January 10, 2022 Project No. 2040906201

Mack Borchardt
City of Frisco
6101 Frisco Square Boulevard
Frisco, Texas 75034

RE: 2021 SECOND QUARTER FRENCH DRAIN OPERATIONAL REPORT, FRISCO COMMUNITY DEVELOPMENT CORPORATION SITE, 7471 OLD 5TH STREET, FRISCO, TEXAS, SWR 30516

Dear Mr. Borchardt,

Golder Associates USA Inc. (Golder) has prepared this quarterly operational report for the French Drain System (FDS) at the Frisco Community Development Corporation (CDC) facility located at 7471 Old 5th Street in Frisco, Texas (Site). This report has been prepared in response to the Texas Commission on Environmental Quality (TCEQ) comments to Exide Technologies, Inc. (Exide) on the 2013 Affected Property Assessment Report (APAR) dated October 8th, 2013 which requested additional information regarding the performance of the French Drain and the TCEQ comments to Exide for the 2014 APAR dated May 5, 2015 which requested quarterly reports on the operation of the FDS. This work is being continued under new ownership by the Frisco CDC.

This report includes general FDS background information and summarizes operation of the FDS system during the second quarter 2021. Specifically, the quarterly report includes a discussion of the performance of the system, gallons of water intercepted, concentrations of constituents in the water, the presence and/or absence of leakage along the flood wall into Stewart Creek, the presence or absence of white crystalline substance and sample results (if applicable), and a determination as to whether ongoing discharges to Stewart Creek are continuing to occur. As stated in previous quarterly reports, survey data for the French Drain and Stewart Creek and specific notes on which days the French Drain was pumped, as requested by the TCEQ, are included in this report.

1.0 FRENCH DRAIN SYSTEM HISTORY

According to historical information contained in the French Drain Construction Report (W&M Environmental Group, Inc. [W&M], 2013), the concrete retaining wall along the southern edge of the operating area was constructed in the late 1980s to keep Stewart Creek floodwaters from entering the operating portion of the facility and to retain storm water from the operating portion of the facility for subsequent collection and treatment at the onsite water treatment plants. After construction of the retaining wall, areas of seepage along the Stewart Creek side of the retaining wall were previously observed by Exide and its consultants; primarily between the Battery Receiving Building and the Slag Treatment Building. In response, Exide sealed numerous cracks in the retaining wall. In 2011, W&M designed the FDS and associated repairs to drain any water that collected below the pavement on the north side of the FDS and eliminate seepage through the flood wall. Water from the FDS is pumped to mobile storage tanks adjacent to the wastewater treatment area for offsite disposal. Additional FDS

information, including system specifications, is included in the June 2014 French Drain Monitoring Plan (FDMP) that was previously provided to the TCEQ.

2.0 DESCRIPTION OF MONITORING AND INSPECTION ACTIVITIES

Activities completed by the City of Frisco employees and Golder during the second quarter 2021 included the following:

- Daily (weekday) Inspections and Maintenance – Inspection of the flowmeter and recording flow rate and totalizer reading.
- Weekly Inspections and Maintenance – Inspection and maintenance of the FDS collection sump.
- Quarterly Inspections and Maintenance –
  - Inspection of the FDS for sedimentation.
  - Inspection of the Flood Wall waterstop and joint fillers.
  - Inspection of the Flood Wall for signs of seepage through the wall, cracks, or other signs of damage.

Monitoring and inspection activities completed for the FDS in accordance with the FDMP during the second quarter 2021 were completed by both City of Frisco Site personnel as well as Golder staff. City of Frisco Site personnel conducted daily and weekly activities and Golder personnel conducted the quarterly inspection.

Golder inspected the outside portion of the flood wall and identified that sealant added by the City of Frisco in first quarter 2021 was working well and did not identify additional areas needing attention. A more detailed description of the results of data collection activities and inspections is included in Section 3.0 below.

3.0 OBSERVATIONS AND RESULTS

3.1 Gallons of Water Intercepted

The flow rate and totalizer reading for the FDS were generally recorded each weekday. Table 1 summarizes the recorded flows of the FDS and the offsite daily precipitation based on data recorded at a local weather station located in Frisco, Texas (data obtained from https://www.wunderground.com/dashboard/pws/KTXDALLA25) or in Dallas, Texas (data obtained from https://www.wunderground.com/history/monthly/us/tx/dallas/KDAL) for dates not listed by the Frisco, Texas weather station.

3.2 Groundwater and Perched Water Level Observations

Water levels for MW-26, MW-29, MW-31, MW-32, MW-33, MW-34, MW-35, and MW-46 were measured and recorded during the second quarter 2021. Table 2 summarizes the groundwater depths and elevations from this sampling event as well as previous data and includes the elevations of the banks and bottom of Stewart Creek at transects located near the upstream, midpoint and downstream end of the FDS. Monitoring well locations, transect locations and Stewart Creek elevations are shown on Figure 1. Water levels were generally consistent when compared to the first quarter of 2021 (with some readings being slightly higher and some readings being slightly lower) than in the previous event.

3.3 Floodwall Seepage

There was no floodwall seepage observed during the flood wall inspections conducted on June 2, 2021.

3.4 White Crystalline Material Observations

White crystalline material was not observed on the flood wall during the Golder inspection conducted on June 2, 2021. As such, no samples of white crystalline material were collected or analyzed.

3.5 Laboratory Analytical Results

Water samples were collected by City of Frisco Site personnel from the FDS during the second quarter 2021. Sampling of the French Drain was conducted on April 8, 2021. All analytical results from these samples are included in Table 3 and Attachment A.

4.0 SUMMARY OF SYSTEM PERFORMANCE

Based on the results of the inspection and monitoring activities for the second quarter 2021 described above, the FDS appears to be operating as designed.

5.0 CLOSURE

Golder appreciates the opportunity to assist the Frisco Community Development Corporation with this project. Please contact us if you have any questions or comments concerning this quarterly operational report.

Sincerely,

Golder Associates Inc.

Emily Forthaus

Anne Faeth-Boyd

Emily P. Forthaus
Senior Consultant

Anne M. Faeth-Boyd, PG
Senior Lead Consultant

EPF/AMF

CC Jerry Wick, Texas Commission on Environmental Quality

Brad Weaver – JEM Connections LLC (City of Frisco)

Attachments: Table 1: French Drain Daily Flow Volumes

Table 2: Perched and Groundwater Monitoring Well Water Elevations

Table 3: French Drain Water Analytical Data

Figure 1: Stewart Creek Transects

Attachment A: French Drain Water Laboratory Analytical Results

Table 1
French Drain Daily Flow Volumes

Apr-21			May-21			Jun-21		
Total Flow/Water Removed (gal)		Total Precip (in)	Total Flow/Water Removed (gal)		Total Precip (in)	Total Flow/Water Removed (gal)		Total Precip (in)
6,258		3.69	10,819		11.51	12,526		4.91
Date	Daily Flow (gal)	Daily Precip (in)	Date	Daily Flow (gal)	Daily Precip (in)	Date	Daily Flow (gal)	Daily Precip (in)
Thursday, April 1, 2021	287	0.00	Saturday, May 1, 2021	421	0.00	Tuesday, June 1, 2021	1,469	0.06
Friday, April 2, 2021	175	0.00	Sunday, May 2, 2021	291	0.00	Wednesday, June 2, 2021	533	0.00
Saturday, April 3, 2021	113	0.00	Monday, May 3, 2021	308	0.05	Thursday, June 3, 2021	372	0.00
Sunday, April 4, 2021	110	0.00	Tuesday, May 4, 2021	206	0.01	Friday, June 4, 2021	319	0.00
Monday, April 5, 2021	113	0.00	Wednesday, May 5, 2021	211	0.00	Saturday, June 5, 2021	211	0.87
Tuesday, April 6, 2021	110	0.00	Thursday, May 6, 2021	220	0.00	Sunday, June 6, 2021	814	0.01
Wednesday, April 7, 2021	54	0.00	Friday, May 7, 2021	163	0.00	Monday, June 7, 2021	1,075	2.37
Thursday, April 8, 2021	111	0.00	Saturday, May 8, 2021	89	0.00	Tuesday, June 8, 2021	1,137	0.01
Friday, April 9, 2021	57	0.00	Sunday, May 9, 2021	182	0.00	Wednesday, June 9, 2021	559	0.00
Saturday, April 10, 2021	56	0.00	Monday, May 10, 2021	118	0.00	Thursday, June 10, 2021	386	0.00
Sunday, April 11, 2021	55	0.00	Tuesday, May 11, 2021	499	0.58 [1]	Friday, June 11, 2021	331	0.00
Monday, April 12, 2021	89	0.00	Wednesday, May 12, 2021	610	0.87 [1]	Saturday, June 12, 2021	389	1.27
Tuesday, April 13, 2021	58	0.05	Thursday, May 13, 2021	323	0.00 [1]	Sunday, June 13, 2021	606	0.00
Wednesday, April 14, 2021	54	0.00	Friday, May 14, 2021	212	0.00 [1]	Monday, June 14, 2021	616	0.00
Thursday, April 15, 2021	53	0.50	Saturday, May 15, 2021	211	0.00 [1]	Tuesday, June 15, 2021	386	0.00
Friday, April 16, 2021	517	0.44	Sunday, May 16, 2021	158	0.00 [1]	Wednesday, June 16, 2021	272	0.00
Saturday, April 17, 2021	588	0.01	Monday, May 17, 2021	1799	5.33 [1]	Thursday, June 17, 2021	273	0.00
Sunday, April 18, 2021	386	0.00	Tuesday, May 18, 2021	662	0.19 [1]	Friday, June 18, 2021	219	0.00
Monday, April 19, 2021	280	0.00	Wednesday, May 19, 2021	486	0.25 [1]	Saturday, June 19, 2021	218	0.00
Tuesday, April 20, 2021	199	0.00	Thursday, May 20, 2021	374	0.02	Sunday, June 20, 2021	164	0.00
Wednesday, April 21, 2021	203	0.00	Friday, May 21, 2021	540	0.00	Monday, June 21, 2021	227	0.02
Thursday, April 22, 2021	124	0.00	Saturday, May 22, 2021	314	0.11	Tuesday, June 22, 2021	112	0.00
Friday, April 23, 2021	105	0.25	Sunday, May 23, 2021	275	0.02	Wednesday, June 23, 2021	120	0.00
Saturday, April 24, 2021	281	0.27	Monday, May 24, 2021	154	0.64	Thursday, June 24, 2021	114	0.00
Sunday, April 25, 2021	217	0.00	Tuesday, May 25, 2021	460	0.34	Friday, June 25, 2021	NR	0.00
Monday, April 26, 2021	275	0.00	Wednesday, May 26, 2021	450	0.00	Saturday, June 26, 2021	252	0.00
Tuesday, April 27, 2021	157	0.00	Thursday, May 27, 2021	276	0.00	Sunday, June 27, 2021	60	0.00
Wednesday, April 28, 2021	162	0.00 [1]	Friday, May 28, 2021	269	0.34	Monday, June 28, 2021	98	0.03
Thursday, April 29, 2021	637	2.15	Saturday, May 29, 2021	212	0.00	Tuesday, June 29, 2021	695	0.27
Friday, April 30, 2021	632	0.02	Sunday, May 30, 2021	165	0.00	Wednesday, June 30, 2021	499	0.00
			Monday, May 31, 2021	161	2.76			

Notes:
1 - As denoted, precipitation data obtained from https://www.wunderground.com/history/monthly/us/tx/frisco/KDAL/ (Dallas Love field), otherwise precipitation data primarily obtained from: https://www.wunderground.com/dashboard/pws/KTXDALLA25 (Frisco).
Daily flow volumes provided by the Site.
NR - Not Recorded.

Prepared by: RSP 07/26/2021
Checked by: EPF 10/28/2021
Reviewed by: AMF 01/06/2022

GOLDER
MEMBER OF WSP

Perched and Groundwater Monitoring Well Water Elevations

Stewart Creek Elevations		
Survey Point	**Measurement Date**	**Elevation (ft msl)**
Transect 1		
Top of North Bank	3/7/2016	628.74
Toe of North Bank	3/7/2016	624.79
Creek Centerline	3/7/2016	622.79
Toe of South Bank	3/7/2016	624.27
Top of South Bank	3/7/2016	634.09
Transect 2		
Top of North Bank	3/7/2016	627.97
Toe of North Bank	3/7/2016	623.57
Toe of South Bank	3/7/2016	624.04
Top of South Bank	3/7/2016	630.52
Transect 3		
Top of North Bank	3/7/2016	628.20
Toe of North Bank	3/7/2016	622.70
Toe of South Bank	3/7/2016	622.88
Top of South Bank	3/7/2016	628.18

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-26 (Groundwater)	631.93	5-15	3/11/2013	9.98	621.95
			4/5/2013	9.52	622.41
			4/29/2013	9.21	622.72
			1/21/2014	5.80	626.13
			7/29/2014	5.79	626.14
			9/23/2014	8.9	623.03
			6/12/2015	5.32	626.61
			9/8/2015	5.72	626.21
			12/17/2015	5.32	626.61
			2/29/2016	5.41	626.52
			6/1/2016	5.47	626.46
			9/8/2016	5.51	626.42
			12/2/2016	5.65	626.28
			3/2/2017	5.81	626.12
			5/4/2017	6.21	625.72
			8/28/2017	5.56	626.37
			11/27/2017	5.71	626.22
			2/15/2018	5.75	626.18
			5/9/2018	5.65	626.28
			9/24/2018	NA	NA
			12/4/2018	5.60	626.33
			3/7/2019	5.64	626.29
			6/3/2019	5.92	626.01
			9/9/2019	5.87	626.06
			12/2/2019	5.63	626.30
			2/26/2020	5.71	626.22
			5/27/2020	4.67	627.26
			8/27/2020	6.12	625.81
			12/8/2020	5.41	626.52
			3/4/2021	5.62	626.31
			6/2/2021	5.56	626.37

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-29 (Groundwater)	633.51	4.5-14.5	3/11/2013	13.08	620.43
			4/5/2013	6.96	626.55
			4/29/2013	6.56	626.95
			1/21/2014	6.62	626.89
			7/29/2014	6.57	626.94
			9/23/2014	6.04	627.47
			6/12/2015	5.21	628.30
			9/8/2015	6.35	627.16
			12/17/2015	5.67	627.84
			2/29/2016	5.79	627.72
			6/1/2016	5.69	627.82
			9/8/2016	5.67	627.84
			12/2/2016	6.25	627.26
			3/2/2017	6.51	627.00
			5/4/2017	5.80	627.71
			8/28/2017	5.90	627.61
			11/27/2017	6.77	626.74
			2/15/2018	6.77	626.74
			5/9/2018	5.95	627.56
			9/24/2018	NA	NA
			12/4/2018	6.12	627.39
			3/7/2019	6.07	627.44
			6/3/2019	6.27	627.24
			9/9/2019	6.25	627.26
			12/2/2019	6.27	627.24
			2/26/2020	5.18	628.33
			5/27/2020	5.09	628.42
			8/27/2020	6.96	626.55
			12/8/2020	6.06	627.45
			3/4/2021	6.12	627.39
			6/2/2021	6.09	627.42
MW-31 (Groundwater)	636.71	8-23	5/13/2013	10.58	626.13
			1/21/2014	10.87	625.84
			7/29/2014	10.81	625.90
			9/23/2014	11.32	625.39
			6/12/2015	9.61	627.10
			9/8/2015	10.53	626.18
			12/17/2015	9.42	627.29
			2/29/2016	9.78	626.93
			6/1/2016	9.82	626.89
			9/8/2016	9.90	626.81
			12/2/2016	10.21	626.50
			3/2/2017	12.23	624.48
			5/4/2017	10.58	626.13
			8/28/2017	9.99	626.72
			11/27/2017	10.82	625.89
			2/15/2018	10.90	625.81
			5/9/2018	10.19	626.52
			9/24/2018	NA	NA
			12/4/2018	10.42	626.29
			3/7/2019	10.13	626.58
			6/3/2019	10.31	626.40
			9/9/2019	10.51	626.20
			12/2/2019	9.85	626.86
			2/26/2020	8.96	627.75
			5/27/2020	8.54	628.17
			8/27/2020	10.56	626.15
			12/8/2020	9.71	627.00
			3/4/2021	9.79	626.92
			6/2/2021	9.86	626.85

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-32 (Perched)	630.96	2.5-5	1/21/2014	4.16	626.80
			7/29/2014	4.59	626.37
			9/23/2014	4.59	626.37
			6/12/2015	3.79	627.17
			9/8/2015	R	R
			2/29/2016	3.57	627.39
			6/1/2016	3.62	627.34
			9/8/2016	3.83	627.13
			12/2/2016	3.40	627.56
			3/2/2017	3.26	627.70
			5/4/2017	3.49	627.47
			8/28/2017	3.55	627.41
			11/27/2017	3.54	627.42
			2/15/2018	3.21	627.75
			5/9/2018	3.30	627.66
			9/24/2018	NA	NA
			12/4/2018	2.70	628.26
			3/7/2019	3.88	627.08
			6/3/2019	3.67	627.29
			9/9/2019	3.92	627.04
			12/2/2019	3.32	627.64
			2/26/2020	2.92	628.04
			5/27/2020	2.39	628.57
			8/27/2020	3.86	627.10
			12/8/2020	3.16	627.80
			3/4/2021	3.29	627.67
			6/2/2021	3.19	627.77
MW-33 (Perched)	632.59	2.5-5	1/21/2014	1.09	631.50
			7/29/2014	2.14	630.45
			9/23/2014	1.55	631.04
			12/17/2015	1.21	631.38
			2/29/2016	1.07	631.52
			6/1/2016	1.09	631.50
			9/8/2016	1.07	631.52
			12/2/2016	0.95	631.64
			3/2/2017	0.88	631.71
			5/4/2017	0.91	631.68
			8/28/2017	0.86	631.73
			11/27/2017	0.85	631.74
			2/15/2018	0.81	631.78
			5/9/2018	0.80	631.79
			9/24/2018	NA	NA
			12/4/2018	0.95	631.64
			3/7/2019	0.64	631.95
			6/3/2019	0.92	631.67
			9/9/2019	1.13	631.46
			12/2/2019	0.33	632.26
			2/26/2020	0.39	632.20
			5/27/2020	0.16	632.43
			8/27/2020	0.99	631.60
			12/8/2020	0.46	632.13
			3/4/2021	0.72	631.87
			6/2/2021	0.61	631.98
MW-34 (Perched)	632.83	2.5-5	1/21/2014	4.31	628.52
			7/29/2014	4.45	628.38
			9/23/2014	4.45	628.38
			6/12/2015	3.42	629.41
			12/17/2015	3.03	629.80
			2/29/2016	1.95	630.88
			6/1/2016	2.04	630.79
			9/8/2016	2.59	630.24
			12/2/2016	2.50	630.33
			3/2/2017	2.75	630.08
			5/4/2017	3.93	628.90
			8/28/2017	2.95	629.88
			11/27/2017	3.62	629.21
			2/15/2018	3.71	629.12
			5/9/2018	3.57	629.26
			9/24/2018	NA	NA
			12/4/2018	3.08	629.75
			3/7/2019	3.41	629.42
			6/3/2019	3.17	629.66
			9/9/2019	3.31	629.52
			12/2/2019	2.89	629.94
			2/26/2020	1.37	631.46
			5/27/2020	1.86	630.97
			8/27/2020	3.49	629.34
			12/8/2020	2.58	630.25
			3/4/2021	2.76	630.07
			6/2/2021	2.67	630.16

Table 2
Perched and Groundwater Monitoring Well Water Elevations

Well ID	TOC Elevation (ft msl)	Screen Interval (ft bgs)	Measurement Date	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft msl)
MW-35 (Perched)	632.55	2.5-5	1/21/2014	DRY	DRY
			7/29/2014	DRY	DRY
			9/23/2014	DRY	DRY
			6/12/2015	4.97	627.58
			9/8/2015	DRY	DRY
			12/17/2015	4.10	628.45
			2/29/2016	3.86	628.69
			6/1/2016	3.99	628.56
			9/8/2016	4.13	628.42
			12/2/2016	3.85	628.70
			3/2/2017	3.94	628.61
			5/4/2017	4.58	627.97
			8/28/2017	4.16	628.39
			11/27/2017	3.98	628.57
			2/15/2018	3.81	628.74
			5/9/2018	3.92	628.63
			9/24/2018	NA	NA
			12/4/2018	3.74	628.81
			3/7/2019	3.65	628.90
			6/3/2019	3.91	628.64
			9/9/2019	4.05	628.50
			12/2/2019	4.06	628.49
			2/26/2020	3.89	628.66
			5/27/2020	2.95	629.60
			8/27/2020	4.52	628.03
			12/8/2020	4.06	628.49
			3/4/2021	4.22	628.33
			6/2/2021	4.19	628.36
MW-46 (Groundwater)	630.98	10-20	1/21/2014	5.21	625.77
			7/29/2014	5.47	625.51
			9/23/2014	5.08	625.90
			6/12/2015	5.50	625.48
			9/8/2015	4.17	626.81
			2/29/2016	5.23	625.75
			6/1/2016	5.30	625.68
			9/8/2016	5.41	625.57
			12/2/2016	4.96	626.02
			3/2/2017	5.00	625.98
			5/4/2017	5.50	625.48
			8/28/2017	4.44	626.54
			11/27/2017	5.41	625.57
			2/15/2018	5.81	625.17
			5/9/2018	4.24	626.74
			9/24/2018	NA	NA
			12/4/2018	4.61	626.37
			3/7/2019	4.29	626.69
			6/3/2019	4.61	626.37
			9/9/2019	4.41	626.57
			12/2/2019	4.32	626.66
			2/26/2020	3.29	627.69
			5/27/2020	3.26	627.72
			8/27/2020	4.89	626.09
			12/8/2020	4.21	626.77
			3/4/2021	4.42	626.56
			6/2/2021	4.39	626.59

Notes:
1. bgs - below ground surface.
2. msl - above mean sea level.
3. btoc - below top of casing.
4. R - depth to groundwater was disqualified as a field error because depth was greater than total depth of the well.
5. NA - not accessible due to Site conditions.

Prepared by: RSP 07/26/2021
Checked by: EPF 10/28/2021
Reviewed by: AMF 01/06/2022

Table 3
French Drain Water
Analytical Data

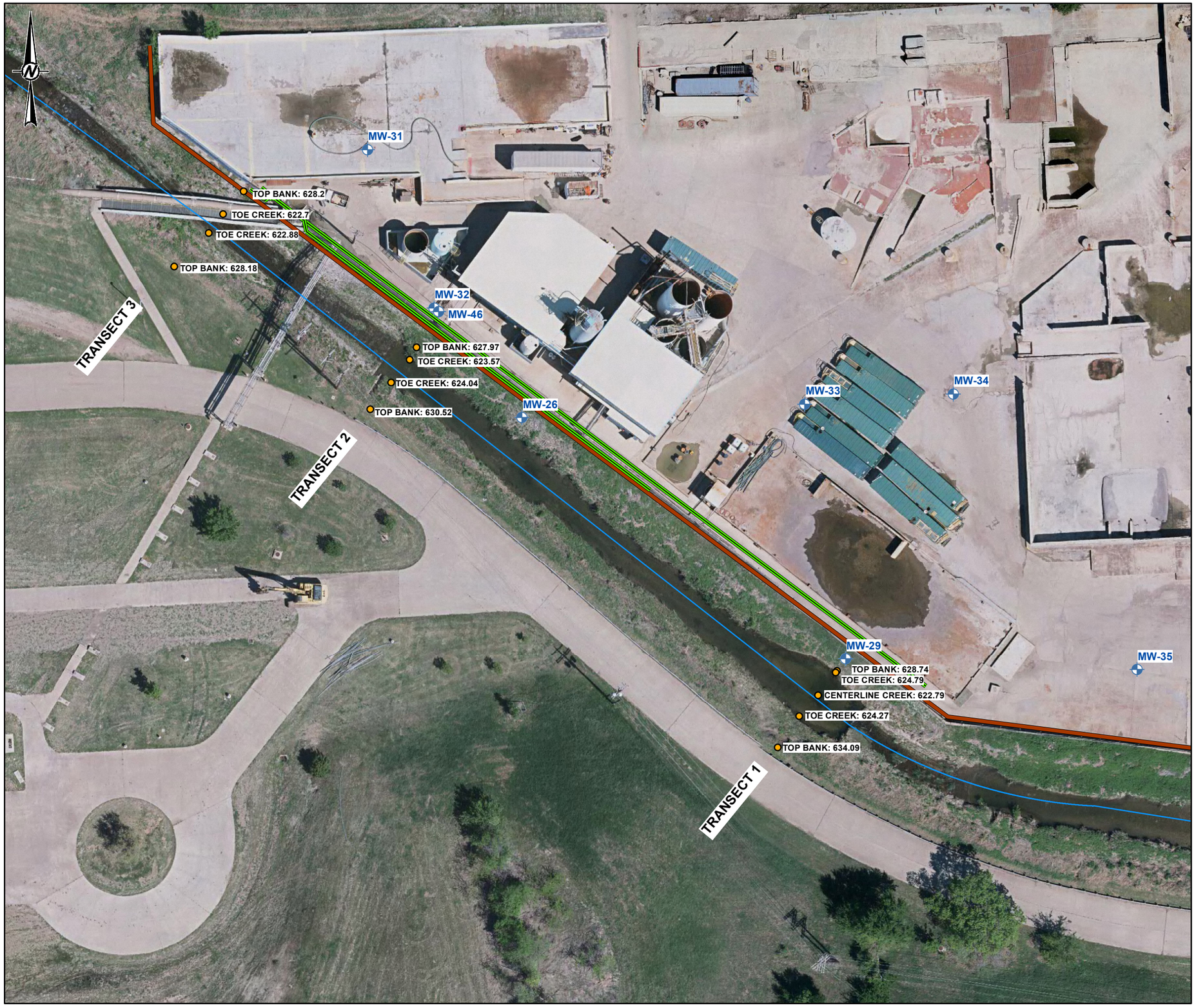
	Sample ID	Sample ID
	FD070821-001	FD070821-002
	Laboratory ID	**Laboratory ID**
	21040133-001	21040133-002
	Date Collected	**Date Collected**
	4/8/2021 13:30	4/8/2021 13:30
Metals				
Parameter:	**Result**	**Units**	**Result**	**Units**
Arsenic	NA	mg/L	<0.003	mg/L
Barium	NA	mg/L	**0.023**	mg/L
Cadmium	NA	mg/L	**0.0257**	mg/L
Chromium	NA	mg/L	**0.006**	mg/L
Copper	NA	mg/L	**0.0116**	mg/L
Iron	NA	mg/L	<0.25	mg/L
Lead	NA	mg/L	<0.003	mg/L
Manganese	NA	mg/L	**0.003**	mg/L
Nickel	NA	mg/L	<0.003	mg/L
Selenium	NA	mg/L	<0.0025	mg/L
Silver	NA	mg/L	<0.001	mg/L
Zinc	NA	mg/L	**0.016**	mg/L
Mercury	NA	mg/L	<0.0001	mg/L
General Chemistry				
Parameter:	**Result**	**Units**	**Result**	**Units**
Total Suspended Solids	<1.0	mg/L	NA	mg/L
Total Dissolved Solids	**1,120**	mg/L	NA	mg/L

Notes:

1) NA - Not Analyzed
2) mg/L - milligrams per liter
3) **Bold** values indicate a detection.
4) < - denotes analyte not detected, value shown is the sample detection limit (SDL)
5) J-5 - the associated concentration is an estimated value between the SDL and the adjusted method quantitation limit (MQL).

Prepared by: RSP 01/07/2022
Checked by: EPF 01/07/2022
Reviewed by: AMF 01/10/2022

GOLDER
MEMBER OF WSP



LEGEND

- Monitoring Well Location
- Transect Location
- French Drain
- Flood Wall
- Approximate Creek Centerline

0 50 100

Feet

NOTE(S)

1. ELEVATIONS SHOWN ARE MEASURED IN FEET ABOVE MEAN SEA LEVEL.

REFERENCE(S)

1. ELEVATIONS COLLECTED BY BRITTAIN & CRAWFORD, LLC ON MARCH 7, 2016
2. AERIAL IMAGERY - APRIL, 2017

CLIENT
FRISCO COMMUNITY DEVELOPMENT CORPORATION

PROJECT
FRENCH DRAIN QUARTERLY REPORT
FRISCO, TEXAS

TITLE
STEWART CREEK TRANSECTS

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2020-12-02
DESIGNED	JWT
PREPARED	JWT
REVIEWED	EPF
APPROVED	AMF

PROJECT NO.	CONTROL	REV.	FIGURE
130208605	1302086Y003	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1 in

PATH: C:\Users\ewhite\Documents\ArcGISPackages\1392086Y003_63081A6B-E617-4618-95AA-9219BC461498\v10\1302086Y003.mxd LAST SAVED ON: 2020-12-02 AT: 12:05:54 PM

Friday, April 16, 2021

Frisco Community Development Corp/City of Fri
Eduardo Salazar
6101 Frisco Square Blvd
Frisco, Texas 75034
Tel: (972) 335-2121 Fax:
esalazar@friscotexas.gov

Re: Project Name: F.C.D.C / Former Exide Technologies
Project Number: Influent water flows
Project Location: 7471 Fifth Street Frisco, Texas 75034

Oxidor received 6 liquid sample(s). The analysis performed were as follows:

Sample	Sample ID	Matrix	Collected	Analysis
21040133-001	FD040821-01	Liquid	4/8/2021 13:30	Total Dissolved Solids, Total Suspended Solids
21040133-002	FD040821-02	Liquid	4/8/2021 13:30	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc
21040133-003	SO040821-01	Liquid	4/8/2021 13:00	Total Dissolved Solids, Total Suspended Solids
21040133-004	SO040821-02	Liquid	4/8/2021 13:00	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc
21040133-005	L040821-01	Liquid	4/8/2021 13:20	Total Dissolved Solids, Total Suspended Solids
21040133-006	L040821-02	Liquid	4/8/2021 13:20	Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Selenium, Silver, Zinc

To the best of my knowledge, all problems/ anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified via associated flags and/ or in the case narrative. The analyses and data met requirements of NELAP except where noted. All non-NELAP methods are identified accordingly and all estimated uncertainties of test results are within method or EPA specifications.

Respectfully submitted,

Charles Brungardt
President

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Analytical Report

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **FD040821-01**
Oxidor Sample ID: 21040133-001 Matrix: **Liquid**
Sample Received: 4/9/2021 Sample Collected: **4/8/2021 13:30**

Parameter	SDL	MQL	Result	Units	Date Analyzed	Method	Analyst	Flags
General Chemistry								
Total Dissolved Solids	50.0	25	**1120**	mg/L	04/12/21 16:05	SM-2540-C	K.V.	
Total Suspended Solids	1.0	5	ND	mg/L	04/12/21 14:25	SM-2540-D	K.V.	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Analytical Report

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **FD040821-02**
Oxidor Sample ID: 21040133-002 Matrix: **Liquid**
Sample Received: 4/9/2021 Sample Collected: **4/8/2021 13:30**

Parameter	SDL	MQL	Result	Units	Date Analyzed	Method	Analyst	Flags
Metals								
Digested by method 200.8 on 04/12/21 at 10:59								
Arsenic	0.003	0.005	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Barium	0.003	0.005	**0.023**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Cadmium	0.0005	0.001	**0.0257**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Chromium	0.003	0.005	**0.006**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Copper	0.0025	0.005	**0.0116**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Iron	0.25	0.5	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Lead	0.003	0.005	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Manganese	0.001	0.002	**0.003**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Nickel	0.003	0.005	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Selenium	0.0025	0.005	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Silver	0.001	0.001	ND	mg/L	04/12/21 17:20	200.8	K.E.L.	
Zinc	0.003	0.005	**0.016**	mg/L	04/12/21 17:20	200.8	K.E.L.	
Digested by method 245.1 on 04/13/21 at 10:55								
Mercury	0.0001	0.0002	ND	mg/L	04/13/21 15:20	245.1	C.L.B.	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Cross Reference

Project Name: **F.C.D.C / Former Exide Technologies**

Customer ID:	Lab ID:	Test	Method	QCBatchID:
FD040821-01	21040133-001	Total Dissolved Solids	SM-2540-C	TDS__14227_L
		Total Suspended Solids	SM-2540-D	TSS__00446_L
FD040821-02	21040133-002	Mercury	245.1	MERC_09347_L
		Arsenic	200.8	META_10480_L
		Selenium	200.8	META_10480_L
		Silver	200.8	META_10480_L
		Zinc	200.8	META_10480_L
		Manganese	200.8	META_10480_L
		Lead	200.8	META_10480_L
		Iron	200.8	META_10480_L
		Copper	200.8	META_10480_L
		Chromium	200.8	META_10480_L
		Nickel	200.8	META_10480_L
		Barium	200.8	META_10480_L
		Cadmium	200.8	META_10480_L
SO040821-01	21040133-003	Total Dissolved Solids	SM-2540-C	TDS__14327_L
		Total Suspended Solids	SM-2540-D	TSS__00446_L
SO040821-02	21040133-004	Mercury	245.1	MERC_09347_L
		Copper	200.8	META_10480_L
		Silver	200.8	META_10480_L
		Selenium	200.8	META_10480_L
		Nickel	200.8	META_10480_L
		Manganese	200.8	META_10480_L
		Iron	200.8	META_10480_L
		Chromium	200.8	META_10480_L
		Zinc	200.8	META_10480_L
		Cadmium	200.8	META_10480_L
		Barium	200.8	META_10480_L
		Arsenic	200.8	META_10480_L
		Lead	200.8	META_10480_L
L040821-01	21040133-005	Total Dissolved Solids	SM-2540-C	TDS__14327_L
		Total Suspended Solids	SM-2540-D	TSS__00446_L
L040821-02	21040133-006	Mercury	245.1	MERC_09347_L
		Lead	200.8	META_10480_L
		Arsenic	200.8	META_10480_L
		Barium	200.8	META_10480_L
		Cadmium	200.8	META_10480_L
		Chromium	200.8	META_10480_L
		Iron	200.8	META_10480_L
		Manganese	200.8	META_10480_L
		Nickel	200.8	META_10480_L
		Selenium	200.8	META_10480_L
		Silver	200.8	META_10480_L
		Zinc	200.8	META_10480_L
		Copper	200.8	META_10480_L

Frisco Community Development Corp/City of Fri
Eduardo Salazar

QC Summary

Project Name: **F.C.D.C / Former Exide Technologies**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID TDS__14227_L									
Blank	Total Dissolved Solids	ND mg/L							
LCS	Total Dissolved Solids	1000 mg/L		1000 mg/L	100%	90-110%			
LCSD	Total Dissolved Solids	990 mg/L		1000 mg/L	99%	90-110%	1.0%	0-5%	
Replicate	Total Dissolved Solids	2410 mg/L	2420 mg/L				0.4%	0-5%	
QCBatchID TDS__14327_L									
Blank	Total Dissolved Solids	ND mg/L							
LCS	Total Dissolved Solids	1000 mg/L		1000 mg/L	100%	90-110%			
LCSD	Total Dissolved Solids	975 mg/L		1000 mg/L	98%	90-110%	2.5%	0-5%	
Replicate	Total Dissolved Solids	12700 mg/L	12740 mg/L				0.5%	0-5%	
QCBatchID TSS__00446_L									
Blank	Total Suspended Solids	ND mg/L							
LCS	Total Suspended Solids	499 mg/L		500 mg/L	100%	85-115%			
LCSD	Total Suspended Solids	506 mg/L		500 mg/L	101%	85-115%	1.4%	0-15%	
Replicate	Total Suspended Solids	4730 mg/L	4966.7 mg/L				4.8%	0-15%	
QCBatchID MERC_09347_L									
Blank	Mercury	ND mg/L							
LCS	Mercury	0.0094 mg/L		0.01 mg/L	94%	85-115%			
LCSD	Mercury	0.0087 mg/L		0.01 mg/L	87%	85-115%	7.7%	0-25%	
MS	Mercury	0.0088 mg/L	ND	0.01 mg/L	88%	80-120%			
MSD	Mercury	0.0093 mg/L	ND	0.01 mg/L	93%	80-120%	5.3%	0-25%	
QCBatchID META_10480_L									
Blank	Arsenic	ND mg/L							
	Barium	ND mg/L							
	Cadmium	ND mg/L							
	Chromium	ND mg/L							
	Copper	ND mg/L							
	Iron	ND mg/L							
	Lead	ND mg/L							
	Manganese	ND mg/L							
	Nickel	ND mg/L							
	Selenium	ND mg/L							
	Silver	ND mg/L							
	Zinc	ND mg/L							
LCS	Arsenic	0.532 mg/L		0.5 mg/L	106%	85-115%			
	Barium	0.539 mg/L		0.5 mg/L	108%	85-115%			
	Cadmium	0.5307 mg/L		0.5 mg/L	106%	85-115%			
	Chromium	0.536 mg/L		0.5 mg/L	107%	85-115%			
	Copper	0.4972 mg/L		0.5 mg/L	99%	85-115%			
	Iron	51.2 mg/L		50.5 mg/L	101%	85-115%			
	Lead	0.529 mg/L		0.5 mg/L	106%	85-115%			

Frisco Community Development Corp/City of Fri
Eduardo Salazar

QC Summary

Project Name: **F.C.D.C / Former Exide Technologies**

QC Type	Parameter	Result	Reference Value	Spike Conc	Rec	Rec Limits	RPD	RPD Limits	Flags
QCBatchID	**META_10480_L**								
	Manganese	0.539 mg/L		0.5 mg/L	108%	85-115%			
	Nickel	0.539 mg/L		0.5 mg/L	108%	85-115%			
	Selenium	0.5130 mg/L		0.5 mg/L	103%	85-115%			
	Silver	0.493 mg/L		0.5 mg/L	99%	85-115%			
	Zinc	0.494 mg/L		0.5 mg/L	99%	85-115%			
LCSD	Arsenic	0.527 mg/L		0.5 mg/L	105%	85-115%	0.9%	0-20%	
	Barium	0.536 mg/L		0.5 mg/L	107%	85-115%	0.6%	0-20%	
	Cadmium	0.5415 mg/L		0.5 mg/L	108%	85-115%	2.0%	0-20%	
	Chromium	0.529 mg/L		0.5 mg/L	106%	85-115%	1.3%	0-20%	
	Copper	0.4965 mg/L		0.5 mg/L	99%	85-115%	0.1%	0-20%	
	Iron	49.8 mg/L		50.5 mg/L	99%	85-115%	2.7%	0-20%	
	Lead	0.538 mg/L		0.5 mg/L	108%	85-115%	1.7%	0-20%	
	Manganese	0.540 mg/L		0.5 mg/L	108%	85-115%	0.2%	0-20%	
	Nickel	0.525 mg/L		0.5 mg/L	105%	85-115%	2.6%	0-20%	
	Selenium	0.5328 mg/L		0.5 mg/L	107%	85-115%	3.8%	0-20%	
	Silver	0.497 mg/L		0.5 mg/L	99%	85-115%	0.8%	0-20%	
	Zinc	0.493 mg/L		0.5 mg/L	99%	85-115%	0.2%	0-20%	
MS	Arsenic	0.524 mg/L	ND	0.5 mg/L	105%	80-120%			
	Barium	0.563 mg/L	0.023 mg/L	0.5 mg/L	108%	80-120%			
	Cadmium	0.5465 mg/L	0.0257 mg/L	0.5 mg/L	104%	80-120%			
	Chromium	0.529 mg/L	0.006 mg/L	0.5 mg/L	105%	80-120%			
	Copper	0.5069 mg/L	0.0116 mg/L	0.5 mg/L	99%	80-120%			
	Iron	50.8 mg/L	ND	50.5 mg/L	101%	80-120%			
	Lead	0.533 mg/L	ND	0.5 mg/L	107%	80-120%			
	Manganese	0.546 mg/L	0.003 mg/L	0.5 mg/L	109%	80-120%			
	Nickel	0.525 mg/L	ND	0.5 mg/L	105%	80-120%			
	Selenium	0.5240 mg/L	ND	0.5 mg/L	105%	80-120%			
	Silver	0.491 mg/L	ND	0.5 mg/L	98%	80-120%			
	Zinc	0.501 mg/L	0.016 mg/L	0.5 mg/L	97%	80-120%			
MSD	Arsenic	0.556 mg/L	ND	0.5 mg/L	111%	80-120%	5.9%	0-20%	
	Barium	0.572 mg/L	0.023 mg/L	0.5 mg/L	110%	80-120%	1.5%	0-20%	
	Cadmium	0.5570 mg/L	0.0257 mg/L	0.5 mg/L	106%	80-120%	1.9%	0-20%	
	Chromium	0.559 mg/L	0.006 mg/L	0.5 mg/L	111%	80-120%	5.5%	0-20%	
	Copper	0.5296 mg/L	0.0116 mg/L	0.5 mg/L	104%	80-120%	4.4%	0-20%	
	Iron	52.6 mg/L	ND	50.5 mg/L	104%	80-120%	3.5%	0-20%	
	Lead	0.537 mg/L	ND	0.5 mg/L	107%	80-120%	0.7%	0-20%	
	Manganese	0.575 mg/L	0.003 mg/L	0.5 mg/L	115%	80-120%	5.2%	0-20%	
	Nickel	0.546 mg/L	ND	0.5 mg/L	109%	80-120%	3.9%	0-20%	
	Selenium	0.5512 mg/L	ND	0.5 mg/L	110%	80-120%	5.1%	0-20%	
	Silver	0.490 mg/L	ND	0.5 mg/L	98%	80-120%	0.2%	0-20%	
	Zinc	0.522 mg/L	0.016 mg/L	0.5 mg/L	101%	80-120%	4.1%	0-20%	

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Case Narrative

Project Name: **F.C.D.C / Former Exide Technologies**

J-5	The associated concentration is an estimated value detected between the SDL and the Adjusted MQL
Dx [Value]	Sample diluted by [Value] amount
ppm	Parts per million = mg/Kg or mg/L
ppb	Parts per billion = ug/Kg or ug/L
MQL	Method quantitation limit
SDL	Sample detection limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilutions)
SQL	Sample quantitation limit (reflects any laboratory adjustments made to the sample during analysis such as dry weight or dilution
ND	Analyte not detected at or above SDL
LCS/LCSD	Laboratory control spike / Laboratory control spike duplicate
MS/MSD	Matrix spike / Matrix spike duplicate
RPD	Relative percent difference
Sub	Analysis performed by subcontract laboratory

Solid samples submitted to the laboratory for analysis by SW-846 Method 8260 should be collected by SW-846 Method 5035. Those samples in which concentrations are less than or equal to 200 ug/kg should be collected in accordance with SW-846 Method 5035, Section 6.2.1. For samples with higher concentrations (> 200 ug/kg), collect samples by SW-846 Method 5035, Section 6.2.2 or 6.2.3. Sample results may not accurately reflect volatile concentrations if collection is not performed according to the referenced methodologies.

Solid samples submitted to the laboratory for analysis by TNRCC Method 1005 should be collected in accordance to the methodology. Those samples in which concentrations of C6 to C12 are known to be absent, or fall under the Petroleum Storage Tank (PST) rule, may be collected in bulk sample jars in accordance with TNRCC Method 1005, Revision 3 clarifications. For samples with concentrations of C6 to C12, or where knowledge of the site does not exist, collect samples by TNRCC Method 1005, Section 6.1. Sample results may not accurately reflect TPH concentrations if collection is not performed according to the referenced methodologies.

Solid sample results reported on a dry weight basis for all applicable analysis, unless otherwise noted. Dry weight calculations based upon % solids obtained as outlined in EPA method 5035 section 7.5.

Oxidor Laboratories, LLC certifies to the best of its knowledge that all results contained in this report are consistent with the National Environmental Laboratory Accreditation Program, except where otherwise noted.

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Preservation Verification

Project Name: **F.C.D.C / Former Exide Technologies**

Receipt temp: **1.2 °C on Ice**
Receipt method: **Customer Courier**
Custody seal intact: **Yes**
All samples / labels received intact: **Yes**

Customer Sample ID: **FD040821-01**
Oxidor Sample ID: **21040133-001**
Collected: **04/08/21 13:30**
Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
1000 mL Plastic	1	Grab		Temp	-

Customer Sample ID: **FD040821-02**
Oxidor Sample ID: **21040133-002**
Collected: **04/08/21 13:30**
Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
250 mL Plastic	1	Grab		HNO3	<2

Customer Sample ID: **SO040821-01**
Oxidor Sample ID: **21040133-003**
Collected: **04/08/21 13:00**
Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
1000 mL Plastic	1	Grab		Temp	-

Customer Sample ID: **SO040821-02**
Oxidor Sample ID: **21040133-004**
Collected: **04/08/21 13:00**
Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
250 mL Plastic	1	Grab		HNO3	<2

Customer Sample ID: **L040821-01**
Oxidor Sample ID: **21040133-005**
Collected: **04/08/21 13:20**
Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
1000 mL Plastic	1	Grab		Temp	-

Frisco Community Development Corp/City of Fri
Eduardo Salazar

Sample Preservation Verification

Project Name: **F.C.D.C / Former Exide Technologies**

Customer Sample ID: **L040821-02**
Oxidor Sample ID: **21040133-006**
Collected: **04/08/21 13:20**

Collected By: **Eduardo Salazar**
Collector Affiliation: **City of Frisco**
Matrix: **Liquid**

Bottle Type	Count	Collection Method	Parts / Interval	Indicated / Observed Preservation	pH
250 mL Plastic	1	Grab		HNO3	<2

Sample conditions at time of receipt at laboratory verified in part or in whole by:

A.J.

Frisco Community Development Corporation

6101 Frisco Square Blvd
Frisco, TX 75034
Telephone 972-335-2121
Facsimile 972-377-2707

CHAIN OF CUSTODY RECORD

INDUSTRY: F.C.D.C / Former Exide Technologies	**OUTFALL:** Influent water flows	**SAMPLER:** Eduardo Salazar
ADDRESS: 7471 Fifth Street Frisco, Texas 75034	**NATURE OF INDUSTRY:** Former Secondary Smelting	**REPRESENTING:** City of Frisco
INDUSTRY REPRESENTATIVE (S): , Eduardo Salazar ,		**SIGNATURE:**

	SAMPLE No. / IDENTIFICATION 21040133	DATE (S)	TIME (S)	SAMPLE TYPE **	ANALYSES REQUESTED	pH	DATE TIME	INIT IALS	PRESERVATION/ REMARKS/CONTAINERS / ALL SAMPLES COOL ≤ 6° C	INITIALS
001	FD040821-01	04/08/21	1:30 PM	Grab	TDS-TSS	10.3	04/09/21 9:45 AM	ES	None/1 liter	ES
002	FD040821-02	04/08/21	1:30 PM	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	10.3	04/09/21 9:45 AM	ES	HNo3//250ml/plastic	ES
003	SO040821-01	04/08/21	1:00 PM	Grab	TDS-TSS	9.5	04/09/21 9:45 AM	ES	None/1 liter	ES
004	SO040821-02	04/08/21	1:00 PM	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	9.5	04/09/21 9:45 AM	ES	HNo3//250ml/plastic	ES
005	L040821-01	04/08/21	1:20 PM	Grab	TDS-TSS	12.9	04/09/21 9:45 AM	ES	None/1 liter	ES
006	L040821-02	04/08/21	1:20 PM	Grab	As,Cd,Cu,Mn, Ni,Ag,Fe,Ba,C r,Pb,Hg,Se,Zn	12.9	04/09/21 9:45 AM	ES	HNo3//250ml/plastic	ES

FIELD INFORMATION: Raw Grab Samples Quarterly

E-MAIL RESULTS TO

USE WASTE WATER REPORT FORMAT

RELINQUISHED BY: (Signature)	REPRESENTING	DATE	TIME	RECEIVED BY: (Signature)	REPRESENTING	DATE	TIME
	EXIDE	04-09-21	9:20		JCS6	04-09-21	9:20AM
RELINQUISHED BY: (Signature)	REPRESENTING	DATE	TIME	RECEIVED BY: (Signature)	REPRESENTING	DATE	TIME
	JCS6	4/9/21	11:45AM		OXIDOR	4-9-21	1145

** TC = TIME COMPOSITE (96 PARTS) FC = FLOW WEIGHTED COMPOSITE (96 PARTS) G = GRAB

1.2°C OX104

Documentation

PROJECT DESCRIPTION: F.C.D.C / Former Exide Technologies

OXIDOR Laboratories

NELAP ACCREDITED LABORATORY TNI

Order ID: 21040133
Date: 4/16/2021
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