,200	6.6	----	1,500	0.43 J	3.778	4.23	----	-85.6	7.37	----	28.1	11.1	----	----	----
Zone 3	LVWPS-U3-MW07A	10/9/2020	N	UMCf-cg	82.8 - 97.5	250	540	5.9	<0.021	1,200	0.39 J	2.450	5.45	0.0 U	252.5	7.72	0.0 U	24.5	91.4	<0.63	180	0.019
Zone 3	LVWPS-U3-MW07B	10/9/2020	N	UMCf-cg	104.8 - 124.5	4,800	8,500	9.2	<0.021	2,100	0.41 J	4.227	6.07	0.0 U	250.6	7.55	0.0 U	25.1	557.2	<0.63	440	0.032
Zone 3	LVWPS-U3-MW08A	10/8/2020	N	UMCf-cg	117.8 - 142.5	15,000	22,000	14	----	2,300	0.47 J	9.500	5.05	----	137.9	7.72	----	33.1	424.2	----	----	----
Zone 3	LVWPS-U3-MW08B	10/8/2020	N	UMCf-cg	149.3 - 174.0	6,100	8,100	4.9	----	2,200	2.6	5.507	2.46	----	-104.9	7.64	----	26.9	246.0	----	----	----
Zone 3	LVWPS-U3-MW09	10/7/2020	N	UMCf-cg	82.8 - 107.5	3,500	6,100	4.8	----	1,300	<0.26	3.846	4.35	----	157.1	7.62	----	27.3	53.0	----	----	----
Zone 3	LVWPS-U3-MW10A	10/5/2020	N	UMCf-cg	85.3 - 95.0	2,600	3,200	3.0	----	1,800	0.77	5.467	0.99	----	161.8	7.48	----	29.2	57.2	----	----	----
Zone 3	LVWPS-U3-MW10B	10/5/2020	N	UMCf-cg	101.3 - 121.0	3,200	4,200	6.5	----	1,600	0.32 J	4.783	6.76	----	147.8	7.45	----	30.3	113.7	----	----	----
Zone 3	LVWPS-U3-MW11A	10/7/2020	N	UMCf-cg	86.3 - 106.0	10,000	16,000	9.8	----	2,000	0.42 J	5.843	2.55	----	115.2	7.91	----	23.3	317.9	----	----	----
Zone 3	LVWPS-U3-MW11B	10/7/2020	N	UMCf-cg	112.3 - 137.0	4,100	9,600	5.2	----	1,900	0.33 J	4.103	1.23	----	116.3	7.80	----	23.9	44.1	----	----	----
Zone 3	LVWPS-U3-MW11C	10/8/2020	N	UMCf-cg	143.3 - 163.0	5,300	7,100	8.5	----	2,000	0.46 J	4.649	4.73	----	-23.7	7.41	----	22.6	235.7	----	----	----
Zone 3	LVWPS-U3-MW12A	10/6/2020	N	UMCf-cg	88.3 - 108.0	2,700	4,200	5.1	<0.021	1,800	0.38 J	4.480	2.67	0.0 U	217.2	7.45	0.0 U	25.1	95.0	<0.63	370	0.015
Zone 3	LVWPS-U3-MW12B	10/6/2020	N	UMCf-cg	113.3 - 138.0	6,000	4,900	6.6	<0.021	1,700	0.27 J	4.385	5.94	0.0 U	263.6	7.46	0.0 U	26.1	103.6	<0.63	340	0.028
Zone 3	LVWPS-U3-MW13A	10/7/2020	N	UMCf-cg	96.3 - 121.0	3,900	7,200	11	----	2,000	0.45 J	4.774	5.44	----	173.7	7.56	----	28.2	261.2	----	----	----
Zone 3	LVWPS-U3-MW13B	10/7/2020	N	UMCf-cg	132.8 - 147.5	350	550	6.8	----	1,500	0.45 J	3.677	5.92	----	156.2	7.79	----	31.7	19.9	----	----	----

Notes:
FD - Field duplicate
concentration of the analyte in the sample.
J- - The result is an estimated quantity, but the result may be biased low.
J+ - The result is an estimated quantity, but the result may be biased high.
mg/L - milligarms per liter
µg/L - micrograms per liter
mS/cm - milliSiemens per centimeter
mV - milliVolts
N - Normal field sample
NTU - Nephelometric Turbidity Unit
SU - Standard Units
approximate and may be inaccurate or imprecise.
UMCf - Upper Muddy Creek formation
< - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
---- Not tested.

DRAFT

Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	SW7199	Dissolved Metals by SW6010B		EPA 351.2	EPA 365.3	NTOTAL	SM2320B				SM2540C	SW6020B	VFA					
						Chromium, Hexavalent	Iron	Manganese	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate ion as HCO3	Carbonate (as CO3)	Hydroxide as OH	Total Dissolved Solids	Arsenic	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Extraction	LVWPS-EW01	9/29/2020	N	Qal	44.8 - 84.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-EW02	9/29/2020	N	Qal	28.3 - 58.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-EW03	9/30/2020	N	Qal	40.3 - 70.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-EW04	9/30/2020	N	Qal	26.3 - 46.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-EW05	9/29/2020	N	Qal	50.3 - 80.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-EW05	9/29/2020	FD	Qal	50.3 - 80.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206A	9/30/2020	N	Qal	39.8 - 59.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206B	9/30/2020	N	Qal	69.9 - 89.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206C	9/30/2020	N	UMCf	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206D	10/6/2020	N	UMCf	125.3 - 145.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Extraction	LVWPS-MW206E	10/5/2020	N	UMCf (Semi-Cons)	195.5 - 205.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW201A	9/28/2020	N	Qal	28.2 - 47.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW201B	9/28/2020	N	UMCf	60.1 - 79.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW202	9/29/2020	N	Qal	41.8 - 61.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW203A	9/30/2020	N	Qal	34.8 - 54.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW203A	9/30/2020	FD	Qal	34.8 - 54.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW203B	9/30/2020	N	UMCf	75.1 - 94.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW203C	9/30/2020	N	UMCf (Semi-Cons)	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW204	9/28/2020	N	Qal	50.3 - 70.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW204	9/28/2020	FD	Qal	50.3 - 70.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW204B	9/28/2020	N	UMCf	101.5 - 121.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW204C	10/7/2020	N	UMCf (Semi-Cons)	150.5 - 170.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW205B	9/28/2020	N	Qal	64.9 - 84.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW205C	9/29/2020	N	Qal	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW207	9/28/2020	N	Qal	68.1 - 87.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209	10/6/2020	N	Qal	71.3 - 91.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209	10/6/2020	FD	Qal	71.3 - 91.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209A	10/6/2020	N	Qal	35.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209B	10/6/2020	N	UMCf-cg	110.3 - 130.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW209C	10/7/2020	N	UMCf-cg	151.0 - 170.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW210A	10/6/2020	N	Qal	35.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW210B	10/6/2020	N	Qal	70.1 - 89.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW210C	10/1/2020	N	UMCf-cg	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW210D	10/7/2020	N	UMCf-cg	130.4 - 140.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW210E	10/7/2020	N	UMCf-cg	145.5 - 165.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW211	9/30/2020	N	Qal	50.0 - 69.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW213	10/1/2020	N	Qal	40.1 - 59.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW213	10/1/2020	FD	Qal	40.1 - 59.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW214	10/7/2020	N	Qal	34.4 - 44.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW215A	10/8/2020	N	Qal	13.5 - 33.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW215B	10/9/2020	N	Horse Springs	40.7 - 45.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW216	10/7/2020	N	Qal	10.4 - 20.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW216	10/7/2020	FD	Qal	10.4 - 20.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW218A	10/5/2020	N	Qal	35.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW218B	10/2/2020	N	UMCf/UMCf-cg	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW218C	10/2/2020	N	UMCf/UMCf-cg	136.0 - 155.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW219A	10/9/2020	N	Qal	35.1 - 49.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW219B	10/9/2020	N	UMCf/Horse Springs	75.3 - 95.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW219C	10/9/2020	N	UMCf/Horse Springs	115.5 - 135.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW220A	10/5/2020	N	Qal	60.3 - 80.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW220B	10/7/2020	N	UMCf-cg	134.5 - 154.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW225A	10/7/2020	N	Qal	49.3 - 69.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW225A	10/7/2020	FD	Qal	49.3 - 69.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW225B	10/7/2020	N	UMCf	90.5 - 110.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW226A	10/1/2020	N	Qal	40.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW226A	10/1/2020	FD	Qal	40.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
General Vicinity	LVWPS-MW226B	10/1/2020	N	UMCf (Semi-Cons)	77.5 - 97.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-A1-MW04	9/30/2020	N	Qal	69.3 - 89.0	18.2	0.052 J	<0.010	1.3 J+	<0.025	16	150	180	<0	<0	3,700	37	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-A1-MW05	9/30/2020	N	Qal	69.3 - 89.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-A1-MW06	9/29/2020	N	Qal	59.3 - 79.0	12.3	<0.030	<0.010	1.5 J+	<0.025	15	150	190	<0	<0	2,900	32	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-A1-MW07	9/30/2020	N	Qal	58.3 - 78.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-A1-MW09	9/30/2020	N	Qal	85.8 - 105.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-A1-MW10	10/1/2020	N	Qal	70.8 - 90.5	21.9	<0.030	<0.010	1.5	<0.025	18	140	170	<0	<0	3,900	38	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-A1-MW10	10/1/2020	FD	Qal	70.8 - 90.5	21.9	<0.030	<0.010	1.5	<0.025	18	140	180	<0	<0	3,600	40	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-MW217A	9/30/2020	N	Qal	51.3 - 71.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-MW217B	9/30/2020	N	UMCf	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	SW7199	Dissolved Metals by SW6010B		EPA 351.2	EPA 365.3	NTOTAL	SM2320B				SM2540C	SW6020B	VFA					
						Chromium, Hexavalent	Iron	Manganese	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate ion as HCO3	Carbonate (as CO3)	Hydroxide as OH	Total Dissolved Solids	Arsenic	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zone 1	LVWPS-MW217C	10/5/2020	N	UMCf	155.5 - 175.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW01A	9/29/2020	N	UMCf	88.8 - 113.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW01B	9/29/2020	N	UMCf	120.3 - 145.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW02A	9/30/2020	N	UMCf	90.3 - 115.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW02B	9/30/2020	N	UMCf	121.3 - 151.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW03A	9/30/2020	N	UMCf	93.8 - 118.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW03B	9/30/2020	N	UMCf	125.3 - 150.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW04A	9/28/2020	N	UMCf	86.8 - 116.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW04A	9/28/2020	FD	UMCf	86.8 - 116.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW04B	9/28/2020	N	UMCf	122.8 - 152.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW05A	9/29/2020	N	UMCf	88.8 - 113.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW05B	9/29/2020	N	UMCf	120.3 - 145.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW06A	9/30/2020	N	UMCf	87.8 - 112.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW06B	9/30/2020	N	UMCf	119.3 - 149.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW07A	10/1/2020	N	UMCf	95.8 - 120.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW07B	10/1/2020	N	UMCf	127.3 - 152.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW08A	10/1/2020	N	UMCf	95.3 - 125.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-IW08B	10/1/2020	N	UMCf	131.8 - 156.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW01A	9/28/2020	N	UMCf	90.3 - 115.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW01B	9/28/2020	N	UMCf	133.5 - 153.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW02A	9/29/2020	N	UMCf	94.3 - 119.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW02B	10/7/2020	N	UMCf	136.9 - 161.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW03B	9/29/2020	N	UMCf	134.5 - 154.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW04A	9/30/2020	N	UMCf	99.3 - 124.0	23.3	0.088 J	0.057	1.4	0.028 J	14	120	140	<0	<0	3,700	65	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-U1-MW04B	10/1/2020	N	UMCf	139.9 - 164.5	23.9	<0.030	0.052	1.3	0.025 J	14	120	140	<0	<0	4,000	65	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-U1-MW05A	9/29/2020	N	UMCf	95.8 - 120.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW05B	9/29/2020	N	UMCf	136.9 - 161.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW06A	9/29/2020	N	UMCf	85.3 - 105.0	2.31	<0.030	0.025	1.8	0.092	13	140	180	<0	<0	2,500	54	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-U1-MW06B	9/29/2020	N	UMCf	109.3 - 134.0	1.61	0.64	0.10	1.5 J+	0.66	13	140	180	<0	<0	2,600	50	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-U1-MW07	9/30/2020	N	UMCf	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW08A	9/30/2020	N	UMCf	93.8 - 118.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW08B	9/30/2020	N	UMCf	125.3 - 150.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW09A	9/30/2020	N	UMCf	115.3 - 125.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW09B	9/30/2020	N	UMCf	130.3 - 155.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 1	LVWPS-U1-MW10A	10/2/2020	N	UMCf	99.3 - 124.0	63.1	<0.030	<0.010	0.89	0.17	11	96	120	<0	<0	4,600	74	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 1	LVWPS-U1-MW10B	10/2/2020	N	UMCf	130.3 - 155.0	10.2	0.036 J	0.076	0.79	0.15	4.6	110	130	<0	<0	4,200	37	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-A2-IW01A	10/1/2020	N	Qal	41.3 - 66.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW01A	10/1/2020	FD	Qal	41.3 - 66.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW01B	10/1/2020	N	Qal	72.8 - 97.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW02A	10/1/2020	N	Qal	38.8 - 68.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW02B	10/2/2020	N	Qal	75.3 - 100.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW03A	10/2/2020	N	Qal	37.3 - 67.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW03B	10/2/2020	N	Qal	73.8 - 103.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW03B	10/2/2020	FD	Qal	73.8 - 103.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW04A	10/2/2020	N	Qal	36.3 - 71.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW04B	10/2/2020	N	Qal	77.3 - 112.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW05A	10/2/2020	N	Qal	37.8 - 62.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW05B	10/2/2020	N	Qal	68.8 - 93.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW06A	10/5/2020	N	Qal	36.8 - 51.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW06B	10/5/2020	N	Qal	57.8 - 77.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW07A	10/5/2020	N	Qal	35.3 - 50.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW07A	10/5/2020	FD	Qal	35.3 - 50.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW07B	10/5/2020	N	Qal	56.3 - 76.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW08A	10/5/2020	N	Qal	35.8 - 55.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW08B	10/5/2020	N	Qal	61.8 - 81.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW09A	10/5/2020	N	Qal	36.8 - 51.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-IW09B	10/6/2020	N	Qal	58.8 - 73.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW01A	10/8/2020	N	Qal	40.3 - 60.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW01A	10/8/2020	FD	Qal	40.3 - 60.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW01B	10/8/2020	N	Qal	70.3 - 90.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW02A	10/8/2020	N	Qal	40.3 - 60.0	16.4	0.031 J	0.013 J	0.82 J+	<0.025 UJ	19	180 J	220 J	<0	<0	5,100	58	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-A2-MW02A	10/8/2020	FD	Qal	40.3 - 60.0	16.4	<0.030	0.012 J	1.1 J+	0.16 J	19	110 J	140 J	<0	<0	5,200	54	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-A2-MW02B	10/8/2020	N	Qal	70.3 - 90.0	11.5	0.071 J	<0.010	1.5 J+	<0.025	16	91	110	<0	<0	4,000	61	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-A2-MW03A	10/9/2020	N	Qal	38.3 - 58.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW03A	10/9/2020	FD	Qal	38.3 - 58.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW03B	10/9/2020	N	Qal	64.3 - 84.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW04A	10/2/2020	N	Qal	43.8 - 63.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW04A	10/2/2020	FD	Qal	43.8 - 63.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW04B	10/2/2020	N	Qal	75.3 - 95.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW05A	10/5/2020	N	Qal	36.8 - 51.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	SW7199	Dissolved Metals by SW6010B		EPA 351.2	EPA 365.3	NTOTAL	SM2320B				SM2540C	SW6020B	VFA					
						Chromium, Hexavalent	Iron	Manganese	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate ion as HCO3	Carbonate (as CO3)	Hydroxide as OH	Total Dissolved Solids	Arsenic	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zone 2	LVWPS-A2-MW05B	10/5/2020	N	Qal	58.8 - 73.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW08A	9/30/2020	N	Qal	40.3 - 55.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW08B	10/1/2020	N	Qal	59.8 - 79.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW08C	10/1/2020	N	Qal	86.3 - 106.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW09A	10/9/2020	N	Qal	34.8 - 54.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW09B	10/9/2020	N	Qal	58.8 - 78.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW11A	10/2/2020	N	Qal	40.3 - 60.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW11A	10/2/2020	FD	Qal	40.3 - 60.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW11B	10/2/2020	N	Qal	65.3 - 85.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW11C	10/2/2020	N	Qal	90.3 - 110.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW12A	10/6/2020	N	Qal	34.9 - 44.5	16.8	0.032 J	<0.010	1.8	0.095	20	110	140	<0	<0	3,400	39	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 2	LVWPS-A2-MW12B	10/7/2020	N	Qal	49.3 - 69.0	15.0	<0.030	<0.010	3.7 J+	0.22	23	110	130	<0	<0	4,500	49	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-A2-MW13A	10/1/2020	N	Qal	41.3 - 61.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW13B	10/1/2020	N	Qal	66.4 - 86.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW14A	10/6/2020	N	Qal	35.8 - 50.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW14A	10/6/2020	FD	Qal	35.8 - 50.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW14B	10/6/2020	N	Qal	54.8 - 74.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW15A	10/7/2020	N	Qal	39.8 - 59.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW15B	10/8/2020	N	Qal	70.3 - 90.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW16A	10/9/2020	N	Qal	35.8 - 55.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW16B	10/9/2020	N	Qal	60.3 - 80.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW16B	10/9/2020	FD	Qal	60.3 - 80.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW17A	10/1/2020	N	Qal	40.3 - 60.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW17B	10/1/2020	N	Qal	65.3 - 85.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-A2-MW17C	10/1/2020	N	Qal	90.3 - 110.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW208A	10/9/2020	N	Qal	39.9 - 59.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW208B	10/9/2020	N	Qal	65.3 - 85.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW221A	10/6/2020	N	Qal	50.3 - 70.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW221B	10/6/2020	N	UMCf/UMCf-cg	83.7 - 103.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW223A	10/6/2020	N	Qal	45.3 - 65.0	16.1	<0.030	<0.010	0.90	<0.025	18	120	150	<0	<0	5,200	57	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 2	LVWPS-MW223A	10/6/2020	FD	Qal	45.3 - 65.0	15.9	<0.030	<0.010	0.70	<0.025	18	120	150	<0	<0	5,300	55	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 2	LVWPS-MW223B	10/6/2020	N	Qal	70.3 - 90.0	19.0	<0.030	<0.010	0.67	0.12	21	110	140	<0	<0	3,600	44	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 2	LVWPS-MW223C	10/7/2020	N	UMCf	95.5 - 110.0	17.2	<0.030	<0.010	0.93 J+	0.053	15	100	130	<0	<0	4,200	37	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-MW224A	10/7/2020	N	Qal	55.3 - 75.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW224B	10/7/2020	N	UMCf	106.8 - 126.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-MW224C	10/8/2020	N	UMCf (Semi-Cons)	174.5 - 194.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW01	10/8/2020	N	UMCf	121.2 - 141.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW01	10/8/2020	FD	UMCf	121.2 - 141.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW02	10/8/2020	N	UMCf	116.2 - 141.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW03	10/8/2020	N	UMCf	99.2 - 124.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW04	10/8/2020	N	UMCf	83.7 - 108.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW05	10/8/2020	N	UMCf	87.7 - 117.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW06	10/8/2020	N	UMCf	89.2 - 104.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW07	10/6/2020	N	UMCf	91.2 - 106.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW08	10/6/2020	N	UMCf	83.7 - 108.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW09	10/6/2020	N	UMCf	103.2 - 128.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW10	10/6/2020	N	UMCf	109.3 - 129.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW11	10/6/2020	N	UMCf	108.9 - 133.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-IW12	10/8/2020	N	UMCf	112.8 - 137.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW01	10/8/2020	N	UMCf	97.3 - 117.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW02	10/8/2020	N	UMCf	100.3 - 125.0	6.98	<0.030	0.65	1.2 J+	0.19	7.5	75	92	<0	<0	4,100	17 J+	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-U2-MW03	10/9/2020	N	UMCf	90.3 - 110.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW04	10/6/2020	N	UMCf	103.2 - 128.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW05	10/5/2020	N	UMCf	83.2 - 108.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW06	10/1/2020	N	UMCf	121.8 - 141.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW07	10/2/2020	N	UMCf	88.2 - 108.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW08	10/1/2020	N	UMCf	113.2 - 133.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW09	10/9/2020	N	UMCf	84.9 - 104.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW10	10/2/2020	N	UMCf	90.2 - 110.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW12	10/7/2020	N	UMCf	83.2 - 108.0	45.4	<0.030	<0.010	0.59 J+	0.16	19	91	110	<0	<0	4,600	56	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 2	LVWPS-U2-MW13	10/2/2020	N	UMCf	94.7 - 109.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW13	10/2/2020	FD	UMCf	94.7 - 109.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW14	10/6/2020	N	UMCf	83.2 - 108.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW17	10/1/2020	N	UMCf	117.0 - 136.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW18	10/5/2020	N	UMCf	88.3 - 113.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW19	10/2/2020	N	UMCf	91.2 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 2	LVWPS-U2-MW20	10/2/2020	N	UMCf	88.2 - 108.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-A3-MW02	10/5/2020	N	Qal	52.8 - 72.5	21.1	<0.030	<0.010	1.3	0.038 J	8.3	79	97	<0	<0	1,800	53	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-A3-MW06	10/5/2020	N	Qal	55.3 - 75.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-A3-MW07	10/8/2020	N	Qal	54.8 - 74.5	19.6	0.19 J	0.025	1.3 J+	0.088 J-	7.7	81	99	<0	<0	2,300	59	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9

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Table 2
Baseline Groundwater Analytical Results
Las Vegas Wash Bioremediation Pilot Study

Zone	Location	Sample Date	QCType	Screened Lithology (TT)	Screened Interval (ft bgs)	SW7199	Dissolved Metals by SW6010B		EPA 351.2	EPA 365.3	NTOTAL	SM2320B				SM2540C	SW6020B	VFA					
						Chromium, Hexavalent	Iron	Manganese	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate ion as HCO3	Carbonate (as CO3)	Hydroxide as OH	Total Dissolved Solids	Arsenic	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Zone 3	LVWPS-A3-MW08	10/8/2020	N	Qal	84.8 - 104.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-A3-MW10	10/5/2020	N	Qal	56.3 - 76.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-A3-MW11	10/7/2020	N	Qal	53.8 - 73.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-A3-MW12	10/5/2020	N	Qal	59.3 - 79.0	21.9	<0.030	<0.010	0.91 J+	<0.025	8.1	84	100	<0	<0	2,400	60	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-MW212A	10/5/2020	N	Qal	34.3 - 54.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW212B	10/5/2020	N	Qal	59.8 - 79.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW212C	10/5/2020	N	UMCf-cg	100.3 - 120.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW212D	10/8/2020	N	UMCf-cg	125.5 - 145.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW222A	10/2/2020	N	UMCf/UMCf-cg	80.3 - 100.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW222B	10/7/2020	N	UMCf-cg	150.3 - 170.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-MW222C	10/2/2020	N	UMCf-cg	214.0 - 233.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW01	10/9/2020	N	UMCf-cg	80.2 - 115.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW02A	10/6/2020	N	UMCf-cg	79.3 - 99.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW02B	10/6/2020	N	UMCf-cg	104.8 - 124.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW03A	10/6/2020	N	UMCf-cg	77.8 - 102.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW03B	10/6/2020	N	UMCf-cg	109.3 - 139.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW04A	10/7/2020	N	UMCf-cg	93.3 - 123.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW04B	10/7/2020	N	UMCf-cg	129.3 - 159.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW05A	10/7/2020	N	UMCf-cg	91.3 - 126.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW05B	10/7/2020	N	UMCf-cg	132.8 - 167.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW06A	10/7/2020	N	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW06B	10/8/2020	N	UMCf-cg	117.8 - 142.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW06C	10/8/2020	N	UMCf-cg	149.3 - 174.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW07A	10/8/2020	N	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW07B	10/8/2020	N	UMCf-cg	117.8 - 142.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW07C	10/9/2020	N	UMCf-cg	149.3 - 174.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW08A	10/8/2020	N	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW08A	10/8/2020	FD	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW08B	10/8/2020	N	UMCf-cg	117.8 - 142.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-IW08C	10/9/2020	N	UMCf-cg	149.3 - 174.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW01B	10/5/2020	N	UMCf-cg	83.8 - 103.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW02A	10/5/2020	N	UMCf-cg	82.3 - 97.0	15.8	0.044 J	0.027	1.3	0.22	7.0	84	100	<0	<0	5,900	25	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-U3-MW02B	10/5/2020	N	UMCf-cg	103.0 - 122.5	22.6	0.034 J	0.23	1.9 J+	0.063	12	54	66	<0	<0	4,100	27	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-U3-MW03A	10/2/2020	N	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW03A	10/2/2020	FD	UMCf-cg	86.3 - 111.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW03B	10/2/2020	N	UMCf-cg	151.1 - 175.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW03C	10/1/2020	N	UMCf-cg	117.8 - 142.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW04B	10/2/2020	N	UMCf-cg	78.2 - 97.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW05B	10/2/2020	N	UMCf-cg	85.2 - 104.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW06A	10/5/2020	N	UMCf-cg	90.3 - 115.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW06B	10/7/2020	N	UMCf-cg	125.3 - 149.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW07A	10/9/2020	N	UMCf-cg	82.8 - 97.5	19.1	0.045 J	0.15	1.3	0.20	7.2	94	110	<0	<0	2,400	39	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-U3-MW07B	10/9/2020	N	UMCf-cg	104.8 - 124.5	31.5 J-	<0.030	0.074	1.2	0.51	10	67	82	<0	<0	3,900	36	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
Zone 3	LVWPS-U3-MW08A	10/8/2020	N	UMCf-cg	117.8 - 142.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW08B	10/8/2020	N	UMCf-cg	149.3 - 174.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW09	10/7/2020	N	UMCf-cg	82.8 - 107.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW10A	10/5/2020	N	UMCf-cg	85.3 - 95.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW10B	10/5/2020	N	UMCf-cg	101.3 - 121.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW11A	10/7/2020	N	UMCf-cg	86.3 - 106.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW11B	10/7/2020	N	UMCf-cg	112.3 - 137.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW11C	10/8/2020	N	UMCf-cg	143.3 - 163.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW12A	10/6/2020	N	UMCf-cg	88.3 - 108.0	15.3	0.035 J	0.10	0.75	0.16	5.8	77	94	<0	<0	3,600	41	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 3	LVWPS-U3-MW12B	10/6/2020	N	UMCf-cg	113.3 - 138.0	27.7	<0.030	<0.010	0.77	0.11	7.4	72	88	<0	<0	3,400	55	<0.29	<0.26	<0.26	<0.31	<1.8	<1.9
Zone 3	LVWPS-U3-MW13A	10/7/2020	N	UMCf-cg	96.3 - 121.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Zone 3	LVWPS-U3-MW13B	10/7/2020	N	UMCf-cg	132.8 - 147.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Notes:
FD - Field duplicate
concentration of the analyte in the sample.
J- - The result is an estimated quantity, but the result may be biased low.
J+ - The result is an estimated quantity, but the result may be biased high.
mg/L - milligarms per liter
µg/L - micrograms per liter
mS/cm - milliSiemens per centimeter
mV - milliVolts
N - Normal field sample
NTU - Nephelometric Turbidity Unit
SU - Standard Units
approximate and may be inaccurate or imprecise.
UMCf - Upper Muddy Creek formation
< - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
---- Not tested.

DRAFT

Table 3
Summary of Aquifer Test Results
Las Vegas Wash Bioremediation Pilot Study

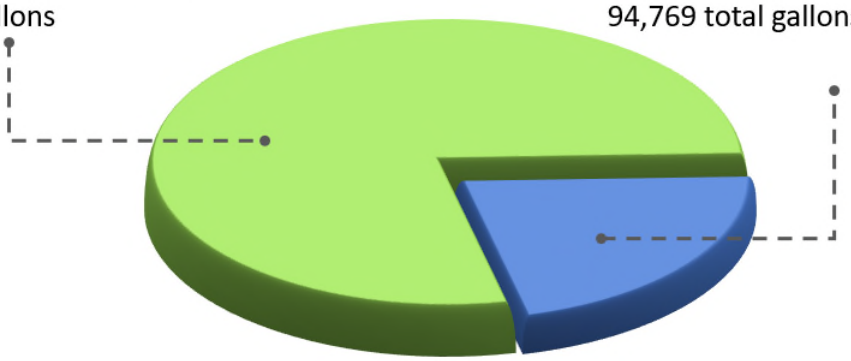
Location	Lithology	Average Flow Velocity (ft/day)	Velocity Range (ft/day)	Average Hydraulic Conductivity (ft/day)	Slug Test Range (ft/day)
Zone 1	Alluvium	20	10 - 30	157	20 - 240
	UMCf	0.19	0.04 - 0.28	1.2	0.17 - 2.7
Zone 2	Alluvium	35	4 - 122	134	14 - 352
	UMCf	0.21	0.08 - 0.56	0.97	0.03 - 5.3
Zone 3	Alluvium	22	22	63	14 - 96
	UMCf-cg	0.15	0.02 - 0.66	2.62	0.14 - 17

Photo Logs

LVW Pilot Study Injection Summary as of December 9, 2020

Injection Event 1 Remaining
76,279 gallons of Injectate Solution
398,731 gallons of Chase Water
475,010 total gallons

Injection Event 1 Completed
67,409 gallons of Injectate Solution
27,360 gallons of Chase Water
94,769 total gallons



- ✓ Set-up of staging area and equipment mobilization began on November 30, 2020.
- ✓ Groundwater extraction began on December 4, 2020.
- ✓ Step-rate injection tests for Zone 2 Alluvium were completed on December 5, 2020.
- ✓ Injections for Zone 2 Alluvium began on December 7, 2020 and are on-going.

Las Vegas Wash Pilot Study Area

TETRA TECH
www.tetratech.com
150 South 4th Street
Henderson, Nevada 89015
PHONE: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

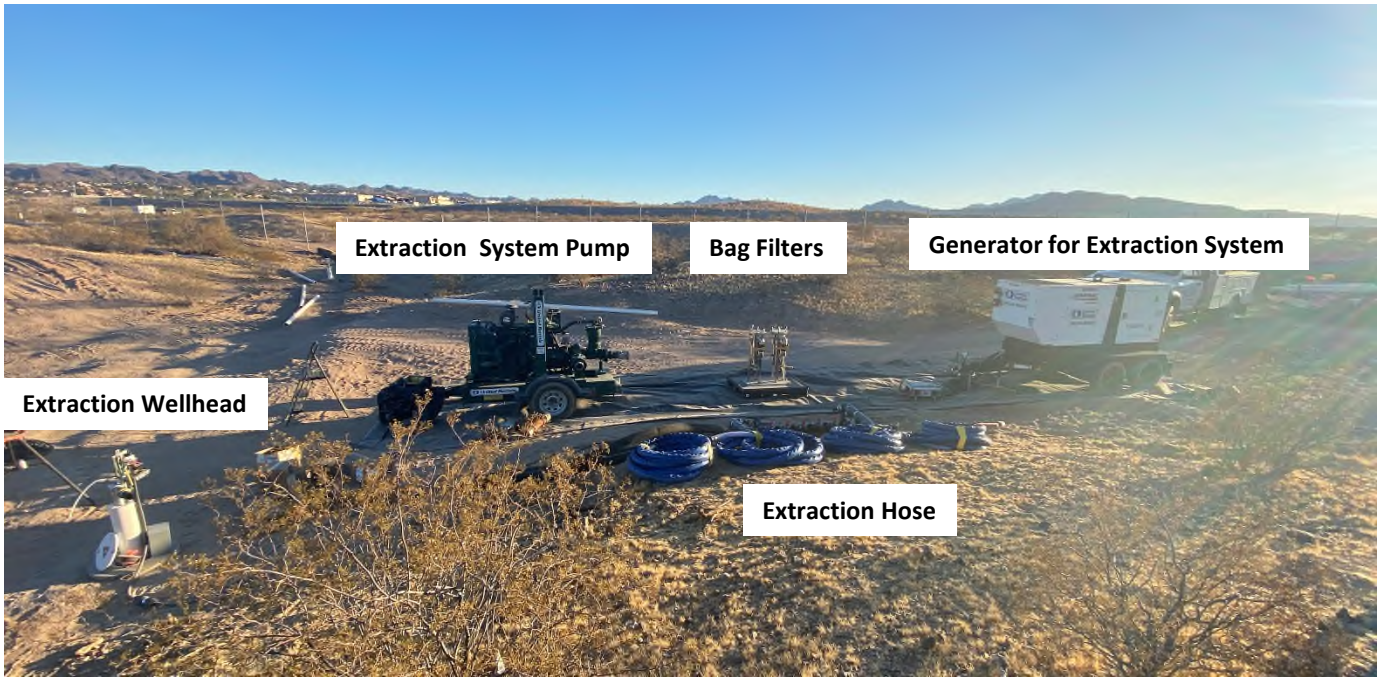
HENDERSON, NEVADA

Phase 2 – Injection Activities
Las Vegas Wash Bioremediation Pilot Study

Project No.:117-7502019-M19-01
Date.: 12/09/20
Designed By: DCG

Deliveries of EOS_{PRO} product are off-loaded into a 21,000-gallon frac tank (left). Three 16,400-gallon frac tanks are used for batch mixing of the injectate solution (right).

During mobilization activities, high-capacity pumps were installed in six extraction wells (left). Extraction wellhead with sampling port, electrical box, pressure gauge, and ¾-inch PVC pipe for depth to water monitoring (right).



Components of the extraction system include: 1) Generator for Extraction System; 2) Extraction Pumps and Extraction Well Heads; 3) Extraction Hose; and 4) Bag filters for Removal of Sediment in Extracted Groundwater Prior to Transfer to Frac Tanks.

Extracted groundwater is pumped from the extraction well field to the frac tanks within the laydown area.

Collecting a sample of carbon substrate solution to prior to injection.

Measuring specific gravity in a batch sample using a hydrometer.

Measuring rhodamine dye concentrations in a batch sample using a field probe.

TETRA TECH
www.tetratech.com
150 South 4th Street
Henderson, Nevada 89015
PHONE: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

HENDERSON, NEVADA

Phase 2 – Drilling Activities
Las Vegas Wash Bioremediation
Pilot Study

Project No.:117-7502019-M19-01

Date.: 12/09/20

Designed By: DCG

Manifold Flow Meters/Totalizers and Pressure Gauges;
Lines Labeled with Injection Well Name

Injection Wellheads

TETRA TECH www.tetratech.com 150 South 4th Street Henderson, Nevada 89015 PHONE: (702) 854-2293	**NEVADA ENVIRONMENTAL RESPONSE TRUST** HENDERSON, NEVADA **Phase 2 – Injection Activities** **Las Vegas Wash Bioremediation** **Pilot Study**	Project No.:117-7502019-M19-01 Date.: 12/09/20 Designed By: DCG Page No. 5 of 6

Injection well lines connected from the injection manifolds to the individual injection wells.

Dye study testing station to collect periodic samples from nearby dose response monitoring wells.

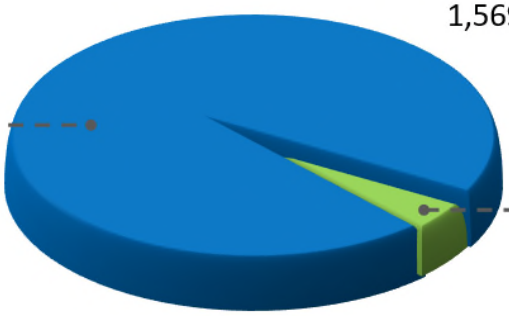
LVW Pilot Study Injection Summary as of December 21, 2020

Injections Completed

142,980 gallons of Injectate Solution
210,227 gallons of Chase Water
353,207 total gallons

Projected Injections Remaining

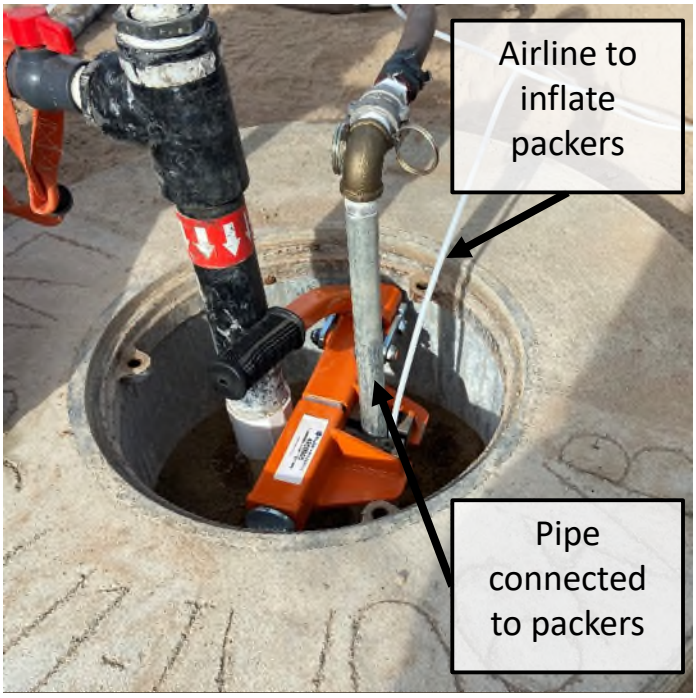
841 gallons of Injectate Solution
728 gallons of Chase Water
1,569 total gallons

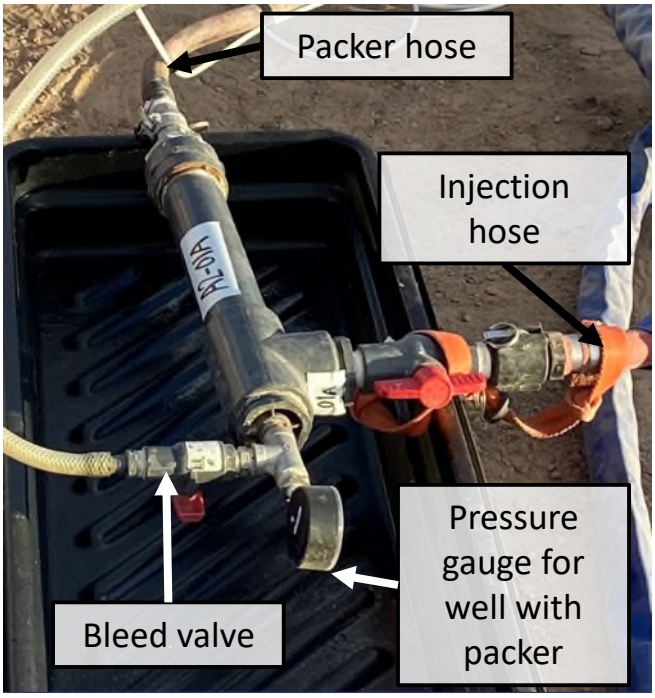


- ✓ Injections into Zone 2 Alluvium were completed on December 4, 2020.
- ✓ Injections into Zone 1 UMCf were completed on December 7, 2020.
- ✓ Injections into Zone 3 UMCf-cg were completed on December 18, 2020.
- ✓ Injections into Zone 2 UMCf are projected to be completed by December 22, 2020.

Las Vegas Wash Pilot Study Area

One “A” injection well within Zone 1 UMCf required an injection packer to seal off a damaged portion of the upper casing. The two packers (top) are connected to a pipe and lowered inside the injection well to a depth that is immediately below the impacted section of the well casing.





The packer is then inflated with air via tubing extending from the packers to the surface (bottom left). Once the packers are inflated to a pressure of approximately 105 PSI, the injections into this well proceed as normal below the packers. Rather than installing a wellhead on the well casing directly, a pressure gauge and bleed valve are fitted between the packer hose and the injection hose to monitor well pressure during injections (bottom right).

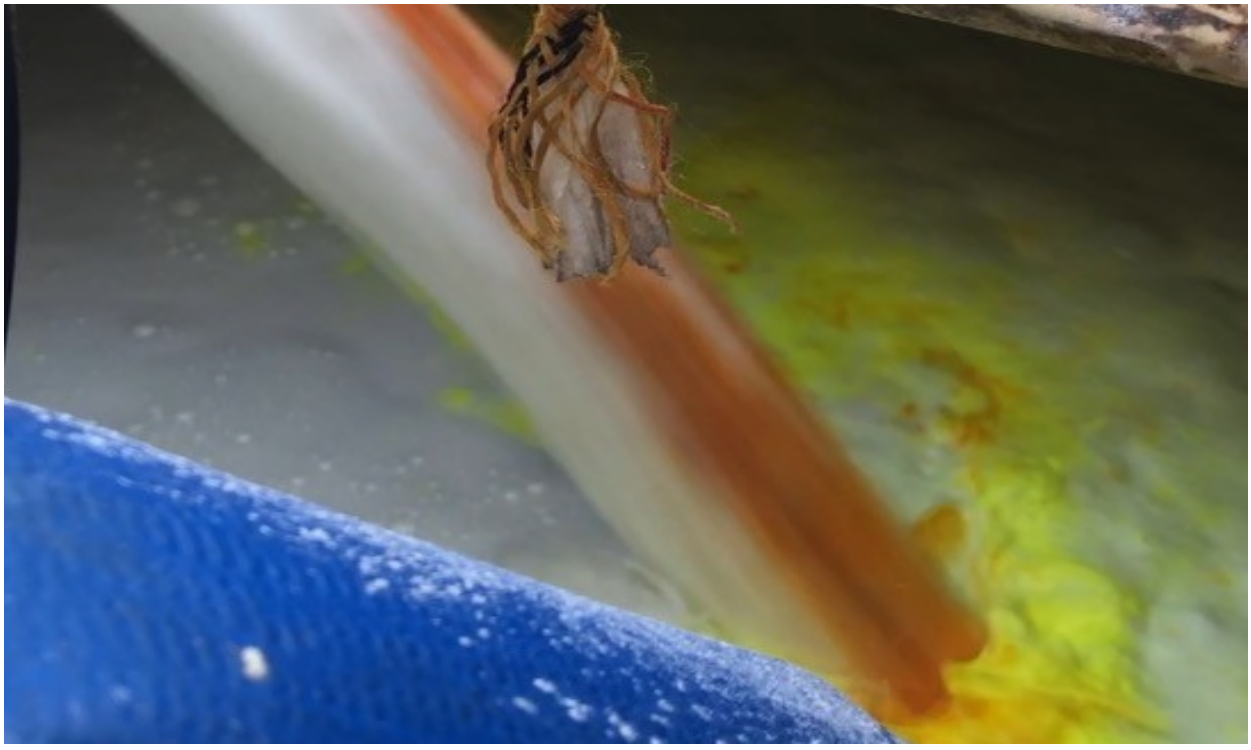
Fully connected injection well transect line within Zone 1 - UMCf.

Fully connected Injection well transect line within Zone 3 – UMCf-cg.

Walking the injection line within Zone 3 to record pressure readings at individual injection wellheads.

Triple Nested Injection Wellhead Connections

Adding and mixing rhodamine into batch mixing tank for Injections into alluvium



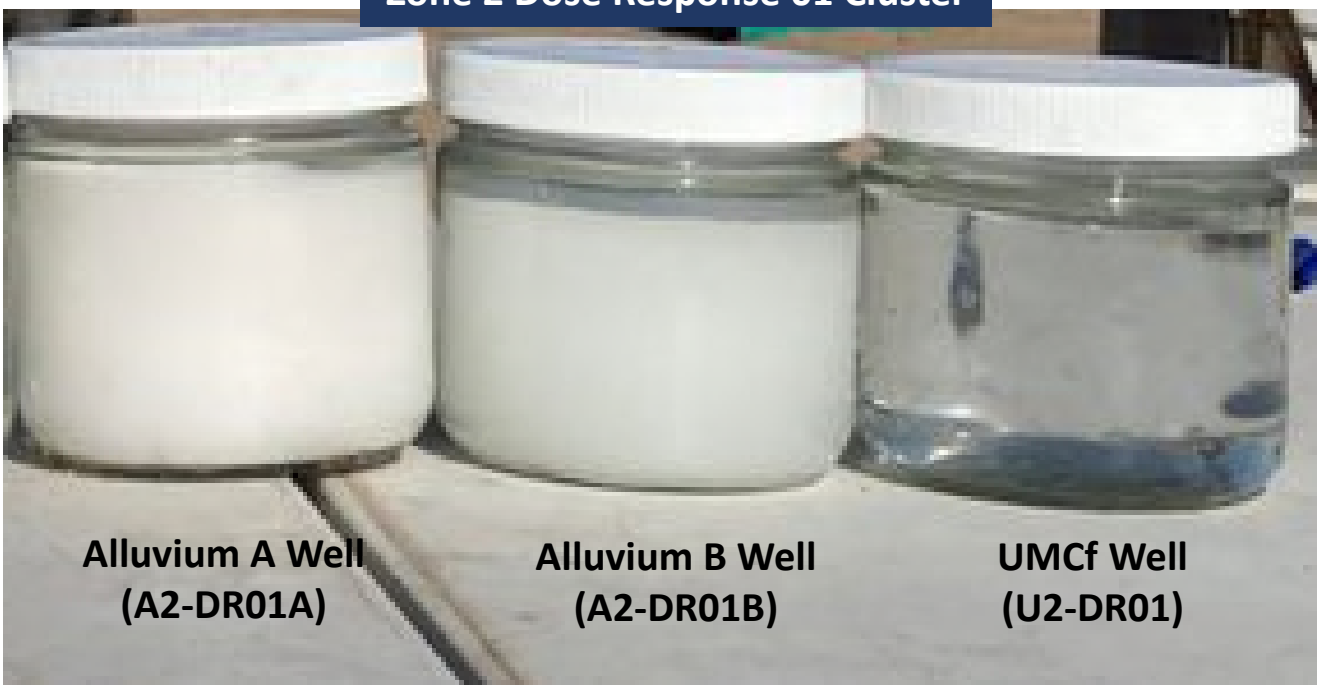
Adding and mixing fluorescein into batch mixing tank for injections into UMCf

During injections, periodic groundwater samples are collected from the downgradient Dose Response monitoring wells, which are located approximately 7 feet away from the injection well line and are screened within the same interval as the upgradient injection well cluster. Samples are typically collected on an hourly or more frequent basis using a bailer.

As observed in the picture on the left, this sample in the bailer has a cloudy fluid with a slight pink tinge, indicating that the injectate has arrived in the vicinity.

Once samples are collected, they are analyzed with Eureka field probes fitted with Turner Designs dye sensors (one for rhodamine and one for fluorescein). These probes measure the fluorescence of each of the dyes in the groundwater sample.

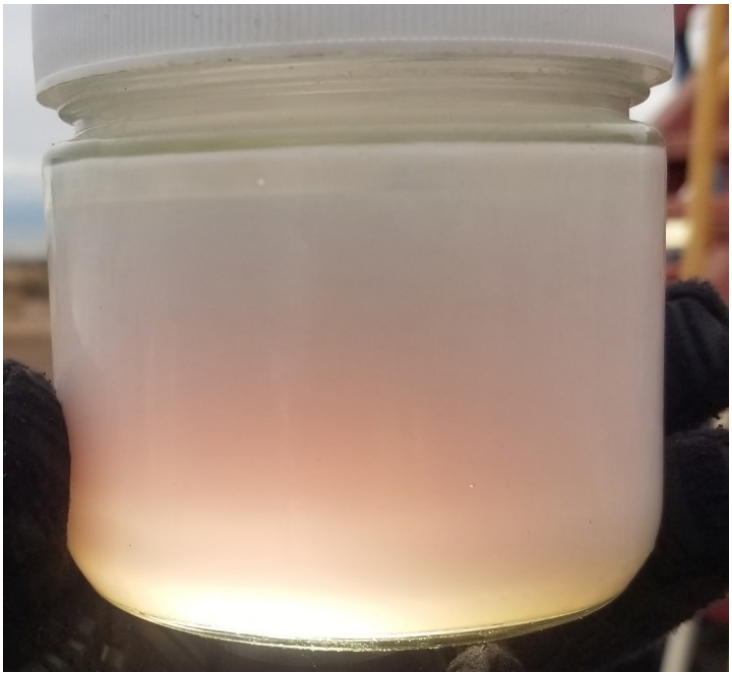
Zone 2 Dose Response 01 Cluster



Zone 2 Dose Response 02 Cluster

Pictures above present groundwater samples collected from the Zone 2 dose response wells approximately one hour after injections began in the Zone 2 alluvium. Injectate solution (white/pink) is observed in all four dose response wells screened in the alluvium. As expected, the samples collected from the UMCf dose response wells remain clear, indicating that the alluvial injectate is not entering into the UMCf.

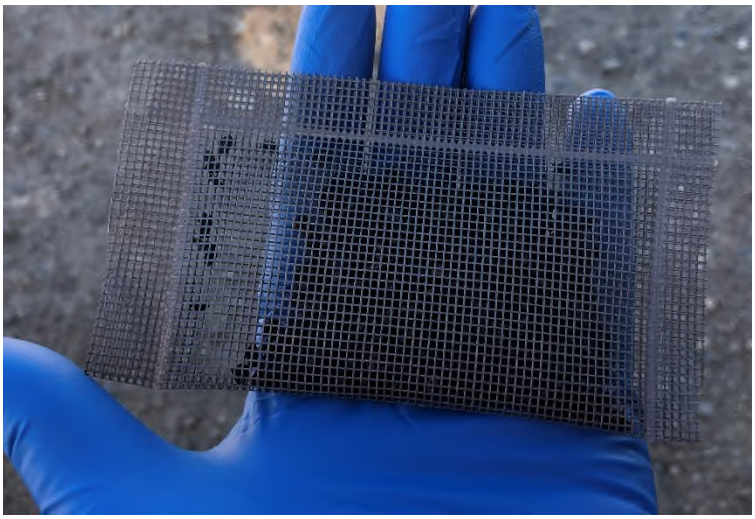
Three days following the start of injections, samples began to show a pink tinge.

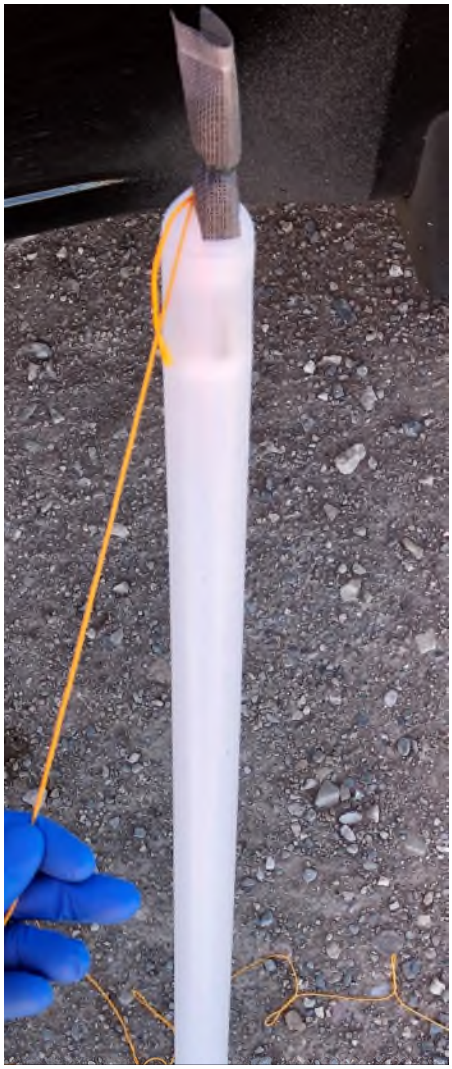


Pink hue to a sample backlit to examine and highlight color change.

Initial Findings from Dye Study During Injections

- During injections, the following data is collected on an hourly basis from the downgradient dose response monitoring wells:
  - Sample time
  - Cumulative injection volume in upgradient injection well at time of sample
  - Concentration of dye in sample from dose response monitoring well
- The results of these on-going analyses have indicated the following:
  - The alluvium has an effective porosity in the expected range that was used in initial calculations for required distribution water. Therefore, no changes were made to targeted distribution water volumes.
  - The UMCf and UMCf-cg have an effective porosity ranging from 1-2%, which is lower than the previous conservative estimate of 7%. As a result, the UMCf and UMCf-cg distribution water volumes were reduced using the new porosity estimates. Although this resulted in lower distribution water volumes, at a minimum, each of the injection wells were flushed with at least six borehole volumes (using the borehole diameter, screened interval, and filter pack porosity) (*Protocol for Enhanced In Situ Bioremediation Using Emulsified Edible Oil, ESTCP, May 2006*).





Charcoal samplers are being installed in monitoring wells during this dye study to improve the likelihood of detecting low concentrations of dye. Charcoal samplers work by adsorbing dye that may flow through the well screen, thereby allowing them to collect and concentrate dye within the sampler over a period of time. Prior to the beginning of injection activities, a charcoal sampler was installed at mid-screen depth in each monitoring well located both upgradient and downgradient of the injection well transect. To suspend the charcoal sampler at the appropriate depth, the charcoal sampler was attached to a dedicated bailer.

Dye Analysis Process in Monitoring Wells

The following describes the analysis process for the dye sampling program:

- At conclusion of injection activities, the charcoal sampler and a groundwater sample are collected via the dedicated bailer from each monitoring well.
- Both the charcoal and water samples are sent to Ozark Underground Laboratory.
- The charcoal sampler is analyzed first to determine if dye was present at some point during injections at this sampling location. This is beneficial as even if the dye is no longer present in groundwater at the time of sampling, a positive result on the charcoal will indicate that the dye made it to that area.
- If dye is present in the charcoal sampler, then the groundwater sample will be analyzed to provide quantitative results of dye concentration at the time groundwater sampling was conducted.