

GW – 028

**Background
Groundwater
Investigation Report**

PART 4 OF 9

September 2015



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-01

Sample ID : MW-55-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/19/14 16:50

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	260000	2200	20000	ug/l		6020	08/27/14	20
Sodium, Dissolved	250000	1100	10000	ug/l		6020	08/25/14	10
Uranium	51.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	48.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	18.	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	17.	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	U	2.6	10.	ug/l		6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.4			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.9			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	94.4			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	97.3			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	190	22.	100	ug/l		8015	08/22/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

Note:

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-55-0814-BG
Collected By : Ron Wood
Collection Date : 08/19/14 16:50

ESC Sample # : L717200-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	130	12.	100	ug/l		8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	106.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	16.8			% Rec.		8270C	08/23/14	1
Phenol-d5	16.0			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	74.9			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	64.1			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	25.2			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	59.0			% Rec.		8270C	08/23/14	1

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Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-02

Sample ID : MW-136-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/19/14 18:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	290000	2600	50000	ug/l		9056MOD	08/21/14	50
Fluoride	1800	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	680	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	2300000	3900	250000	ug/l		9056MOD	08/21/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	4700000	2800	10000	ug/l		2540 C-	08/25/14	1
Aluminum	760	2.0	50.	ug/l		6020	08/25/14	1
Aluminum, Dissolved	44.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	2.2	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	2.0	0.25	1.0	ug/l		6020	08/22/14	1
Barium	26.	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	12.	0.36	2.0	ug/l		6020	08/22/14	1
Boron	500	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	570	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	710000	920	20000	ug/l		6020	08/27/14	20
Calcium, Dissolved	760000	460	10000	ug/l		6020	08/25/14	10
Chromium	2.2	0.54	1.0	ug/l		6020	08/25/14	1
Chromium, Dissolved	1.3	0.54	1.0	ug/l		6020	08/22/14	1
Copper	1.1	0.52	1.0	ug/l		6020	08/25/14	1
Copper, Dissolved	1.4	0.52	1.0	ug/l		6020	08/26/14	1
Cobalt	1.3	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	0.81	0.26	1.0	ug/l	J	6020	08/22/14	1
Iron	380	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	0.72	0.24	1.0	ug/l	J	6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	93.	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	71.	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	6.0	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	6.0	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	2.0	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	1.6	0.35	1.0	ug/l		6020	08/22/14	1
Potassium	3000	37.	1000	ug/l		6020	08/25/14	1
Potassium, Dissolved	2800	37.	1000	ug/l		6020	08/22/14	1
Selenium	4.4	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	3.8	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

U = ND (Not Detected)

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2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-02

Sample ID : MW-136-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/19/14 18:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	89000	110	1000	ug/l		6020	08/27/14	1
Sodium, Dissolved	93000	110	1000	ug/l		6020	08/22/14	1
Uranium	69.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	64.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	18.	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	16.	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	7.8	2.6	10.	ug/l	J	6020	08/25/14	1
Zinc, Dissolved	3.4	2.6	10.	ug/l	J	6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.3			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	94.8			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	99.0			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	77.	22.	100	ug/l	J	8015	08/22/14	1

U = ND (Not Detected)

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August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-136-0814-BG
Collected By : Ron Wood
Collection Date : 08/19/14 18:30

ESC Sample # : L717200-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	74.	12.	100	ug/l	J	8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	107.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	23.8			% Rec.		8270C	08/23/14	1
Phenol-d5	22.1			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	76.7			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	67.0			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	49.9			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	62.1			% Rec.		8270C	08/23/14	1

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August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-03

Sample ID : EB-05-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/19/14 18:45

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	330	52.	1000	ug/l	JP1	9056MOD	08/21/14	1
Fluoride	U	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	U	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	340	77.	5000	ug/l	JP1	9056MOD	08/21/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	4000	2800	10000	ug/l	J	2540 C-	08/25/14	1
Aluminum	15.	2.0	50.	ug/l	J	6020	08/25/14	1
Aluminum, Dissolved	13.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	U	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	U	0.25	1.0	ug/l		6020	08/22/14	1
Barium	U	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	U	0.36	2.0	ug/l		6020	08/22/14	1
Boron	57.	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	39.	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	130	46.	1000	ug/l	J	6020	08/25/14	1
Calcium, Dissolved	77.	46.	1000	ug/l	J	6020	08/25/14	1
Chromium	0.91	0.54	1.0	ug/l	J	6020	08/25/14	1
Chromium, Dissolved	U	0.54	1.0	ug/l		6020	08/22/14	1
Copper	U	0.52	1.0	ug/l		6020	08/25/14	1
Copper, Dissolved	U	0.52	1.0	ug/l		6020	08/22/14	1
Cobalt	U	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	08/22/14	1
Iron	U	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	U	0.24	1.0	ug/l		6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	U	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	U	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	U	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	U	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	U	0.35	1.0	ug/l		6020	08/22/14	1
Potassium	54.	37.	1000	ug/l	J	6020	08/25/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	08/22/14	1
Selenium	U	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

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August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-03

Sample ID : EB-05-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/19/14 18:45

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	800	110	1000	ug/l	J	6020	08/27/14	1
Sodium, Dissolved	780	110	1000	ug/l	J	6020	08/22/14	1
Uranium	U	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	U	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	U	2.6	10.	ug/l		6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.7			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.0			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	93.0			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	97.0			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	08/22/14	1

U = ND (Not Detected)

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB-05-0814-BG
Collected By : Ron Wood
Collection Date : 08/19/14 18:45

ESC Sample # : L717200-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	U	12.	100	ug/l		8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	109.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	45.1			% Rec.		8270C	08/23/14	1
Phenol-d5	30.4			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	84.7			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	71.3			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	76.1			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	62.3			% Rec.		8270C	08/23/14	1

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-04

Sample ID : UG-3R-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 09:55

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	36000	52.	1000	ug/l		9056MOD	08/21/14	1
Fluoride	660	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	960	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	1200000	3900	250000	ug/l		9056MOD	08/21/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	2100000	2800	10000	ug/l		2540 C-	08/23/14	1
Aluminum	330	2.0	50.	ug/l		6020	08/25/14	1
Aluminum, Dissolved	21.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	1.4	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	1.2	0.25	1.0	ug/l		6020	08/22/14	1
Barium	18.	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	17.	0.36	2.0	ug/l		6020	08/22/14	1
Boron	250	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	270	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	420000	460	10000	ug/l		6020	08/27/14	10
Calcium, Dissolved	430000	230	5000	ug/l		6020	08/25/14	5
Chromium	2.0	0.54	1.0	ug/l		6020	08/25/14	1
Chromium, Dissolved	0.76	0.54	1.0	ug/l	J	6020	08/22/14	1
Copper	0.76	0.52	1.0	ug/l	J	6020	08/25/14	1
Copper, Dissolved	0.84	0.52	1.0	ug/l	J	6020	08/26/14	1
Cobalt	U	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	08/22/14	1
Iron	150	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	U	0.24	1.0	ug/l		6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	5.2	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	0.55	0.25	2.0	ug/l	J	6020	08/22/14	1
Molybdenum	2.4	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	2.5	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	1.0	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	0.62	0.35	1.0	ug/l	J	6020	08/22/14	1
Potassium	1900	37.	1000	ug/l		6020	08/25/14	1
Potassium, Dissolved	1900	37.	1000	ug/l		6020	08/22/14	1
Selenium	3.6	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	3.6	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-04

Sample ID : UG-3R-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 09:55

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	40000	110	1000	ug/l		6020	08/27/14	1
Sodium, Dissolved	41000	110	1000	ug/l		6020	08/22/14	1
Uranium	14.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	14.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	9.0	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	8.8	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	3.9	2.6	10.	ug/l	J	6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.9			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.9			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	95.9			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	98.4			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	55.	22.	100	ug/l	J	8015	08/26/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-3R-0814-BG
Collected By : Ron Wood
Collection Date : 08/20/14 09:55

ESC Sample # : L717200-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	U	12.	100	ug/l		8015	08/26/14	1
Surrogate Recovery								
o-Terphenyl	105.			% Rec.		8015	08/26/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	41.0			% Rec.		8270C	08/23/14	1
Phenol-d5	29.9			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	77.9			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	61.7			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	76.4			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	57.9			% Rec.		8270C	08/23/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-05

Sample ID : UG-2-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 11:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	61000	52.	1000	ug/l		9056MOD	08/21/14	1
Fluoride	1600	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	4700	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	1000000	3900	250000	ug/l		9056MOD	08/21/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	2100000	2800	10000	ug/l		2540 C-	08/23/14	1
Aluminum	160	2.0	50.	ug/l		6020	08/25/14	1
Aluminum, Dissolved	20.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	2.1	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	1.5	0.25	1.0	ug/l		6020	08/22/14	1
Barium	21.	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	15.	0.36	2.0	ug/l		6020	08/22/14	1
Boron	320	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	300	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	340000	460	10000	ug/l		6020	08/27/14	10
Calcium, Dissolved	460000	230	5000	ug/l		6020	08/25/14	5
Chromium	3.4	0.54	1.0	ug/l		6020	08/25/14	1
Chromium, Dissolved	U	0.54	1.0	ug/l		6020	08/22/14	1
Copper	1.8	0.52	1.0	ug/l		6020	08/25/14	1
Copper, Dissolved	0.79	0.52	1.0	ug/l	J	6020	08/26/14	1
Cobalt	3.1	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	1.2	0.26	1.0	ug/l		6020	08/22/14	1
Iron	310	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	82.	50.	50.	ug/l		6020	08/22/14	1
Lead	0.57	0.24	1.0	ug/l	J	6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	170	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	160	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	14.	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	14.	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	19.	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	16.	0.35	1.0	ug/l		6020	08/22/14	1
Potassium	1700	37.	1000	ug/l		6020	08/25/14	1
Potassium, Dissolved	1600	37.	1000	ug/l		6020	08/22/14	1
Selenium	3.2	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	3.2	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-05

Sample ID : UG-2-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 11:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	81000	110	1000	ug/l		6020	08/27/14	1
Sodium, Dissolved	76000	110	1000	ug/l		6020	08/22/14	1
Uranium	16.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	14.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	12.	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	8.8	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	9.6	2.6	10.	ug/l	J	6020	08/25/14	1
Zinc, Dissolved	7.3	2.6	10.	ug/l	J	6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.7			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	94.5			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	94.6			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	54.	22.	100	ug/l	J	8015	08/22/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-2-0814-BG
Collected By : Ron Wood
Collection Date : 08/20/14 11:10

ESC Sample # : L717200-05

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	13.	12.	100	ug/l	J	8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	108.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	28.6			% Rec.		8270C	08/23/14	1
Phenol-d5	21.3			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	73.3			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	62.0			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	70.4			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	55.5			% Rec.		8270C	08/23/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-06

Sample ID : UG-1-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 12:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	100000	2600	50000	ug/l		9056MOD	08/21/14	50
Fluoride	810	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	8300	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	1600000	3900	250000	ug/l		9056MOD	08/21/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	2500000	2800	10000	ug/l		2540 C-	08/23/14	1
Aluminum	220	2.0	50.	ug/l		6020	08/25/14	1
Aluminum, Dissolved	35.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	1.3	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	1.2	0.25	1.0	ug/l		6020	08/22/14	1
Barium	20.	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	13.	0.36	2.0	ug/l		6020	08/22/14	1
Boron	440	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	420	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	480000	920	20000	ug/l		6020	08/27/14	20
Calcium, Dissolved	480000	460	10000	ug/l		6020	08/25/14	10
Chromium	1.8	0.54	1.0	ug/l		6020	08/25/14	1
Chromium, Dissolved	0.69	0.54	1.0	ug/l	J	6020	08/22/14	1
Copper	1.5	0.52	1.0	ug/l		6020	08/25/14	1
Copper, Dissolved	1.1	0.52	1.0	ug/l		6020	08/26/14	1
Cobalt	U	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	08/22/14	1
Iron	74.	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	0.48	0.24	1.0	ug/l	J	6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	6.6	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	3.2	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	4.8	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	4.8	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	1.3	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	0.85	0.35	1.0	ug/l	J	6020	08/22/14	1
Potassium	1600	37.	1000	ug/l		6020	08/25/14	1
Potassium, Dissolved	1500	37.	1000	ug/l		6020	08/22/14	1
Selenium	6.4	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	5.6	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-06

Sample ID : UG-1-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 12:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	86000	110	1000	ug/l		6020	08/27/14	1
Sodium, Dissolved	86000	110	1000	ug/l		6020	08/22/14	1
Uranium	18.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	18.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	11.	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	11.	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	4.7	2.6	10.	ug/l	J	6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.4			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.9			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	95.3			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	99.4			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	52.	22.	100	ug/l	J	8015	08/22/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-1-0814-BG
Collected By : Ron Wood
Collection Date : 08/20/14 12:30

ESC Sample # : L717200-06

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	U	12.	100	ug/l		8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	110.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	35.0			% Rec.		8270C	08/23/14	1
Phenol-d5	26.1			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	75.6			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	64.8			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	67.4			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	62.6			% Rec.		8270C	08/23/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-07

Sample ID : EB-06-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 13:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	110	52.	1000	ug/l	J	9056MOD	08/21/14	1
Fluoride	U	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	45.	23.	100	ug/l	J	9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	1200	77.	5000	ug/l	J	9056MOD	08/21/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	U	2800	10000	ug/l	T4	2540 C-	08/23/14	1
Aluminum	11.	2.0	50.	ug/l	J	6020	08/25/14	1
Aluminum, Dissolved	20.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	U	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	U	0.25	1.0	ug/l		6020	08/22/14	1
Barium	U	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	U	0.36	2.0	ug/l		6020	08/22/14	1
Boron	45.	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	35.	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	150	46.	1000	ug/l	J	6020	08/25/14	1
Calcium, Dissolved	480	46.	1000	ug/l	J	6020	08/25/14	1
Chromium	0.61	0.54	1.0	ug/l	J	6020	08/25/14	1
Chromium, Dissolved	U	0.54	1.0	ug/l		6020	08/22/14	1
Copper	U	0.52	1.0	ug/l		6020	08/25/14	1
Copper, Dissolved	U	0.52	1.0	ug/l		6020	08/22/14	1
Cobalt	U	0.26	1.0	ug/l		6020	08/25/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	08/22/14	1
Iron	U	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	U	0.24	1.0	ug/l		6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	U	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	U	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	U	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	U	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	U	0.35	1.0	ug/l		6020	08/22/14	1
Potassium	45.	37.	1000	ug/l	J	6020	08/25/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	08/22/14	1
Selenium	0.50	0.38	2.0	ug/l	J	6020	08/25/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-07

Sample ID : EB-06-0814-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 13:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	430	110	1000	ug/l	J	6020	08/27/14	1
Sodium, Dissolved	550	110	1000	ug/l	J	6020	08/22/14	1
Uranium	U	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	U	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	U	2.6	10.	ug/l		6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/25/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.8			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	98.0			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	93.1			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	98.5			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	46.	22.	100	ug/l	J	8015	08/22/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB-06-0814-BG
Collected By : Ron Wood
Collection Date : 08/20/14 13:15

ESC Sample # : L717200-07

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	U	12.	100	ug/l		8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	106.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	33.6			% Rec.		8270C	08/23/14	1
Phenol-d5	23.6			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	70.8			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	59.8			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	65.7			% Rec.		8270C	08/23/14	1
p-Terphenyl-d14	56.4			% Rec.		8270C	08/23/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-08

Sample ID : DUP-2-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	380000	2600	50000	ug/l		9056MOD	08/21/14	50
Fluoride	1700	9.9	100	ug/l		9056MOD	08/21/14	1
Nitrate	7500	23.	100	ug/l		9056MOD	08/21/14	1
Nitrite	U	28.	100	ug/l		9056MOD	08/21/14	1
Sulfate	2700000	3900	250000	ug/l		9056MOD	08/21/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	08/27/14	1
Dissolved Solids	4700000	2800	10000	ug/l		2540 C-	08/23/14	1
Aluminum	50.	2.0	50.	ug/l		6020	08/25/14	1
Aluminum, Dissolved	15.	2.0	50.	ug/l	J	6020	08/22/14	1
Arsenic	5.0	0.25	1.0	ug/l		6020	08/25/14	1
Arsenic, Dissolved	4.9	0.25	1.0	ug/l		6020	08/22/14	1
Barium	11.	0.36	2.0	ug/l		6020	08/25/14	1
Barium, Dissolved	10.	0.36	2.0	ug/l		6020	08/22/14	1
Boron	1000	1.5	20.	ug/l		6020	08/27/14	1
Boron, Dissolved	1100	1.5	20.	ug/l		6020	08/22/14	1
Cadmium	U	0.16	0.50	ug/l		6020	08/25/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	08/22/14	1
Calcium	600000	920	20000	ug/l		6020	08/27/14	20
Calcium, Dissolved	660000	460	10000	ug/l		6020	08/25/14	10
Chromium	1.2	0.54	1.0	ug/l		6020	08/25/14	1
Chromium, Dissolved	0.60	0.54	1.0	ug/l	J	6020	08/22/14	1
Copper	0.87	0.52	1.0	ug/l	J	6020	08/25/14	1
Copper, Dissolved	1.6	0.52	1.0	ug/l		6020	08/26/14	1
Cobalt	0.70	0.26	1.0	ug/l	J	6020	08/25/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	08/22/14	1
Iron	U	50.	50.	ug/l		6020	08/25/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	08/22/14	1
Lead	U	0.24	1.0	ug/l		6020	08/25/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	08/22/14	1
Manganese	130	0.25	2.0	ug/l		6020	08/25/14	1
Manganese, Dissolved	88.	0.25	2.0	ug/l		6020	08/22/14	1
Molybdenum	25.	0.14	2.0	ug/l		6020	08/25/14	1
Molybdenum, Dissolved	27.	0.14	2.0	ug/l		6020	08/22/14	1
Nickel	4.8	0.35	1.0	ug/l		6020	08/25/14	1
Nickel, Dissolved	4.3	0.35	1.0	ug/l		6020	08/22/14	1
Potassium	940	37.	1000	ug/l	J	6020	08/25/14	1
Potassium, Dissolved	890	37.	1000	ug/l	J	6020	08/22/14	1
Selenium	23.	0.38	2.0	ug/l		6020	08/25/14	1
Selenium, Dissolved	22.	0.38	2.0	ug/l		6020	08/22/14	1
Silver	U	0.31	0.50	ug/l		6020	08/25/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-08

Sample ID : DUP-2-BG

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	0.50	ug/l		6020	08/22/14	1
Sodium	250000	2200	20000	ug/l		6020	08/27/14	20
Sodium, Dissolved	260000	1100	10000	ug/l		6020	08/25/14	10
Uranium	50.	0.33	10.	ug/l		6020	08/25/14	1
Uranium, Dissolved	48.	0.33	10.	ug/l		6020	08/22/14	1
Vanadium	17.	0.18	1.0	ug/l		6020	08/25/14	1
Vanadium, Dissolved	16.	0.18	1.0	ug/l		6020	08/22/14	1
Zinc	U	2.6	10.	ug/l		6020	08/25/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	08/22/14	1
Mercury	U	0.049	0.20	ug/l		7470A	08/26/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	08/23/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	100.			% Rec.		8015D/G	08/23/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	08/22/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	08/22/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	08/22/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	08/22/14	1
Toluene	U	0.78	5.0	ug/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	08/22/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	08/22/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	08/22/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	08/22/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	08/22/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	98.3			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	92.7			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	100.			% Rec.		8260B	08/22/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	180	22.	100	ug/l		8015	08/22/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : DUP-2-BG
Collected By : Ron Wood
Collection Date : 08/20/14 00:00

ESC Sample # : L717200-08

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
C28-C40 Oil Range	120	12.	100	ug/l		8015	08/22/14	1
Surrogate Recovery								
o-Terphenyl	105.			% Rec.		8015	08/22/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	08/23/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	08/23/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	08/23/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	08/23/14	1
Surrogate Recovery								
2-Fluorophenol	17.6			% Rec.		8270C	08/23/14	1
Phenol-d5	15.6			% Rec.		8270C	08/23/14	1
Nitrobenzene-d5	67.9			% Rec.		8270C	08/23/14	1
2-Fluorobiphenyl	59.8			% Rec.		8270C	08/23/14	1
2,4,6-Tribromophenol	7.60			% Rec.	J2	8270C	08/23/14	1
p-Terphenyl-d14	60.3			% Rec.		8270C	08/23/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-09

Sample ID : TRIPBLANK 08

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	08/22/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	08/22/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	08/22/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	08/22/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	08/22/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	99.5			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	94.4			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	100.			% Rec.		8260B	08/22/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-10

Sample ID : TRIPBLANK 09

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	08/22/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	08/22/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	08/22/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	08/22/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	08/22/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.4			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	95.0			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	98.1			% Rec.		8260B	08/22/14	1

U = ND (Not Detected)

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L717200-11

Sample ID : TRIPBLANK 10

Site ID :

Collected By : Ron Wood
Collection Date : 08/20/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	08/22/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	08/22/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	08/22/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	08/22/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	08/22/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	93.6			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	96.3			% Rec.		8260B	08/22/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : August 21, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : TRIPBLANK 11
Collected By : Ron Wood
Collection Date : 08/20/14 00:00

ESC Sample # : L717200-12

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	08/22/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	08/22/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	08/22/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	08/22/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	08/22/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	08/22/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	08/22/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	08/22/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	08/22/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	08/22/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	08/22/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	08/22/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	08/22/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	08/22/14	1
Surrogate Recovery								
Toluene-d8	97.3			% Rec.		8260B	08/22/14	1
Dibromofluoromethane	94.3			% Rec.		8260B	08/22/14	1
4-Bromofluorobenzene	97.1			% Rec.		8260B	08/22/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L717200-01	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738880	SAMP	Chromium,Dissolved	R2980422	J
	WG738881	SAMP	Copper	R2980986	J
	WG738881	SAMP	Lead	R2980986	J
	WG738881	SAMP	Potassium	R2980986	J
L717200-02	WG738880	SAMP	Potassium,Dissolved	R2980422	J
	WG738790	SAMP	C10-C28 Diesel Range	R2979506	J
	WG738790	SAMP	C28-C40 Oil Range	R2979506	J
	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738880	SAMP	Cobalt,Dissolved	R2980422	J
L717200-03	WG738881	SAMP	Lead	R2980986	J
	WG738881	SAMP	Zinc	R2980986	J
	WG738880	SAMP	Zinc,Dissolved	R2980422	J
	WG738638	SAMP	Chloride	R2979508	JP1
	WG738638	SAMP	Sulfate	R2979508	JP1
L717200-04	WG738744	SAMP	Dissolved Solids	R2980666	J
	WG738881	SAMP	Aluminum	R2980986	J
	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738881	SAMP	Calcium	R2980986	J
	WG738880	SAMP	Calcium,Dissolved	R2980985	J
L717200-05	WG738881	SAMP	Chromium	R2980986	J
	WG738881	SAMP	Potassium	R2980986	J
	WG738881	SAMP	Sodium	R2981803	J
	WG738880	SAMP	Sodium,Dissolved	R2980422	J
	WG738815	SAMP	C10-C28 Diesel Range	R2981605	J
L717200-06	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738880	SAMP	Chromium,Dissolved	R2980422	J
	WG738881	SAMP	Copper	R2980986	J
	WG739363	SAMP	Copper,Dissolved	R2981311	J
	WG738880	SAMP	Manganese,Dissolved	R2980422	J
L717200-07	WG738880	SAMP	Nickel,Dissolved	R2980422	J
	WG738881	SAMP	Zinc	R2980986	J
	WG738790	SAMP	C10-C28 Diesel Range	R2979506	J
	WG738638	SAMP	Chloride	R2979508	J
	WG738638	SAMP	Nitrate	R2979508	J
L717200-08	WG738638	SAMP	Sulfate	R2979508	J
	WG738745	SAMP	Dissolved Solids	R2980045	T4
	WG738881	SAMP	Aluminum	R2980986	J
	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738881	SAMP	Calcium	R2980986	J
L717200-09	WG738880	SAMP	Calcium,Dissolved	R2980985	J
	WG738881	SAMP	Chromium	R2980986	J
	WG738881	SAMP	Potassium	R2980986	J
	WG738881	SAMP	Selenium	R2980986	J
	WG738881	SAMP	Sodium	R2981803	J
L717200-10	WG738880	SAMP	Sodium,Dissolved	R2980422	J
	WG738716	SAMP	2,4,6-Tribromophenol	R2981189	J2
	WG738880	SAMP	Aluminum,Dissolved	R2980422	J
	WG738880	SAMP	Chromium,Dissolved	R2980422	J
	WG738881	SAMP	Copper	R2980986	J
L717200-11	WG738881	SAMP	Cobalt	R2980986	J
	WG738881	SAMP	Potassium	R2980986	J
	WG738880	SAMP	Potassium,Dissolved	R2980422	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T4	(ESC) - Additional method/sample information: QNS - Quantity Not Sufficient

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738638
Analysis Date:	8/21/2014 12:10:00 PM	Analyst:	236
Instrument ID:	IC-10		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chloride	16887-00-6	< 1.00	< 0.0519	
Fluoride	16984-48-8	< 0.100	< 0.00990	
Nitrate	14797-55-8	< 0.100	< 0.0227	
Nitrite	14797-65-0	< 0.100	< 0.0277	
Sulfate	14808-79-8	< 5.00	< 0.0774	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG738638
Collection Date:	8/19/2014			Analyst:	236
Analysis Date:	8/21/2014 12:10:00 PM				
Instrument ID:	IC-10				
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08				

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	40.177	100	90 - 110	
Fluoride	1	8	8.0819	101	90 - 110	
Nitrate	1	8	8.1589	102	90 - 110	
Nitrite	1	8	7.9122	99	90 - 110	
Sulfate	1	40	40.185	100	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	40.006	100	90 - 110	
Fluoride	1	8	8.0615	101	90 - 110	
Nitrate	1	8	8.1265	102	90 - 110	
Nitrite	1	8	7.9409	99	90 - 110	
Sulfate	1	40	40.007	100	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Chloride	1	40	40.177	100	40.006	100	90 - 110	0	20	
Fluoride	1	8	8.0819	101	8.0615	101	90 - 110	0	20	
Nitrate	1	8	8.1589	102	8.1265	102	90 - 110	0	20	
Nitrite	1	8	7.9122	99	7.9409	99	90 - 110	0	20	
Sulfate	1	40	40.185	100	40.007	100	90 - 110	0	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG738638
Collection Date:	8/19/2014			Analyst:	236
Analysis Date:	8/21/2014 12:10:00 PM				
Instrument ID:	IC-10				
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08				

Sample Duplicate

L717210-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	74.404	74.532	0	20	
Fluoride	1	0.6039	0.594	2	20	
Nitrate	1	1.4494	1.5158	4	20	
Nitrite	1	<0.0277	<0.0277		20	

Sample Duplicate

L717200-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	0.3319	0.1323	86	20	P1
Fluoride	1	<0.0099	<0.0099		20	
Nitrate	1	<0.0227	<0.0227		20	
Nitrite	1	<0.0277	<0.0277		20	
Sulfate	1	0.3417	0.4689	31	20	P1

Matrix Spike / Matrix Spike Duplicate

L717210-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Chloride	1	50	66.881	114.46	95	114.46	95	80 - 120		0	20	
Fluoride	1	5	0.5549	5.5933	101	5.5843	101	80 - 120		0	20	
Nitrate	1	5	1.6717	6.6329	99	6.6037	99	80 - 120		0	20	
Nitrite	1	5	<0.0277	5.1262	103	5.1374	103	80 - 120		0	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG739278
Analysis Date:	8/27/2014 7:46:00 PM	Analyst:	578
Instrument ID:	LACHAT4		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cyanide	57-12-5	< 0.00500	< 0.00180	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.105	105	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.1	100	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Cyanide	1	0.1	0.105	105	0.1	100	90 - 110	4.88	20		

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Cyanide by Method 9012B			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG739278
Collection Date:	8/19/2014			Analyst:	578
Analysis Date:	8/27/2014 7:46:00 PM				
Instrument ID:	LACHAT4				
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08				

Sample Duplicate

L717200-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Sample Duplicate

L717200-07

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Matrix Spike / Matrix Spike Duplicate

L717162-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cyanide	1	0.2	<0.0018	0.188	94	0.188	94	90 - 110		0	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738744
Analysis Date:	8/25/2014 2:23:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L717200-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8910	101	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8870	101	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Dissolved Solids	1	8800	8910	101	8870	101	85 - 115	0.45	5		

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738745
Analysis Date:	8/23/2014 3:42:00 PM	Analyst:	519
Instrument ID:	WETBAL2		
Sample Numbers:	L717200-04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8660	98.4	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8800	100	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Dissolved Solids	1	8800	8660	98.4	8800	100	85 - 115	1.6	5	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738744
Analysis Date:	8/25/2014 2:23:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L717200-01, -02, -03		

Sample Duplicate

L716986-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	228	229.33	0.58	5	



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Est. 1970

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738745
Analysis Date:	8/23/2014 3:42:00 PM	Analyst:	519
Instrument ID:	WETBAL2		
Sample Numbers:	L717200-04, -05, -06, -07, -08		

Sample Duplicate

L716988-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	32	33	3.08	5	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738777
Analysis Date:	8/25/2014 10:21:00 AM	Analyst:	628
Instrument ID:	CVAA3	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	2.9511	98	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG739225
Analysis Date:	8/26/2014 8:44:00 AM	Analyst:	628
Instrument ID:	CVAA3	Prep Date:	8/25/2014
Sample Numbers:	L717200-08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	2.7952	93	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738777
Analysis Date:	8/25/2014 10:21:00 AM	Analyst:	628
Instrument ID:	CVAA3	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07		

Sample Duplicate

L717200-07

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	<0.049	<0.049		20	

Serial Dilution

L717200-07

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L717200-07

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	<0.049	3.1513	105	3.0122	100	80 - 120		5	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG739225
Analysis Date:	8/26/2014 8:44:00 AM	Analyst:	628
Instrument ID:	CVAA3	Prep Date:	8/25/2014
Sample Numbers:	L717200-08		

Sample Duplicate

L717298-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	<0.049	<0.049		20	

Serial Dilution

L717298-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L717298-01

Analyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	<0.049	2.8285	94	2.9566	99	80 - 120	4	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738880
Analysis Date:	8/22/2014 5:11:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum,Dissolved	7429-90-5	< 50.0	2.67	
Arsenic,Dissolved	7440-38-2	< 1.00	< 0.250	
Barium,Dissolved	7440-39-3	< 2.00	< 0.360	
Boron,Dissolved	7440-42-8	< 20.0	2.02	
Cadmium,Dissolved	7440-43-9	< 0.500	< 0.160	
Calcium,Dissolved	7440-70-2	< 1000	< 46.0	
Chromium,Dissolved	7440-47-3	< 1.00	< 0.540	
Cobalt,Dissolved	7440-48-4	< 1.00	< 0.260	
Copper,Dissolved	7440-50-8	3.09	3.09	B
Iron,Dissolved	7439-89-6	< 50.0	< 50.0	
Lead,Dissolved	7439-92-1	< 1.00	< 0.240	
Manganese,Dissolved	7439-96-5	< 2.00	< 0.250	
Molybdenum,Dissolved	7439-98-7	< 2.00	< 0.140	
Nickel,Dissolved	7440-02-0	< 1.00	< 0.350	
Potassium,Dissolved	7440-09-7	< 1000	< 37.0	
Selenium,Dissolved	7782-49-2	< 2.00	< 0.380	
Silver,Dissolved	7440-22-4	< 0.500	< 0.310	
Sodium,Dissolved	7440-23-5	< 1000	251	
Uranium,Dissolved	7440-61-1	< 10.0	< 0.330	
Vanadium,Dissolved	7440-62-2	< 1.00	< 0.180	
Zinc,Dissolved	7440-66-6	< 10.0	< 2.56	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738881
Analysis Date:	8/25/2014 3:24:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum	7429-90-5	< 100	4.14	
Arsenic	7440-38-2	< 2.00	< 0.250	
Barium	7440-39-3	< 5.00	< 0.360	
Boron	7440-42-8	< 20.0	5.38	
Cadmium	7440-43-9	< 1.00	< 0.160	
Calcium	7440-70-2	< 1000	< 46.0	
Chromium	7440-47-3	< 1.00	0.669	
Cobalt	7440-48-4	< 2.00	< 0.260	
Copper	7440-50-8	< 5.00	< 0.520	
Iron	7439-89-6	< 100	< 15.0	
Lead	7439-92-1	< 2.00	< 0.240	
Manganese	7439-96-5	< 5.00	< 0.250	
Molybdenum	7439-98-7	< 5.00	< 0.140	
Nickel	7440-02-0	< 2.00	< 0.350	
Potassium	7440-09-7	< 1000	< 37.0	
Selenium	7782-49-2	< 2.00	< 0.380	
Silver	7440-22-4	< 2.00	< 0.310	
Sodium	7440-23-5	< 1000	< 110	
Uranium	7440-61-1	< 10.0	< 0.330	
Vanadium	7440-62-2	< 5.00	< 0.180	
Zinc	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG739363
Analysis Date:	8/26/2014 2:01:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/25/2014
Sample Numbers:	L717200-01, -02, -04, -05, -06, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Copper,Dissolved	7440-50-8	< 5.00	< 0.520	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Copper,Dissolved	1	111	115.11	104	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Copper,Dissolved	1	111	114.08	103	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Copper,Dissolved	1	111	115.11	104	114.08	103	85 - 115	1	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738880
Analysis Date:	8/22/2014 5:11:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1174.6	106	70 - 130	
Arsenic,Dissolved	1	111	114.37	103	85 - 115	
Barium,Dissolved	1	111	115.45	104	85 - 115	
Boron,Dissolved	1	111	118.43	107	70 - 130	
Cadmium,Dissolved	1	111	113.35	102	85 - 115	
Calcium,Dissolved	1	11100	12354	111	70 - 130	
Chromium,Dissolved	1	111	110.69	100	85 - 115	
Cobalt,Dissolved	1	111	116.26	105	85 - 115	
Copper,Dissolved	1	111	114.64	103	85 - 115	
Iron,Dissolved	1	1110	1178.9	106	85 - 115	
Lead,Dissolved	1	111	111.19	100	85 - 115	
Manganese,Dissolved	1	111	120.35	108	85 - 115	
Molybdenum,Dissolved	1	111	115.39	104	85 - 115	
Nickel,Dissolved	1	111	116.06	105	85 - 115	
Potassium,Dissolved	1	11100	11661	105	70 - 130	
Selenium,Dissolved	1	111	114.09	103	85 - 115	
Silver,Dissolved	1	111	112.20	101	85 - 115	
Sodium,Dissolved	1	11100	12023	108	70 - 130	
Uranium,Dissolved	1	111	110.32	99	70 - 130	
Vanadium,Dissolved	1	111	112.74	102	85 - 115	
Zinc,Dissolved	1	111	113.39	102	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738880
Analysis Date:	8/22/2014 5:11:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1156.8	104	70 - 130	
Arsenic,Dissolved	1	111	110.82	100	85 - 115	
Barium,Dissolved	1	111	113.81	103	85 - 115	
Boron,Dissolved	1	111	127.75	115	70 - 130	
Cadmium,Dissolved	1	111	110.38	99	85 - 115	
Calcium,Dissolved	1	11100	12377	112	70 - 130	
Chromium,Dissolved	1	111	109.37	99	85 - 115	
Cobalt,Dissolved	1	111	113.48	102	85 - 115	
Copper,Dissolved	1	111	110.71	100	85 - 115	
Iron,Dissolved	1	1110	1146.1	103	85 - 115	
Lead,Dissolved	1	111	109.52	99	85 - 115	
Manganese,Dissolved	1	111	118.54	107	85 - 115	
Molybdenum,Dissolved	1	111	113.67	102	85 - 115	
Nickel,Dissolved	1	111	113.70	102	85 - 115	
Potassium,Dissolved	1	11100	11577	104	70 - 130	
Selenium,Dissolved	1	111	109.94	99	85 - 115	
Silver,Dissolved	1	111	110.73	100	85 - 115	
Sodium,Dissolved	1	11100	11759	106	70 - 130	
Uranium,Dissolved	1	111	108.65	98	70 - 130	
Vanadium,Dissolved	1	111	111.48	100	85 - 115	
Zinc,Dissolved	1	111	109.78	99	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Trace Metals by Method 6020
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 8/19/2014
Analysis Date: 8/22/2014 5:11:00 PM
Instrument ID: ICPMS8
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Matrix: Water - ug/L
EPA ID: TN00003
Analytic Batch: WG738880
Analyst: 664
Prep Date: 8/22/2014

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Aluminum,Dissolved	1	1110	1174.6	106	1156.8	104	70 - 130	2	20	
Arsenic,Dissolved	1	111	114.37	103	110.82	100	85 - 115	3	20	
Barium,Dissolved	1	111	115.45	104	113.81	103	85 - 115	1	20	
Boron,Dissolved	1	111	118.43	107	127.75	115	70 - 130	8	20	
Cadmium,Dissolved	1	111	113.35	102	110.38	99	85 - 115	3	20	
Calcium,Dissolved	1	11100	12354	111	12377	112	70 - 130	0	20	
Chromium,Dissolved	1	111	110.69	100	109.37	99	85 - 115	1	20	
Cobalt,Dissolved	1	111	116.26	105	113.48	102	85 - 115	2	20	
Copper,Dissolved	1	111	114.64	103	110.71	100	85 - 115	3	20	
Iron,Dissolved	1	1110	1178.9	106	1146.1	103	85 - 115	3	20	
Lead,Dissolved	1	111	111.19	100	109.52	99	85 - 115	2	20	
Manganese,Dissolved	1	111	120.35	108	118.54	107	85 - 115	2	20	
Molybdenum,Dissolved	1	111	115.39	104	113.67	102	85 - 115	1	20	
Nickel,Dissolved	1	111	116.06	105	113.70	102	85 - 115	2	20	
Potassium,Dissolved	1	11100	11661	105	11577	104	70 - 130	1	20	
Selenium,Dissolved	1	111	114.09	103	109.94	99	85 - 115	4	20	
Silver,Dissolved	1	111	112.20	101	110.73	100	85 - 115	1	20	
Sodium,Dissolved	1	11100	12023	108	11759	106	70 - 130	2	20	
Uranium,Dissolved	1	111	110.32	99	108.65	98	70 - 130	2	20	
Vanadium,Dissolved	1	111	112.74	102	111.48	100	85 - 115	1	20	
Zinc,Dissolved	1	111	113.39	102	109.78	99	85 - 115	3	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738881
Analysis Date:	8/25/2014 3:24:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum	1	1110	1141.0	103	70 - 130	
Arsenic	1	111	111.46	100	85 - 115	
Barium	1	111	113.69	102	85 - 115	
Boron	1	111	112.58	101	70 - 130	
Cadmium	1	111	112.64	101	85 - 115	
Calcium	1	11100	12934	117	70 - 130	
Chromium	1	111	112.51	101	85 - 115	
Cobalt	1	111	112.99	102	85 - 115	
Copper	1	111	110.82	100	85 - 115	
Iron	1	1110	1095.8	99	85 - 115	
Lead	1	111	115.27	104	85 - 115	
Manganese	1	111	113.15	102	85 - 115	
Molybdenum	1	111	111.10	100	85 - 115	
Nickel	1	111	111.26	100	85 - 115	
Potassium	1	11100	11469	103	70 - 130	
Selenium	1	111	112.60	101	85 - 115	
Silver	1	111	119.18	107	85 - 115	
Sodium	1	11100	12325	111	70 - 130	
Uranium	1	111	114.35	103	70 - 130	
Vanadium	1	111	115.51	104	85 - 115	
Zinc	1	111	109.01	98	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738881
Analysis Date:	8/25/2014 3:24:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum	1	1110	1171.2	106	70 - 130	
Arsenic	1	111	113.44	102	85 - 115	
Barium	1	111	113.44	102	85 - 115	
Boron	1	111	104.78	94	70 - 130	
Cadmium	1	111	113.63	102	85 - 115	
Calcium	1	11100	13048	118	70 - 130	
Chromium	1	111	113.28	102	85 - 115	
Cobalt	1	111	114.55	103	85 - 115	
Copper	1	111	113.34	102	85 - 115	
Iron	1	1110	1109.9	100	85 - 115	
Lead	1	111	115.98	104	85 - 115	
Manganese	1	111	115.37	104	85 - 115	
Molybdenum	1	111	112.14	101	85 - 115	
Nickel	1	111	113.26	102	85 - 115	
Potassium	1	11100	11615	105	70 - 130	
Selenium	1	111	114.98	104	85 - 115	
Silver	1	111	119.70	108	85 - 115	
Sodium	1	11100	12397	112	70 - 130	
Uranium	1	111	116.03	105	70 - 130	
Vanadium	1	111	116.17	105	85 - 115	
Zinc	1	111	112.28	101	85 - 115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Trace Metals by Method 6020
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 8/19/2014
Analysis Date: 8/25/2014 3:24:00 PM
Instrument ID: ICPMS8
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Matrix: Water - ug/L
EPA ID: TN00003
Analytic Batch: WG738881
Analyst: 664
Prep Date: 8/22/2014

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Aluminum	1	1110	1141.0	103	1171.2	106	70 - 130	3	20	
Arsenic	1	111	111.46	100	113.44	102	85 - 115	2	20	
Barium	1	111	113.69	102	113.44	102	85 - 115	0	20	
Boron	1	111	112.58	101	104.78	94	70 - 130	7	20	
Cadmium	1	111	112.64	101	113.63	102	85 - 115	1	20	
Calcium	1	11100	12934	117	13048	118	70 - 130	1	20	
Chromium	1	111	112.51	101	113.28	102	85 - 115	1	20	
Cobalt	1	111	112.99	102	114.55	103	85 - 115	1	20	
Copper	1	111	110.82	100	113.34	102	85 - 115	2	20	
Iron	1	1110	1095.8	99	1109.9	100	85 - 115	1	20	
Lead	1	111	115.27	104	115.98	104	85 - 115	1	20	
Manganese	1	111	113.15	102	115.37	104	85 - 115	2	20	
Molybdenum	1	111	111.10	100	112.14	101	85 - 115	1	20	
Nickel	1	111	111.26	100	113.26	102	85 - 115	2	20	
Potassium	1	11100	11469	103	11615	105	70 - 130	1	20	
Selenium	1	111	112.60	101	114.98	104	85 - 115	2	20	
Silver	1	111	119.18	107	119.70	108	85 - 115	0	20	
Sodium	1	11100	12325	111	12397	112	70 - 130	1	20	
Uranium	1	111	114.35	103	116.03	105	70 - 130	1	20	
Vanadium	1	111	115.51	104	116.17	105	85 - 115	1	20	
Zinc	1	111	109.01	98	112.28	101	85 - 115	3	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738880
Analysis Date:	8/22/2014 5:11:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Serial Dilution

L716903-02

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum,Dissolved	5	14.027	21.356	52	10	
Arsenic,Dissolved	5	1.2069	1.5070	25	10	
Barium,Dissolved	5	21.590	23.419	8	10	
Boron,Dissolved	5	602.96	702.69	17	10	
Cadmium,Dissolved	5	<0.16	<0.8		10	
Calcium,Dissolved	100	744082	761636	2	10	
Chromium,Dissolved	5	<0.54	<2.7		10	
Cobalt,Dissolved	5	<0.26	<1.3		10	
Iron,Dissolved	5	119.26	137.34	15	10	
Lead,Dissolved	5	<0.24	<1.2		10	
Manganese,Dissolved	5	101.00	116.45	15	10	
Molybdenum,Dissolved	5	4.5389	5.1278	13	10	
Nickel,Dissolved	5	1.9191	<1.75	34	10	
Potassium,Dissolved	5	4886.0	5793.6	19	10	
Selenium,Dissolved	5	9.6229	12.660	32	10	
Silver,Dissolved	5	<0.31	<1.55		10	
Sodium,Dissolved	100	1403056	1489020	6	10	
Uranium,Dissolved	5	5.9134	6.9255	17	10	
Vanadium,Dissolved	5	2.1375	2.3646	11	10	
Zinc,Dissolved	5	<2.56	<12.8		10	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Trace Metals by Method 6020
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 8/19/2014
Analysis Date: 8/22/2014 5:11:00 PM
Instrument ID: ICPMS8
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Matrix: Water - ug/L
EPA ID: TN00003
Analytic Batch: WG738880
Analyst: 664
Prep Date: 8/22/2014

Matrix Spike / Matrix Spike Duplicate

L716903-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Aluminum,Dissolved	1	1110	14.027	1144.6	102	1142.5	102	70 - 130		0	20	
Arsenic,Dissolved	1	111	1.2069	112.28	100	114.61	102	75 - 125		2	20	
Barium,Dissolved	1	111	21.590	138.63	105	140.19	107	75 - 125		1	20	
Boron,Dissolved	1	111	602.96	741.95	125	687.90	77	70 - 130		8	20	
Cadmium,Dissolved	1	111	<0.16	112.99	102	112.03	101	75 - 125		1	20	
Calcium,Dissolved	20	555	744082	776068	288	768111	216	70 - 130	V	1	20	
Chromium,Dissolved	1	111	<0.54	107.65	97	104.88	94	75 - 125		3	20	
Cobalt,Dissolved	1	111	<0.26	109.39	98	111.33	100	75 - 125		2	20	
Iron,Dissolved	1	1110	119.26	1179.7	96	1156.2	93	75 - 125		2	20	
Lead,Dissolved	1	111	<0.24	104.30	94	103.07	93	75 - 125		1	20	
Manganese,Dissolved	1	111	101.00	212.91	101	219.30	107	75 - 125		3	20	
Molybdenum,Dissolved	1	111	4.5389	112.93	98	115.43	100	75 - 125		2	20	
Nickel,Dissolved	1	111	1.9191	109.02	96	110.08	97	75 - 125		1	20	
Potassium,Dissolved	1	11100	4886.0	16525	105	16204	102	70 - 130		2	20	
Selenium,Dissolved	1	111	9.6229	118.68	98	122.65	102	75 - 125		3	20	
Silver,Dissolved	1	111	<0.31	109.51	99	109.18	98	75 - 125		0	20	
Sodium,Dissolved	20	555	14030561	1445048	378	1434736	285	70 - 130	V	1	20	
Uranium,Dissolved	1	111	5.9134	111.43	95	110.44	94	70 - 130		1	20	
Vanadium,Dissolved	1	111	2.1375	114.92	102	112.76	100	75 - 125		2	20	
Zinc,Dissolved	1	111	<2.56	105.58	93	107.66	95	75 - 125		2	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738880
Analysis Date:	8/22/2014 5:11:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Post Digest Spike

L716903-02

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Aluminum,Dissolved	1	1110	14.027	1079.4	96	70-130	
Arsenic,Dissolved	1	111	1.2069	108.71	97	85-115	
Barium,Dissolved	1	111	21.590	131.34	99	85-115	
Boron,Dissolved	1	111	602.96	673.72	64	70-130	
Cadmium,Dissolved	1	111	<0.16	105.76	95	85-115	
Calcium,Dissolved	20	11100	744082	864237	54	70-130	O1
Chromium,Dissolved	1	111	<0.54	100.99	91	85-115	
Cobalt,Dissolved	1	111	<0.26	106.08	95	85-115	
Iron,Dissolved	1	1110	119.26	1094.0	88	85-115	
Lead,Dissolved	1	111	<0.24	98.551	89	85-115	
Manganese,Dissolved	1	111	101.00	211.40	99	85-115	
Molybdenum,Dissolved	1	111	4.5389	110.94	96	85-115	
Nickel,Dissolved	1	111	1.9191	104.75	93	85-115	
Potassium,Dissolved	1	11100	4886.0	15656	97	70-130	
Selenium,Dissolved	1	111	9.6229	118.64	98	85-115	
Silver,Dissolved	1	111	<0.31	103.29	93	85-115	
Sodium,Dissolved	20	11100	1403056	1596997	87	70-130	
Uranium,Dissolved	1	111	5.9134	106.28	90	70-130	
Vanadium,Dissolved	1	111	2.1375	107.95	95	85-115	
Zinc,Dissolved	1	111	<2.56	103.92	91	85-115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Trace Metals by Method 6020
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 8/19/2014
Analysis Date: 8/25/2014 3:24:00 PM
Instrument ID: ICPMS8
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Matrix: Water - ug/L
EPA ID: TN00003
Analytic Batch: WG738881
Analyst: 664
Prep Date: 8/22/2014

Serial Dilution

L716903-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum	5	15.787	17.236	9	10	
Arsenic	5	1.4569	1.5420	6	10	
Barium	5	29.729	28.919	3	10	
Boron	5	552.67	548.36	1	10	
Cadmium	5	<0.16	<0.8		10	
Calcium	250	740004	711633	4	10	
Chromium	5	<0.54	<2.7		10	
Cobalt	5	0.3041	<1.3	24	10	
Copper	5	1.1358	<2.6	5	10	
Iron	5	318.71	331.58	4	10	
Lead	5	<0.24	<1.2		10	
Manganese	5	386.82	395.40	2	10	
Molybdenum	5	3.2989	3.2542	1	10	
Nickel	5	1.0553	<1.75	29	10	
Potassium	5	5800.6	5931.3	2	10	
Selenium	5	0.7058	<1.9	137	10	
Silver	5	<0.31	<1.55		10	
Sodium	250	1219681	1230664	1	10	
Uranium	5	9.1405	9.1563	0	10	
Vanadium	5	4.8429	4.7170	3	10	
Zinc	5	4.1460	<12.8	23	10	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG738881
Collection Date:	8/19/2014			Analyst:	664
Analysis Date:	8/25/2014 3:24:00 PM			Prep Date:	8/22/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08				

Matrix Spike / Matrix Spike Duplicate

L716903-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Aluminum	1	1110	15.787	1137.0	101	1156.7	103	70 - 130		2	20	
Arsenic	1	111	1.4569	114.47	102	115.39	103	75 - 125		1	20	
Barium	1	111	29.729	157.61	115	156.40	114	75 - 125		1	20	
Boron	1	111	552.67	666.07	102	645.67	84	70 - 130		3	20	
Cadmium	1	111	<0.16	118.40	107	117.87	106	75 - 125		0	20	
Calcium	50	222	740004	806552	600	784015	396	70 - 130	V	3	20	
Chromium	1	111	<0.54	102.99	92	102.54	92	75 - 125		0	20	
Cobalt	1	111	0.3041	106.76	96	107.39	96	75 - 125		1	20	
Copper	1	111	1.1358	103.29	92	104.03	93	75 - 125		1	20	
Iron	1	1110	318.71	1423.0	99	1430.3	100	75 - 125		1	20	
Lead	1	111	<0.24	102.31	92	102.69	92	75 - 125		0	20	
Manganese	1	111	386.82	496.67	99	503.05	105	75 - 125		1	20	
Molybdenum	1	111	3.2989	110.40	96	111.23	97	75 - 125		1	20	
Nickel	1	111	1.0553	103.55	92	104.20	93	75 - 125		1	20	
Potassium	1	11100	5800.6	16980	101	17132	102	70 - 130		1	20	
Selenium	1	111	0.7058	118.92	106	117.83	106	75 - 125		1	20	
Silver	1	111	<0.31	118.28	107	118.28	107	75 - 125		0	20	
Sodium	50	222	1219681	1324236	942	1278770	532	70 - 130	V	3	20	
Uranium	1	111	9.1405	113.50	94	113.36	94	70 - 130		0	20	
Vanadium	1	111	4.8429	113.66	98	115.02	99	75 - 125		1	20	
Zinc	1	111	4.1460	108.38	94	107.67	93	75 - 125		1	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738881
Analysis Date:	8/25/2014 3:24:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	8/22/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Post Digest Spike

L716903-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Aluminum	1	1110	15.787	1090.4	97	70-130	
Arsenic	1	111	1.4569	106.28	94	85-115	
Barium	1	111	29.729	148.03	107	85-115	
Boron	1	111	552.67	717.51	149	70-130	
Cadmium	1	111	<0.16	107.94	97	85-115	
Calcium	50	11100	740004	747827	1	70-130	O1
Chromium	1	111	<0.54	97.060	87	85-115	
Cobalt	1	111	0.3041	98.935	89	85-115	
Copper	1	111	1.1358	96.699	86	85-115	
Iron	1	1110	318.71	1350.1	93	85-115	
Lead	1	111	<0.24	94.686	85	85-115	
Manganese	1	111	386.82	492.47	95	85-115	
Molybdenum	1	111	3.2989	103.53	90	85-115	
Nickel	1	111	1.0553	96.357	86	85-115	
Potassium	1	11100	5800.6	16291	95	70-130	
Selenium	1	111	0.7058	110.78	99	85-115	
Silver	1	111	<0.31	107.44	97	85-115	
Sodium	50	11100	1219681	1219978	0	70-130	O1
Uranium	1	111	9.1405	106.22	87	70-130	
Vanadium	1	111	4.8429	107.98	93	85-115	
Zinc	1	111	4.1460	101.74	88	85-115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG739363
Collection Date:	8/19/2014			Analyst:	664
Analysis Date:	8/26/2014 2:01:00 PM			Prep Date:	8/25/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L717200-01, -02, -04, -05, -06, -08				

Serial Dilution

L716903-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Copper,Dissolved	5	1.1344	<2.6	8	10	

Matrix Spike / Matrix Spike Duplicate

L716903-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Copper,Dissolved	1	111	1.1344	111.10	99	112.06	100	75 - 125		1	20	

Post Digest Spike

L716903-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Copper,Dissolved	1	111	1.1344	105.22	94	85-115	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738755
Analysis Date:	8/23/2014 3:50:00 AM	Analyst:	621
Instrument ID:	VOCGC12		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.4592	99.3	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.4646	99.4	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec	Control RPD	% RPD	Control RPD	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.4592	99.3	5.4646	99.4	67 - 132	0.1	20			

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738755
Analysis Date:	8/23/2014 3:50:00 AM	Analyst:	621
Instrument ID:	VOCGC12		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Matrix Spike / Matrix Spike Duplicate

L717200-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	<0.0314	5.4082	98.3	5.3591	97.4	50 - 143		0.91	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738755
Analysis Date:	8/23/2014 3:50:00 AM	Analyst:	621
Instrument ID:	VOCGC12		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L717200-01	VOCGC12	0822_49	0.199	99.4		
L717200-02	VOCGC12	0822_53	0.199	99.3		
L717200-03	VOCGC12	0822_47	0.199	99.7		
L717200-04	VOCGC12	0822_54	0.200	99.9		
L717200-05	VOCGC12	0822_55	0.199	99.7		
L717200-06	VOCGC12	0822_56	0.199	99.4		
L717200-07	VOCGC12	0822_48	0.200	99.8		
L717200-08	VOCGC12	0822_61	0.200	100		
LCS WG738755	VOCGC12	0822_41	0.196	97.9	0.206	103
LCSD WG738755	VOCGC12	0822_42	0.196	97.9	0.206	103
MS WG738755	VOCGC12	0822_43	0.192	95.9	0.201	101
MSD WG738755	VOCGC12	0822_44	0.190	94.8	0.202	101
BLANK WG738755	VOCGC12	0822_46	0.201	100	0.203	102

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738775
Analysis Date:	8/22/2014 4:44:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738775
Analysis Date:	8/22/2014 4:44:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0252	101	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0231	92.4	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0274	110	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0262	105	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0237	94.8	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0200	79.9	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0267	107	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0235	94	68.8 - 124	
Benzene	1	0.025	0.0246	98.5	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0239	95.5	70.2 - 123	
Chloroform	1	0.025	0.0232	92.8	76 - 121	
Ethylbenzene	1	0.025	0.0265	106	78.8 - 122	
m&p-Xylenes	1	0.05	0.0526	105	78.8 - 121	
Methylene Chloride	1	0.025	0.0230	92.2	70.3 - 120	
o-Xylene	1	0.025	0.0261	104	77.6 - 122	
Tetrachloroethene	1	0.025	0.0271	108	72.6 - 126	
Toluene	1	0.025	0.0259	104	79.7 - 116	
Vinyl chloride	1	0.025	0.0252	101	65.9 - 128	
Xylenes, Total	1	0.075	0.0787	105	78.7 - 121	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 8/19/2014 Analytic Batch: **WG738775**
 Analysis Date: 8/22/2014 4:44:00 PM Analyst: 644
 Instrument ID: VOCMS16
 Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0253	101	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0241	96.5	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0273	109	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0257	103	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0245	98.2	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0207	82.8	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0261	104	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0239	95.6	68.8 - 124	
Benzene	1	0.025	0.0256	102	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0257	103	70.2 - 123	
Chloroform	1	0.025	0.0238	95.4	76 - 121	
Ethylbenzene	1	0.025	0.0270	108	78.8 - 122	
m&p-Xylenes	1	0.05	0.0534	107	78.8 - 121	
Methylene Chloride	1	0.025	0.0233	93.2	70.3 - 120	
o-Xylene	1	0.025	0.0265	106	77.6 - 122	
Tetrachloroethene	1	0.025	0.0277	111	72.6 - 126	
Toluene	1	0.025	0.0261	104	79.7 - 116	
Vinyl chloride	1	0.025	0.0260	104	65.9 - 128	
Xylenes, Total	1	0.075	0.0800	107	78.7 - 121	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 8/19/2014 Analytic Batch: WG738775
 Analysis Date: 8/22/2014 4:44:00 PM Analyst: 644
 Instrument ID: VOCMS16
 Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0252	101	0.0253	101	74.2 - 124	0.22	20	
1,1,1-Trichloroethane	1	0.025	0.0231	92.4	0.0241	96.5	73.2 - 123	4.38	20	
1,1,2,2-Tetrachloroethane	1	0.025	0.0274	110	0.0273	109	70.7 - 122	0.39	20	
1,1,2-Trichloroethane	1	0.025	0.0262	105	0.0257	103	77.7 - 118	1.82	20	
1,1-Dichloroethane	1	0.025	0.0237	94.8	0.0245	98.2	70.7 - 126	3.52	20	
1,1-Dichloroethene	1	0.025	0.0200	79.9	0.0207	82.8	67.8 - 129	3.59	20	
1,2-Dibromoethane	1	0.025	0.0267	107	0.0261	104	76.6 - 121	2.56	20	
1,2-Dichloroethane	1	0.025	0.0235	94	0.0239	95.6	68.8 - 124	1.67	20	
Benzene	1	0.025	0.0246	98.5	0.0256	102	74.8 - 121	3.87	20	
Carbon tetrachloride	1	0.025	0.0239	95.5	0.0257	103	70.2 - 123	7.3	20	
Chloroform	1	0.025	0.0232	92.8	0.0238	95.4	76 - 121	2.71	20	
Ethylbenzene	1	0.025	0.0265	106	0.0270	108	78.8 - 122	1.94	20	
m&p-Xylenes	1	0.05	0.0526	105	0.0534	107	78.8 - 121	1.58	20	
Methylene Chloride	1	0.025	0.0230	92.2	0.0233	93.2	70.3 - 120	1.1	20	
o-Xylene	1	0.025	0.0261	104	0.0265	106	77.6 - 122	1.65	20	
Tetrachloroethene	1	0.025	0.0271	108	0.0277	111	72.6 - 126	2.12	20	
Toluene	1	0.025	0.0259	104	0.0261	104	79.7 - 116	0.74	20	
Vinyl chloride	1	0.025	0.0252	101	0.0260	104	65.9 - 128	3.05	20	
Xylenes, Total	1	0.075	0.0787	105	0.0800	107	78.7 - 121	1.6	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 8/19/2014 Analytic Batch: WG738775
 Analysis Date: 8/22/2014 4:44:00 PM Analyst: 644
 Instrument ID: VOCMS16
 Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Matrix Spike / Matrix Spike Duplicate

L717200-04

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0239	95.5	0.0233	93	70.5 - 132		2.63	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0210	83.8	0.0210	83.8	58.7 - 134		0.01	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0283	113	0.0284	114	64.9 - 145		0.56	20	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0244	97.6	0.0249	99.6	74.1 - 130		1.94	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0214	85.4	0.0216	86.6	64 - 134		1.36	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0169	67.6	0.0169	67.5	48.8 - 144		0.14	20	
1,2-Dibromoethane	1	0.025	<0.0004	0.0251	100	0.0254	102	73.8 - 131		1.17	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0215	86.2	0.0219	87.8	60.7 - 132		1.82	20	
Benzene	1	0.025	<0.0003	0.0213	85.1	0.0217	86.7	58.6 - 133		1.84	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0213	85.2	0.0214	85.4	60.6 - 139		0.31	20	
Chloroform	1	0.025	<0.0003	0.0211	84.3	0.0213	85.3	66.1 - 133		1.19	20	
Ethylbenzene	1	0.025	<0.0004	0.0235	94	0.0231	92.4	62.7 - 136		1.71	20	
m&p-Xylenes	1	0.05	<0.0007	0.0467	93.3	0.0463	92.6	64.1 - 133		0.82	20	
Methylene Chloride	1	0.025	<0.001	0.0203	81.3	0.0207	82.8	61.5 - 125		1.88	20	
o-Xylene	1	0.025	<0.0003	0.0233	93.3	0.0231	92.2	67.1 - 133		1.14	20	
Tetrachloroethene	1	0.025	<0.0004	0.0229	91.6	0.0236	94.6	57.4 - 141		3.15	20	
Toluene	1	0.025	<0.0008	0.0220	87.8	0.0222	88.7	67.8 - 124		1.02	20	
Vinyl chloride	1	0.025	<0.0003	0.0201	80.4	0.0203	81.3	44.3 - 143		1.09	20	
Xylenes, Total	1	0.075	<0.0011	0.0700	93.3	0.0693	92.4	65.6 - 133		0.92	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 8/19/2014 Analytic Batch: WG738775
 Analysis Date: 8/22/2014 4:44:00 PM Analyst: 644
 Instrument ID: VOCMS16
 Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Internal Standard Response and Retention Time Summary

File ID: 0822_02
 Analyzed: 08/22/14 090800

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	518020	4.28	935477	4.60	146756	5.74	384153	8.11
Upper Limit	1040000	4.78	1870000	5.10	294000	6.24	768000	8.61
Lower Limit	259000	3.78	468000	4.10	73400	5.24	192000	7.61
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L717200-03	543393	4.27	952416	4.60	148600	5.75	392278	8.11
L717200-07	531313	4.27	934732	4.60	143048	5.74	383617	8.11
L717200-09	535940	4.27	927839	4.60	143824	5.74	391063	8.11
L717200-10	526785	4.27	935645	4.60	144370	5.74	379499	8.11
L717200-11	537130	4.27	935990	4.60	145167	5.74	382123	8.11
L717200-12	524569	4.27	937633	4.60	144527	5.74	376159	8.11
L717200-04	527629	4.27	933428	4.60	146528	5.74	384783	8.11
L717200-01	528317	4.27	943285	4.60	148743	5.74	401778	8.11
L717200-02	534482	4.27	936564	4.60	147551	5.74	394920	8.11
L717200-05	527717	4.27	928000	4.60	150034	5.74	387803	8.10
L717200-06	524402	4.27	932355	4.60	142711	5.74	385166	8.11
L717200-08	533609	4.27	931582	4.60	141688	5.74	384218	8.11
MSD WG738775	508748	4.28	911765	4.60	144350	5.74	383723	8.11
MS WG738775	516542	4.28	926319	4.60	144436	5.75	386823	8.11
LCSD WG738775	500028	4.28	895718	4.60	143129	5.74	373193	8.11
LCS WG738775	521900	4.28	914955	4.60	146367	5.75	381540	8.11
BLANK WG738775	536928	4.27	941316	4.60	145472	5.74	384501	8.11

Legend:

IS1 -- PENTAFLUOROBENZENE
 IS2 -- 1,4-DIFLUOROBENZENE
 IS3 -- 2-BROMO-1-CHLOROPROPANE
 DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 8/19/2014 Analytic Batch: WG738775
 Analysis Date: 8/22/2014 4:44:00 PM Analyst: 644
 Instrument ID: VOCMS16
 Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Surrogate Summary

		BFB			DFM		TD8		TFT	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L717200-01	VOCMS16	0822_18	0.0389	97.3	0.0378	94.4	0.0392	97.9		
L717200-02	VOCMS16	0822_19	0.0396	99.0	0.0379	94.8	0.0393	98.3		
L717200-03	VOCMS16	0822_10	0.0388	97.0	0.0372	93.0	0.0388	97.0		
L717200-04	VOCMS16	0822_16	0.0393	98.4	0.0384	95.9	0.0392	97.9		
L717200-05	VOCMS16	0822_20	0.0378	94.6	0.0378	94.5	0.0398	99.4		
L717200-06	VOCMS16	0822_21	0.0398	99.4	0.0381	95.3	0.0392	97.9		
L717200-07	VOCMS16	0822_11	0.0394	98.5	0.0373	93.1	0.0392	98.0		
L717200-08	VOCMS16	0822_22	0.0400	100	0.0371	92.7	0.0393	98.3		
L717200-09	VOCMS16	0822_12	0.0402	100	0.0378	94.4	0.0398	99.5		
L717200-10	VOCMS16	0822_13	0.0392	98.1	0.0380	95.0	0.0390	97.4		
L717200-11	VOCMS16	0822_14	0.0385	96.3	0.0375	93.6	0.0395	98.8		
L717200-12	VOCMS16	0822_15	0.0388	97.1	0.0377	94.3	0.0389	97.3		
LCS WG738775	VOCMS16	0822_03	0.0389	97.3	0.0379	94.7	0.0404	101	0.0410	102
LCSD WG738775	VOCMS16	0822_04	0.0389	97.1	0.0381	95.1	0.0400	100	0.0412	103
MS WG738775	VOCMS16	0822_06	0.0403	101	0.0380	94.9	0.0396	99.0	0.0404	101
MSD WG738775	VOCMS16	0822_07	0.0401	100	0.0376	93.9	0.0396	98.9	0.0410	103
BLANK WG738775	VOCMS16	0822_09	0.0384	96.1	0.0375	93.6	0.0385	96.3	0.0408	102

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG738790
Collection Date:	8/19/2014			Analyst:	546
Analysis Date:	8/22/2014 12:25:00 AM			Prep Date:	8/21/2014
Instrument ID:	SVGC31				
Sample Numbers:	L717200-01, -02, -03, -05, -06, -07, -08				

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C10-C28 Diesel Range		< 0.100	< 0.0222	
C28-C40 Oil Range		< 0.100	< 0.0118	
Extractable Petroleum Hydrocarbon		< 0.100	< 0.0330	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.6202	108	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5739	105	70 - 130	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.6202	108	1.5739	105	70 - 130	2.9	20		

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Diesel Range Organics by Method 8015
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 8/19/2014
Analysis Date: 8/26/2014 10:28:00 PM
Instrument ID: SVGC27
Sample Numbers: L717200-04

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG738815
Analyst: 546
Prep Date: 8/21/2014

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C10-C28 Diesel Range		< 0.100	< 0.0222	
C28-C40 Oil Range		< 0.100	< 0.0118	
Extractable Petroleum Hydrocarbon		< 0.100	< 0.0330	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5220	101	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5757	105	70 - 130	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5220	101	1.5757	105	70 - 130	3.47	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738790
Analysis Date:	8/22/2014 12:25:00 AM	Analyst:	546
Instrument ID:	SVGC31	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -05, -06, -07, -08		

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L717200-01	SVGC31	0821_43	0.0213	106
L717200-02	SVGC31	0821_44	0.0213	107
L717200-03	SVGC31	0821_49	0.0218	109
L717200-05	SVGC31	0821_51	0.0216	108
L717200-06	SVGC31	0821_52	0.0221	110
L717200-07	SVGC31	0821_53	0.0211	106
L717200-08	SVGC31	0821_54	0.0210	105
BLANK WG738790	SVGC31	0821_32	0.0215	108
LCS WG738790	SVGC31	0821_33	0.0230	115
LCSD WG738790	SVGC31	0821_34	0.0218	109
MS WG738790	SVGC31	0821_57	0.0219	109
MSD WG738790	SVGC31	0821_58	0.0213	107

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738815
Analysis Date:	8/26/2014 10:28:00 PM	Analyst:	546
Instrument ID:	SVGC27	Prep Date:	8/21/2014
Sample Numbers:	L717200-04		

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L717200-04	SVGC27	0826_40	0.0209	105
BLANK WG738815	SVGC27	0826_14	0.0201	100
LCS WG738815	SVGC27	0826_15	0.0196	97.9
LCSD WG738815	SVGC27	0826_16	0.0200	100

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738790
Analysis Date:	8/22/2014 12:25:00 AM	Analyst:	546
Instrument ID:	SVGC31	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -05, -06, -07, -08		

Matrix Spike / Matrix Spike Duplicate

L717314-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Extractable Petroleum Hydrocarbon	1	1.5	0.0	1.8115	121	1.6243	108	70 - 130		10.9	20	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS2, BNAMS4	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 1.00	< 0.330	
2-Methylnaphthalene	91-57-6	< 1.00	< 0.311	
Benzo(a)pyrene	50-32-8	< 1.00	< 0.340	
Naphthalene	91-20-3	< 1.00	< 0.372	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS2, BNAMS4	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	17.141	68.6	34.7 - 102	
2-Methylnaphthalene	1	25	15.732	62.9	33.8 - 98.6	
Benzo(a)pyrene	1	25	14.933	59.7	45.6 - 106	
Naphthalene	1	25	14.709	58.8	32.2 - 101	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	17.916	71.7	34.7 - 102	
2-Methylnaphthalene	1	25	17.180	68.7	33.8 - 98.6	
Benzo(a)pyrene	1	25	16.943	67.8	45.6 - 106	
Naphthalene	1	25	15.830	63.3	32.2 - 101	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1-Methylnaphthalene	1	25	17.141	68.6	17.916	71.7	34.7 - 102	4.42	24.9	
2-Methylnaphthalene	1	25	15.732	62.9	17.180	68.7	33.8 - 98.6	8.8	24.2	
Benzo(a)pyrene	1	25	14.933	59.7	16.943	67.8	45.6 - 106	12.6	20	
Naphthalene	1	25	14.709	58.8	15.830	63.3	32.2 - 101	7.34	23.8	

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Internal Standard Response and Retention Time Summary

File ID: 0823a_02

Analyzed: 08/23/14 143900

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	113398	5.37	462870	6.12	296061	7.14	457913	8.03
Upper Limit	227000	5.87	926000	6.62	592000	7.64	916000	8.53
Lower Limit	56700	4.87	231000	5.62	148000	6.64	229000	7.53
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L717200-01	105272	5.37	425154	6.12	262581	7.14	398038	8.02
L717200-02	111385	5.37	439815	6.12	276193	7.14	415068	8.02
L717200-03	102667	5.37	414446	6.12	253084	7.14	387132	8.02
L717200-04	113029	5.37	437800	6.12	274193	7.14	410587	8.02
L717200-05	110098	5.37	423865	6.12	262486	7.14	399785	8.02
L717200-06	109668	5.37	441355	6.12	276598	7.14	413365	8.02
L717200-07	114058	5.37	448858	6.12	283685	7.14	432571	8.02
L717200-08	109761	5.37	436368	6.12	277878	7.14	407261	8.02

Legend:

DCB -- 1,4-Dichlorobenzene-d4

NAP -- Naphthalene-d8

ACE -- Acenaphthene-d10

PHEN -- Phenanthrene-d10

CHR -- Chrysene-d12

PER -- Perylene-d12

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Internal Standard Response and Retention Time Summary

File ID: 0823a_02

Analyzed: 08/23/14 143900

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	113398	5.37	371275	10.14	425665	12.40
Upper Limit	227000	5.87	743000	10.64	851000	12.90
Lower Limit	56700	4.87	186000	9.64	213000	11.90
Sample ID	Response	RT	Response	RT	Response	RT
L717200-01	105272	5.37	313923	10.12	368672	12.39
L717200-02	111385	5.37	320936	10.13	384681	12.39
L717200-03	102667	5.37	305993	10.12	352104	12.39
L717200-04	113029	5.37	323990	10.12	378960	12.39
L717200-05	110098	5.37	319611	10.13	375003	12.39
L717200-06	109668	5.37	327494	10.13	381863	12.40
L717200-07	114058	5.37	333711	10.13	385764	12.39
L717200-08	109761	5.37	316392	10.13	351845	12.39

Legend:

DCB -- 1,4-Dichlorobenzene-d4

NAP -- Naphthalene-d8

ACE -- Acenaphthene-d10

PHEN -- Phenanthrene-d10

CHR -- Chrysene-d12

PER -- Perylene-d12

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Internal Standard Response and Retention Time Summary

File ID: 0823A_04

Analyzed: 08/23/14 144700

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	83740	5.27	345685	6.02	195617	7.05	287752	7.93
Upper Limit	167000	5.77	691000	6.52	391000	7.55	576000	8.43
Lower Limit	41900	4.77	173000	5.52	97800	6.55	144000	7.43
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
LCSD WG738716	86519	5.28	343036	6.02	198419	7.06	299055	7.93
LCS WG738716	85536	5.28	332736	6.02	194095	7.06	289392	7.93
BLANK WG738716	91206	5.27	381087	6.02	218388	7.05	338540	7.93

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	8/19/2014	Analytic Batch:	WG738716
Analysis Date:	8/23/2014 9:13:00 PM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	8/21/2014
Sample Numbers:	L717200-01, -02, -03, -04, -05, -06, -07, -08		

Internal Standard Response and Retention Time Summary

File ID: 0823A_04

Analyzed: 08/23/14 144700

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	83740	5.27	253560	10	240164	12.24
Upper Limit	167000	5.77	507000	10.5	480000	12.74
Lower Limit	41900	4.77	127000	9.5	120000	11.74
Sample ID	Response	RT	Response	RT	Response	RT
LCSD WG738716	86519	5.28	254441	10	262369	12.24
LCS WG738716	85536	5.28	233685	10.01	252270	12.25
BLANK WG738716	91206	5.27	274530	9.99	283859	12.24

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 8/19/2014 Analytic Batch: WG738716
Analysis Date: 8/23/2014 9:13:00 PM Analyst: 280
Instrument ID: BNAMS2 Prep Date: 8/21/2014
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Surrogate Summary

Laboratory			TBP		FBP		2FP		NBZ		
	Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
	L717200-01	BNAMS2	0823A_21	0.00503	25.2	0.00641	64.1	0.00337	16.8	0.00749	74.9
	L717200-02	BNAMS2	0823A_22	0.00999	49.9	0.00670	67.0	0.00475	23.8	0.00767	76.7
	L717200-03	BNAMS2	0823A_23	0.0152	76.1	0.00713	71.3	0.00901	45.1	0.00847	84.7
	L717200-04	BNAMS2	0823A_24	0.0153	76.4	0.00617	61.7	0.00821	41.0	0.00779	77.9
	L717200-05	BNAMS2	0823A_25	0.0141	70.4	0.00620	62.0	0.00572	28.6	0.00733	73.3
	L717200-06	BNAMS2	0823A_26	0.0135	67.4	0.00648	64.8	0.00700	35.0	0.00756	75.6
	L717200-07	BNAMS2	0823A_27	0.0131	65.7	0.00598	59.8	0.00673	33.6	0.00708	70.8
	L717200-08	BNAMS2	0823A_28	0.00152	7.6 J2	0.00598	59.8	0.00352	17.6	0.00679	67.9
	LCS WG738716	BNAMS4	0823A_10-	0.0125	62.3	0.00604	60.4	0.00644	32.2	0.00694	69.4
	LCSD WG738716	BNAMS4	0823A_11-	0.0153	76.4	0.00663	66.3	0.00770	38.5	0.00771	77.1
	BLANK WG738716	BNAMS4	0823A_12-	0.0113	56.3	0.00588	58.8	0.00746	37.3	0.00536	53.6

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L717200

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 8/19/2014 Analytic Batch: WG738716
Analysis Date: 8/23/2014 9:13:00 PM Analyst: 280
Instrument ID: BNAMS2 Prep Date: 8/21/2014
Sample Numbers: L717200-01, -02, -03, -04, -05, -06, -07, -08

Surrogate Summary

Laboratory	TPH				PHL	
	Sample ID	Instrument	File ID	ppm % Rec	ppm % Rec	
	L717200-01	BNAMS2	0823A_21	0.00590 59.0	0.00320 16.0	
	L717200-02	BNAMS2	0823A_22	0.00621 62.1	0.00442 22.1	
	L717200-03	BNAMS2	0823A_23	0.00623 62.3	0.00608 30.4	
	L717200-04	BNAMS2	0823A_24	0.00579 57.9	0.00598 29.9	
	L717200-05	BNAMS2	0823A_25	0.00555 55.5	0.00426 21.3	
	L717200-06	BNAMS2	0823A_26	0.00626 62.6	0.00523 26.1	
	L717200-07	BNAMS2	0823A_27	0.00564 56.4	0.00472 23.6	
	L717200-08	BNAMS2	0823A_28	0.00603 60.3	0.00313 15.6	
	LCS WG738716	BNAMS4	0823A_10-	0.00635 63.5	0.00457 22.8	
	LCSD WG738716	BNAMS4	0823A_11-	0.00666 66.6	0.00566 28.3	
	BLANK WG738716	BNAMS4	0823A_12-	0.00608 60.8	0.00523 26.2	

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

ARCADIS US-TX
929 Briarpark Drive, Suite 300
Houston, TX 77042

Billing Information:
Att. Accounts Payable 630
Plaza Drive, Suite 600 Highland
Ranch, CO 80129

Report to: Pam Krueger

Email To: pam.krueger@arcadis-us.com

Project: Navajo Refining Company-Artesia, NM

Phone: 713-953-4800

Client Project #
TX000836.0008.00004

City/State
Collected:
Lab Project # ARCADHTX-
NAVAJO

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Date Results Needed

Immediately
Checked on Ice N Y

Same Day200%
Next Day100%
Two Day50%
Three Day25%

Email? No Yes
FAX? No Yes

No.
of
Cntr

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntr	Shipped via:										Rem./Contaminant	Sample # (lab only)
							***C	8270	Cya	8015	Diss	Total	8260	2540	8015	RA2		
MW-SS-0814	G	GW		8/19/14	1650	16	X	X	X	X	X	X	X	X	X		-01	
MW-136-0814	G	GW		8/19/14	1830	16											02	
EB-05-0814	G	W		8/19/14	1845	16											03	
UG-3R-0814	G	GW		8/20/14	0955	16											04	
UG-2-0814	G	GW		8/20/14	1110	16											05	
UG-1-0814	G	GW		8/20/14	1230	16											06	
EB-06-0814	G	W		8/20/14	1315	16											07	
Dup-2	G	GW				16											08	
Trip Blank 08						1								X			09	
Trip Blank 09						1								X			10	

Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: ** Navajo metals list includes Uranium **

★ Run mercury on all GW samples ★

Flow _____ Other _____

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Samples returned via: ☐ UPS
☒ FedEx ☐ Courier ☐ _____

Condition: (lab use only)

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:
3.6 133

COC Seal Intact: Y N NA

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 8/21/14 Time: 0900

pH Checked: <2, >12

89 of 90

Chain of Custody Page ____ of ____
ESC
L.A.B S.C.I.E.N.C.E.

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# L717200

D116

Acctnum:

Template:

Prelogin:

TSR:

PB:

Shipped Via:

ARCADIS US - TX

2929 Briarpark Dr., Suite 300
Houston, TX 77042

Billing Information:

Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to:
Pam Krueger

Email To: pam.krueger@arcadis-us.com;maisha.turner@arcadis-us.com;

Project
Description: **Navajo Refining Company - Artesia, NM**

City/State
Collected:

Phone: **713-953-4800**
Fax:

Client Project #
TX000836.0008.00004

Lab Project #
ARCADHTX-NAVAJO

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Date Results Needed

Immediately
Packed on Ice N ☐ Y ☒

☐ Same Day200%
☐ Next Day100%
☐ Two Day50%
☐ Three Day25%

Email? ☐ No ☒ Yes

FAX? ☐ No ☐ Yes

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative										Chain of Custody	Page ____ of ____
Trip Blank 10		GW				15	X										 ESC L.A.B S.C.I.E.N.C.E.S YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 	L # <u>L 717200</u>
Trip Blank 11		GW				15	X											
		GW				15	X											
		GW				15	X											
		GW				15	X											
		GW				2	X											
		GW				2	X											
		GW				2	X											
		GW				2	X											
		GW				2	X											
		GW				2	X											

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Samples returned via: ☐ UPS

Condition: (lab use only)

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: _____ °C Bottles Received:

COC Seal Intact: ☒ Y ☐ N ☐ NA

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: _____ Time: _____

pH Checked: _____

90 of 90

LABORATORY REPORT

This report contains 19 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

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Eaton Analytical, Inc.*

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Environmental Science

Report: 324029

Attn: Janice Cozby
 12065 Lebanon Road
 Mount Juliet, TN 37122

Priority: Standard Written

Status: Final

PWS ID: Not Supplied

Copies
 to: None

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3089664	L717202-01	7500-Ra B	08/19/14 16:50	Client	08/22/14 10:30
3089664	L717202-01	7500-Ra D	08/19/14 16:50	Client	08/22/14 10:30
3089665	L717202-02	7500-Ra B	08/19/14 18:30	Client	08/22/14 10:30
3089665	L717202-02	7500-Ra D	08/19/14 18:30	Client	08/22/14 10:30
3089666	L717202-03	7500-Ra B	08/19/14 18:45	Client	08/22/14 10:30
3089666	L717202-03	7500-Ra D	08/19/14 18:45	Client	08/22/14 10:30
3089667	L717202-04	7500-Ra B	08/20/14 09:55	Client	08/22/14 10:30
3089667	L717202-04	7500-Ra D	08/20/14 09:55	Client	08/22/14 10:30
3089668	L717202-05	7500-Ra B	08/20/14 09:55	Client	08/22/14 10:30
3089668	L717202-05	7500-Ra D	08/20/14 09:55	Client	08/22/14 10:30
3089669	L717202-06	7500-Ra B	08/20/14 11:10	Client	08/22/14 10:30
3089669	L717202-06	7500-Ra D	08/20/14 11:10	Client	08/22/14 10:30
3089670	L717202-07	7500-Ra B	08/20/14 12:30	Client	08/22/14 10:30
3089670	L717202-07	7500-Ra D	08/20/14 12:30	Client	08/22/14 10:30
3089671	L717202-08	7500-Ra B	08/20/14 13:15	Client	08/22/14 10:30
3089671	L717202-08	7500-Ra D	08/20/14 13:15	Client	08/22/14 10:30

Report Summary

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Trott at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Kelly Goto Analytical Services Manager

Authorized Signature

Title

02/07/2015

Date

Client Name: Environmental Science
Report #: 324029

Sampling Point: L717202-01

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.99	1.0	0.50 ± 1.12	pCi/L	08/26/14 12:30	09/04/14 08:47	3089664
15262-20-1	Radium-228	7500-Ra D	---	0.34	1.0	-0.71 ± 0.30	pCi/L	08/26/14 12:30	09/17/14 17:50	3089664
---	Combined Radium	calc.	5 *	0.99	---	-0.21 ± 1.16	pCi/L	08/26/14 12:30	09/17/14 17:50	3089664

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-02

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	1.09	1.0	0.40 ± 0.96	pCi/L	08/26/14 12:30	09/04/14 08:47	3089665
15262-20-1	Radium-228	7500-Ra D	---	0.24	1.0	0.44 ± 0.25	pCi/L	08/26/14 12:30	09/17/14 17:50	3089665
---	Combined Radium	calc.	5 *	1.09	---	0.84 ± 0.99	pCi/L	08/26/14 12:30	09/17/14 17:50	3089665

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-03

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.8	1.0	1.9 ± 0.8	pCi/L	08/26/14 12:30	08/28/14 11:05	3089666
15262-20-1	Radium-228	7500-Ra D	---	0.35	1.0	-0.15 ± 0.33	pCi/L	08/26/14 12:30	09/17/14 17:50	3089666
---	Combined Radium	calc.	5 *	0.8	---	1.75 ± 0.88	pCi/L	08/26/14 12:30	09/17/14 17:50	3089666

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-04

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.94	1.0	0.33 ± 1.43	pCi/L	08/26/14 12:30	09/04/14 08:47	3089667
15262-20-1	Radium-228	7500-Ra D	---	0.31	1.0	0.35 ± 0.32	pCi/L	08/27/14 13:20	09/17/14 17:50	3089667
---	Combined Radium	calc.	5 *	0.94	---	0.68 ± 1.47	pCi/L	08/26/14 12:30	09/17/14 17:50	3089667

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-05

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.8	1.0	2.0 ± 0.8	pCi/L	08/26/14 12:30	08/28/14 11:05	3089668
15262-20-1	Radium-228	7500-Ra D	---	0.5	1.0	-1.5 ± 0.4	pCi/L	08/27/14 13:20	09/17/14 17:50	3089668
---	Combined Radium	calc.	5 *	0.8	---	0.5 ± 0.9	pCi/L	08/26/14 12:30	09/17/14 17:50	3089668

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-06

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.9	1.0	1.1 ± 0.7	pCi/L	08/26/14 12:30	08/28/14 11:05	3089669
15262-20-1	Radium-228	7500-Ra D	---	0.34	1.0	0.14 ± 0.32	pCi/L	09/12/14 13:43	09/19/14 18:36	3089669
---	Combined Radium	calc.	5 *	0.9	---	1.24 ± 0.76	pCi/L	08/26/14 12:30	09/19/14 18:36	3089669

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-07

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	1.0	1.0	1.2 ± 0.7	pCi/L	08/26/14 12:30	08/28/14 11:05	3089670
15262-20-1	Radium-228	7500-Ra D	---	0.25	1.00	0.03 ± 0.24	pCi/L	08/27/14 13:20	09/17/14 17:50	3089670
---	Combined Radium	calc.	5 *	1.0	---	1.23 ± 0.77	pCi/L	08/26/14 12:30	09/17/14 17:50	3089670

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L717202-08

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.8	1.0	1.8 ± 0.8	pCi/L	08/26/14 12:30	08/28/14 11:05	3089671
15262-20-1	Radium-228	7500-Ra D	---	0.30	1.0	0.20 ± 0.29	pCi/L	08/27/14 13:20	09/17/14 17:50	3089671
---	Combined Radium	calc.	5 *	0.8	---	2.00 ± 0.83	pCi/L	08/26/14 12:30	09/17/14 17:50	3089671

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Sub-Contract Chain of Custody

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

Sub-Contract Lab : ENVHEALT

City / State : South Bend, IN

Results Needed by : 9/17/14

ESC Purchase Order # : S20572 **Client Provided Sample Container**

Send Reports To : Janice Cozby jcozby@esclabsciences.com

324029

260209

WORKGROUP

WG738690

Date Created : 8/21/2014

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L717202-01	DW	8/19/2014 16:50	Radium 226	(1) RA226	7500Ra B-2001	NM CLIENT
17221678 17221677				PH2 3089664		
L717202-01	DW	8/19/2014 16:50	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17221677 17221678						
L717202-02	DW	8/19/2014 18:30	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17221680 17221679				2 PH2 3089665		
L717202-02	DW	8/19/2014 18:30	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17221679 17221680						
L717202-03	DW	8/19/2014 18:45	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17221681 17221682				2 PH2 3089666		
L717202-03	DW	8/19/2014 18:45	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17221681 17221682						
L717202-04	DW	8/20/2014 9:55	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17221684 17221683				2 PH2 3089667		
L717202-04	DW	8/20/2014 9:55	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17221684 17221683						
L717202-05	DW	8/20/2014 9:55	Radium 226	2 RA226	7500Ra B-2001	NM CLIENT
17221686 17221685				PH2 3089668		
L717202-05	DW	8/20/2014 9:55	Radium 228	RA228	7500Ra D-2001	NM CLIENT

Relinquished by J Cozby

Date: 082114 West in

Received by : K. D. Smith

Date: 8-22-14 1030

Relinquished by _____

Date: _____

Received by : _____

Date: _____

Sub-Contract Lab : ENVHEALTCity / State : South Bend, INResults Needed by : 9/17/14ESC Purchase Order # : S20572

WORKGROUP

WG738690

Date Created :

8/21/2014

Send Reports To : Janice Cozby jcozby@esclabsciences.com

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L717202-06 17221687 17221686	DW	8/20/2014 11:10	Radium 226 RA226		7500Ra B-2001	NM CLIENT
17221687 17221688						
L717202-06	DW	8/20/2014 11:10	Radium 228 RA228		7500Ra D-2001	NM CLIENT
17221687 17221688						
L717202-07	DW	8/20/2014 12:30	Radium 226 RA226		7500Ra B-2001	NM CLIENT
17221696 17221695						
L717202-07	DW	8/20/2014 12:30	Radium 228 RA228		7500Ra D-2001	NM CLIENT
17221695 17221696						
L717202-08	DW	8/20/2014 13:15	Radium 226 RA226		7500Ra B-2001	NM CLIENT
17221697 17221698						
L717202-08	DW	8/20/2014 13:15	Radium 228 RA228		7500Ra D-2001	NM CLIENT
17221698 17221697						

Relinquished by _____ Date: _____

Received by : _____ Date: _____

Relinquished by _____ Date: _____

Received by : _____ Date: _____



Eurofins Eaton Analytical Run Log

Run ID: **194387** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3089666	L717202-03	GW	DU	08/28/2014 11:05	
FS	3089668	L717202-05	GW	DU	08/28/2014 11:05	
FS	3089669	L717202-06	GW	DU	08/28/2014 11:05	
FS	3089670	L717202-07	GW	DU	08/28/2014 11:05	
FS	3089671	L717202-08	GW	DU	08/28/2014 11:05	
LRB	3093878		RW	DU	08/28/2014 11:05	
LFB	3093879		RW	DU	08/28/2014 11:05	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.8	L717202-03		1.9		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3089666
FS	Radium-226	7500-Ra B	0.8	L717202-05		2.0		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3089668
FS	Radium-226	7500-Ra B	0.9	L717202-06		1.1		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3089669
FS	Radium-226	7500-Ra B	1.0	L717202-07		1.2		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3089670
FS	Radium-226	7500-Ra B	0.8	L717202-08		1.8		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3089671
LRB	Radium-226	7500-Ra B	0.45	---		0.05		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3093878
LFB	Radium-226	7500-Ra B	0.4	---		22.2500	18.0	% Recovery	124	30 - 160	---	---	1.0	08/26/2014 12:30	08/28/2014 11:05	3093879

Eurofins Eaton Analytical
Run Log

Run ID: **194544** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3089664	L717202-01	GW	CI	09/04/2014 08:47	
FS	3089665	L717202-02	GW	CI	09/04/2014 08:47	
FS	3089667	L717202-04	GW	CI	09/04/2014 08:47	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.99	L717202-01		0.50		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/04/2014 08:47	3089664
FS	Radium-226	7500-Ra B	1.1	L717202-02		0.40		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/04/2014 08:47	3089665
FS	Radium-226	7500-Ra B	0.94	L717202-04		0.33		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/04/2014 08:47	3089667

Eurofins Eaton Analytical
Run Log

Run ID: **195056** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3089667	L717202-04	GW	DU	09/17/2014 17:50	
FS	3089668	L717202-05	GW	DU	09/17/2014 17:50	
FS	3089670	L717202-07	GW	DU	09/17/2014 17:50	
FS	3089671	L717202-08	GW	DU	09/17/2014 17:50	
LRB	3106600		RW	DU	09/17/2014 17:50	
LFB	3106601		RW	DU	09/17/2014 17:50	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.31	L717202-04		0.35		pCi/L	---	---	---	---	1.0	08/27/2014 13:20	09/17/2014 17:50	3089667
FS	Radium-228	7500-Ra D	0.5	L717202-05		-1.5		pCi/L	---	---	---	---	1.0	08/27/2014 13:20	09/17/2014 17:50	3089668
FS	Radium-228	7500-Ra D	0.25	L717202-07		0.03		pCi/L	---	---	---	---	1.0	08/27/2014 13:20	09/17/2014 17:50	3089670
FS	Radium-228	7500-Ra D	0.30	L717202-08		0.20		pCi/L	---	---	---	---	1.0	08/27/2014 13:20	09/17/2014 17:50	3089671
LRB	Radium-228	7500-Ra D	0.43	---		-0.25		pCi/L	---	---	---	---	1.0	---	09/17/2014 17:50	3106600
LFB	Radium-228	7500-Ra D	0.30	---		8.9800	8.96	% Recovery	100	48 - 139	---	---	1.0	---	09/17/2014 17:50	3106601

Eurofins Eaton Analytical
Run Log

Run ID: **195069** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3089664	L717202-01	GW	CI	09/17/2014 17:50	
FS	3089665	L717202-02	GW	CI	09/17/2014 17:50	
FS	3089666	L717202-03	GW	CI	09/17/2014 17:50	
LRB	3106855		RW	CI	09/17/2014 17:50	
LFB	3106856		RW	CI	09/17/2014 17:50	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.34	L717202-01		-0.71		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/17/2014 17:50	3089664
FS	Radium-228	7500-Ra D	0.24	L717202-02		0.44		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/17/2014 17:50	3089665
FS	Radium-228	7500-Ra D	0.35	L717202-03		-0.15		pCi/L	---	---	---	---	1.0	08/26/2014 12:30	09/17/2014 17:50	3089666
LRB	Radium-228	7500-Ra D	0.26	---		-0.09		pCi/L	---	---	---	---	1.0	---	09/17/2014 17:50	3106855
LFB	Radium-228	7500-Ra D	0.24	---		7.1600	8.55	% Recovery	84	48 - 139	---	---	1.0	---	09/17/2014 17:50	3106856

Eurofins Eaton Analytical
Run Log

Run ID: **195177** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3089669	L717202-06	GW	DU	09/19/2014 18:36	
LRB	3108394		RW	DU	09/19/2014 18:36	
LFB	3108395		RW	DU	09/19/2014 18:36	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.34	L717202-06		0.14		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:36	3089669
LRB	Radium-228	7500-Ra D	0.38	---		0.17		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:36	3108394
LFB	Radium-228	7500-Ra D	0.25	---		6.5100	8.54	% Recovery	76	48 - 139	---	---	1.0	09/12/2014 13:43	09/19/2014 18:36	3108395

Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>
FS	Field Sample
LFB	Laboratory Fortified Blank
LRB	Laboratory Reagent Blank

Quality Control Summary

SDG: L720783

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Anions by Method 9056MOD

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742065. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742065 sample duplicate analysis was performed on sample L720717-07. The relative percent difference exceeded the method limits for Chloride.

For analytical batch WG742065 sample duplicate analysis was performed on sample L720768-01. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742065 matrix spike/matrix spike duplicate analysis was performed on sample L720733-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Total Dissolved Solids by Method 2540 C-2011

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742415. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742415 sample duplicate analysis was performed on sample L720734-02. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742415 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L720783

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Cyanide by Method 9012B

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG743012. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG743012 sample duplicate analysis was performed on sample L720687-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG743012 sample duplicate analysis was performed on sample L720856-09. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG743012 matrix spike/matrix spike duplicate analysis was performed on sample L720678-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Mercury by Method 7470A

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742053. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742053 sample duplicate analysis was performed on sample L720691-01. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742053 matrix spike/matrix spike duplicate analysis was performed on sample L720691-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6020

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742348. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Quality Control Summary

SDG: L720783

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

October 17, 2014

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742886. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742348 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries were above laboratory control limits for Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved. The matrix spike recoveries were below laboratory control limits for Boron,Dissolved. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch. Sodium,Dissolved did not meet the method limit criteria for the serial dilution. Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved did not meet the method limit criteria for the post digest spike. Sodium,Dissolved exceeded the method limit criteria for both the serial dilution and the post digest spike. This exceedance indicates matrix interference.

For analytical batch WG742886 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile TPH by Method 8015D/GRO

Laboratory Control Sample

Sample L720783-01 was analyzed in analytical batch WG742165. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L720783-02 and 03 were analyzed in analytical batch WG743038. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742165 matrix spike/matrix spike duplicate analysis was performed on sample L720715-03. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG743038 matrix spike/matrix spike duplicate analysis was performed on sample L720531-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L720783

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Volatile Organic Compounds by Method 8260B

Laboratory Control Sample

Samples L720783-01, -02, -03, and -04 were analyzed in analytical batch WG742211. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742211 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Semi-Volatile Organic Compounds by Method 8270C

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742163. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742163 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Diesel Range Organics by Method 8015

Laboratory Control Sample

Samples L720783-01, -02, and -03 were analyzed in analytical batch WG742393. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742393 matrix spike/matrix spike duplicate analysis was performed on sample L720039-14. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.



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Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Report Summary

Monday August 10, 2015

Report Number: L720783

Samples Received: 09/10/14

Client Project: TX000836.0008.00004

Description: Navajo Refining Company - Artesia, NM

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jovona McDowell , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BI0041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720783-01

Sample ID : NP-5-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 09:05

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	390000	2600	50000	ug/l		9056MOD	09/11/14	50
Fluoride	2200	9.9	100	ug/l		9056MOD	09/10/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/10/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/10/14	1
Sulfate	3600000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/16/14	1
Dissolved Solids	5600000	2800	10000	ug/l		2540 C-	09/15/14	1
Aluminum, Dissolved	22.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	3.1	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	3.2	0.25	1.0	ug/l		6020	09/15/14	1
Barium	7.5	1.8	10.	ug/l	J	6020	09/15/14	5
Barium, Dissolved	7.5	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	1800	30.	400	ug/l	01V	6020	09/15/14	20
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	520000	920	20000	ug/l	01V	6020	09/15/14	20
Chromium	1.1	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	0.88	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	1.5	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	2.4	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	1.2	5.0	ug/l		6020	09/15/14	5
Lead, Dissolved	0.30	0.24	1.0	ug/l	J	6020	09/15/14	1
Manganese	0.69	0.25	2.0	ug/l	J	6020	09/15/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	31.	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	0.84	0.35	1.0	ug/l	J	6020	09/15/14	1
Nickel, Dissolved	1.0	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	350	37.	1000	ug/l	J	6020	09/15/14	1
Selenium	7.2	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	8.7	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	6.2	10.	ug/l		6020	09/15/14	20
Sodium, Dissolved	220000	2200	20000	ug/l	01V	6020	09/15/14	20
Uranium, Dissolved	180	6.6	200	ug/l	J	6020	09/15/14	20
Vanadium	19.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	18.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	0.052	0.049	0.20	ug/l	J	7470A	09/11/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Reported: 08/10/15 17:12 Printed: 08/10/15 17:13

L720783-01 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : NP-5-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 09:05

ESC Sample # : L720783-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	310	1000	ug/l		8015D/G	09/12/14	10
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.9			% Rec.		8015D/G	09/12/14	10
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/13/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/13/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/13/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/13/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/13/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/13/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/13/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/13/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/13/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/13/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/13/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/13/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/13/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/13/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/13/14	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	09/13/14	1
Dibromofluoromethane	99.8			% Rec.		8260B	09/13/14	1
4-Bromofluorobenzene	91.8			% Rec.		8260B	09/13/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	98.7			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/12/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/12/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/12/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/12/14	1
Surrogate Recovery								
2-Fluorophenol	54.1			% Rec.		8270C	09/12/14	1

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L720783-01 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : NP-5-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 09:05

ESC Sample # : L720783-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	40.1			% Rec.		8270C	09/12/14	1
Nitrobenzene-d5	62.3			% Rec.		8270C	09/12/14	1
2-Fluorobiphenyl	76.5			% Rec.		8270C	09/12/14	1
2,4,6-Tribromophenol	68.5			% Rec.		8270C	09/12/14	1
p-Terphenyl-d14	66.8			% Rec.		8270C	09/12/14	1

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L720783-01 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720783-02

Sample ID : MW-136-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 11:20

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	240000	2600	50000	ug/l		9056MOD	09/11/14	50
Fluoride	1600	9.9	100	ug/l		9056MOD	09/10/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/10/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/10/14	1
Sulfate	2700000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/16/14	1
Dissolved Solids	4200000	2800	10000	ug/l		2540 C-	09/15/14	1
Aluminum, Dissolved	17.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	2.4	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	2.1	0.25	1.0	ug/l		6020	09/15/14	1
Barium	50.	1.8	10.	ug/l		6020	09/15/14	5
Barium, Dissolved	11.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	540	30.	400	ug/l		6020	09/15/14	20
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	680000	920	20000	ug/l		6020	09/15/14	20
Chromium	3.2	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	0.90	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	2.3	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	0.88	0.52	1.0	ug/l	J	6020	09/15/14	1
Cobalt, Dissolved	0.40	0.26	1.0	ug/l	J	6020	09/15/14	1
Iron	790	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	1.2	5.0	ug/l		6020	09/15/14	5
Lead, Dissolved	U	0.24	1.0	ug/l		6020	09/15/14	1
Manganese	85.	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	45.	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	6.1	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	2.1	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	1.2	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	2600	37.	1000	ug/l		6020	09/15/14	1
Selenium	3.8	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	3.9	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	6.2	10.	ug/l		6020	09/15/14	20
Sodium, Dissolved	85000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	63.	6.6	200	ug/l	J	6020	09/15/14	20
Vanadium	18.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	16.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	5.2	2.6	10.	ug/l	J	6020	09/15/14	1
Mercury	0.078	0.049	0.20	ug/l	J	7470A	09/11/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-136-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 11:20

ESC Sample # : L720783-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	35.	31.	100	ug/l	J	8015D/G	09/16/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.5			% Rec.		8015D/G	09/16/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/13/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/13/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/13/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/13/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/13/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/13/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/13/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/13/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/13/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/13/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/13/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/13/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/13/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/13/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/13/14	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/13/14	1
Dibromofluoromethane	102.			% Rec.		8260B	09/13/14	1
4-Bromofluorobenzene	93.0			% Rec.		8260B	09/13/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	95.8			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/12/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/12/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/12/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/12/14	1
Surrogate Recovery								
2-Fluorophenol	2.80			% Rec.	J2	8270C	09/12/14	1

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REPORT OF ANALYSIS

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ARCADIS US - TX
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Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-136-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 11:20

ESC Sample # : L720783-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	3.92			% Rec.	J2	8270C	09/12/14	1
Nitrobenzene-d5	63.8			% Rec.		8270C	09/12/14	1
2-Fluorobiphenyl	77.9			% Rec.		8270C	09/12/14	1
2,4,6-Tribromophenol	65.9			% Rec.		8270C	09/12/14	1
p-Terphenyl-d14	73.1			% Rec.		8270C	09/12/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720783-03

Sample ID : UG-1-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 13:55

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	99000	52.	1000	ug/l		9056MOD	09/10/14	1
Fluoride	770	9.9	100	ug/l		9056MOD	09/10/14	1
Nitrate	7000	23.	100	ug/l		9056MOD	09/10/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/10/14	1
Sulfate	1700000	1500	100000	ug/l		9056MOD	09/11/14	20
Cyanide	U	1.8	5.0	ug/l		9012B	09/16/14	1
Dissolved Solids	2900000	2800	10000	ug/l		2540 C-	09/15/14	1
Aluminum, Dissolved	14.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	1.3	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	1.2	0.25	1.0	ug/l		6020	09/15/14	1
Barium	13.	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	12.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	440	15.	200	ug/l		6020	09/15/14	10
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	440000	460	10000	ug/l		6020	09/15/14	10
Chromium	1.6	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	1.0	0.54	1.0	ug/l		6020	09/15/14	1
Copper	0.58	0.52	1.0	ug/l	J	6020	09/15/14	1
Copper, Dissolved	1.1	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	79.	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	09/15/14	1
Manganese	1.2	0.25	2.0	ug/l	J	6020	09/15/14	1
Manganese, Dissolved	0.36	0.25	2.0	ug/l	J	6020	09/15/14	1
Molybdenum, Dissolved	5.0	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	1.1	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	1.3	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	1300	37.	1000	ug/l		6020	09/15/14	1
Selenium	4.4	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	5.8	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	3.1	5.0	ug/l		6020	09/15/14	10
Sodium, Dissolved	78000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	17.	3.3	100	ug/l	J	6020	09/15/14	10
Vanadium	12.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	11.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	0.059	0.049	0.20	ug/l	J	7470A	09/11/14	1

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-1-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 13:55

ESC Sample # : L720783-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/16/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	95.0			% Rec.		8015D/G	09/16/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/13/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/13/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/13/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/13/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/13/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/13/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/13/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/13/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/13/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/13/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/13/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/13/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/13/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/13/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/13/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/13/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/13/14	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	09/13/14	1
Dibromofluoromethane	103.			% Rec.		8260B	09/13/14	1
4-Bromofluorobenzene	93.8			% Rec.		8260B	09/13/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	101.			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/12/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/12/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/12/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/12/14	1
Surrogate Recovery								
2-Fluorophenol	58.5			% Rec.		8270C	09/12/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-1-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 13:55

ESC Sample # : L720783-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	42.9			% Rec.		8270C	09/12/14	1
Nitrobenzene-d5	66.9			% Rec.		8270C	09/12/14	1
2-Fluorobiphenyl	80.9			% Rec.		8270C	09/12/14	1
2,4,6-Tribromophenol	73.5			% Rec.		8270C	09/12/14	1
p-Terphenyl-d14	79.5			% Rec.		8270C	09/12/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 10, 2015

Date Received : September 10, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720783-04

Sample ID : TRIPBLANK-12-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/13/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/13/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/13/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/13/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/13/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/13/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/13/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/13/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/13/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/13/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/13/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/13/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/13/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/13/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/13/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/13/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/13/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/13/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/13/14	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	09/13/14	1
Dibromofluoromethane	99.0			% Rec.		8260B	09/13/14	1
4-Bromofluorobenzene	94.0			% Rec.		8260B	09/13/14	1

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L720783-01	WG742053	SAMP	Mercury	R2988112	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Barium	R2989598	J
	WG742348	SAMP	Boron, Dissolved	R2989790	01V
	WG742348	SAMP	Calcium, Dissolved	R2989790	01V
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Lead, Dissolved	R2989790	J
	WG742886	SAMP	Manganese	R2989598	J
	WG742886	SAMP	Nickel	R2989598	J
	WG742348	SAMP	Potassium, Dissolved	R2989790	J
	WG742348	SAMP	Sodium, Dissolved	R2989790	01V
	WG742348	SAMP	Uranium, Dissolved	R2989790	J
L720783-02	WG742053	SAMP	Mercury	R2988112	J
	WG742163	SAMP	2-Fluorophenol	R2988670	J2
	WG742163	SAMP	Phenol-d5	R2988670	J2
	WG743038	SAMP	TPH (GC/FID) Low Fraction	R2989887	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Copper, Dissolved	R2989790	J
	WG742348	SAMP	Cobalt, Dissolved	R2989790	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J
	WG742348	SAMP	Zinc, Dissolved	R2989790	J
L720783-03	WG742053	SAMP	Mercury	R2988112	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Copper	R2989598	J
	WG742886	SAMP	Manganese	R2989598	J
	WG742348	SAMP	Manganese, Dissolved	R2989790	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
01	(ESC) The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742065
Analysis Date:	9/10/2014 6:15:00 PM	Analyst:	577
Instrument ID:	IC-9		
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chloride	16887-00-6	< 1.00	< 0.0519	
Fluoride	16984-48-8	< 0.100	< 0.00990	
Nitrate	14797-55-8	< 0.100	< 0.0227	
Nitrite	14797-65-0	< 0.100	< 0.0277	
Sulfate	14808-79-8	< 5.00	< 0.0774	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742065
Analysis Date:	9/10/2014 6:15:00 PM	Analyst:	577
Instrument ID:	IC-9		
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.834	100	90 - 110	
Fluoride	1	8	8.0215	100	90 - 110	
Nitrate	1	8	8.1066	101	90 - 110	
Nitrite	1	8	7.9654	100	90 - 110	
Sulfate	1	40	40.652	102	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.866	100	90 - 110	
Fluoride	1	8	8.025	100	90 - 110	
Nitrate	1	8	8.1013	101	90 - 110	
Nitrite	1	8	7.9868	100	90 - 110	
Sulfate	1	40	40.567	101	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Chloride	1	40	39.834	100	39.866	100	90 - 110	0	20	
Fluoride	1	8	8.0215	100	8.025	100	90 - 110	0	20	
Nitrate	1	8	8.1066	101	8.1013	101	90 - 110	0	20	
Nitrite	1	8	7.9654	100	7.9868	100	90 - 110	0	20	
Sulfate	1	40	40.652	102	40.567	101	90 - 110	0	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742065
Collection Date:	9/9/2014			Analyst:	577
Analysis Date:	9/10/2014 6:15:00 PM				
Instrument ID:	IC-9				
Sample Numbers:	L720783-01, -02, -03				

Sample Duplicate

L720717-07

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	0.1307	0.0952	31	20	P1
Fluoride	1	<0.0099	<0.0099		20	
Nitrate	1	<0.0227	<0.0227		20	
Sulfate	1	0.1086	0.0982	10	20	

Sample Duplicate

L720768-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Nitrate	1	<0.0227	<0.0227		20	
Nitrite	1	<0.0277	<0.0277		20	

Matrix Spike / Matrix Spike Duplicate

L720733-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Nitrate	1	5	0.0605	4.8683	96	4.8856	97	80 - 120		0	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG743012
Analysis Date:	9/16/2014 4:16:00 PM	Analyst:	183
Instrument ID:	LACHAT4		
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cyanide	57-12-5	< 0.00500	< 0.00180	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.0999	99.9	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.0959	95.9	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Cyanide	1	0.1	0.0999	99.9	0.0959	95.9	90 - 110	4.09	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Cyanide by Method 9012B			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG743012
Collection Date:	9/9/2014			Analyst:	183
Analysis Date:	9/16/2014 4:16:00 PM				
Instrument ID:	LACHAT4				
Sample Numbers:	L720783-01, -02, -03				

Sample Duplicate

L720687-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Sample Duplicate

L720856-09

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	0.0019	0	20	

Matrix Spike / Matrix Spike Duplicate

L720678-02

Analyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cyanide	1	0.2	<0.0018	0.209	104	0.195	97.5	90 - 110	6.93	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742415
Analysis Date:	9/15/2014 3:44:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8680	98.6	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8690	98.8	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Dissolved Solids	1	8800	8680	98.6	8690	98.8	85 - 115	0.12	5		

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742415
Analysis Date:	9/15/2014 3:44:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720783-01, -02, -03		

Sample Duplicate

L720734-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	440	457	3.79	5	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742053
Analysis Date:	9/11/2014 7:43:00 AM	Analyst:	628
Instrument ID:	CVAA3	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	0.0513	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.0106	100	85 - 115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Mercury by Method 7470A			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742053
Collection Date:	9/9/2014			Analyst:	628
Analysis Date:	9/11/2014 7:43:00 AM			Prep Date:	9/10/2014
Instrument ID:	CVAA3				
Sample Numbers:	L720783-01, -02, -03				

Sample Duplicate

L720691-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	0.0613	0.0735	0	20	

Serial Dilution

L720691-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	0.0613	0.2593	323	10	

Matrix Spike / Matrix Spike Duplicate

L720691-01

Analyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	0.0613	3.0571	100	3.1448	103	80 - 120	3	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum,Dissolved	7429-90-5	< 100	3.69	
Arsenic,Dissolved	7440-38-2	< 2.00	< 0.250	
Barium,Dissolved	7440-39-3	< 5.00	< 0.360	
Boron,Dissolved	7440-42-8	< 20.0	< 1.5	
Cadmium,Dissolved	7440-43-9	< 1.00	< 0.160	
Calcium,Dissolved	7440-70-2	< 1000	< 46.0	
Chromium,Dissolved	7440-47-3	< 1.00	< 0.540	
Cobalt,Dissolved	7440-48-4	< 2.00	< 0.260	
Copper,Dissolved	7440-50-8	< 5.00	< 0.520	
Iron,Dissolved	7439-89-6	< 100	< 15.0	
Lead,Dissolved	7439-92-1	< 2.00	< 0.240	
Manganese,Dissolved	7439-96-5	< 5.00	0.282	
Molybdenum,Dissolved	7439-98-7	< 5.00	< 0.140	
Nickel,Dissolved	7440-02-0	< 2.00	< 0.350	
Potassium,Dissolved	7440-09-7	< 1000	< 37.0	
Selenium,Dissolved	7782-49-2	< 2.00	< 0.380	
Silver,Dissolved	7440-22-4	< 2.00	< 0.310	
Sodium,Dissolved	7440-23-5	< 1000	< 110	
Uranium,Dissolved	7440-61-1	< 10.0	< 0.330	
Vanadium,Dissolved	7440-62-2	< 5.00	< 0.180	
Zinc,Dissolved	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 12:29:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Arsenic	7440-38-2	< 2.00	< 0.250	
Barium	7440-39-3	< 5.00	< 0.360	
Chromium	7440-47-3	< 1.00	< 0.540	
Copper	7440-50-8	< 5.00	< 0.520	
Iron	7439-89-6	< 100	< 15.0	
Lead	7439-92-1	< 2.00	< 0.240	
Manganese	7439-96-5	< 5.00	< 0.250	
Nickel	7440-02-0	< 2.00	< 0.350	
Selenium	7782-49-2	< 2.00	< 0.380	
Vanadium	7440-62-2	< 5.00	< 0.180	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	70 - 130	
Arsenic,Dissolved	1	111	109.21	98	85 - 115	
Barium,Dissolved	1	111	107.18	97	85 - 115	
Boron,Dissolved	1	111	115.19	104	70 - 130	
Cadmium,Dissolved	1	111	106.38	96	85 - 115	
Calcium,Dissolved	1	11100	11096	100	70 - 130	
Chromium,Dissolved	1	111	108.38	98	85 - 115	
Cobalt,Dissolved	1	111	111.33	100	85 - 115	
Copper,Dissolved	1	111	109.72	99	85 - 115	
Iron,Dissolved	1	1110	1079.5	97	85 - 115	
Lead,Dissolved	1	111	107.86	97	85 - 115	
Manganese,Dissolved	1	111	111.82	101	85 - 115	
Molybdenum,Dissolved	1	111	109.17	98	85 - 115	
Nickel,Dissolved	1	111	110.94	100	85 - 115	
Potassium,Dissolved	1	11100	10872	98	70 - 130	
Selenium,Dissolved	1	111	105.08	95	85 - 115	
Silver,Dissolved	1	111	112.46	101	85 - 115	
Sodium,Dissolved	1	11100	10972	99	70 - 130	
Uranium,Dissolved	1	111	102.92	93	70 - 130	
Vanadium,Dissolved	1	111	107.38	97	85 - 115	
Zinc,Dissolved	1	111	107.98	97	85 - 115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1081.5	97	70 - 130	
Arsenic,Dissolved	1	111	109.19	98	85 - 115	
Barium,Dissolved	1	111	109.17	98	85 - 115	
Boron,Dissolved	1	111	120.38	108	70 - 130	
Cadmium,Dissolved	1	111	107.16	97	85 - 115	
Calcium,Dissolved	1	11100	11067	100	70 - 130	
Chromium,Dissolved	1	111	109.43	99	85 - 115	
Cobalt,Dissolved	1	111	111.38	100	85 - 115	
Copper,Dissolved	1	111	111.05	100	85 - 115	
Iron,Dissolved	1	1110	1064.5	96	85 - 115	
Lead,Dissolved	1	111	109.88	99	85 - 115	
Manganese,Dissolved	1	111	112.32	101	85 - 115	
Molybdenum,Dissolved	1	111	110.84	100	85 - 115	
Nickel,Dissolved	1	111	111.66	101	85 - 115	
Potassium,Dissolved	1	11100	10929	98	70 - 130	
Selenium,Dissolved	1	111	106.50	96	85 - 115	
Silver,Dissolved	1	111	113.42	102	85 - 115	
Sodium,Dissolved	1	11100	11139	100	70 - 130	
Uranium,Dissolved	1	111	105.70	95	70 - 130	
Vanadium,Dissolved	1	111	108.54	98	85 - 115	
Zinc,Dissolved	1	111	109.83	99	85 - 115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	1081.5	97	70 - 130	1	20	
Arsenic,Dissolved	1	111	109.21	98	109.19	98	85 - 115	0	20	
Barium,Dissolved	1	111	107.18	97	109.17	98	85 - 115	2	20	
Boron,Dissolved	1	111	115.19	104	120.38	108	70 - 130	4	20	
Cadmium,Dissolved	1	111	106.38	96	107.16	97	85 - 115	1	20	
Calcium,Dissolved	1	11100	11096	100	11067	100	70 - 130	0	20	
Chromium,Dissolved	1	111	108.38	98	109.43	99	85 - 115	1	20	
Cobalt,Dissolved	1	111	111.33	100	111.38	100	85 - 115	0	20	
Copper,Dissolved	1	111	109.72	99	111.05	100	85 - 115	1	20	
Iron,Dissolved	1	1110	1079.5	97	1064.5	96	85 - 115	1	20	
Lead,Dissolved	1	111	107.86	97	109.88	99	85 - 115	2	20	
Manganese,Dissolved	1	111	111.82	101	112.32	101	85 - 115	0	20	
Molybdenum,Dissolved	1	111	109.17	98	110.84	100	85 - 115	2	20	
Nickel,Dissolved	1	111	110.94	100	111.66	101	85 - 115	1	20	
Potassium,Dissolved	1	11100	10872	98	10929	98	70 - 130	1	20	
Selenium,Dissolved	1	111	105.08	95	106.50	96	85 - 115	1	20	
Silver,Dissolved	1	111	112.46	101	113.42	102	85 - 115	1	20	
Sodium,Dissolved	1	11100	10972	99	11139	100	70 - 130	2	20	
Uranium,Dissolved	1	111	102.92	93	105.70	95	70 - 130	3	20	
Vanadium,Dissolved	1	111	107.38	97	108.54	98	85 - 115	1	20	
Zinc,Dissolved	1	111	107.98	97	109.83	99	85 - 115	2	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 12:29:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.72	99	85 - 115	
Barium	1	111	108.26	98	85 - 115	
Chromium	1	111	111.12	100	85 - 115	
Copper	1	111	111.66	101	85 - 115	
Iron	1	1110	1082.2	97	85 - 115	
Lead	1	111	108.16	97	85 - 115	
Manganese	1	111	111.85	101	85 - 115	
Nickel	1	111	112.23	101	85 - 115	
Selenium	1	111	102.95	93	85 - 115	
Vanadium	1	111	110.90	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.98	99	85 - 115	
Barium	1	111	107.45	97	85 - 115	
Chromium	1	111	113.03	102	85 - 115	
Copper	1	111	111.82	101	85 - 115	
Iron	1	1110	1081.6	97	85 - 115	
Lead	1	111	108.22	97	85 - 115	
Manganese	1	111	113.25	102	85 - 115	
Nickel	1	111	112.25	101	85 - 115	
Selenium	1	111	105.82	95	85 - 115	
Vanadium	1	111	112.42	101	85 - 115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742886
Collection Date:	9/9/2014			Analyst:	664
Analysis Date:	9/15/2014 12:29:00 PM			Prep Date:	9/15/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L720783-01, -02, -03				

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Arsenic	1	111	109.72	99	109.98	99	85 - 115	0	20	
Barium	1	111	108.26	98	107.45	97	85 - 115	1	20	
Chromium	1	111	111.12	100	113.03	102	85 - 115	2	20	
Copper	1	111	111.66	101	111.82	101	85 - 115	0	20	
Iron	1	1110	1082.2	97	1081.6	97	85 - 115	0	20	
Lead	1	111	108.16	97	108.22	97	85 - 115	0	20	
Manganese	1	111	111.85	101	113.25	102	85 - 115	1	20	
Nickel	1	111	112.23	101	112.25	101	85 - 115	0	20	
Selenium	1	111	102.95	93	105.82	95	85 - 115	3	20	
Vanadium	1	111	110.90	100	112.42	101	85 - 115	1	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum,Dissolved	5	22.288	21.100	5	10	
Arsenic,Dissolved	5	3.2501	3.4281	5	10	
Barium,Dissolved	5	7.4854	7.8058	4	10	
Boron,Dissolved	100	1788.1	1640.1	8	10	
Cadmium,Dissolved	5	<0.16	<0.8		10	
Calcium,Dissolved	100	524278	489993	7	10	
Chromium,Dissolved	5	0.8808	<2.7	112	10	
Cobalt,Dissolved	5	<0.26	<1.3		10	
Copper,Dissolved	5	2.4494	2.9229	19	10	
Iron,Dissolved	5	<15	81.690	9275	10	
Lead,Dissolved	5	0.2981	<1.2	18	10	
Manganese,Dissolved	5	<0.25	<1.25		10	
Molybdenum,Dissolved	5	30.979	35.153	13	10	
Nickel,Dissolved	5	1.0394	<1.75	49	10	
Potassium,Dissolved	5	349.09	323.07	7	10	
Selenium,Dissolved	5	8.7353	9.5457	9	10	
Silver,Dissolved	100	<6.2	<31		10	
Sodium,Dissolved	100	224049	199404	11	10	O1
Uranium,Dissolved	100	176.04	161.38	8	10	
Vanadium,Dissolved	5	18.203	19.780	9	10	
Zinc,Dissolved	5	<2.56	24.614	1863	10	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742348
Collection Date:	9/9/2014			Analyst:	664
Analysis Date:	9/15/2014 8:57:00 PM			Prep Date:	9/11/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L720783-01, -02, -03				

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Aluminum,Dissolved	1	1110	22.288	1052.4	93	1041.0	92	70 - 130		1	20	
Arsenic,Dissolved	1	111	3.2501	113.48	99	115.12	101	75 - 125		1	20	
Barium,Dissolved	1	111	7.4854	118.85	100	115.59	97	75 - 125		3	20	
Boron,Dissolved	20	5.55	1788.1	1956.7	152	1774.8	0	70 - 130	V	10	20	
Cadmium,Dissolved	1	111	<0.16	106.76	96	105.63	95	75 - 125		1	20	
Calcium,Dissolved	20	555	524278	546114	197	545299	189	70 - 130	V	0	20	
Chromium,Dissolved	1	111	0.8808	106.72	95	105.07	94	75 - 125		2	20	
Cobalt,Dissolved	1	111	<0.26	106.64	96	108.38	98	75 - 125		2	20	
Copper,Dissolved	1	111	2.4494	106.64	94	108.04	95	75 - 125		1	20	
Iron,Dissolved	1	1110	<15	1041.4	94	1081.3	97	75 - 125		4	20	
Lead,Dissolved	1	111	0.2981	100.85	91	100.08	90	75 - 125		1	20	
Manganese,Dissolved	1	111	<0.25	111.69	100	113.55	102	75 - 125		2	20	
Molybdenum,Dissolved	1	111	30.979	135.82	94	138.32	97	75 - 125		2	20	
Nickel,Dissolved	1	111	1.0394	105.42	94	107.10	96	75 - 125		2	20	
Potassium,Dissolved	1	11100	349.09	11488	100	11293	99	70 - 130		2	20	
Selenium,Dissolved	1	111	8.7353	111.94	93	112.53	94	75 - 125		1	20	
Silver,Dissolved	20	5.55	<6.2	100.12	89	94.393	84	75 - 125		6	20	
Sodium,Dissolved	20	555	224049	240006	144	239276	137	70 - 130	V	0	20	
Uranium,Dissolved	20	5.55	176.04	276.34	90	272.08	87	70 - 130		2	20	
Vanadium,Dissolved	1	111	18.203	127.63	99	125.43	97	75 - 125		2	20	
Zinc,Dissolved	1	111	<2.56	103.18	92	103.69	92	75 - 125		0	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 8:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Aluminum,Dissolved	1	1110	22.288	1003.6	88	70-130	
Arsenic,Dissolved	1	111	3.2501	105.88	92	85-115	
Barium,Dissolved	1	111	7.4854	109.86	92	85-115	
Boron,Dissolved	20	111	1788.1	1834.4	2	70-130	O1
Cadmium,Dissolved	1	111	<0.16	99.787	90	85-115	
Calcium,Dissolved	20	11100	524278	549675	11	70-130	O1
Chromium,Dissolved	1	111	0.8808	100.32	90	85-115	
Cobalt,Dissolved	1	111	<0.26	100.22	90	85-115	
Copper,Dissolved	1	111	2.4494	99.806	88	85-115	
Iron,Dissolved	1	1110	<15	977.94	88	85-115	
Lead,Dissolved	1	111	0.2981	94.947	85	85-115	
Manganese,Dissolved	1	111	<0.25	104.08	94	85-115	
Molybdenum,Dissolved	1	111	30.979	129.64	89	85-115	
Nickel,Dissolved	1	111	1.0394	98.590	88	85-115	
Potassium,Dissolved	1	11100	349.09	10693	93	70-130	
Selenium,Dissolved	1	111	8.7353	105.86	87	85-115	
Silver,Dissolved	20	111	<6.2	111.22	5	85-115	
Sodium,Dissolved	20	11100	224049	239036	7	70-130	O1
Uranium,Dissolved	20	111	176.04	270.24	4	70-130	
Vanadium,Dissolved	1	111	18.203	120.09	92	85-115	
Zinc,Dissolved	1	111	<2.56	95.065	85	85-115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742886
Collection Date:	9/9/2014			Analyst:	664
Analysis Date:	9/15/2014 12:29:00 PM			Prep Date:	9/15/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L720783-01, -02, -03				

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Arsenic	5	3.1369	3.6306	16	10	
Barium	25	7.5498	<9	17	10	
Chromium	5	1.0926	<2.7	114	10	
Copper	5	1.5219	<2.6	52	10	
Iron	5	29.852	<75	0	10	
Lead	25	<1.2	<6		10	
Manganese	5	0.6898	<1.25	25	10	
Nickel	5	0.8360	<1.75	17	10	
Selenium	5	7.1998	6.7039	7	10	
Vanadium	5	18.811	21.583	15	10	

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Arsenic	1	111	3.1369	114.11	100	111.92	98	75 - 125		2	20	
Barium	5	22.2	7.5498	123.75	105	119.51	101	75 - 125		3	20	
Chromium	1	111	1.0926	112.77	101	112.40	100	75 - 125		0	20	
Copper	1	111	1.5219	110.56	98	109.14	97	75 - 125		1	20	
Iron	1	1110	29.852	1082.7	95	1071.3	94	75 - 125		1	20	
Lead	5	22.2	<1.2	113.70	102	110.69	100	75 - 125		3	20	
Manganese	1	111	0.6898	109.23	98	108.65	97	75 - 125		1	20	
Nickel	1	111	0.8360	110.11	98	109.84	98	75 - 125		0	20	
Selenium	1	111	7.1998	104.27	87	105.24	88	75 - 125		1	20	
Vanadium	1	111	18.811	132.79	103	132.66	103	75 - 125		0	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 12:29:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720783-01, -02, -03		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Arsenic	1	111	3.1369	107.42	94	85-115	
Barium	5	111	7.5498	135.09	23	85-115	
Chromium	1	111	1.0926	107.96	96	85-115	
Copper	1	111	1.5219	103.68	92	85-115	
Iron	1	1110	29.852	1022.0	89	85-115	
Lead	5	111	<1.2	129.24	23	85-115	
Manganese	1	111	0.6898	102.25	91	85-115	
Nickel	1	111	0.8360	102.24	91	85-115	
Selenium	1	111	7.1998	95.526	80	85-115	
Vanadium	1	111	18.811	127.53	98	85-115	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742165
Analysis Date:	9/12/2014 10:54:00 PM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L720783-01		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.9136	89.3	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.0044	91	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.9136	89.3	5.0044	91	67 - 132	1.83	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG743038
Analysis Date:	9/16/2014 9:15:00 AM	Analyst:	621
Instrument ID:	VOCGC7		
Sample Numbers:	L720783-02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.5929	83.5	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.7032	85.5	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	% RPD Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.5929	83.5	4.7032	85.5	67 - 132	2.37	20		

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742165
Analysis Date:	9/12/2014 10:54:00 PM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L720783-01		

Matrix Spike / Matrix Spike Duplicate

L720715-03

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	<0.0314	5.0809	92.1	5.1910	94.1	50 - 143		2.14	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG743038
Analysis Date:	9/16/2014 9:15:00 AM	Analyst:	621
Instrument ID:	VOCGC7		
Sample Numbers:	L720783-02, -03		

Matrix Spike / Matrix Spike Duplicate

L720531-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	0.9944	5.8756	88.7	5.1930	76.3	50 - 143		12.3	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742165
Analysis Date:	9/12/2014 10:54:00 PM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L720783-01		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L720783-01 10x	VOCGC1	0912_21	0.196	97.9		
LCS WG742165	VOCGC1	0912_06	0.199	99.7	0.223	111
LCSD WG742165	VOCGC1	0912_07	0.200	99.8	0.223	111
MS WG742165	VOCGC1	0912_08	0.201	100	0.223	112
MSD WG742165	VOCGC1	0912_09	0.198	98.9	0.222	111
BLANK WG742165	VOCGC1	0912_11	0.195	97.7	0.204	102

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG743038
Analysis Date:	9/16/2014 9:15:00 AM	Analyst:	621
Instrument ID:	VOCGC7		
Sample Numbers:	L720783-02, -03		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L720783-02	VOCGC7	0916_15	0.191	95.5
L720783-03	VOCGC7	0916_16	0.190	95.0
LCS WG743038	VOCGC7	0916_04	0.205	103
LCSD WG743038	VOCGC7	0916_05	0.206	103
MS WG743038	VOCGC7	0916_06	0.207	103
MSD WG743038	VOCGC7	0916_07	0.204	102
BLANK WG743038	VOCGC7	0916_09	0.190	94.9

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0240	95.9	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0238	95.4	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0244	97.7	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0239	95.6	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0246	98.4	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0224	89.7	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0231	92.5	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0242	96.8	68.8 - 124	
Benzene	1	0.025	0.0237	94.6	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0241	96.4	70.2 - 123	
Chloroform	1	0.025	0.0234	93.6	76 - 121	
Ethylbenzene	1	0.025	0.0233	93.4	78.8 - 122	
m&p-Xylenes	1	0.05	0.0460	91.9	78.8 - 121	
Methylene Chloride	1	0.025	0.0220	87.9	70.3 - 120	
o-Xylene	1	0.025	0.0233	93.2	77.6 - 122	
Tetrachloroethene	1	0.025	0.0225	90.1	72.6 - 126	
Toluene	1	0.025	0.0238	95.3	79.7 - 116	
Vinyl chloride	1	0.025	0.0205	82.1	65.9 - 128	
Xylenes, Total	1	0.075	0.0693	92.4	78.7 - 121	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0243	97.4	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0244	97.4	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0242	96.9	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0233	93	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0248	99.4	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0227	91	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0231	92.4	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0249	99.7	68.8 - 124	
Benzene	1	0.025	0.0239	95.6	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0246	98.3	70.2 - 123	
Chloroform	1	0.025	0.0238	95.3	76 - 121	
Ethylbenzene	1	0.025	0.0229	91.8	78.8 - 122	
m&p-Xylenes	1	0.05	0.0455	91	78.8 - 121	
Methylene Chloride	1	0.025	0.0222	88.7	70.3 - 120	
o-Xylene	1	0.025	0.0226	90.6	77.6 - 122	
Tetrachloroethene	1	0.025	0.0226	90.5	72.6 - 126	
Toluene	1	0.025	0.0240	96	79.7 - 116	
Vinyl chloride	1	0.025	0.0214	85.5	65.9 - 128	
Xylenes, Total	1	0.075	0.0681	90.8	78.7 - 121	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0240	95.9	0.0243	97.4	74.2 - 124		1.55	20
1,1,1-Trichloroethane	1	0.025	0.0238	95.4	0.0244	97.4	73.2 - 123		2.08	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0244	97.7	0.0242	96.9	70.7 - 122		0.9	20
1,1,2-Trichloroethane	1	0.025	0.0239	95.6	0.0233	93	77.7 - 118		2.74	20
1,1-Dichloroethane	1	0.025	0.0246	98.4	0.0248	99.4	70.7 - 126		1	20
1,1-Dichloroethene	1	0.025	0.0224	89.7	0.0227	91	67.8 - 129		1.45	20
1,2-Dibromoethane	1	0.025	0.0231	92.5	0.0231	92.4	76.6 - 121		0.02	20
1,2-Dichloroethane	1	0.025	0.0242	96.8	0.0249	99.7	68.8 - 124		2.93	20
Benzene	1	0.025	0.0237	94.6	0.0239	95.6	74.8 - 121		1.03	20
Carbon tetrachloride	1	0.025	0.0241	96.4	0.0246	98.3	70.2 - 123		1.95	20
Chloroform	1	0.025	0.0234	93.6	0.0238	95.3	76 - 121		1.78	20
Ethylbenzene	1	0.025	0.0233	93.4	0.0229	91.8	78.8 - 122		1.68	20
m&p-Xylenes	1	0.05	0.0460	91.9	0.0455	91	78.8 - 121		1.05	20
Methylene Chloride	1	0.025	0.0220	87.9	0.0222	88.7	70.3 - 120		0.89	20
o-Xylene	1	0.025	0.0233	93.2	0.0226	90.6	77.6 - 122		2.88	20
Tetrachloroethene	1	0.025	0.0225	90.1	0.0226	90.5	72.6 - 126		0.46	20
Toluene	1	0.025	0.0238	95.3	0.0240	96	79.7 - 116		0.73	20
Vinyl chloride	1	0.025	0.0205	82.1	0.0214	85.5	65.9 - 128		4.04	20
Xylenes, Total	1	0.075	0.0693	92.4	0.0681	90.8	78.7 - 121		1.66	20

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0235	94.1	0.0233	93.2	70.5 - 132		1.02	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0237	94.8	0.0234	93.8	58.7 - 134		1.05	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0259	104	0.0250	100	64.9 - 145		3.57	20	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0237	94.9	0.0236	94.6	74.1 - 130		0.33	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0246	98.3	0.0240	96	64 - 134		2.37	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0219	87.6	0.0218	87.3	48.8 - 144		0.27	20	
1,2-Dibromoethane	1	0.025	<0.0004	0.0235	93.9	0.0232	92.7	73.8 - 131		1.18	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0254	102	0.0243	97.1	60.7 - 132		4.51	20	
Benzene	1	0.025	<0.0003	0.0235	94	0.0232	92.8	58.6 - 133		1.26	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0243	97.1	0.0239	95.6	60.6 - 139		1.66	20	
Chloroform	1	0.025	<0.0003	0.0236	94.5	0.0235	94	66.1 - 133		0.54	20	
Ethylbenzene	1	0.025	<0.0004	0.0225	90.1	0.0219	87.6	62.7 - 136		2.86	20	
m&p-Xylenes	1	0.05	<0.0007	0.0448	89.7	0.0438	87.7	64.1 - 133		2.24	20	
Methylene Chloride	1	0.025	<0.001	0.0216	86.6	0.0212	84.9	61.5 - 125		1.97	20	
o-Xylene	1	0.025	<0.0003	0.0221	88.4	0.0221	88.3	67.1 - 133		0.16	20	
Tetrachloroethene	1	0.025	<0.0004	0.0218	87.3	0.0217	86.6	57.4 - 141		0.73	20	
Toluene	1	0.025	<0.0008	0.0238	95.1	0.0233	93.3	67.8 - 124		1.9	20	
Vinyl chloride	1	0.025	<0.0003	0.0206	82.3	0.0207	82.8	44.3 - 143		0.63	20	
Xylenes, Total	1	0.075	<0.0011	0.0669	89.3	0.0659	87.9	65.6 - 133		1.55	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Internal Standard Response and Retention Time Summary

File ID: 0912_34
Analyzed: 09/12/14 204500

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	265341	5.33	493211	5.76	84311	7.29	210777	10.36
Upper Limit	531000	5.83	986000	6.26	169000	7.79	422000	10.86
Lower Limit	133000	4.83	247000	5.26	42200	6.79	105000	9.86
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L720783-04	237982	5.32	461155	5.76	73012	7.29	177130	10.36
L720783-01	233616	5.33	449058	5.76	73228	7.29	180595	10.36
L720783-02	229110	5.33	443681	5.76	73748	7.29	179556	10.36
L720783-03	226229	5.33	432534	5.76	70869	7.29	176234	10.36
MSD WG742211	273787	5.33	512825	5.76	85759	7.29	214571	10.36
MS WG742211	263857	5.33	497392	5.76	83123	7.29	218659	10.36
LCSD WG742211	268001	5.33	508575	5.76	83627	7.29	212091	10.36
LCS WG742211	267877	5.33	497622	5.76	81486	7.29	211011	10.36
BLANK WG742211	249249	5.33	470616	5.76	75774	7.29	185595	10.36

Legend:

IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742211
Analysis Date:	9/13/2014 2:20:00 AM	Analyst:	644
Instrument ID:	VOCMS22		
Sample Numbers:	L720783-01, -02, -03, -04		

Surrogate Summary

		BFB			DFM		TD8		TFT	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L720783-01	VOCMS22	0912_47	0.0367	91.8	0.0399	99.8	0.0411	103		
L720783-02	VOCMS22	0912_49	0.0372	93.0	0.0407	102	0.0415	104		
L720783-03	VOCMS22	0912_50	0.0375	93.8	0.0413	103	0.0418	104		
L720783-04	VOCMS22	0912_42	0.0376	94.0	0.0396	99.0	0.0402	101		
LCS WG742211	VOCMS22	0912_35	0.0392	98.0	0.0396	98.9	0.0412	103	0.0395	98.8
LCSD WG742211	VOCMS22	0912_36	0.0383	95.7	0.0402	100	0.0408	102	0.0393	98.3
MS WG742211	VOCMS22	0912_38	0.0383	95.7	0.0400	100	0.0413	103	0.0405	101
MSD WG742211	VOCMS22	0912_39	0.0375	93.8	0.0394	98.4	0.0407	102	0.0394	98.5
BLANK WG742211	VOCMS22	0912_41	0.0364	90.9	0.0392	98.0	0.0410	102	0.0400	100

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test: Diesel Range Organics by Method 8015
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 9/9/2014
Analysis Date: 9/12/2014 10:00:00 PM
Instrument ID: SVGC27
Sample Numbers: L720783-01, -02, -03

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG742393
Analyst: 546
Prep Date: 9/11/2014

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C10-C28 Diesel Range		< 0.100	< 0.0222	
C28-C40 Oil Range		< 0.100	< 0.0118	
Extractable Petroleum Hydrocarbon		< 0.100	< 0.0330	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5666	104	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5653	104	70 - 130	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5666	104	1.5653	104	70 - 130	0.08	20		

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742393
Analysis Date:	9/12/2014 10:00:00 PM	Analyst:	546
Instrument ID:	SVGC27	Prep Date:	9/11/2014
Sample Numbers:	L720783-01, -02, -03		

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L720783-01	SVGC27	0912_33	0.0197	98.7
L720783-02	SVGC27	0912_34	0.0192	95.8
L720783-03	SVGC27	0912_35	0.0202	101
BLANK WG742393	SVGC27	0912_08	0.0222	111
LCS WG742393	SVGC27	0912_09	0.0216	108
LCSD WG742393	SVGC27	0912_10	0.0219	109
MS WG742393	SVGC27	0912_31	0.0207	103
MSD WG742393	SVGC27	0912_32	0.0201	100

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742393
Collection Date:	9/9/2014			Analyst:	546
Analysis Date:	9/12/2014 10:00:00 PM			Prep Date:	9/11/2014
Instrument ID:	SVGC27				
Sample Numbers:	L720783-01, -02, -03				

Matrix Spike / Matrix Spike Duplicate

L720039-14

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Extractable Petroleum Hydrocarbon	1	1.5	0.0	1.5878	106	1.5306	102	70 - 130		3.67	20	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4, BNAMS2	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 1.00	< 0.330	
2-Methylnaphthalene	91-57-6	< 1.00	< 0.311	
Benzo(a)pyrene	50-32-8	< 1.00	< 0.340	
Naphthalene	91-20-3	< 1.00	< 0.372	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4, BNAMS2	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	19.289	77.2	34.7 - 102	
2-Methylnaphthalene	1	25	17.755	71	33.8 - 98.6	
Benzo(a)pyrene	1	25	17.484	69.9	45.6 - 106	
Naphthalene	1	25	16.726	66.9	32.2 - 101	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	21.389	85.6	34.7 - 102	
2-Methylnaphthalene	1	25	19.810	79.2	33.8 - 98.6	
Benzo(a)pyrene	1	25	20.514	82.1	45.6 - 106	
Naphthalene	1	25	18.009	72	32.2 - 101	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1-Methylnaphthalene	1	25	19.289	77.2	21.389	85.6	34.7 - 102	10.3	24.9	
2-Methylnaphthalene	1	25	17.755	71	19.810	79.2	33.8 - 98.6	10.9	24.2	
Benzo(a)pyrene	1	25	17.484	69.9	20.514	82.1	45.6 - 106	16	20	
Naphthalene	1	25	16.726	66.9	18.009	72	32.2 - 101	7.39	23.8	

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS1	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0912_03
Analyzed: 09/12/14 095700

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	111467	4.78	414413	5.53	217378	6.56	325874	7.43
Upper Limit	223000	5.28	829000	6.03	435000	7.06	652000	7.93
Lower Limit	55700	4.28	207000	5.03	109000	6.06	163000	6.93
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
BLANK WG742163	98286	4.79	370619	5.54	195484	6.56	291646	7.43

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS1	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0912_03
Analyzed: 09/12/14 095700

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	111467	4.78	332556	8.98	209553	10.11
Upper Limit	223000	5.28	665000	9.48	419000	10.61
Lower Limit	55700	4.28	166000	8.48	105000	9.61

Sample ID	Response	RT	Response	RT	Response	RT
BLANK WG742163	98286	4.79	280147	8.98	251085	10.12

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0911A_03

Analyzed: 09/11/14 235600

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	97622	5.45	431087	6.72	291127	8.60	502549	10.21
Upper Limit	195000	5.95	862000	7.22	582000	9.10	1010000	10.71
Lower Limit	48800	4.95	216000	6.22	146000	8.10	251000	9.71
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
LCSD WG742163	64159	5.46	285656	6.73	188257	8.60	331491	10.22
LCS WG742163	73168	5.46	323216	6.73	217607	8.60	368210	10.21
BLANK WG742163	69353	5.46	300692	6.73	198907	8.60	345408	10.21

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0911A_03

Analyzed: 09/11/14 235600

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	97622	5.45	540846	13.28	635128	15.05
Upper Limit	195000	5.95	1080000	13.78	1270000	15.55
Lower Limit	48800	4.95	270000	12.78	318000	14.55
Sample ID	Response	RT	Response	RT	Response	RT
LCSD WG742163	64159	5.46	356725	13.17	406086	14.84
LCS WG742163	73168	5.46	399426	13.17	453887	14.81
BLANK WG742163	69353	5.46	358866	13.19	414302	14.87

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0912_02
Analyzed: 09/12/14 031000

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	315263	5.54	1333113	6.83	857315	8.73	1477354	10.37
Upper Limit	631000	6.04	2670000	7.33	1710000	9.23	2950000	10.87
Lower Limit	158000	5.04	667000	6.33	429000	8.23	739000	9.87
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L720783-01	451510	5.54	1870697	6.83	1160364	8.73	2034691	10.37
L720783-02	414547	5.54	1777792	6.83	1116606	8.73	1940310	10.37
L720783-03	386785	5.54	1655196	6.83	1038983	8.73	1803617	10.37

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Internal Standard Response and Retention Time Summary

File ID: 0912_02
Analyzed: 09/12/14 031000

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	315263	5.54	1677466	13.27	1832861	14.79
Upper Limit	631000	6.04	3350000	13.77	3670000	15.29
Lower Limit	158000	5.04	839000	12.77	916000	14.29
Sample ID	Response	RT	Response	RT	Response	RT
L720783-01	451510	5.54	2274226	13.27	2556312	14.79
L720783-02	414547	5.54	2126659	13.27	2343589	14.79
L720783-03	386785	5.54	1975482	13.27	2195029	14.79

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Surrogate Summary

			TBP		FBP		2FP		NBZ	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L720783-01	BNAMS4	0912_16	0.0137	68.5	0.00765	76.5	0.0108	54.1	0.00623	62.3
L720783-02	BNAMS4	0912_17	0.0132	65.9	0.00779	77.9	0.000561	2.8 J2	0.00638	63.8
L720783-03	BNAMS4	0912_18	0.0147	73.5	0.00809	80.9	0.0117	58.5	0.00669	66.9
LCS WG742163	BNAMS2	0911A_09-	0.0175	87.4	0.00723	72.3	0.0102	51.2	0.00610	61.0
LCSD WG742163	BNAMS2	0911A_10-	0.0184	91.9	0.00811	81.1	0.0111	55.7	0.00654	65.4
BLANK WG742163	BNAMS2	0911A_11-	0.0151	75.4	0.00758	75.8	0.0108	53.8	0.00637	63.7

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1



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Quality Control Summary

SDG: L720783

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742163
Analysis Date:	9/12/2014 8:20:00 AM	Analyst:	280
Instrument ID:	BNAMS4	Prep Date:	9/10/2014
Sample Numbers:	L720783-01, -02, -03		

Surrogate Summary

		TPH		PHL	
Laboratory					
Sample ID	Instrument	File ID	ppm	% Rec	ppm % Rec
L720783-01	BNAMS4	0912_16	0.00668	66.8	0.00802 40.1
L720783-02	BNAMS4	0912_17	0.00731	73.1	0.000784 3.92 J2
L720783-03	BNAMS4	0912_18	0.00795	79.5	0.00858 42.9
LCS WG742163	BNAMS2	0911A_09-	0.00646	64.6	0.00733 36.7
LCSD WG742163	BNAMS2	0911A_10-	0.00723	72.3	0.00847 42.3
BLANK WG742163	BNAMS2	0911A_11-	0.00684	68.4	0.00750 37.5

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

LABORATORY REPORT

This report contains ¹⁰_____ pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

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Eaton Analytical, Inc.*

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Environmental Science

Report: 325211

Attn: Janice Cozby
 12065 Lebanon Road
 Mount Juliet, TN 37122

Priority: Standard Written
 Status: Final
 PWS ID: Not Supplied

Copies
 to: None

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3100964	L720784-01	7500-Ra B	09/09/14 09:05	Client	09/11/14 08:45
3100964	L720784-01	7500-Ra D	09/09/14 09:05	Client	09/11/14 08:45
3100965	L720784-02	7500-Ra B	09/09/14 11:20	Client	09/11/14 08:45
3100965	L720784-02	7500-Ra D	09/09/14 11:20	Client	09/11/14 08:45
3100966	L720784-03	7500-Ra B	09/09/14 13:55	Client	09/11/14 08:45
3100966	L720784-03	7500-Ra D	09/09/14 13:55	Client	09/11/14 08:45

Report Summary

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Trott at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

 Analytical Services Manager

Authorized Signature

Title

02/07/2015

Date

Client Name: Environmental Science

Report #: 325211

Sampling Point: L720784-01

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.4	1.0	1.5 ± 0.5	pCi/L	09/16/14 10:50	09/20/14 12:27	3100964
15262-20-1	Radium-228	7500-Ra D	---	0.42	1.0	0.52 ± 0.43	pCi/L	09/12/14 13:43	09/19/14 18:37	3100964
---	Combined Radium	calc.	5 *	0.42	---	2.02 ± 0.69	pCi/L	09/16/14 10:50	09/20/14 12:27	3100964

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L720784-02

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.32	1.0	0.90 ± 0.43	pCi/L	09/16/14 10:50	09/20/14 12:27	3100965
15262-20-1	Radium-228	7500-Ra D	---	0.32	1.0	0.62 ± 0.33	pCi/L	09/12/14 13:43	09/19/14 18:37	3100965
---	Combined Radium	calc.	5 *	0.32	---	1.52 ± 0.54	pCi/L	09/16/14 10:50	09/20/14 12:27	3100965

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L720784-03

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.46	1.0	0.46 ± 0.46	pCi/L	09/16/14 10:50	09/20/14 12:50	3100966
15262-20-1	Radium-228	7500-Ra D	---	0.42	1.0	0.58 ± 0.43	pCi/L	09/12/14 13:43	09/19/14 18:37	3100966
---	Combined Radium	calc.	5 *	0.46	---	1.04 ± 0.63	pCi/L	09/16/14 10:50	09/20/14 12:50	3100966

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Sub-Contract Chain of Custody



Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

325211 261019

Sub-Contract Lab : ENVHEALT

City / State : South Bend, IN

Results Needed by : 10/9/14

ESC Purchase Order # : S20661

Send Reports To : Janice Cozby jcozby@esclabsciences.com

WORKGROUP

WG742113

Date Created :

9/10/2014

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L720784-01	DW	9/9/2014 9:05	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17334925			2 PH22		3100964	
L720784-01	DW	9/9/2014 9:05	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17334925						
L720784-02	DW	9/9/2014 11:20	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17334929			2 PH22		3100965	
L720784-02	DW	9/9/2014 11:20	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17334929						
L720784-03	DW	9/9/2014 13:55	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17334930			2 PH22		3100966	
L720784-03	DW	9/9/2014 13:55	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17334930						

Client Provided Sample Container

Wht in

Relinquished by J Cozby

Date: 091014

Received by: K Depue

Date: 9-11-14 0845

Relinquished by _____

Date: _____

Received by: _____

Date: _____



Eurofins Eaton Analytical Run Log

Run ID: **195264** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3100964	L720784-01	GW	DU	09/20/2014 12:27	
FS	3100965	L720784-02	GW	DU	09/20/2014 12:27	
LRB	3110025		RW	DU	09/20/2014 12:27	
LFB	3110026		RW	DU	09/20/2014 12:27	
FS	3100966	L720784-03	GW	DU	09/20/2014 12:50	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.4	L720784-01		1.5		pCi/L	---	---	---	---	1.0	09/16/2014 10:50	09/20/2014 12:27	3100964
FS	Radium-226	7500-Ra B	0.32	L720784-02		0.90		pCi/L	---	---	---	---	1.0	09/16/2014 10:50	09/20/2014 12:27	3100965
LRB	Radium-226	7500-Ra B	0.16	---		0.01		pCi/L	---	---	---	---	1.0	---	09/20/2014 12:27	3110025
LFB	Radium-226	7500-Ra B	0.2	---		20.5200	18.0	% Recovery	114	30 - 160	---	---	1.0	---	09/20/2014 12:27	3110026
FS	Radium-226	7500-Ra B	0.46	L720784-03		0.46		pCi/L	---	---	---	---	1.0	09/16/2014 10:50	09/20/2014 12:50	3100966

Eurofins Eaton Analytical
Run Log

Run ID: **195176** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3100964	L720784-01	GW	CI	09/19/2014 18:37	
FS	3100965	L720784-02	GW	CI	09/19/2014 18:37	
FS	3100966	L720784-03	GW	CI	09/19/2014 18:37	
LRB	3108390		RW	CI	09/19/2014 18:37	
LFB	3108391		RW	CI	09/19/2014 18:37	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.42	L720784-01		0.52		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:37	3100964
FS	Radium-228	7500-Ra D	0.32	L720784-02		0.62		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:37	3100965
FS	Radium-228	7500-Ra D	0.42	L720784-03		0.58		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:37	3100966
LRB	Radium-228	7500-Ra D	0.39	---		0.32		pCi/L	---	---	---	---	1.0	09/12/2014 13:43	09/19/2014 18:37	3108390
LFB	Radium-228	7500-Ra D	0.30	---		5.2400	8.54	% Recovery	61	48 - 139	---	---	1.0	09/12/2014 13:43	09/19/2014 18:37	3108391

Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>
FS	Field Sample
LFB	Laboratory Fortified Blank
LRB	Laboratory Reagent Blank

Quality Control Summary

SDG: L720999

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Anions by Method 9056MOD

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742310. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742310 sample duplicate analysis was performed on sample L720999-03. The relative percent difference exceeded the method limits for Chloride, Nitrate, and Sulfate.

For analytical batch WG742310 sample duplicate analysis was performed on sample L721171-03. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742310 matrix spike/matrix spike duplicate analysis was performed on sample L720821-10. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Total Dissolved Solids by Method 2540 C-2011

Laboratory Control Sample

Samples L720999-01, -02, and -03 were analyzed in analytical batch WG742415. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L720999-04, -05, and -06 were analyzed in analytical batch WG742979. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742415 sample duplicate analysis was performed on sample L720734-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG742979 sample duplicate analysis was performed on sample L720983-02. The relative percent differences were within the method limits for target analytes reported from this batch.

Quality Control Summary

SDG: L720999

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742415 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Precision for batch WG742979 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Cyanide by Method 9012B

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG743138. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG743138 sample duplicate analysis was performed on sample L720999-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG743138 sample duplicate analysis was performed on sample L720483-02. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG743138 matrix spike/matrix spike duplicate analysis was performed on sample L720526-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Mercury by Method 7470A

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, and -05 were analyzed in analytical batch WG742307. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Sample L720999-06 was analyzed in analytical batch WG742437. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742307 sample duplicate analysis was performed on sample L720961-01. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG742437 sample duplicate analysis was performed on sample L721049-24. The relative percent differences were within the method limits for target analytes reported from this batch.

Quality Control Summary

SDG: L720999

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

October 17, 2014

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742307 matrix spike/matrix spike duplicate analysis was performed on sample L720961-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG742437 matrix spike/matrix spike duplicate analysis was performed on sample L721049-24. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6020

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742348. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742886. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742348 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries were above laboratory control limits for Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved. The matrix spike recoveries were below laboratory control limits for Boron,Dissolved. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch. Sodium,Dissolved did not meet the method limit criteria for the serial dilution. Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved, did not meet the method limit criteria for the post digest spike. Sodium,Dissolved exceeded the method limit criteria for both the serial dilution and the post digest spike. This exceedance indicates matrix interference.

For analytical batch WG742886 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile TPH by Method 8015D/GRO

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742368. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Quality Control Summary

SDG: L720999

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742368 matrix spike/matrix spike duplicate analysis was performed on sample L720823-50. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile Organic Compounds by Method 8260B

Laboratory Control Sample

Samples L720999-01, -02, -03, -05, -06, -07, -08, and -09 were analyzed in analytical batch WG742458. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L720999-04 was analyzed in analytical batch WG742667. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742458 matrix spike/matrix spike duplicate analysis was performed on sample L720993-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG742667 matrix spike/matrix spike duplicate analysis was performed on sample L721326-21. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Semi-Volatile Organic Compounds by Method 8270C

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742452. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742452 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L720999

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Diesel Range Organics by Method 8015

Laboratory Control Sample

Samples L720999-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742393. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742393 matrix spike/matrix spike duplicate analysis was performed on sample L720039-14. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Report Summary

Tuesday August 11, 2015

Report Number: L720999

Samples Received: 09/11/14

Client Project: TX000836.0008.00004

Description: Navajo Refining Company - Artesia, NM

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Pam Langford , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BI0041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-01

Sample ID : UG-2-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 16:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	55000	52.	1000	ug/l		9056MOD	09/11/14	1
Fluoride	1500	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	4300	23.	100	ug/l		9056MOD	09/11/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/11/14	1
Sulfate	1100000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	2000000	2800	10000	ug/l		2540 C-	09/15/14	1
Aluminum, Dissolved	31.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	2.1	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	1.7	0.25	1.0	ug/l		6020	09/15/14	1
Barium	29.	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	15.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	300	15.	200	ug/l		6020	09/15/14	10
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	310000	460	10000	ug/l		6020	09/15/14	10
Chromium	73.	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	2.9	0.54	1.0	ug/l		6020	09/15/14	1
Copper	3.4	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	1.1	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	0.77	0.26	1.0	ug/l	J	6020	09/15/14	1
Iron	760	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	0.80	0.24	1.0	ug/l	J	6020	09/15/14	1
Lead, Dissolved	U	2.4	10.	ug/l		6020	09/15/14	10
Manganese	120	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	81.	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	12.	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	52.	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	16.	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	1800	37.	1000	ug/l		6020	09/15/14	1
Selenium	2.6	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	2.8	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	3.1	5.0	ug/l		6020	09/15/14	10
Sodium, Dissolved	69000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	13.	3.3	100	ug/l	J	6020	09/15/14	10
Vanadium	15.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	11.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	6.2	2.6	10.	ug/l	J	6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-2-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 16:15

ESC Sample # : L720999-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.3			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	107.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	100.			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	103.			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	53.6			% Rec.		8270C	09/13/14	1

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-2-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 16:15

ESC Sample # : L720999-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	40.2			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	69.1			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	75.5			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	82.9			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	72.4			% Rec.		8270C	09/13/14	1

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REPORT OF ANALYSIS

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ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-02

Sample ID : UG-3R-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 17:40

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	24000	52.	1000	ug/l		9056MOD	09/11/14	1
Fluoride	640	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	550	23.	100	ug/l		9056MOD	09/11/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/11/14	1
Sulfate	1500000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	2400000	2800	10000	ug/l		2540 C-	09/15/14	1
Aluminum, Dissolved	14.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	1.4	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	1.3	0.25	1.0	ug/l		6020	09/15/14	1
Barium	17.	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	17.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	180	15.	200	ug/l	J	6020	09/15/14	10
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	390000	460	10000	ug/l		6020	09/15/14	10
Chromium	1.4	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	0.86	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	U	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	0.60	0.52	1.0	ug/l	J	6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	2.4	10.	ug/l		6020	09/15/14	10
Manganese	1.1	0.25	2.0	ug/l	J	6020	09/15/14	1
Manganese, Dissolved	0.76	0.25	2.0	ug/l	J	6020	09/15/14	1
Molybdenum, Dissolved	3.0	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	0.90	0.35	1.0	ug/l	J	6020	09/15/14	1
Nickel, Dissolved	0.96	0.35	1.0	ug/l	J	6020	09/15/14	1
Potassium, Dissolved	1800	37.	1000	ug/l		6020	09/15/14	1
Selenium	2.6	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	2.7	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	3.1	5.0	ug/l		6020	09/15/14	10
Sodium, Dissolved	46000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	10.	3.3	100	ug/l	J	6020	09/15/14	10
Vanadium	8.8	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	8.5	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-3R-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 17:40

ESC Sample # : L720999-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.3			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	106.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	98.0			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	100.			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	55.5			% Rec.		8270C	09/13/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-3R-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 17:40

ESC Sample # : L720999-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	40.1			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	74.6			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	79.2			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	86.7			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	73.4			% Rec.		8270C	09/13/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-03

Sample ID : EB-07-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 18:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	250	52.	1000	ug/l	JP1	9056MOD	09/11/14	1
Fluoride	U	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	28.	23.	100	ug/l	JP1	9056MOD	09/11/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/11/14	1
Sulfate	840	77.	5000	ug/l	JP1	9056MOD	09/11/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	U	2800	10000	ug/l	T4	2540 C-	09/15/14	1
Aluminum, Dissolved	8.5	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	U	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	U	0.25	1.0	ug/l		6020	09/15/14	1
Barium	U	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	U	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	24.	1.5	20.	ug/l		6020	09/15/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	79.	46.	1000	ug/l	J	6020	09/15/14	1
Chromium	0.94	0.54	1.0	ug/l	J	6020	09/15/14	1
Chromium, Dissolved	0.55	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	U	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	0.57	0.52	1.0	ug/l	J	6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	09/15/14	1
Manganese	0.28	0.25	2.0	ug/l	J	6020	09/15/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	U	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	U	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	U	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	09/15/14	1
Selenium	U	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	0.31	0.50	ug/l		6020	09/15/14	1
Sodium, Dissolved	U	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	09/15/14	1
Vanadium	U	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-03

Sample ID : EB-07-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/09/14 18:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.4			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	108.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	101.			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/12/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/12/14	1
Surrogate Recovery								
o-Terphenyl	108.			% Rec.		8015	09/12/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	46.2			% Rec.		8270C	09/13/14	1

U = ND (Not Detected)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB-07-0914-BG
Collected By : Ron Wood
Collection Date : 09/09/14 18:15

ESC Sample # : L720999-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	34.2			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	52.6			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	56.5			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	56.9			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	51.8			% Rec.		8270C	09/13/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-04

Sample ID : MW-13-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 09:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	1800000	2600	50000	ug/l		9056MOD	09/11/14	50
Fluoride	490	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/11/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/11/14	1
Sulfate	2600000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	7100000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	12.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	1.1	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	0.91	0.25	1.0	ug/l	J	6020	09/15/14	1
Barium	29.	3.6	20.	ug/l		6020	09/15/14	10
Barium, Dissolved	27.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	420	75.	1000	ug/l	J	6020	09/15/14	50
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	700000	2300	50000	ug/l		6020	09/15/14	50
Chromium	0.96	0.54	1.0	ug/l	J	6020	09/15/14	1
Chromium, Dissolved	U	0.54	1.0	ug/l		6020	09/15/14	1
Copper	0.96	0.52	1.0	ug/l	J	6020	09/15/14	1
Copper, Dissolved	1.0	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	200	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	2.4	10.	ug/l		6020	09/15/14	10
Lead, Dissolved	U	12.	50.	ug/l		6020	09/15/14	50
Manganese	630	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	590	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	3.6	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	1.1	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	1.4	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	5800	37.	1000	ug/l		6020	09/15/14	1
Selenium	U	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	0.66	0.38	2.0	ug/l	J	6020	09/15/14	1
Silver, Dissolved	U	16.	25.	ug/l		6020	09/15/14	50
Sodium, Dissolved	1100000	5500	50000	ug/l		6020	09/15/14	50
Uranium, Dissolved	U	16.	500	ug/l		6020	09/15/14	50
Vanadium	3.6	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	2.8	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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L720999-04 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-13-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 09:10

ESC Sample # : L720999-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.0			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/18/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/18/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/18/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/18/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/18/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/18/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/18/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/18/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/18/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/18/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/18/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/18/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/18/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/18/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/18/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/18/14	1
Surrogate Recovery								
Toluene-d8	97.6			% Rec.		8260B	09/18/14	1
Dibromofluoromethane	91.3			% Rec.		8260B	09/18/14	1
4-Bromofluorobenzene	96.0			% Rec.		8260B	09/18/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/13/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/13/14	1
Surrogate Recovery								
o-Terphenyl	103.			% Rec.		8015	09/13/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	35.2			% Rec.		8270C	09/13/14	1

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L720999-04 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-13-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 09:10

ESC Sample # : L720999-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	22.9			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	68.6			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	77.0			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	82.3			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	71.0			% Rec.		8270C	09/13/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-05

Sample ID : MW-12-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 10:05

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	1700000	2600	50000	ug/l		9056MOD	09/11/14	50
Fluoride	1300	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	4100	23.	100	ug/l		9056MOD	09/11/14	1
Nitrite	51.	28.	100	ug/l	J	9056MOD	09/11/14	1
Sulfate	3600000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	8200000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	19.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	1.3	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	1.0	0.25	1.0	ug/l		6020	09/15/14	1
Barium	17.	3.6	20.	ug/l	J	6020	09/15/14	10
Barium, Dissolved	20.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	620	75.	1000	ug/l	J	6020	09/15/14	50
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	650000	2300	50000	ug/l		6020	09/15/14	50
Chromium	0.94	0.54	1.0	ug/l	J	6020	09/15/14	1
Chromium, Dissolved	0.71	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	1.8	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	2.0	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	240	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	2.4	10.	ug/l		6020	09/15/14	10
Lead, Dissolved	U	12.	50.	ug/l		6020	09/15/14	50
Manganese	30.	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	31.	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	4.7	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	1.7	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	2.1	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	4500	37.	1000	ug/l		6020	09/15/14	1
Selenium	6.2	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	7.4	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	16.	25.	ug/l		6020	09/15/14	50
Sodium, Dissolved	1400000	5500	50000	ug/l		6020	09/15/14	50
Uranium, Dissolved	U	16.	500	ug/l		6020	09/15/14	50
Vanadium	2.3	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	2.1	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	5.3	2.6	10.	ug/l	J	6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

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L720999-05 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-05

Sample ID : MW-12-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 10:05

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.1			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	105.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	92.8			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	U	22.	100	ug/l		8015	09/13/14	1
C28-C40 Oil Range	U	12.	100	ug/l		8015	09/13/14	1
Surrogate Recovery								
o-Terphenyl	99.7			% Rec.		8015	09/13/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	53.6			% Rec.		8270C	09/13/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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Reported: 08/11/15 10:58 Printed: 08/11/15 10:58

L720999-05 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-12-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 10:05

ESC Sample # : L720999-05

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	40.8			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	68.4			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	73.6			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	78.1			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	67.9			% Rec.		8270C	09/13/14	1

U = ND (Not Detected)

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L720999-05 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-06

Sample ID : MW-55-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 12:40

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	47000	52.	1000	ug/l		9056MOD	09/11/14	1
Fluoride	3400	9.9	100	ug/l		9056MOD	09/11/14	1
Nitrate	2800	23.	100	ug/l		9056MOD	09/11/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/11/14	1
Sulfate	2400000	3900	250000	ug/l		9056MOD	09/11/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/18/14	1
Dissolved Solids	3600000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	11.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	4.8	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	4.8	0.25	1.0	ug/l		6020	09/15/14	1
Barium	13.	1.8	10.	ug/l		6020	09/15/14	5
Barium, Dissolved	9.1	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	730	30.	400	ug/l		6020	09/15/14	20
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	540000	920	20000	ug/l		6020	09/15/14	20
Chromium	3.8	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	3.4	0.54	1.0	ug/l		6020	09/15/14	1
Copper	0.81	0.52	1.0	ug/l	J	6020	09/15/14	1
Copper, Dissolved	0.96	0.52	1.0	ug/l	J	6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	81.	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	1.2	5.0	ug/l		6020	09/15/14	5
Lead, Dissolved	U	4.8	20.	ug/l		6020	09/15/14	20
Manganese	160	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	3.3	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	37.	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	1.2	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	0.68	0.35	1.0	ug/l	J	6020	09/15/14	1
Potassium, Dissolved	2700	37.	1000	ug/l		6020	09/15/14	1
Selenium	5.0	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	4.6	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	6.2	10.	ug/l		6020	09/15/14	20
Sodium, Dissolved	31000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	8.6	6.6	200	ug/l	J	6020	09/15/14	20
Vanadium	23.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	22.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

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Reported: 08/11/15 10:58 Printed: 08/11/15 10:58

L720999-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-55-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 12:40

ESC Sample # : L720999-06

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/13/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.4			% Rec.		8015D/G	09/13/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	101.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	95.7			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	72.	22.	100	ug/l	J	8015	09/13/14	1
C28-C40 Oil Range	30.	12.	100	ug/l	J	8015	09/13/14	1
Surrogate Recovery								
o-Terphenyl	103.			% Rec.		8015	09/13/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/13/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/13/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/13/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/13/14	1
Surrogate Recovery								
2-Fluorophenol	52.8			% Rec.		8270C	09/13/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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Reported: 08/11/15 10:58 Printed: 08/11/15 10:58

L720999-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-55-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 12:40

ESC Sample # : L720999-06

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	38.8			% Rec.		8270C	09/13/14	1
Nitrobenzene-d5	66.0			% Rec.		8270C	09/13/14	1
2-Fluorobiphenyl	73.8			% Rec.		8270C	09/13/14	1
2,4,6-Tribromophenol	77.5			% Rec.		8270C	09/13/14	1
p-Terphenyl-d14	68.9			% Rec.		8270C	09/13/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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L720999-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
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August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-07

Sample ID : TRIPBLANK-13-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	106.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	97.6			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : TRIPBLANK 14-0914-BG
Collected By : Ron Wood
Collection Date : 09/10/14 00:00

ESC Sample # : L720999-08

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	111.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	97.8			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 11, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L720999-09

Sample ID : TRIPBLANK 15-0914-BG

Site ID :

Collected By : Ron Wood
Collection Date : 09/10/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	103.			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	94.4			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 08/11/15 10:58 Printed: 08/11/15 10:58

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L720999-01	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Cobalt, Dissolved	R2989790	J
	WG742886	SAMP	Lead	R2989598	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J
L720999-02	WG742348	SAMP	Zinc, Dissolved	R2989790	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Boron, Dissolved	R2989790	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Copper, Dissolved	R2989790	J
	WG742886	SAMP	Manganese	R2989598	J
	WG742348	SAMP	Manganese, Dissolved	R2989790	J
	WG742886	SAMP	Nickel	R2989598	J
	WG742348	SAMP	Nickel, Dissolved	R2989790	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J
L720999-03	WG742310	SAMP	Chloride	R2988404	JP1
	WG742310	SAMP	Nitrate	R2988404	JP1
	WG742310	SAMP	Sulfate	R2988404	JP1
	WG742415	SAMP	Dissolved Solids	R2989613	T4
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Calcium, Dissolved	R2989790	J
	WG742886	SAMP	Chromium	R2989598	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Copper, Dissolved	R2989790	J
	WG742886	SAMP	Manganese	R2989598	J
L720999-04	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Arsenic, Dissolved	R2989790	J
	WG742348	SAMP	Boron, Dissolved	R2989790	J
	WG742886	SAMP	Chromium	R2989598	J
	WG742886	SAMP	Copper	R2989598	J
	WG742348	SAMP	Selenium, Dissolved	R2989790	J
L720999-05	WG742310	SAMP	Nitrite	R2988404	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Barium	R2989598	J
	WG742348	SAMP	Boron, Dissolved	R2989790	J
	WG742886	SAMP	Chromium	R2989598	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
L720999-06	WG742348	SAMP	Zinc, Dissolved	R2989790	J
	WG742393	SAMP	C10-C28 Diesel Range	R2988688	J
	WG742393	SAMP	C28-C40 Oil Range	R2988688	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Copper	R2989598	J
	WG742348	SAMP	Copper, Dissolved	R2989790	J
	WG742348	SAMP	Nickel, Dissolved	R2989790	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T4	(ESC) - Additional method/sample information: QNS - Quantity Not Sufficient

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742310
Analysis Date:	9/11/2014 12:09:00 PM	Analyst:	577
Instrument ID:	IC-9		
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chloride	16887-00-6	< 1.00	0.0573	
Fluoride	16984-48-8	< 0.100	< 0.00990	
Nitrate	14797-55-8	< 0.100	< 0.0227	
Nitrite	14797-65-0	< 0.100	< 0.0277	
Sulfate	14808-79-8	< 5.00	< 0.0774	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742310
Analysis Date:	9/11/2014 12:09:00 PM	Analyst:	577
Instrument ID:	IC-9		
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.734	99	90 - 110	
Fluoride	1	8	8.0212	100	90 - 110	
Nitrate	1	8	8.077	101	90 - 110	
Nitrite	1	8	7.9464	99	90 - 110	
Sulfate	1	40	40.659	102	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.814	100	90 - 110	
Fluoride	1	8	8.0473	101	90 - 110	
Nitrate	1	8	8.0956	101	90 - 110	
Nitrite	1	8	7.9717	100	90 - 110	
Sulfate	1	40	40.614	102	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Chloride	1	40	39.734	99	39.814	100	90 - 110	0	20	
Fluoride	1	8	8.0212	100	8.0473	101	90 - 110	0	20	
Nitrate	1	8	8.077	101	8.0956	101	90 - 110	0	20	
Nitrite	1	8	7.9464	99	7.9717	100	90 - 110	0	20	
Sulfate	1	40	40.659	102	40.614	102	90 - 110	0	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742310
Collection Date:	9/9/2014			Analyst:	577
Analysis Date:	9/11/2014 12:09:00 PM				
Instrument ID:	IC-9				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Sample Duplicate

L720999-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	0.2496	<0.0519	143	20	P1
Fluoride	1	<0.0099	<0.0099		20	
Nitrate	1	0.0283	0.0451	46	20	P1
Nitrite	1	<0.0277	<0.0277		20	
Sulfate	1	0.8369	0.391	73	20	P1

Sample Duplicate

L721171-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Nitrate	1	<0.0227	<0.0227		20	
Nitrite	1	<0.0277	<0.0277		20	
Sulfate	1	2.8222	2.7064	0	20	

Matrix Spike / Matrix Spike Duplicate

L720821-10

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Fluoride	1	5	<0.0099	5.0765	102	5.0753	102	80 - 120		0	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG743138
Analysis Date:	9/18/2014 3:11:00 PM	Analyst:	578
Instrument ID:	LACHAT4		
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cyanide	57-12-5	< 0.00500	< 0.00180	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.102	102	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.101	101	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Cyanide	1	0.1	0.102	102	0.101	101	90 - 110	0.99	20		

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Cyanide by Method 9012B			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG743138
Collection Date:	9/9/2014			Analyst:	578
Analysis Date:	9/18/2014 3:11:00 PM				
Instrument ID:	LACHAT4				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Sample Duplicate

L720999-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Sample Duplicate

L720483-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Matrix Spike / Matrix Spike Duplicate

L720526-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cyanide	1	0.2	<0.0018	0.188	94	0.183	91.5	90 - 110		2.7	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742415
Analysis Date:	9/15/2014 3:42:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720999-01, -02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8680	98.6	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8690	98.8	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Dissolved Solids	1	8800	8680	98.6	8690	98.8	85 - 115	0.12	5		

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742979
Analysis Date:	9/17/2014 4:27:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720999-04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8840	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8800	100	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Dissolved Solids	1	8800	8840	100	8800	100	85 - 115	0.45	5		

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742415
Analysis Date:	9/15/2014 3:42:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720999-01, -02, -03		

Sample Duplicate

L720734-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	440	457	3.79	5	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742979
Analysis Date:	9/17/2014 4:27:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L720999-04, -05, -06		

Sample Duplicate

L720983-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	620	625	0.8	5	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742307
Analysis Date:	9/12/2014 8:13:00 AM	Analyst:	628
Instrument ID:	CVAA4	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.0616	102	85 - 115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742437
Analysis Date:	9/12/2014 9:05:00 AM	Analyst:	628
Instrument ID:	CVAA4	Prep Date:	9/11/2014
Sample Numbers:	L720999-06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.0253	101	85 - 115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Mercury by Method 7470A			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742307
Collection Date:	9/9/2014			Analyst:	628
Analysis Date:	9/12/2014 8:13:00 AM			Prep Date:	9/11/2014
Instrument ID:	CVAA4				
Sample Numbers:	L720999-01, -02, -03, -04, -05				

Sample Duplicate

L720961-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	<0.049	<0.049		20	

Serial Dilution

L720961-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L720961-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	<0.049	3.0740	102	3.0769	103	80 - 120		0	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742437
Analysis Date:	9/12/2014 9:05:00 AM	Analyst:	628
Instrument ID:	CVAA4	Prep Date:	9/11/2014
Sample Numbers:	L720999-06		

Sample Duplicate

L721049-24

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	<0.049	<0.049		20	

Serial Dilution

L721049-24

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L721049-24

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	<0.049	3.1373	105	3.0160	101	80 - 120		4	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum,Dissolved	7429-90-5	< 100	3.69	
Arsenic,Dissolved	7440-38-2	< 2.00	< 0.250	
Barium,Dissolved	7440-39-3	< 5.00	< 0.360	
Boron,Dissolved	7440-42-8	< 20.0	< 1.5	
Cadmium,Dissolved	7440-43-9	< 1.00	< 0.160	
Calcium,Dissolved	7440-70-2	< 1000	< 46.0	
Chromium,Dissolved	7440-47-3	< 1.00	< 0.540	
Cobalt,Dissolved	7440-48-4	< 2.00	< 0.260	
Copper,Dissolved	7440-50-8	< 5.00	< 0.520	
Iron,Dissolved	7439-89-6	< 100	< 15.0	
Lead,Dissolved	7439-92-1	< 2.00	< 0.240	
Manganese,Dissolved	7439-96-5	< 5.00	0.282	
Molybdenum,Dissolved	7439-98-7	< 5.00	< 0.140	
Nickel,Dissolved	7440-02-0	< 2.00	< 0.350	
Potassium,Dissolved	7440-09-7	< 1000	< 37.0	
Selenium,Dissolved	7782-49-2	< 2.00	< 0.380	
Silver,Dissolved	7440-22-4	< 2.00	< 0.310	
Sodium,Dissolved	7440-23-5	< 1000	< 110	
Uranium,Dissolved	7440-61-1	< 10.0	< 0.330	
Vanadium,Dissolved	7440-62-2	< 5.00	< 0.180	
Zinc,Dissolved	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 4:56:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Arsenic	7440-38-2	< 2.00	< 0.250	
Barium	7440-39-3	< 5.00	< 0.360	
Chromium	7440-47-3	< 1.00	< 0.540	
Copper	7440-50-8	< 5.00	< 0.520	
Iron	7439-89-6	< 100	< 15.0	
Lead	7439-92-1	< 2.00	< 0.240	
Manganese	7439-96-5	< 5.00	< 0.250	
Nickel	7440-02-0	< 2.00	< 0.350	
Selenium	7782-49-2	< 2.00	< 0.380	
Vanadium	7440-62-2	< 5.00	< 0.180	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	70 - 130	
Arsenic,Dissolved	1	111	109.21	98	85 - 115	
Barium,Dissolved	1	111	107.18	97	85 - 115	
Boron,Dissolved	1	111	115.19	104	70 - 130	
Cadmium,Dissolved	1	111	106.38	96	85 - 115	
Calcium,Dissolved	1	11100	11096	100	70 - 130	
Chromium,Dissolved	1	111	108.38	98	85 - 115	
Cobalt,Dissolved	1	111	111.33	100	85 - 115	
Copper,Dissolved	1	111	109.72	99	85 - 115	
Iron,Dissolved	1	1110	1079.5	97	85 - 115	
Lead,Dissolved	1	111	107.86	97	85 - 115	
Manganese,Dissolved	1	111	111.82	101	85 - 115	
Molybdenum,Dissolved	1	111	109.17	98	85 - 115	
Nickel,Dissolved	1	111	110.94	100	85 - 115	
Potassium,Dissolved	1	11100	10872	98	70 - 130	
Selenium,Dissolved	1	111	105.08	95	85 - 115	
Silver,Dissolved	1	111	112.46	101	85 - 115	
Sodium,Dissolved	1	11100	10972	99	70 - 130	
Uranium,Dissolved	1	111	102.92	93	70 - 130	
Vanadium,Dissolved	1	111	107.38	97	85 - 115	
Zinc,Dissolved	1	111	107.98	97	85 - 115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1081.5	97	70 - 130	
Arsenic,Dissolved	1	111	109.19	98	85 - 115	
Barium,Dissolved	1	111	109.17	98	85 - 115	
Boron,Dissolved	1	111	120.38	108	70 - 130	
Cadmium,Dissolved	1	111	107.16	97	85 - 115	
Calcium,Dissolved	1	11100	11067	100	70 - 130	
Chromium,Dissolved	1	111	109.43	99	85 - 115	
Cobalt,Dissolved	1	111	111.38	100	85 - 115	
Copper,Dissolved	1	111	111.05	100	85 - 115	
Iron,Dissolved	1	1110	1064.5	96	85 - 115	
Lead,Dissolved	1	111	109.88	99	85 - 115	
Manganese,Dissolved	1	111	112.32	101	85 - 115	
Molybdenum,Dissolved	1	111	110.84	100	85 - 115	
Nickel,Dissolved	1	111	111.66	101	85 - 115	
Potassium,Dissolved	1	11100	10929	98	70 - 130	
Selenium,Dissolved	1	111	106.50	96	85 - 115	
Silver,Dissolved	1	111	113.42	102	85 - 115	
Sodium,Dissolved	1	11100	11139	100	70 - 130	
Uranium,Dissolved	1	111	105.70	95	70 - 130	
Vanadium,Dissolved	1	111	108.54	98	85 - 115	
Zinc,Dissolved	1	111	109.83	99	85 - 115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	1081.5	97	70 - 130	1	20	
Arsenic,Dissolved	1	111	109.21	98	109.19	98	85 - 115	0	20	
Barium,Dissolved	1	111	107.18	97	109.17	98	85 - 115	2	20	
Boron,Dissolved	1	111	115.19	104	120.38	108	70 - 130	4	20	
Cadmium,Dissolved	1	111	106.38	96	107.16	97	85 - 115	1	20	
Calcium,Dissolved	1	11100	11096	100	11067	100	70 - 130	0	20	
Chromium,Dissolved	1	111	108.38	98	109.43	99	85 - 115	1	20	
Cobalt,Dissolved	1	111	111.33	100	111.38	100	85 - 115	0	20	
Copper,Dissolved	1	111	109.72	99	111.05	100	85 - 115	1	20	
Iron,Dissolved	1	1110	1079.5	97	1064.5	96	85 - 115	1	20	
Lead,Dissolved	1	111	107.86	97	109.88	99	85 - 115	2	20	
Manganese,Dissolved	1	111	111.82	101	112.32	101	85 - 115	0	20	
Molybdenum,Dissolved	1	111	109.17	98	110.84	100	85 - 115	2	20	
Nickel,Dissolved	1	111	110.94	100	111.66	101	85 - 115	1	20	
Potassium,Dissolved	1	11100	10872	98	10929	98	70 - 130	1	20	
Selenium,Dissolved	1	111	105.08	95	106.50	96	85 - 115	1	20	
Silver,Dissolved	1	111	112.46	101	113.42	102	85 - 115	1	20	
Sodium,Dissolved	1	11100	10972	99	11139	100	70 - 130	2	20	
Uranium,Dissolved	1	111	102.92	93	105.70	95	70 - 130	3	20	
Vanadium,Dissolved	1	111	107.38	97	108.54	98	85 - 115	1	20	
Zinc,Dissolved	1	111	107.98	97	109.83	99	85 - 115	2	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 4:56:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.72	99	85 - 115	
Barium	1	111	108.26	98	85 - 115	
Chromium	1	111	111.12	100	85 - 115	
Copper	1	111	111.66	101	85 - 115	
Iron	1	1110	1082.2	97	85 - 115	
Lead	1	111	108.16	97	85 - 115	
Manganese	1	111	111.85	101	85 - 115	
Nickel	1	111	112.23	101	85 - 115	
Selenium	1	111	102.95	93	85 - 115	
Vanadium	1	111	110.90	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.98	99	85 - 115	
Barium	1	111	107.45	97	85 - 115	
Chromium	1	111	113.03	102	85 - 115	
Copper	1	111	111.82	101	85 - 115	
Iron	1	1110	1081.6	97	85 - 115	
Lead	1	111	108.22	97	85 - 115	
Manganese	1	111	113.25	102	85 - 115	
Nickel	1	111	112.25	101	85 - 115	
Selenium	1	111	105.82	95	85 - 115	
Vanadium	1	111	112.42	101	85 - 115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 4:56:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Arsenic	1	111	109.72	99	109.98	99	85 - 115	0	20	
Barium	1	111	108.26	98	107.45	97	85 - 115	1	20	
Chromium	1	111	111.12	100	113.03	102	85 - 115	2	20	
Copper	1	111	111.66	101	111.82	101	85 - 115	0	20	
Iron	1	1110	1082.2	97	1081.6	97	85 - 115	0	20	
Lead	1	111	108.16	97	108.22	97	85 - 115	0	20	
Manganese	1	111	111.85	101	113.25	102	85 - 115	1	20	
Nickel	1	111	112.23	101	112.25	101	85 - 115	0	20	
Selenium	1	111	102.95	93	105.82	95	85 - 115	3	20	
Vanadium	1	111	110.90	100	112.42	101	85 - 115	1	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum,Dissolved	5	22.288	21.100	5	10	
Arsenic,Dissolved	5	3.2501	3.4281	5	10	
Barium,Dissolved	5	7.4854	7.8058	4	10	
Boron,Dissolved	100	1788.1	1640.1	8	10	
Cadmium,Dissolved	5	<0.16	<0.8		10	
Calcium,Dissolved	100	524278	489993	7	10	
Chromium,Dissolved	5	0.8808	<2.7	112	10	
Cobalt,Dissolved	5	<0.26	<1.3		10	
Copper,Dissolved	5	2.4494	2.9229	19	10	
Iron,Dissolved	5	<15	81.690	9275	10	
Lead,Dissolved	5	0.2981	<1.2	18	10	
Manganese,Dissolved	5	<0.25	<1.25		10	
Molybdenum,Dissolved	5	30.979	35.153	13	10	
Nickel,Dissolved	5	1.0394	<1.75	49	10	
Potassium,Dissolved	5	349.09	323.07	7	10	
Selenium,Dissolved	5	8.7353	9.5457	9	10	
Silver,Dissolved	100	<6.2	<31		10	
Sodium,Dissolved	100	224049	199404	11	10	O1
Uranium,Dissolved	100	176.04	161.38	8	10	
Vanadium,Dissolved	5	18.203	19.780	9	10	
Zinc,Dissolved	5	<2.56	24.614	1863	10	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742348
Collection Date:	9/9/2014			Analyst:	664
Analysis Date:	9/15/2014 9:42:00 PM			Prep Date:	9/11/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Aluminum,Dissolved	1	1110	22.288	1052.4	93	1041.0	92	70 - 130		1	20	
Arsenic,Dissolved	1	111	3.2501	113.48	99	115.12	101	75 - 125		1	20	
Barium,Dissolved	1	111	7.4854	118.85	100	115.59	97	75 - 125		3	20	
Boron,Dissolved	20	5.55	1788.1	1956.7	152	1774.8	0	70 - 130	V	10	20	
Cadmium,Dissolved	1	111	<0.16	106.76	96	105.63	95	75 - 125		1	20	
Calcium,Dissolved	20	555	524278	546114	197	545299	189	70 - 130	V	0	20	
Chromium,Dissolved	1	111	0.8808	106.72	95	105.07	94	75 - 125		2	20	
Cobalt,Dissolved	1	111	<0.26	106.64	96	108.38	98	75 - 125		2	20	
Copper,Dissolved	1	111	2.4494	106.64	94	108.04	95	75 - 125		1	20	
Iron,Dissolved	1	1110	<15	1041.4	94	1081.3	97	75 - 125		4	20	
Lead,Dissolved	1	111	0.2981	100.85	91	100.08	90	75 - 125		1	20	
Manganese,Dissolved	1	111	<0.25	111.69	100	113.55	102	75 - 125		2	20	
Molybdenum,Dissolved	1	111	30.979	135.82	94	138.32	97	75 - 125		2	20	
Nickel,Dissolved	1	111	1.0394	105.42	94	107.10	96	75 - 125		2	20	
Potassium,Dissolved	1	11100	349.09	11488	100	11293	99	70 - 130		2	20	
Selenium,Dissolved	1	111	8.7353	111.94	93	112.53	94	75 - 125		1	20	
Silver,Dissolved	20	5.55	<6.2	100.12	89	94.393	84	75 - 125		6	20	
Sodium,Dissolved	20	555	224049	240006	144	239276	137	70 - 130	V	0	20	
Uranium,Dissolved	20	5.55	176.04	276.34	90	272.08	87	70 - 130		2	20	
Vanadium,Dissolved	1	111	18.203	127.63	99	125.43	97	75 - 125		2	20	
Zinc,Dissolved	1	111	<2.56	103.18	92	103.69	92	75 - 125		0	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 9:42:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Aluminum,Dissolved	1	1110	22.288	1003.6	88	70-130	
Arsenic,Dissolved	1	111	3.2501	105.88	92	85-115	
Barium,Dissolved	1	111	7.4854	109.86	92	85-115	
Boron,Dissolved	20	111	1788.1	1834.4	2	70-130	O1
Cadmium,Dissolved	1	111	<0.16	99.787	90	85-115	
Calcium,Dissolved	20	11100	524278	549675	11	70-130	O1
Chromium,Dissolved	1	111	0.8808	100.32	90	85-115	
Cobalt,Dissolved	1	111	<0.26	100.22	90	85-115	
Copper,Dissolved	1	111	2.4494	99.806	88	85-115	
Iron,Dissolved	1	1110	<15	977.94	88	85-115	
Lead,Dissolved	1	111	0.2981	94.947	85	85-115	
Manganese,Dissolved	1	111	<0.25	104.08	94	85-115	
Molybdenum,Dissolved	1	111	30.979	129.64	89	85-115	
Nickel,Dissolved	1	111	1.0394	98.590	88	85-115	
Potassium,Dissolved	1	11100	349.09	10693	93	70-130	
Selenium,Dissolved	1	111	8.7353	105.86	87	85-115	
Silver,Dissolved	20	111	<6.2	111.22	5	85-115	
Sodium,Dissolved	20	11100	224049	239036	7	70-130	O1
Uranium,Dissolved	20	111	176.04	270.24	4	70-130	
Vanadium,Dissolved	1	111	18.203	120.09	92	85-115	
Zinc,Dissolved	1	111	<2.56	95.065	85	85-115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742886
Collection Date:	9/9/2014			Analyst:	664
Analysis Date:	9/15/2014 4:56:00 PM			Prep Date:	9/15/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Arsenic	5	3.1369	3.6306	16	10	
Barium	25	7.5498	<9	17	10	
Chromium	5	1.0926	<2.7	114	10	
Copper	5	1.5219	<2.6	52	10	
Iron	5	29.852	<75	0	10	
Lead	25	<1.2	<6		10	
Manganese	5	0.6898	<1.25	25	10	
Nickel	5	0.8360	<1.75	17	10	
Selenium	5	7.1998	6.7039	7	10	
Vanadium	5	18.811	21.583	15	10	

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Arsenic	1	111	3.1369	114.11	100	111.92	98	75 - 125		2	20	
Barium	5	22.2	7.5498	123.75	105	119.51	101	75 - 125		3	20	
Chromium	1	111	1.0926	112.77	101	112.40	100	75 - 125		0	20	
Copper	1	111	1.5219	110.56	98	109.14	97	75 - 125		1	20	
Iron	1	1110	29.852	1082.7	95	1071.3	94	75 - 125		1	20	
Lead	5	22.2	<1.2	113.70	102	110.69	100	75 - 125		3	20	
Manganese	1	111	0.6898	109.23	98	108.65	97	75 - 125		1	20	
Nickel	1	111	0.8360	110.11	98	109.84	98	75 - 125		0	20	
Selenium	1	111	7.1998	104.27	87	105.24	88	75 - 125		1	20	
Vanadium	1	111	18.811	132.79	103	132.66	103	75 - 125		0	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 4:56:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Arsenic	1	111	3.1369	107.42	94	85-115	
Barium	5	111	7.5498	135.09	23	85-115	
Chromium	1	111	1.0926	107.96	96	85-115	
Copper	1	111	1.5219	103.68	92	85-115	
Iron	1	1110	29.852	1022.0	89	85-115	
Lead	5	111	<1.2	129.24	23	85-115	
Manganese	1	111	0.6898	102.25	91	85-115	
Nickel	1	111	0.8360	102.24	91	85-115	
Selenium	1	111	7.1998	95.526	80	85-115	
Vanadium	1	111	18.811	127.53	98	85-115	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742368
Analysis Date:	9/13/2014 7:47:00 AM	Analyst:	621
Instrument ID:	VOCGC6		
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.9981	109	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.9600	108	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.9981	109	5.9600	108	67 - 132	0.64	20		

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742368
Collection Date:	9/9/2014			Analyst:	621
Analysis Date:	9/13/2014 7:47:00 AM				
Instrument ID:	VOCGC6				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Matrix Spike / Matrix Spike Duplicate

L720823-50

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	0.2832	5.7692	99.7	6.0500	105	50 - 143		4.75	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742368
Analysis Date:	9/13/2014 7:47:00 AM	Analyst:	621
Instrument ID:	VOCGC6		
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L720999-01	VOCGC6	0912_30	0.197	98.3		
L720999-02	VOCGC6	0912_31	0.197	98.3		
L720999-03	VOCGC6	0912_32	0.197	98.4		
L720999-04	VOCGC6	0912_33	0.196	98.0		
L720999-05	VOCGC6	0912_34	0.196	98.1		
L720999-06	VOCGC6	0912_35	0.197	98.4		
LCS WG742368	VOCGC6	0912_05	0.200	100	0.209	104
LCSD WG742368	VOCGC6	0912_06	0.199	99.4	0.206	103
MS WG742368	VOCGC6	0912_07	0.199	99.5	0.205	103
MSD WG742368	VOCGC6	0912_08	0.199	99.4	0.205	102
BLANK WG742368	VOCGC6	0912_10	0.197	98.6	0.202	101

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0271	108	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0302	121	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0270	108	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0245	97.9	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0267	107	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0269	108	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0247	98.8	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0253	101	68.8 - 124	
Benzene	1	0.025	0.0263	105	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0289	115	70.2 - 123	
Chloroform	1	0.025	0.0270	108	76 - 121	
Ethylbenzene	1	0.025	0.0273	109	78.8 - 122	
m&p-Xylenes	1	0.05	0.0554	111	78.8 - 121	
Methylene Chloride	1	0.025	0.0247	98.8	70.3 - 120	
o-Xylene	1	0.025	0.0271	108	77.6 - 122	
Tetrachloroethene	1	0.025	0.0273	109	72.6 - 126	
Toluene	1	0.025	0.0276	110	79.7 - 116	
Vinyl chloride	1	0.025	0.0273	109	65.9 - 128	
Xylenes, Total	1	0.075	0.0825	110	78.7 - 121	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0292	117	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0297	119	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0273	109	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0261	104	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0265	106	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0275	110	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0266	106	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0261	105	68.8 - 124	
Benzene	1	0.025	0.0269	108	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0294	118	70.2 - 123	
Chloroform	1	0.025	0.0265	106	76 - 121	
Ethylbenzene	1	0.025	0.0289	116	78.8 - 122	
m&p-Xylenes	1	0.05	0.0596	119	78.8 - 121	
Methylene Chloride	1	0.025	0.0245	97.8	70.3 - 120	
o-Xylene	1	0.025	0.0288	115	77.6 - 122	
Tetrachloroethene	1	0.025	0.0293	117	72.6 - 126	
Toluene	1	0.025	0.0288	115	79.7 - 116	
Vinyl chloride	1	0.025	0.0268	107	65.9 - 128	
Xylenes, Total	1	0.075	0.0884	118	78.7 - 121	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0271	108	0.0292	117	74.2 - 124		7.52	20
1,1,1-Trichloroethane	1	0.025	0.0302	121	0.0297	119	73.2 - 123		1.52	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0270	108	0.0273	109	70.7 - 122		0.78	20
1,1,2-Trichloroethane	1	0.025	0.0245	97.9	0.0261	104	77.7 - 118		6.52	20
1,1-Dichloroethane	1	0.025	0.0267	107	0.0265	106	70.7 - 126		0.72	20
1,1-Dichloroethene	1	0.025	0.0269	108	0.0275	110	67.8 - 129		2.01	20
1,2-Dibromoethane	1	0.025	0.0247	98.8	0.0266	106	76.6 - 121		7.48	20
1,2-Dichloroethane	1	0.025	0.0253	101	0.0261	105	68.8 - 124		3.28	20
Benzene	1	0.025	0.0263	105	0.0269	108	74.8 - 121		2.53	20
Carbon tetrachloride	1	0.025	0.0289	115	0.0294	118	70.2 - 123		1.79	20
Chloroform	1	0.025	0.0270	108	0.0265	106	76 - 121		1.88	20
Ethylbenzene	1	0.025	0.0273	109	0.0289	116	78.8 - 122		5.74	20
m&p-Xylenes	1	0.05	0.0554	111	0.0596	119	78.8 - 121		7.28	20
Methylene Chloride	1	0.025	0.0247	98.8	0.0245	97.8	70.3 - 120		1	20
o-Xylene	1	0.025	0.0271	108	0.0288	115	77.6 - 122		6.11	20
Tetrachloroethene	1	0.025	0.0273	109	0.0293	117	72.6 - 126		7.01	20
Toluene	1	0.025	0.0276	110	0.0288	115	79.7 - 116		4.32	20
Vinyl chloride	1	0.025	0.0273	109	0.0268	107	65.9 - 128		1.68	20
Xylenes, Total	1	0.075	0.0825	110	0.0884	118	78.7 - 121		6.9	20

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0301	121	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0276	110	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0259	103	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0269	108	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0243	97.4	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0223	89.1	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0280	112	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0252	101	68.8 - 124	
Benzene	1	0.025	0.0232	92.9	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0272	109	70.2 - 123	
Chloroform	1	0.025	0.0249	99.5	76 - 121	
Ethylbenzene	1	0.025	0.0284	114	78.8 - 122	
m&p-Xylenes	1	0.05	0.0558	112	78.8 - 121	
Methylene Chloride	1	0.025	0.0224	89.6	70.3 - 120	
o-Xylene	1	0.025	0.0283	113	77.6 - 122	
Tetrachloroethene	1	0.025	0.0291	116	72.6 - 126	
Toluene	1	0.025	0.0234	93.7	79.7 - 116	
Vinyl chloride	1	0.025	0.0206	82.4	65.9 - 128	
Xylenes, Total	1	0.075	0.0840	112	78.7 - 121	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0299	120	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0284	114	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0272	109	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0270	108	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0253	101	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0219	87.8	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0276	110	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0245	98	68.8 - 124	
Benzene	1	0.025	0.0229	91.5	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0275	110	70.2 - 123	
Chloroform	1	0.025	0.0251	101	76 - 121	
Ethylbenzene	1	0.025	0.0286	114	78.8 - 122	
m&p-Xylenes	1	0.05	0.0570	114	78.8 - 121	
Methylene Chloride	1	0.025	0.0228	91.2	70.3 - 120	
o-Xylene	1	0.025	0.0283	113	77.6 - 122	
Tetrachloroethene	1	0.025	0.0296	118	72.6 - 126	
Toluene	1	0.025	0.0248	99.3	79.7 - 116	
Vinyl chloride	1	0.025	0.0211	84.3	65.9 - 128	
Xylenes, Total	1	0.075	0.0853	114	78.7 - 121	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0301	121	0.0299	120	74.2 - 124		0.78	20
1,1,1-Trichloroethane	1	0.025	0.0276	110	0.0284	114	73.2 - 123		3.12	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0259	103	0.0272	109	70.7 - 122		4.97	20
1,1,2-Trichloroethane	1	0.025	0.0269	108	0.0270	108	77.7 - 118		0.39	20
1,1-Dichloroethane	1	0.025	0.0243	97.4	0.0253	101	70.7 - 126		4.01	20
1,1-Dichloroethene	1	0.025	0.0223	89.1	0.0219	87.8	67.8 - 129		1.46	20
1,2-Dibromoethane	1	0.025	0.0280	112	0.0276	110	76.6 - 121		1.67	20
1,2-Dichloroethane	1	0.025	0.0252	101	0.0245	98	68.8 - 124		2.67	20
Benzene	1	0.025	0.0232	92.9	0.0229	91.5	74.8 - 121		1.49	20
Carbon tetrachloride	1	0.025	0.0272	109	0.0275	110	70.2 - 123		0.99	20
Chloroform	1	0.025	0.0249	99.5	0.0251	101	76 - 121		1	20
Ethylbenzene	1	0.025	0.0284	114	0.0286	114	78.8 - 122		0.77	20
m&p-Xylenes	1	0.05	0.0558	112	0.0570	114	78.8 - 121		2.16	20
Methylene Chloride	1	0.025	0.0224	89.6	0.0228	91.2	70.3 - 120		1.69	20
o-Xylene	1	0.025	0.0283	113	0.0283	113	77.6 - 122		0.13	20
Tetrachloroethene	1	0.025	0.0291	116	0.0296	118	72.6 - 126		1.71	20
Toluene	1	0.025	0.0234	93.7	0.0248	99.3	79.7 - 116		5.84	20
Vinyl chloride	1	0.025	0.0206	82.4	0.0211	84.3	65.9 - 128		2.26	20
Xylenes, Total	1	0.075	0.0840	112	0.0853	114	78.7 - 121		1.48	20

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 9/9/2014 Analytic Batch: WG742458
 Analysis Date: 9/17/2014 1:33:00 PM Analyst: 644
 Instrument ID: VOCMS2
 Sample Numbers: L720999-01, -02, -03, -05, -06, -07, -08, -09

Matrix Spike / Matrix Spike Duplicate

L720993-01

Analyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0270	108	0.0254	101	64 - 128	6.2	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0302	121	0.0273	109	58.7 - 134	10.1	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0278	111	0.0264	106	56 - 132	5.2	22.2	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0254	101	0.0235	94.1	66.3 - 125	7.55	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0267	107	0.0245	98.1	58.5 - 132	8.48	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0268	107	0.0253	101	51.1 - 140	5.53	20.2	
1,2-Dibromoethane	1	0.025	<0.0004	0.0260	104	0.0232	92.7	67.1 - 125	11.3	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0263	105	0.0242	96.9	60 - 126	8.3	20	
Benzene	1	0.025	<0.0003	0.0267	107	0.0249	99.6	54.3 - 133	7.05	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0286	114	0.0266	106	55.7 - 134	7.12	20	
Chloroform	1	0.025	0.0021	0.0288	107	0.0259	95.4	63 - 129	10.5	20	
Ethylbenzene	1	0.025	<0.0004	0.0270	108	0.0254	102	61.4 - 133	5.95	20	
m&p-Xylenes	1	0.05	<0.0007	0.0553	111	0.0521	104	61.7 - 133	5.96	20	
Methylene Chloride	1	0.025	<0.001	0.0242	97	0.0224	89.5	58.1 - 122	8.01	20	
o-Xylene	1	0.025	<0.0003	0.0265	106	0.0251	101	63.3 - 130	5.4	20	
Tetrachloroethene	1	0.025	<0.0004	0.0277	111	0.0258	103	53 - 139	7.24	20	
Toluene	1	0.025	<0.0008	0.0271	108	0.0261	104	61.4 - 130	3.59	20	
Vinyl chloride	1	0.025	<0.0003	0.0265	106	0.0247	98.9	47.8 - 137	6.96	20	
Xylenes, Total	1	0.075	<0.0011	0.0818	109	0.0772	103	63.3 - 131	5.77	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Matrix Spike / Matrix Spike Duplicate

L721326-21

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0255	102	0.0291	116	64 - 128		13.4	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0248	99.3	0.0252	101	58.7 - 134		1.31	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0225	90	0.0262	105	56 - 132		15.2	22.2	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0228	91.3	0.0261	104	66.3 - 125		13.4	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0221	88.5	0.0215	85.9	58.5 - 132		3.02	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0190	76.2	0.0195	78	51.1 - 140		2.35	20.2	
1,2-Dibromoethane	1	0.025	<0.0004	0.0231	92.5	0.0270	108	67.1 - 125		15.7	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0229	91.6	0.0225	90	60 - 126		1.83	20	
Benzene	1	0.025	<0.0003	0.0204	81.8	0.0203	81.3	54.3 - 133		0.58	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0240	95.9	0.0237	94.9	55.7 - 134		1.02	20	
Chloroform	1	0.025	<0.0003	0.0223	89.3	0.0222	88.8	63 - 129		0.54	20	
Ethylbenzene	1	0.025	<0.0004	0.0220	87.8	0.0259	104	61.4 - 133		16.6	20	
m&p-Xylenes	1	0.05	<0.0007	0.0449	89.7	0.0518	104	61.7 - 133		14.4	20	
Methylene Chloride	1	0.025	<0.001	0.0197	78.8	0.0199	79.6	58.1 - 122		0.91	20	
o-Xylene	1	0.025	<0.0003	0.0229	91.5	0.0265	106	63.3 - 130		14.8	20	
Tetrachloroethene	1	0.025	<0.0004	0.0232	92.7	0.0272	109	53 - 139		16	20	
Toluene	1	0.025	<0.0008	0.0211	84.2	0.0224	89.7	61.4 - 130		6.29	20	
Vinyl chloride	1	0.025	<0.0003	0.0175	69.8	0.0180	71.9	47.8 - 137		2.91	20	
Xylenes, Total	1	0.075	<0.0011	0.0678	90.3	0.0784	104	63.3 - 131		14.5	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Internal Standard Response and Retention Time Summary

File ID: 0917_02
Analyzed: 09/17/14 095800

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	357038	4.34	665730	4.67	113622	5.84	281915	8.22
Upper Limit	714000	4.84	1330000	5.17	227000	6.34	564000	8.72
Lower Limit	179000	3.84	333000	4.17	56800	5.34	141000	7.72
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L720999-01	284060	4.34	564715	4.67	90490	5.83	241684	8.22
L720999-02	283196	4.34	567690	4.67	93140	5.84	243109	8.22
L720999-03	268867	4.34	529000	4.67	85176	5.83	233900	8.22
L720999-05	298471	4.34	598723	4.67	97821	5.84	238552	8.22
L720999-06	299019	4.34	605591	4.67	95800	5.84	232816	8.22
L720999-07	276781	4.34	553714	4.67	90737	5.84	234238	8.22
L720999-08	267482	4.34	542404	4.67	90289	5.83	230484	8.22
L720999-09	289291	4.34	592673	4.67	95094	5.84	229983	8.22
MSD WG742458	335842	4.34	620502	4.67	103612	5.84	272776	8.22
MS WG742458	359348	4.34	675043	4.67	111547	5.84	291826	8.22
LCSD WG742458	359626	4.34	664966	4.67	107029	5.83	270950	8.22
LCS WG742458	355555	4.34	661289	4.67	111665	5.84	295871	8.22
BLANK WG742458	304566	4.34	633936	4.67	101096	5.84	242381	8.22

Legend:

IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Internal Standard Response and Retention Time Summary

File ID: 0918_02
Analyzed: 09/18/14 080800

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	261119	4.19	447405	4.52	66708	5.67	191492	8.05
Upper Limit	522000	4.69	895000	5.02	133000	6.17	383000	8.55
Lower Limit	131000	3.69	224000	4.02	33400	5.17	95700	7.55
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L720999-04	246952	4.20	425783	4.52	67217	5.67	177266	8.05
MSD WG742667	256385	4.19	437454	4.52	64680	5.67	183287	8.05
MS WG742667	255272	4.19	460639	4.52	71216	5.67	184390	8.05
LCSD WG742667	254728	4.19	443715	4.52	67768	5.67	192192	8.05
LCS WG742667	257270	4.20	453042	4.52	66423	5.67	190198	8.05
BLANK WG742667	245469	4.20	427062	4.52	65496	5.67	175026	8.05

Legend:

IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742458
Analysis Date:	9/17/2014 1:33:00 PM	Analyst:	644
Instrument ID:	VOCMS2		
Sample Numbers:	L720999-01, -02, -03, -05, -06, -07, -08, -09		

Surrogate Summary

		BFB			DFM		TD8		TFT	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L720999-01	VOCMS2	0917_12	0.0400	100	0.0429	107	0.0423	106		
L720999-02	VOCMS2	0917_13	0.0392	98.0	0.0422	106	0.0423	106		
L720999-03	VOCMS2	0917_14	0.0403	101	0.0432	108	0.0426	106		
L720999-05	VOCMS2	0917_16	0.0371	92.8	0.0420	105	0.0434	108		
L720999-06	VOCMS2	0917_17	0.0383	95.7	0.0405	101	0.0429	107		
L720999-07	VOCMS2	0917_18	0.0390	97.6	0.0425	106	0.0426	107		
L720999-08	VOCMS2	0917_19	0.0391	97.8	0.0446	111	0.0426	107		
L720999-09	VOCMS2	0917_20	0.0378	94.4	0.0412	103	0.0425	106		
LCS WG742458	VOCMS2	0917_03	0.0371	92.8	0.0402	101	0.0419	105	0.0417	104
LCSD WG742458	VOCMS2	0917_04	0.0375	93.9	0.0386	96.6	0.0417	104	0.0419	105
MS WG742458	VOCMS2	0917_06	0.0379	94.7	0.0407	102	0.0417	104	0.0427	107
MSD WG742458	VOCMS2	0917_07	0.0376	94.0	0.0392	98.0	0.0421	105	0.0430	108
BLANK WG742458	VOCMS2	0917_09	0.0373	93.2	0.0407	102	0.0427	107	0.0407	102

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742667
Analysis Date:	9/18/2014 12:13:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L720999-04		

Surrogate Summary

			BFB		DFM		TD8		TFT	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L720999-04	VOCMS4	0918_12	0.0384	96.0	0.0365	91.3	0.0390	97.6		
LCS WG742667	VOCMS4	0918_03	0.0418	105	0.0379	94.7	0.0382	95.4	0.0425	106
LCSD WG742667	VOCMS4	0918_04	0.0410	103	0.0385	96.3	0.0393	98.2	0.0438	110
MS WG742667	VOCMS4	0918_06	0.0368	91.9	0.0388	97.1	0.0386	96.4	0.0420	105
MSD WG742667	VOCMS4	0918_07	0.0414	104	0.0357	89.3	0.0386	96.4	0.0426	106
BLANK WG742667	VOCMS4	0918_09	0.0392	98.1	0.0359	89.7	0.0386	96.5	0.0430	108

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742393
Collection Date:	9/9/2014			Analyst:	546
Analysis Date:	9/12/2014 11:15:00 PM			Prep Date:	9/11/2014
Instrument ID:	SVGC27				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C10-C28 Diesel Range		< 0.100	< 0.0222	
C28-C40 Oil Range		< 0.100	< 0.0118	
Extractable Petroleum Hydrocarbon		< 0.100	< 0.0330	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5666	104	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5653	104	70 - 130	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5666	104	1.5653	104	70 - 130	0.08	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742393
Collection Date:	9/9/2014			Analyst:	546
Analysis Date:	9/12/2014 11:15:00 PM			Prep Date:	9/11/2014
Instrument ID:	SVGC27				
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06				

Matrix Spike / Matrix Spike Duplicate

L720039-14

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Extractable Petroleum Hydrocarbon	1	1.5	0.0	1.5878	106	1.5306	102	70 - 130		3.67	20	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742393
Analysis Date:	9/12/2014 11:15:00 PM	Analyst:	546
Instrument ID:	SVGC27	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L720999-01	SVGC27	0912_37	0.0205	103
L720999-02	SVGC27	0912_38	0.0201	100
L720999-03	SVGC27	0912_39	0.0217	108
L720999-04	SVGC27	0912_40	0.0207	103
L720999-05	SVGC27	0912_41	0.0199	99.7
L720999-06	SVGC27	0912_48	0.0206	103
BLANK WG742393	SVGC27	0912_08	0.0222	111
LCS WG742393	SVGC27	0912_09	0.0216	108
LCSD WG742393	SVGC27	0912_10	0.0219	109
MS WG742393	SVGC27	0912_31	0.0207	103
MSD WG742393	SVGC27	0912_32	0.0201	100

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS19, BNAMS4	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 1.00	< 0.330	
2-Methylnaphthalene	91-57-6	< 1.00	< 0.311	
Benzo(a)pyrene	50-32-8	< 1.00	< 0.340	
Naphthalene	91-20-3	< 1.00	< 0.372	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS19, BNAMS4	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	19.696	78.8	34.7 - 102	
2-Methylnaphthalene	1	25	18.584	74.3	33.8 - 98.6	
Benzo(a)pyrene	1	25	18.973	75.9	45.6 - 106	
Naphthalene	1	25	17.399	69.6	32.2 - 101	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	20.979	83.9	34.7 - 102	
2-Methylnaphthalene	1	25	19.322	77.3	33.8 - 98.6	
Benzo(a)pyrene	1	25	19.657	78.6	45.6 - 106	
Naphthalene	1	25	18.458	73.8	32.2 - 101	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1-Methylnaphthalene	1	25	19.696	78.8	20.979	83.9	34.7 - 102	6.31	24.9	
2-Methylnaphthalene	1	25	18.584	74.3	19.322	77.3	33.8 - 98.6	3.9	24.2	
Benzo(a)pyrene	1	25	18.973	75.9	19.657	78.6	45.6 - 106	3.54	20	
Naphthalene	1	25	17.399	69.6	18.458	73.8	32.2 - 101	5.91	23.8	

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS1	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0916b_30

Analyzed: 09/17/14 063100

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	123405	4.79	467166	5.54	244873	6.56	365926	7.43
Upper Limit	247000	5.29	934000	6.04	490000	7.06	732000	7.93
Lower Limit	61700	4.29	234000	5.04	122000	6.06	183000	6.93
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
BLANK WG742452	96643	4.79	371968	5.54	193435	6.56	297173	7.43

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS1	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0916b_30

Analyzed: 09/17/14 063100

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	123405	4.79	306510	8.98	349648	10.12
Upper Limit	247000	5.29	613000	9.48	699000	10.62
Lower Limit	61700	4.29	153000	8.48	175000	9.62

Sample ID	Response	RT	Response	RT	Response	RT
BLANK WG742452	96643	4.79	239801	8.98	266703	10.12

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS19	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0913_03
Analyzed: 09/13/14 123600

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	188622	5.48	806637	6.77	545095	8.67	967093	10.30
Upper Limit	377000	5.98	1610000	7.27	1090000	9.17	1930000	10.80
Lower Limit	94300	4.98	403000	6.27	273000	8.17	484000	9.80
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L720999-01	120705	5.48	517301	6.77	330487	8.66	562023	10.29
L720999-02	125144	5.48	526947	6.77	334433	8.66	578734	10.29
L720999-03	123231	5.48	523687	6.77	334167	8.66	578045	10.29
L720999-04	119495	5.48	509752	6.77	322159	8.66	551774	10.29
L720999-05	132691	5.48	556697	6.77	355964	8.66	620368	10.29
L720999-06	125427	5.48	524790	6.77	339947	8.66	599612	10.29

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS19	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0913_03
Analyzed: 09/13/14 123600

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	188622	5.48	982054	13.21	942966	15.15
Upper Limit	377000	5.98	1960000	13.71	1890000	15.65
Lower Limit	94300	4.98	491000	12.71	471000	14.65
Sample ID	Response	RT	Response	RT	Response	RT
L720999-01	120705	5.48	536917	13.20	563782	15.14
L720999-02	125144	5.48	556106	13.19	585819	15.13
L720999-03	123231	5.48	562484	13.19	584813	15.14
L720999-04	119495	5.48	540132	13.19	554331	15.14
L720999-05	132691	5.48	614962	13.19	635218	15.14
L720999-06	125427	5.48	593626	13.19	599894	15.14

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS4	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0913_02
Analyzed: 09/13/14 113900

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	287938	5.54	1230040	6.83	766846	8.73	1350828	10.37
Upper Limit	576000	6.04	2460000	7.33	1530000	9.23	2700000	10.87
Lower Limit	144000	5.04	615000	6.33	383000	8.23	675000	9.87
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
LCSD WG742452	373054	5.54	1573774	6.83	990170	8.73	1754160	10.37
LCS WG742452	374663	5.54	1583002	6.83	996301	8.73	1734436	10.37
BLANK WG742452	392370	5.54	1660756	6.83	1044161	8.73	1835871	10.36

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS4	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0913_02
Analyzed: 09/13/14 113900

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	287938	5.54	1492777	13.27	1606098	14.79
Upper Limit	576000	6.04	2990000	13.77	3210000	15.29
Lower Limit	144000	5.04	746000	12.77	803000	14.29
Sample ID	Response	RT	Response	RT	Response	RT
LCSD WG742452	373054	5.54	1921049	13.27	2143051	14.79
LCS WG742452	374663	5.54	1902047	13.27	2104114	14.79
BLANK WG742452	392370	5.54	2013747	13.27	2197847	14.79

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 9/9/2014 Analytic Batch: WG742452
Analysis Date: 9/13/2014 5:09:00 PM Analyst: 377
Instrument ID: BNAMS19 Prep Date: 9/11/2014
Sample Numbers: L720999-01, -02, -03, -04, -05, -06

Surrogate Summary

		TBP			FBP		2FP		NBZ	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L720999-01	BNAMS19	0913_14	0.0166	82.9	0.00755	75.5	0.0107	53.6	0.00691	69.1
L720999-02	BNAMS19	0913_15	0.0173	86.7	0.00792	79.2	0.0111	55.5	0.00746	74.6
L720999-03	BNAMS19	0913_16	0.0114	56.9	0.00565	56.5	0.00924	46.2	0.00526	52.6
L720999-04	BNAMS19	0913_17	0.0165	82.3	0.00770	77.0	0.00704	35.2	0.00686	68.6
L720999-05	BNAMS19	0913_18	0.0156	78.1	0.00736	73.6	0.0107	53.6	0.00684	68.4
L720999-06	BNAMS19	0913_19	0.0155	77.5	0.00738	73.8	0.0106	52.8	0.00660	66.0
LCS WG742452	BNAMS4	0913_04-3	0.0167	83.4	0.00824	82.4	0.0114	57.2	0.00686	68.6
LCSD WG742452	BNAMS4	0913_05-3	0.0173	86.7	0.00843	84.3	0.0113	56.3	0.00689	68.9
BLANK WG742452	BNAMS4	0913_06-3	0.0127	63.6	0.00748	74.8	0.0109	54.6	0.00674	67.4

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

Quality Control Summary

SDG: L720999

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/9/2014	Analytic Batch:	WG742452
Analysis Date:	9/13/2014 5:09:00 PM	Analyst:	377
Instrument ID:	BNAMS19	Prep Date:	9/11/2014
Sample Numbers:	L720999-01, -02, -03, -04, -05, -06		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	TPH		PHL	
			ppm	% Rec	ppm	% Rec
L720999-01	BNAMS19	0913_14	0.00724	72.4	0.00804	40.2
L720999-02	BNAMS19	0913_15	0.00734	73.4	0.00802	40.1
L720999-03	BNAMS19	0913_16	0.00518	51.8	0.00684	34.2
L720999-04	BNAMS19	0913_17	0.00710	71.0	0.00457	22.9
L720999-05	BNAMS19	0913_18	0.00679	67.9	0.00817	40.8
L720999-06	BNAMS19	0913_19	0.00689	68.9	0.00775	38.8
LCS WG742452	BNAMS4	0913_04-3	0.00708	70.8	0.00837	41.9
LCSD WG742452	BNAMS4	0913_05-3	0.00731	73.1	0.00819	40.9
BLANK WG742452	BNAMS4	0913_06-3	0.00678	67.8	0.00766	38.3

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

ARCADIS US - TX Suite 300 2929 Briarpark Drive Houston, TX 77042				Billing Information: Attn Accounts Payable 630 Plaza Drive, Suite 600 Highlands Ranch, CO 80129				Analysis / Container / Preservative												Chain of Custody Page 1 of 1							
Report to: Pam Krueger				Email To: jleik@trcsolutions.com				8015 GRO 8015 DRO 40 ml/Amb HCL 9012 Cyanide 250ml HDPE NaOH >12 *** 300 Anions (Cl, F, SO4, NO2, NO3) *** 125 ml HDPE No Pres 6020 Total Metals: (As, Ba, Cr, Fe, Pb, Mn, Se, Ni, V) 7470 Hg 500 ml HDPE HNO3 <2 6020 Field Filtered Metals: (Al, As, Ba, B, Cd, Ca, Cr, Co, Fe, Pb, Mn, Mo, Ni, K, Se, Ag, Na, U, Va, Zn) 400 ml HDPE HNO3 <2 2540 TDS 250 ml HDPE No Pres 8260 VOCs 40 ml/Amb HCL 8270 SVOCs 100 ml Amb No Pres SUB - Ra226 / Ra228 15 HDPE Add HNO3												 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859							
Project Description: Navajo Refining Company, Artesia, NM				City/State Collected:				Lab Project # ARCADHTX-NAVAJO												C210							
Phone: 713-953-4800 Fax:				Client Project # TX000836.0008.00004				P.O. #												Account:							
Collected by (print): Ronald Wood				Site/Facility ID #				Date Results Needed												Template:							
Collected by (signature): <i>Ronald Wood</i>				Rush? (Lab MUST Be Notified) Same Day200% Next Day100% Two Day50% Three Day25%				Email? ___ No ___ Yes FAX? ___ No ___ Yes												Prelogin:							
Immediately Packed on Ice N ___ Y ☒				No. of Cntr				Shipped Via:												Rem./Contaminant							
Sample ID				Comp/Grab		Matrix *		Depth		Date		Time		No. of Cntr												Sample # (lab only)	
UG-2-0914				6		GW				9/9/14		1615		15												01	
UG-3R-0914				6		GW				9/9/14		1740		15												02	
EB-07-0914				6		W				9/9/14		1815		15												03	
MW-13-0914				6		GW				9/10/14		0910		15												04	
MW-12-0914				6		GW				9/10/14		1005		15												05	
MW-55-0914				6		GW				9/10/14		1240		15												06	

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: 6171 2086 2337
6171 2086 2338

Relinquished by: (Signature) *Ronald Wood* Date: 9/10/14 Time: 435

Relinquished by: (Signature) Date: Time:

Relinquished by: (Signature) Date: Time:

Received by: (Signature) *[Signature]* Date: 9/10/14 Time: 09:00

Received by: (Signature) Date: Time:

Received for lab by: (Signature) *[Signature]* Date: 9/10/14 Time: 09:00

Samples returned via: ☒ UPS ☐ FedEx ☐ Courier ☐ _____

Temp: 31 °C Bottles Received: 80 + 3 TB

Condition: (lab use only) *Sub*

COC Seal Intact: ___ Y ___ N

pH Checked: 7.02 NCF: *62*

Andy Vann

L720999

From: Pam Langford
Sent: Thursday, September 11, 2014 10:06 AM
To: Andy Vann; Login
Subject: FW: Trip blanks

Andy,
Ron failed to put the Trip Blanks on the chain of custody. This is the sample coming in (hopefully) this morning which has the Hexavalent Chromium collected at 11:00 a.m. yesterday. Hope it is here.

Thanks!

Pamela A. Langford
Lab Documentation Chemist
ESC Lab Sciences
12065 Lebanon Road
Mt. Juliet, TN 37122
Direct: 615-773-9687
plangford@esclabsciences.com

-----Original Message-----

From: Wood, Ron [<mailto:Ron.Wood@arcadis-us.com>]
Sent: Thursday, September 11, 2014 10:00 AM
To: Pam Langford
Subject: Trip blanks

Pam,

Yesterday I shipped the background samples without putting the trip blanks on the COC. Can you please name them trip blank 13, 14, and 15 on the lab report?

Please let me know if you have any questions.

Thank you,

Ron Wood
(832) 622-4783

LABORATORY REPORT

This report contains ²¹_____ pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

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Eaton Analytical, Inc.*

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Environmental Science

Report: 325358

Attn: Janice Cozby
 12065 Lebanon Road
 Mount Juliet, TN 37122

Priority: Standard Written

Status: Final

PWS ID: Not Supplied

Copies
 to: None

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3102472	L721001-01	7500-Ra B	09/09/14 16:15	Client	09/12/14 09:00
3102472	L721001-01	7500-Ra D	09/09/14 16:15	Client	09/12/14 09:00
3102473	L721001-02	7500-Ra B	09/09/14 17:40	Client	09/12/14 09:00
3102473	L721001-02	7500-Ra D	09/09/14 17:40	Client	09/12/14 09:00
3102474	L721001-03	7500-Ra B	09/09/14 18:15	Client	09/12/14 09:00
3102474	L721001-03	7500-Ra D	09/09/14 18:15	Client	09/12/14 09:00
3102475	L721001-04	7500-Ra B	09/10/14 09:10	Client	09/12/14 09:00
3102475	L721001-04	7500-Ra D	09/10/14 09:10	Client	09/12/14 09:00
3102476	L721001-05	7500-Ra B	09/10/14 10:05	Client	09/12/14 09:00
3102476	L721001-05	7500-Ra D	09/10/14 10:05	Client	09/12/14 09:00
3102477	L721001-06	7500-Ra B	09/10/14 12:40	Client	09/12/14 09:00
3102477	L721001-06	7500-Ra D	09/10/14 12:40	Client	09/12/14 09:00

Report Summary

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Trott at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Kelly Trott Analytical Services Manager

Authorized Signature

Title

02/07/2015

Date

Client Name: Environmental Science

Report #: 325358

Client Name: Environmental Science

Report #: 325358

Sampling Point: L721001-01

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.37	1.0	0.42 ± 0.38	pCi/L	09/16/14 10:50	09/20/14 13:27	3102472
15262-20-1	Radium-228	7500-Ra D	---	0.30	1.0	0.63 ± 0.33	pCi/L	09/16/14 10:51	10/06/14 13:11	3102472
---	Combined Radium	calc.	5 *	0.37	---	1.05 ± 0.50	pCi/L	09/16/14 10:50	10/06/14 13:11	3102472

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L721001-02

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.4	1.0	1.8 ± 0.6	pCi/L	09/16/14 10:50	09/20/14 13:27	3102473
15262-20-1	Radium-228	7500-Ra D	---	0.35	1.0	0.22 ± 0.35	pCi/L	09/18/14 13:15	10/06/14 13:14	3102473
---	Combined Radium	calc.	5 *	0.4	---	2.02 ± 0.69	pCi/L	09/16/14 10:50	10/06/14 13:14	3102473

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L721001-03

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.33	1.00	0.04 ± 0.26	pCi/L	09/18/14 13:15	09/22/14 10:23	3102474
15262-20-1	Radium-228	7500-Ra D	---	0.51	1.00	0.06 ± 0.49	pCi/L	09/18/14 13:15	10/06/14 13:14	3102474
---	Combined Radium	calc.	5 *	0.51	---	0.10 ± 0.55	pCi/L	09/18/14 13:15	10/06/14 13:14	3102474

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L721001-04

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.20	1.0	0.71 ± 0.32	pCi/L	09/18/14 13:15	09/22/14 10:27	3102475
15262-20-1	Radium-228	7500-Ra D	---	0.27	1.0	0.57 ± 0.29	pCi/L	09/18/14 13:15	10/06/14 13:14	3102475
---	Combined Radium	calc.	5 *	0.27	---	1.28 ± 0.43	pCi/L	09/18/14 13:15	10/06/14 13:14	3102475

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L721001-05

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.6	1.0	1.5 ± 0.8	pCi/L	09/22/14 11:29	09/25/14 10:29	3102476
15262-20-1	Radium-228	7500-Ra D	---	0.24	1.0	0.40 ± 0.25	pCi/L	09/18/14 13:15	10/06/14 13:14	3102476
---	Combined Radium	calc.	5 *	0.6	---	1.90 ± 0.80	pCi/L	09/22/14 11:29	10/06/14 13:14	3102476

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L721001-06

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.18	1.0	0.47 ± 0.26	pCi/L	09/18/14 13:15	09/22/14 10:27	3102477
15262-20-1	Radium-228	7500-Ra D	---	0.27	1.0	0.52 ± 0.29	pCi/L	09/18/14 13:15	10/06/14 13:14	3102477
---	Combined Radium	calc.	5 *	0.27	---	0.99 ± 0.39	pCi/L	09/18/14 13:15	10/06/14 13:14	3102477

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Sub-Contract Chain of Custody

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

261120

Sub-Contract Lab : ENVHEALT
City / State : South Bend, IN
Results Needed by : 10/10/14
ESC Purchase Order # : S20666

Client Provided Sample Container

WORKGROUP **WG742372**
Date Created : 9/11/2014

Send Reports To : Janice Cozby jcozby@esclabsciences.com

325358

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L721001-01 17341441 17341440	DW	9/9/2014 16:15	Radium 226	RA226	7500Ra B-2001	NM CLIENT
						3102472
L721001-01 17341440 17341441	DW	9/9/2014 16:15	Radium 228	RA228	7500Ra D-2001	NM CLIENT
L721001-02 17341443 17341442	DW	9/9/2014 17:40	Radium 226	RA226	7500Ra B-2001	NM CLIENT
						473
L721001-02 17341443 17341442	DW	9/9/2014 17:40	Radium 228	RA228	7500Ra D-2001	NM CLIENT
L721001-03 17341445 17341444	DW	9/9/2014 18:15	Radium 226	RA226	7500Ra B-2001	NM CLIENT
						474
L721001-03 17341445 17341444	DW	9/9/2014 18:15	Radium 228	RA228	7500Ra D-2001	NM CLIENT
L721001-04 17341447 17341446	DW	9/10/2014 9:10	Radium 226	RA226	7500Ra B-2001	NM CLIENT
						475
L721001-04 17341446 17341447	DW	9/10/2014 9:10	Radium 228	RA228	7500Ra D-2001	NM CLIENT
L721001-05 17341449 17341448	DW	9/10/2014 10:05	Radium 226	RA226	7500Ra B-2001	NM CLIENT
						476
L721001-05	DW	9/10/2014 10:05	Radium 228	RA228	7500Ra D-2001	NM CLIENT

Relinquished by Janice Cozby
Received by : Janice Cozby
Relinquished by _____
Received by : _____

Date: 9-12-14 0900
Date: _____
Date: _____
Date: _____

Temp. 0.2°C

Sub-Contract Lab : ENVHEALT
City / State : South Bend, IN
Results Needed by : 10/10/14
ESC Purchase Order # : S20666

WORKGROUP **WG742372**
Date Created : 9/11/2014

Send Reports To : Janice Cozby jcozby@esclabsciences.com

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
17341448 17341449						
L721001-06	DW	9/10/2014 12:40	Radium 226	RA226	7500Ra B-2001	NM CLIENT
17341450 17341451						
L721001-06	DW	9/10/2014 12:40	Radium 228	RA228	7500Ra D-2001	NM CLIENT
17341451 17341450						

PH < 2 (2) 3102477

Relinquished by _____ Date: _____
Received by : Gregory Fordmanis Date: 9-12-14 0900
Relinquished by _____ Date: _____
Received by : _____ Date: _____



Environmental Science Corp.

Work Group Report (wk03)

11-SEP-14 02:27 PM

Page 1 of 1

Work Group: WG742372

Department: 10

Analyst: 485

Created: 11-SEP-14

Due:

Sample	Account Num	Det. Limit	Units	Result	Matrix	Date Analyzed	Dilution Factor
L721001-01 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-01 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				
L721001-02 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				
L721001-02 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-03 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-03 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				
L721001-04 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-04 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				
L721001-05 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-05 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				
L721001-06 *	ARCADHTX		RA226		DW	10-OCT-14	R5
Radium 226			pCi/l				
L721001-06 *	ARCADHTX		RA228		DW	10-OCT-14	R5
Radium 228			pCi/l				

Comments:

L721001-01 Subbed to Envhealt jlc 9/11/14 PO#S20666

Eurofins Eaton Analytical
Run Log

Run ID: **195171** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3102475	L721001-04	GW	CI	09/22/2014 10:27	
FS	3102477	L721001-06	GW	CI	09/22/2014 10:27	
LRB	3108337		RW	CI	09/22/2014 10:27	
LFB	3108338		RW	CI	09/22/2014 10:27	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.20	L721001-04		0.71		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	09/22/2014 10:27	3102475
FS	Radium-226	7500-Ra B	0.18	L721001-06		0.47		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	09/22/2014 10:27	3102477
LRB	Radium-226	7500-Ra B	0.12	---		0.20		pCi/L	---	---	---	---	1.0	---	09/22/2014 10:27	3108337
LFB	Radium-226	7500-Ra B	0.1	---		19.0600	18.0	% Recovery	106	30 - 160	---	---	1.0	---	09/22/2014 10:27	3108338

Eurofins Eaton Analytical
Run Log

Run ID: **195175** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3102474	L721001-03	GW	DU	09/22/2014 10:23	
LRB	3108371		RW	DU	09/22/2014 10:23	
LFB	3108372		RW	DU	09/22/2014 10:23	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.33	L721001-03		0.04		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	09/22/2014 10:23	3102474
LRB	Radium-226	7500-Ra B	0.16	---		0.12		pCi/L	---	---	---	---	1.0	---	09/22/2014 10:23	3108371
LFB	Radium-226	7500-Ra B	0.2	---		18.8000	18.0	% Recovery	104	30 - 160	---	---	1.0	---	09/22/2014 10:23	3108372

Eurofins Eaton Analytical
Run Log

Run ID: **195264** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
LRB	3110025		RW	DU	09/20/2014 12:27	
LFB	3110026		RW	DU	09/20/2014 12:27	
FS	3102472	L721001-01	GW	DU	09/20/2014 13:27	
FS	3102473	L721001-02	GW	DU	09/20/2014 13:27	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
LRB	Radium-226	7500-Ra B	0.16	---		0.01		pCi/L	---	---	---	---	1.0	---	09/20/2014 12:27	3110025
LFB	Radium-226	7500-Ra B	0.2	---		20.5200	18.0	% Recovery	114	30 - 160	---	---	1.0	---	09/20/2014 12:27	3110026
FS	Radium-226	7500-Ra B	0.37	L721001-01		0.42		pCi/L	---	---	---	---	1.0	09/16/2014 10:50	09/20/2014 13:27	3102472
FS	Radium-226	7500-Ra B	0.4	L721001-02		1.8		pCi/L	---	---	---	---	1.0	09/16/2014 10:50	09/20/2014 13:27	3102473

Eurofins Eaton Analytical
Run Log

Run ID: **195308** Method: **7500-Ra B**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3102476	L721001-05	GW	DU	09/25/2014 10:29	
LRB	3092001		RW	DU	09/25/2014 10:29	
LFB	3110909		RW	DU	09/25/2014 10:29	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-226	7500-Ra B	0.6	L721001-05		1.5		pCi/L	---	---	---	---	1.0	09/22/2014 11:29	09/25/2014 10:29	3102476
LRB	Radium-226	7500-Ra B	0.28	---		0.05		pCi/L	---	---	---	---	1.0	09/22/2014 11:29	09/25/2014 10:29	3092001
LFB	Radium-226	7500-Ra B	0.3	---		21.7100	18.0	% Recovery	121	30 - 160	---	---	1.0	---	09/25/2014 10:29	3110909

Eurofins Eaton Analytical
Run Log

Run ID: **195683** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3102472	L721001-01	GW	DU	10/06/2014 13:11	
LRB	3117452		RW	DU	10/06/2014 13:23	
LFB	3117453		RW	DU	10/06/2014 13:23	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.30	L721001-01		0.63		pCi/L	---	---	---	---	1.0	09/16/2014 10:51	10/06/2014 13:11	3102472
LRB	Radium-228	7500-Ra D	0.34	---		0.17		pCi/L	---	---	---	---	1.0	09/16/2014 10:51	10/06/2014 13:23	3117452
LFB	Radium-228	7500-Ra D	0.30	---		7.7800	8.49	% Recovery	92	48 - 139	---	---	1.0	09/16/2014 10:51	10/06/2014 13:23	3117453

Eurofins Eaton Analytical
Run Log

Run ID: **195684** Method: **7500-Ra D**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis Date</u>	<u>Calibration File</u>
FS	3102473	L721001-02	GW	CI	10/06/2014 13:14	
FS	3102474	L721001-03	GW	CI	10/06/2014 13:14	
FS	3102475	L721001-04	GW	CI	10/06/2014 13:14	
FS	3102476	L721001-05	GW	CI	10/06/2014 13:14	
FS	3102477	L721001-06	GW	CI	10/06/2014 13:14	
LRB	3117456		RW	CI	10/06/2014 13:14	
LFB	3117457		RW	CI	10/06/2014 13:14	

QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit	Dil Factor	Extracted	Analyzed	EEA ID #
FS	Radium-228	7500-Ra D	0.35	L721001-02		0.22		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3102473
FS	Radium-228	7500-Ra D	0.51	L721001-03		0.06		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3102474
FS	Radium-228	7500-Ra D	0.27	L721001-04		0.57		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3102475
FS	Radium-228	7500-Ra D	0.24	L721001-05		0.40		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3102476
FS	Radium-228	7500-Ra D	0.27	L721001-06		0.52		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3102477
LRB	Radium-228	7500-Ra D	0.30	---		0.58		pCi/L	---	---	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3117456
LFB	Radium-228	7500-Ra D	0.36	---		6.5200	8.49	% Recovery	77	48 - 139	---	---	1.0	09/18/2014 13:15	10/06/2014 13:14	3117457

Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>
FS	Field Sample
LFB	Laboratory Fortified Blank
LRB	Laboratory Reagent Blank

Quality Control Summary

SDG: L721278

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Anions by Method 9056MOD

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742563. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742563 sample duplicate analysis was performed on sample L721278-02. The relative percent difference exceeded the method limits for Nitrate and Sulfate.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742563 matrix spike/matrix spike duplicate analysis was performed on sample L721280-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Total Dissolved Solids by Method 2540 C-2011

Laboratory Control Sample

Samples L721278-01 and 02 were analyzed in analytical batch WG742979. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L721278-03, -04, -05, and -06 were analyzed in analytical batch WG743073. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742979 sample duplicate analysis was performed on sample L720983-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG743073 sample duplicate analysis was performed on sample L721250-03. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742979 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Precision for batch WG743073 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Quality Control Summary

SDG: L721278

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Cyanide by Method 9012B

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG743692. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG743692 sample duplicate analysis was performed on sample L721278-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG743692 sample duplicate analysis was performed on sample L721563-03. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG743692 matrix spike/matrix spike duplicate analysis was performed on sample L721278-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Mercury by Method 7470A

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742534. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG742534 sample duplicate analysis was performed on sample L721177-01. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742534 matrix spike/matrix spike duplicate analysis was performed on sample L721177-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L721278

For: ARCADIS US - TX

**Project: Navajo Refining Company - Artesia,
October 17, 2014**

Trace Metals by Method 6020

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742348. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742886. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742348 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries were above laboratory control limits for Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved. The matrix spike recoveries were below laboratory control limits for Boron,Dissolved. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch. Sodium,Dissolved did not meet the method limit criteria for the serial dilution. Boron,Dissolved, Calcium,Dissolved, and Sodium,Dissolved, did not meet the method limit criteria for the post digest spike. Sodium,Dissolved exceeded the method limit criteria for both the serial dilution and the post digest spike. This exceedance indicates matrix interference.

For analytical batch WG742886 matrix spike/matrix spike duplicate analysis was performed on sample L720783-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile TPH by Method 8015D/GRO

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742602. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742602 matrix spike/matrix spike duplicate analysis was performed on sample L721148-13. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L721278

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Volatile Organic Compounds by Method 8260B

Laboratory Control Sample

Samples L721278-01, -02, -03, -05, -06, -07, -08, and -09 were analyzed in analytical batch WG742668. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L721278-04 was analyzed in analytical batch WG743784. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG742668 matrix spike/matrix spike duplicate analysis was performed on sample L721278-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG743784 matrix spike/matrix spike duplicate analysis was performed on sample L722004-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Semi-Volatile Organic Compounds by Method 8270C

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742731. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742731 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Diesel Range Organics by Method 8015

Laboratory Control Sample

Samples L721278-01, -02, -03, -04, -05, and -06 were analyzed in analytical batch WG742865. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG742865 was evaluated using the LCS/LCSD. The RPDs were within method limits.



YOUR LAB OF CHOICE

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Est. 1970

Quality Control Summary

SDG: L721278

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences



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Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Report Summary

Tuesday August 11, 2015

Report Number: L721278

Samples Received: 09/12/14

Client Project: TX000836.0008.00004

Description: Navajo Refining Company - Artesia, NM

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Pam Langford , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BI0041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-01

Sample ID : MW25-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/10/14 16:50

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	5000000	5200	100000	ug/l		9056MOD	09/12/14	100
Fluoride	750	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	4500000	7700	500000	ug/l		9056MOD	09/12/14	100
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	14000000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	14.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	5.4	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	5.5	0.25	1.0	ug/l		6020	09/15/14	1
Barium	21.	3.6	20.	ug/l		6020	09/15/14	10
Barium, Dissolved	22.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	U	150	2000	ug/l		6020	09/15/14	100
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	1000000	4600	100000	ug/l		6020	09/15/14	100
Chromium	0.60	0.54	1.0	ug/l	J	6020	09/15/14	1
Chromium, Dissolved	0.55	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	1.5	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	1.8	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	0.70	0.26	1.0	ug/l	J	6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	2.4	10.	ug/l		6020	09/15/14	10
Lead, Dissolved	U	24.	100	ug/l		6020	09/15/14	100
Manganese	400	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	220	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	17.	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	3.2	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	3.2	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	7400	37.	1000	ug/l		6020	09/15/14	1
Selenium	9.5	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	12.	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	31.	50.	ug/l		6020	09/15/14	100
Sodium, Dissolved	2500000	11000	100000	ug/l		6020	09/15/14	100
Uranium, Dissolved	U	33.	1000	ug/l		6020	09/15/14	100
Vanadium	11.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	10.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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L721278-01 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-01

Sample ID : MW25-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/10/14 16:50

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	66.	31.	100	ug/l	J	8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	96.5			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	99.1			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	95.9			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	94.9			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	370	22.	100	ug/l		8015	09/17/14	1
C28-C40 Oil Range	120	12.	100	ug/l		8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	129.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.38	1.1	ug/l		8270C	09/15/14	1.11
1-Methylnaphthalene	U	0.37	1.1	ug/l		8270C	09/15/14	1.11
2-Methylnaphthalene	U	0.34	1.1	ug/l		8270C	09/15/14	1.11
Naphthalene	U	0.41	1.1	ug/l		8270C	09/15/14	1.11
Surrogate Recovery								
2-Fluorophenol	50.4			% Rec.		8270C	09/15/14	1.11

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L721278-01 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW25-0914-BG
Collected By : R. Wood
Collection Date : 09/10/14 16:50

ESC Sample # : L721278-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	38.4			% Rec.		8270C	09/15/14	1.11
Nitrobenzene-d5	62.7			% Rec.		8270C	09/15/14	1.11
2-Fluorobiphenyl	74.1			% Rec.		8270C	09/15/14	1.11
2,4,6-Tribromophenol	91.5			% Rec.		8270C	09/15/14	1.11
p-Terphenyl-d14	76.1			% Rec.		8270C	09/15/14	1.11

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2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-02

Sample ID : EB08-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/10/14 17:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	300	52.	1000	ug/l	J	9056MOD	09/12/14	1
Fluoride	U	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	U	23.	100	ug/l	P1	9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	230	77.	5000	ug/l	JP1	9056MOD	09/12/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	6000	2800	10000	ug/l	JT4	2540 C-	09/17/14	1
Aluminum, Dissolved	13.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	U	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	U	0.25	1.0	ug/l		6020	09/15/14	1
Barium	U	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	U	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	37.	1.5	20.	ug/l		6020	09/15/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	120	46.	1000	ug/l	J	6020	09/15/14	1
Chromium	0.59	0.54	1.0	ug/l	J	6020	09/15/14	1
Chromium, Dissolved	0.65	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	U	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	U	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	09/15/14	1
Manganese	U	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	U	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	U	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	U	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	68.	37.	1000	ug/l	J	6020	09/15/14	1
Selenium	U	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	0.31	0.50	ug/l		6020	09/15/14	1
Sodium, Dissolved	890	110	1000	ug/l	J	6020	09/15/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	09/15/14	1
Vanadium	U	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

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REPORT OF ANALYSIS

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ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : EB08-0914-BG

Collected By : R. Wood
Collection Date : 09/10/14 17:30

ESC Sample # : L721278-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.9			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	99.7			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	96.2			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	95.2			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	43.	22.	100	ug/l	J	8015	09/17/14	1
C28-C40 Oil Range	15.	12.	100	ug/l	J	8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	149.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/15/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/15/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/15/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/15/14	1
Surrogate Recovery								
2-Fluorophenol	59.6			% Rec.		8270C	09/15/14	1

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August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB08-0914-BG
Collected By : R. Wood
Collection Date : 09/10/14 17:30

ESC Sample # : L721278-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	41.3			% Rec.		8270C	09/15/14	1
Nitrobenzene-d5	62.9			% Rec.		8270C	09/15/14	1
2-Fluorobiphenyl	76.0			% Rec.		8270C	09/15/14	1
2,4,6-Tribromophenol	82.0			% Rec.		8270C	09/15/14	1
p-Terphenyl-d14	74.2			% Rec.		8270C	09/15/14	1

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August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-03

Sample ID : MW17-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 08:45

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	140000	2600	50000	ug/l		9056MOD	09/12/14	50
Fluoride	1100	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	1500	23.	100	ug/l		9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	1300000	3900	250000	ug/l		9056MOD	09/12/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	2000000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	15.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	0.70	0.25	1.0	ug/l	J	6020	09/15/14	1
Arsenic, Dissolved	0.71	0.25	1.0	ug/l	J	6020	09/15/14	1
Barium	13.	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	12.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	110	15.	200	ug/l	J	6020	09/15/14	10
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	360000	460	10000	ug/l		6020	09/15/14	10
Chromium	1.8	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	2.0	0.54	1.0	ug/l		6020	09/15/14	1
Copper	U	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	0.57	0.52	1.0	ug/l	J	6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	2.4	10.	ug/l		6020	09/15/14	10
Manganese	0.72	0.25	2.0	ug/l	J	6020	09/15/14	1
Manganese, Dissolved	0.31	0.25	2.0	ug/l	J	6020	09/15/14	1
Molybdenum, Dissolved	8.4	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	U	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	0.39	0.35	1.0	ug/l	J	6020	09/15/14	1
Potassium, Dissolved	2100	37.	1000	ug/l		6020	09/15/14	1
Selenium	6.6	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	6.2	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	3.1	5.0	ug/l		6020	09/15/14	10
Sodium, Dissolved	60000	110	1000	ug/l		6020	09/15/14	1
Uranium, Dissolved	U	3.3	100	ug/l		6020	09/15/14	10
Vanadium	5.0	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	4.8	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-03

Sample ID : MW17-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 08:45

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.6			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	98.8			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	96.4			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	94.0			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	39.	22.	100	ug/l	J	8015	09/17/14	1
C28-C40 Oil Range	18.	12.	100	ug/l	J	8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	140.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/15/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/15/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/15/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/15/14	1
Surrogate Recovery								
2-Fluorophenol	53.6			% Rec.		8270C	09/15/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW17-0914-BG
Collected By : R. Wood
Collection Date : 09/11/14 08:45

ESC Sample # : L721278-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	38.3			% Rec.		8270C	09/15/14	1
Nitrobenzene-d5	60.3			% Rec.		8270C	09/15/14	1
2-Fluorobiphenyl	75.6			% Rec.		8270C	09/15/14	1
2,4,6-Tribromophenol	81.1			% Rec.		8270C	09/15/14	1
p-Terphenyl-d14	77.6			% Rec.		8270C	09/15/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-04

Sample ID : UG4-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 10:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	39000	52.	1000	ug/l		9056MOD	09/12/14	1
Fluoride	590	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	2900000	3900	250000	ug/l		9056MOD	09/12/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	4000000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	20.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	1.7	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	0.55	0.25	1.0	ug/l	J	6020	09/15/14	1
Barium	110	1.8	10.	ug/l		6020	09/15/14	5
Barium, Dissolved	42.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	730	30.	400	ug/l		6020	09/15/14	20
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	610000	920	20000	ug/l		6020	09/15/14	20
Chromium	6.1	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	1.5	0.54	1.0	ug/l		6020	09/15/14	1
Copper	5.6	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	1.5	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	1.3	0.26	1.0	ug/l		6020	09/15/14	1
Iron	2900	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	3.1	1.2	5.0	ug/l	J	6020	09/15/14	5
Lead, Dissolved	U	4.8	20.	ug/l		6020	09/15/14	20
Manganese	280	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	230	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	4.0	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	6.3	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	3.7	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	3400	37.	1000	ug/l		6020	09/15/14	1
Selenium	5.7	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	4.4	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	6.2	10.	ug/l		6020	09/15/14	20
Sodium, Dissolved	190000	2200	20000	ug/l		6020	09/15/14	20
Uranium, Dissolved	26.	6.6	200	ug/l	J	6020	09/15/14	20
Vanadium	9.0	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	2.5	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	27.	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

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L721278-04 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG4-0914-BG
Collected By : R. Wood
Collection Date : 09/11/14 10:10

ESC Sample # : L721278-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.2			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/18/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/18/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/18/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/18/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/18/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/18/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/18/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/18/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/18/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/18/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/18/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/18/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/18/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/18/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/18/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/18/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/18/14	1
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	09/18/14	1
Dibromofluoromethane	99.1			% Rec.		8260B	09/18/14	1
4-Bromofluorobenzene	91.1			% Rec.		8260B	09/18/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	82.	22.	100	ug/l	J	8015	09/17/14	1
C28-C40 Oil Range	33.	12.	100	ug/l	J	8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	137.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.38	1.1	ug/l		8270C	09/15/14	1.11
1-Methylnaphthalene	U	0.37	1.1	ug/l		8270C	09/15/14	1.11
2-Methylnaphthalene	U	0.34	1.1	ug/l		8270C	09/15/14	1.11
Naphthalene	U	0.41	1.1	ug/l		8270C	09/15/14	1.11
Surrogate Recovery								
2-Fluorophenol	43.0			% Rec.		8270C	09/15/14	1.11

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L721278-04 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG4-0914-BG
Collected By : R. Wood
Collection Date : 09/11/14 10:10

ESC Sample # : L721278-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	27.2			% Rec.		8270C	09/15/14	1.11
Nitrobenzene-d5	64.9			% Rec.		8270C	09/15/14	1.11
2-Fluorobiphenyl	82.6			% Rec.		8270C	09/15/14	1.11
2,4,6-Tribromophenol	81.6			% Rec.		8270C	09/15/14	1.11
p-Terphenyl-d14	80.1			% Rec.		8270C	09/15/14	1.11

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L721278-04 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-05

Sample ID : EB09-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 10:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	130	52.	1000	ug/l	J	9056MOD	09/12/14	1
Fluoride	U	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	110	23.	100	ug/l		9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	980	77.	5000	ug/l	J	9056MOD	09/12/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	3000	2800	10000	ug/l	JT4	2540 C-	09/17/14	1
Aluminum, Dissolved	18.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	U	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	U	0.25	1.0	ug/l		6020	09/15/14	1
Barium	U	0.36	2.0	ug/l		6020	09/15/14	1
Barium, Dissolved	U	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	46.	1.5	20.	ug/l		6020	09/17/14	1
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	U	46.	1000	ug/l		6020	09/15/14	1
Chromium	U	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	0.68	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	U	0.52	1.0	ug/l		6020	09/15/14	1
Copper, Dissolved	U	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	U	0.26	1.0	ug/l		6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	0.24	1.0	ug/l		6020	09/15/14	1
Lead, Dissolved	U	0.24	1.0	ug/l		6020	09/15/14	1
Manganese	U	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	U	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	U	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	U	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	U	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	09/15/14	1
Selenium	U	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	0.31	0.50	ug/l		6020	09/15/14	1
Sodium, Dissolved	240	110	1000	ug/l	J	6020	09/15/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	09/15/14	1
Vanadium	U	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	U	2.6	10.	ug/l		6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-05

Sample ID : EB09-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 10:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.8			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	96.9			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	94.6			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	43.	22.	100	ug/l	J	8015	09/17/14	1
C28-C40 Oil Range	29.	12.	100	ug/l	J	8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	138.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/15/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/15/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/15/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/15/14	1
Surrogate Recovery								
2-Fluorophenol	52.5			% Rec.		8270C	09/15/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB09-0914-BG
Collected By : R. Wood
Collection Date : 09/11/14 10:30

ESC Sample # : L721278-05

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	38.8			% Rec.		8270C	09/15/14	1
Nitrobenzene-d5	58.3			% Rec.		8270C	09/15/14	1
2-Fluorobiphenyl	74.7			% Rec.		8270C	09/15/14	1
2,4,6-Tribromophenol	72.0			% Rec.		8270C	09/15/14	1
p-Terphenyl-d14	75.4			% Rec.		8270C	09/15/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-06

Sample ID : DUP3-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	5000000	5200	100000	ug/l		9056MOD	09/12/14	100
Fluoride	710	9.9	100	ug/l		9056MOD	09/12/14	1
Nitrate	U	23.	100	ug/l		9056MOD	09/12/14	1
Nitrite	U	28.	100	ug/l		9056MOD	09/12/14	1
Sulfate	4400000	7700	500000	ug/l		9056MOD	09/12/14	100
Cyanide	U	1.8	5.0	ug/l		9012B	09/20/14	1
Dissolved Solids	14000000	2800	10000	ug/l		2540 C-	09/17/14	1
Aluminum, Dissolved	22.	2.0	50.	ug/l	J	6020	09/15/14	1
Arsenic	5.5	0.25	1.0	ug/l		6020	09/15/14	1
Arsenic, Dissolved	5.4	0.25	1.0	ug/l		6020	09/15/14	1
Barium	22.	3.6	20.	ug/l		6020	09/15/14	10
Barium, Dissolved	20.	0.36	2.0	ug/l		6020	09/15/14	1
Boron, Dissolved	250	15.	200	ug/l		6020	09/17/14	10
Cadmium, Dissolved	U	0.16	0.50	ug/l		6020	09/15/14	1
Calcium, Dissolved	970000	4600	100000	ug/l		6020	09/15/14	100
Chromium	U	0.54	1.0	ug/l		6020	09/15/14	1
Chromium, Dissolved	0.68	0.54	1.0	ug/l	J	6020	09/15/14	1
Copper	0.73	0.52	1.0	ug/l	J	6020	09/15/14	1
Copper, Dissolved	1.0	0.52	1.0	ug/l		6020	09/15/14	1
Cobalt, Dissolved	0.75	0.26	1.0	ug/l	J	6020	09/15/14	1
Iron	U	50.	50.	ug/l		6020	09/15/14	1
Iron, Dissolved	U	50.	50.	ug/l		6020	09/15/14	1
Lead	U	2.4	10.	ug/l		6020	09/15/14	10
Lead, Dissolved	U	24.	100	ug/l		6020	09/15/14	100
Manganese	390	0.25	2.0	ug/l		6020	09/15/14	1
Manganese, Dissolved	220	0.25	2.0	ug/l		6020	09/15/14	1
Molybdenum, Dissolved	17.	0.14	2.0	ug/l		6020	09/15/14	1
Nickel	3.0	0.35	1.0	ug/l		6020	09/15/14	1
Nickel, Dissolved	3.1	0.35	1.0	ug/l		6020	09/15/14	1
Potassium, Dissolved	7300	37.	1000	ug/l		6020	09/15/14	1
Selenium	11.	0.38	2.0	ug/l		6020	09/15/14	1
Selenium, Dissolved	11.	0.38	2.0	ug/l		6020	09/15/14	1
Silver, Dissolved	U	3.1	5.0	ug/l		6020	09/17/14	10
Sodium, Dissolved	2500000	11000	100000	ug/l		6020	09/15/14	100
Uranium, Dissolved	U	33.	1000	ug/l		6020	09/15/14	100
Vanadium	10.	0.18	1.0	ug/l		6020	09/15/14	1
Vanadium, Dissolved	10.	0.18	1.0	ug/l		6020	09/15/14	1
Zinc, Dissolved	4.3	2.6	10.	ug/l	J	6020	09/15/14	1
Mercury	U	0.049	0.20	ug/l		7470A	09/12/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Reported: 08/11/15 10:57 Printed: 08/11/15 10:58

L721278-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L721278-06

Sample ID : DUP3-0914-BG

Site ID :

Collected By : R. Wood
Collection Date : 09/11/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPH (GC/FID) Low Fraction	62.	31.	100	ug/l	J	8015D/G	09/14/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	96.4			% Rec.		8015D/G	09/14/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	09/17/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	09/17/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	09/17/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	09/17/14	1
Toluene	U	0.78	5.0	ug/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	09/17/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	09/17/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	09/17/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	09/17/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	09/17/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	95.9			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	94.6			% Rec.		8260B	09/17/14	1
Diesel and Oil Ranges								
C10-C28 Diesel Range	410	22.	100	ug/l		8015	09/17/14	1
C28-C40 Oil Range	130	12.	100	ug/l		8015	09/17/14	1
Surrogate Recovery								
o-Terphenyl	137.			% Rec.		8015	09/17/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	09/16/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	09/16/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	09/16/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	09/16/14	1
Surrogate Recovery								
2-Fluorophenol	46.3			% Rec.		8270C	09/16/14	1

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L721278-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : DUP3-0914-BG
Collected By : R. Wood
Collection Date : 09/11/14 00:00

ESC Sample # : L721278-06

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Phenol-d5	33.9			% Rec.		8270C	09/16/14	1
Nitrobenzene-d5	57.0			% Rec.		8270C	09/16/14	1
2-Fluorobiphenyl	74.9			% Rec.		8270C	09/16/14	1
2,4,6-Tribromophenol	74.1			% Rec.		8270C	09/16/14	1
p-Terphenyl-d14	75.5			% Rec.		8270C	09/16/14	1

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L721278-06 (GFAA METALS) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : TRIPBLANK-16

Collected By : R. Wood
Collection Date : 09/11/14 00:00

ESC Sample # : L721278-07

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	99.4			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	96.5			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	92.7			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

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RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : TRIPBLANK-17

Collected By : R. Wood
Collection Date : 09/11/14 00:00

ESC Sample # : L721278-08

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	99.6			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	96.0			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	96.5			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/11/15 10:57 Printed: 08/11/15 10:58



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : TRIPBLANK-18

Collected By : R. Wood
Collection Date : 09/11/14 00:00

ESC Sample # : L721278-09

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	09/17/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	09/17/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	09/17/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	09/17/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	09/17/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	09/17/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	09/17/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	09/17/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	09/17/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	09/17/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	09/17/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	09/17/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	09/17/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	09/17/14	1
Surrogate Recovery								
Toluene-d8	100.			% Rec.		8260B	09/17/14	1
Dibromofluoromethane	98.3			% Rec.		8260B	09/17/14	1
4-Bromofluorobenzene	95.0			% Rec.		8260B	09/17/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/11/15 10:57 Printed: 08/11/15 10:58

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L721278-01	WG742602	SAMP	TPH (GC/FID) Low Fraction	R2989607	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Chromium	R2989598	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
L721278-02	WG742348	SAMP	Cobalt, Dissolved	R2989790	J
	WG742865	SAMP	C10-C28 Diesel Range	R2990670	J
	WG742865	SAMP	C28-C40 Oil Range	R2990670	J
	WG742563	SAMP	Chloride	R2988867	J
	WG742563	SAMP	Nitrate	R2988867	P1
	WG742563	SAMP	Sulfate	R2988867	JP1
	WG742979	SAMP	Dissolved Solids	R2990297	JT4
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Calcium, Dissolved	R2989790	J
	WG742886	SAMP	Chromium	R2989598	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Potassium, Dissolved	R2989790	J
	WG742348	SAMP	Sodium, Dissolved	R2989790	J
L721278-03	WG742865	SAMP	C10-C28 Diesel Range	R2990670	J
	WG742865	SAMP	C28-C40 Oil Range	R2990670	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742886	SAMP	Arsenic	R2989598	J
	WG742348	SAMP	Arsenic, Dissolved	R2989790	J
	WG742348	SAMP	Boron, Dissolved	R2989790	J
	WG742348	SAMP	Copper, Dissolved	R2989790	J
	WG742886	SAMP	Manganese	R2989598	J
	WG742348	SAMP	Manganese, Dissolved	R2989790	J
	WG742348	SAMP	Nickel, Dissolved	R2989790	J
	WG742865	SAMP	C10-C28 Diesel Range	R2990670	J
	WG742865	SAMP	C28-C40 Oil Range	R2990670	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Arsenic, Dissolved	R2989790	J
L721278-04	WG742886	SAMP	Lead	R2989598	J
	WG742348	SAMP	Uranium, Dissolved	R2989790	J
	WG742865	SAMP	C10-C28 Diesel Range	R2990670	J
	WG742865	SAMP	C28-C40 Oil Range	R2990670	J
	WG742563	SAMP	Chloride	R2988867	J
	WG742563	SAMP	Sulfate	R2988867	J
	WG743073	SAMP	Dissolved Solids	R2990290	JT4
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742348	SAMP	Sodium, Dissolved	R2989790	J
L721278-05	WG742602	SAMP	TPH (GC/FID) Low Fraction	R2989607	J
	WG742348	SAMP	Aluminum, Dissolved	R2989790	J
	WG742348	SAMP	Chromium, Dissolved	R2989790	J
	WG742886	SAMP	Copper	R2989598	J
	WG742348	SAMP	Cobalt, Dissolved	R2989790	J
	WG742348	SAMP	Zinc, Dissolved	R2989790	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T4	(ESC) - Additional method/sample information: QNS - Quantity Not Sufficient

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742563
Analysis Date:	9/12/2014 2:43:00 PM	Analyst:	577
Instrument ID:	IC-9		
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chloride	16887-00-6	< 1.00	< 0.0519	
Fluoride	16984-48-8	< 0.100	< 0.00990	
Nitrate	14797-55-8	< 0.100	< 0.0227	
Nitrite	14797-65-0	< 0.100	< 0.0277	
Sulfate	14808-79-8	< 5.00	< 0.0774	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742563
Collection Date:	9/10/2014			Analyst:	577
Analysis Date:	9/12/2014 2:43:00 PM				
Instrument ID:	IC-9				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.665	99	90 - 110	
Fluoride	1	8	7.9711	100	90 - 110	
Nitrate	1	8	8.0812	101	90 - 110	
Nitrite	1	8	7.9163	99	90 - 110	
Sulfate	1	40	40.097	100	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.695	99	90 - 110	
Fluoride	1	8	7.9916	100	90 - 110	
Nitrate	1	8	8.1088	101	90 - 110	
Nitrite	1	8	7.9379	99	90 - 110	
Sulfate	1	40	39.985	100	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Chloride	1	40	39.665	99	39.695	99	90 - 110	0	20	
Fluoride	1	8	7.9711	100	7.9916	100	90 - 110	0	20	
Nitrate	1	8	8.0812	101	8.1088	101	90 - 110	0	20	
Nitrite	1	8	7.9163	99	7.9379	99	90 - 110	0	20	
Sulfate	1	40	40.097	100	39.985	100	90 - 110	0	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Anions by Method 9056MOD			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742563
Collection Date:	9/10/2014			Analyst:	577
Analysis Date:	9/12/2014 2:43:00 PM				
Instrument ID:	IC-9				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Sample Duplicate

L721278-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	0.2965	0.3275	10	20	
Fluoride	1	<0.0099	<0.0099		20	
Nitrate	1	<0.0227	0.0583	0	20	P1
Nitrite	1	<0.0277	<0.0277		20	
Sulfate	1	0.2283	2.3694	165	20	P1

Matrix Spike / Matrix Spike Duplicate

L721280-01

Analyte	Dil	Spike Value	Sample MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Nitrate	1	5	0.7234	5.5721	97	5.6041	98	80 - 120	1	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743692
Analysis Date:	9/20/2014 7:53:00 AM	Analyst:	183
Instrument ID:	LACHAT4		
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cyanide	57-12-5	< 0.00500	< 0.00180	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.1	100	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.099	99	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Cyanide	1	0.1	0.1	100	0.099	99	90 - 110	1.01	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Cyanide by Method 9012B			Matrix:	Water - mg/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG743692
Collection Date:	9/10/2014			Analyst:	183
Analysis Date:	9/20/2014 7:53:00 AM				
Instrument ID:	LACHAT4				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Sample Duplicate

L721278-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Sample Duplicate

L721563-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Matrix Spike / Matrix Spike Duplicate

L721278-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cyanide	1	0.2	<0.0018	0.2	100	0.192	96	90 - 110		4.08	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742979
Analysis Date:	9/17/2014 4:25:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L721278-01, -02		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8840	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8800	100	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Dissolved Solids	1	8800	8840	100	8800	100	85 - 115	0.45	5		

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743073
Analysis Date:	9/17/2014 4:09:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L721278-03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8810	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8750	99.4	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Dissolved Solids	1	8800	8810	100	8750	99.4	85 - 115	0.68	5		

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742979
Analysis Date:	9/17/2014 4:25:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L721278-01, -02		

Sample Duplicate

L720983-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	620	625	0.8	5	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743073
Analysis Date:	9/17/2014 4:09:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L721278-03, -04, -05, -06		

Sample Duplicate

L721250-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	765.33	766.67	0.17	5	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742534
Analysis Date:	9/12/2014 5:38:00 PM	Analyst:	572
Instrument ID:	CVAA3	Prep Date:	9/12/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.0043	100	85 - 115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742534
Analysis Date:	9/12/2014 5:38:00 PM	Analyst:	572
Instrument ID:	CVAA3	Prep Date:	9/12/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Sample Duplicate

L721177-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Mercury	1	<0.049	<0.049		20	

Serial Dilution

L721177-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L721177-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Mercury	1	3	<0.049	3.1087	102	3.1186	102	80 - 120		0	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum,Dissolved	7429-90-5	< 100	3.69	
Arsenic,Dissolved	7440-38-2	< 2.00	< 0.250	
Barium,Dissolved	7440-39-3	< 5.00	< 0.360	
Boron,Dissolved	7440-42-8	< 20.0	< 1.5	
Cadmium,Dissolved	7440-43-9	< 1.00	< 0.160	
Calcium,Dissolved	7440-70-2	< 1000	< 46.0	
Chromium,Dissolved	7440-47-3	< 1.00	< 0.540	
Cobalt,Dissolved	7440-48-4	< 2.00	< 0.260	
Copper,Dissolved	7440-50-8	< 5.00	< 0.520	
Iron,Dissolved	7439-89-6	< 100	< 15.0	
Lead,Dissolved	7439-92-1	< 2.00	< 0.240	
Manganese,Dissolved	7439-96-5	< 5.00	0.282	
Molybdenum,Dissolved	7439-98-7	< 5.00	< 0.140	
Nickel,Dissolved	7440-02-0	< 2.00	< 0.350	
Potassium,Dissolved	7440-09-7	< 1000	< 37.0	
Selenium,Dissolved	7782-49-2	< 2.00	< 0.380	
Silver,Dissolved	7440-22-4	< 2.00	< 0.310	
Sodium,Dissolved	7440-23-5	< 1000	< 110	
Uranium,Dissolved	7440-61-1	< 10.0	< 0.330	
Vanadium,Dissolved	7440-62-2	< 5.00	< 0.180	
Zinc,Dissolved	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 5:27:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Arsenic	7440-38-2	< 2.00	< 0.250	
Barium	7440-39-3	< 5.00	< 0.360	
Chromium	7440-47-3	< 1.00	< 0.540	
Copper	7440-50-8	< 5.00	< 0.520	
Iron	7439-89-6	< 100	< 15.0	
Lead	7439-92-1	< 2.00	< 0.240	
Manganese	7439-96-5	< 5.00	< 0.250	
Nickel	7440-02-0	< 2.00	< 0.350	
Selenium	7782-49-2	< 2.00	< 0.380	
Vanadium	7440-62-2	< 5.00	< 0.180	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	70 - 130	
Arsenic,Dissolved	1	111	109.21	98	85 - 115	
Barium,Dissolved	1	111	107.18	97	85 - 115	
Boron,Dissolved	1	111	115.19	104	70 - 130	
Cadmium,Dissolved	1	111	106.38	96	85 - 115	
Calcium,Dissolved	1	11100	11096	100	70 - 130	
Chromium,Dissolved	1	111	108.38	98	85 - 115	
Cobalt,Dissolved	1	111	111.33	100	85 - 115	
Copper,Dissolved	1	111	109.72	99	85 - 115	
Iron,Dissolved	1	1110	1079.5	97	85 - 115	
Lead,Dissolved	1	111	107.86	97	85 - 115	
Manganese,Dissolved	1	111	111.82	101	85 - 115	
Molybdenum,Dissolved	1	111	109.17	98	85 - 115	
Nickel,Dissolved	1	111	110.94	100	85 - 115	
Potassium,Dissolved	1	11100	10872	98	70 - 130	
Selenium,Dissolved	1	111	105.08	95	85 - 115	
Silver,Dissolved	1	111	112.46	101	85 - 115	
Sodium,Dissolved	1	11100	10972	99	70 - 130	
Uranium,Dissolved	1	111	102.92	93	70 - 130	
Vanadium,Dissolved	1	111	107.38	97	85 - 115	
Zinc,Dissolved	1	111	107.98	97	85 - 115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	1110	1081.5	97	70 - 130	
Arsenic,Dissolved	1	111	109.19	98	85 - 115	
Barium,Dissolved	1	111	109.17	98	85 - 115	
Boron,Dissolved	1	111	120.38	108	70 - 130	
Cadmium,Dissolved	1	111	107.16	97	85 - 115	
Calcium,Dissolved	1	11100	11067	100	70 - 130	
Chromium,Dissolved	1	111	109.43	99	85 - 115	
Cobalt,Dissolved	1	111	111.38	100	85 - 115	
Copper,Dissolved	1	111	111.05	100	85 - 115	
Iron,Dissolved	1	1110	1064.5	96	85 - 115	
Lead,Dissolved	1	111	109.88	99	85 - 115	
Manganese,Dissolved	1	111	112.32	101	85 - 115	
Molybdenum,Dissolved	1	111	110.84	100	85 - 115	
Nickel,Dissolved	1	111	111.66	101	85 - 115	
Potassium,Dissolved	1	11100	10929	98	70 - 130	
Selenium,Dissolved	1	111	106.50	96	85 - 115	
Silver,Dissolved	1	111	113.42	102	85 - 115	
Sodium,Dissolved	1	11100	11139	100	70 - 130	
Uranium,Dissolved	1	111	105.70	95	70 - 130	
Vanadium,Dissolved	1	111	108.54	98	85 - 115	
Zinc,Dissolved	1	111	109.83	99	85 - 115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Aluminum,Dissolved	1	1110	1091.3	98	1081.5	97	70 - 130	1	20	
Arsenic,Dissolved	1	111	109.21	98	109.19	98	85 - 115	0	20	
Barium,Dissolved	1	111	107.18	97	109.17	98	85 - 115	2	20	
Boron,Dissolved	1	111	115.19	104	120.38	108	70 - 130	4	20	
Cadmium,Dissolved	1	111	106.38	96	107.16	97	85 - 115	1	20	
Calcium,Dissolved	1	11100	11096	100	11067	100	70 - 130	0	20	
Chromium,Dissolved	1	111	108.38	98	109.43	99	85 - 115	1	20	
Cobalt,Dissolved	1	111	111.33	100	111.38	100	85 - 115	0	20	
Copper,Dissolved	1	111	109.72	99	111.05	100	85 - 115	1	20	
Iron,Dissolved	1	1110	1079.5	97	1064.5	96	85 - 115	1	20	
Lead,Dissolved	1	111	107.86	97	109.88	99	85 - 115	2	20	
Manganese,Dissolved	1	111	111.82	101	112.32	101	85 - 115	0	20	
Molybdenum,Dissolved	1	111	109.17	98	110.84	100	85 - 115	2	20	
Nickel,Dissolved	1	111	110.94	100	111.66	101	85 - 115	1	20	
Potassium,Dissolved	1	11100	10872	98	10929	98	70 - 130	1	20	
Selenium,Dissolved	1	111	105.08	95	106.50	96	85 - 115	1	20	
Silver,Dissolved	1	111	112.46	101	113.42	102	85 - 115	1	20	
Sodium,Dissolved	1	11100	10972	99	11139	100	70 - 130	2	20	
Uranium,Dissolved	1	111	102.92	93	105.70	95	70 - 130	3	20	
Vanadium,Dissolved	1	111	107.38	97	108.54	98	85 - 115	1	20	
Zinc,Dissolved	1	111	107.98	97	109.83	99	85 - 115	2	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 5:27:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.72	99	85 - 115	
Barium	1	111	108.26	98	85 - 115	
Chromium	1	111	111.12	100	85 - 115	
Copper	1	111	111.66	101	85 - 115	
Iron	1	1110	1082.2	97	85 - 115	
Lead	1	111	108.16	97	85 - 115	
Manganese	1	111	111.85	101	85 - 115	
Nickel	1	111	112.23	101	85 - 115	
Selenium	1	111	102.95	93	85 - 115	
Vanadium	1	111	110.90	100	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Arsenic	1	111	109.98	99	85 - 115	
Barium	1	111	107.45	97	85 - 115	
Chromium	1	111	113.03	102	85 - 115	
Copper	1	111	111.82	101	85 - 115	
Iron	1	1110	1081.6	97	85 - 115	
Lead	1	111	108.22	97	85 - 115	
Manganese	1	111	113.25	102	85 - 115	
Nickel	1	111	112.25	101	85 - 115	
Selenium	1	111	105.82	95	85 - 115	
Vanadium	1	111	112.42	101	85 - 115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742886
Collection Date:	9/10/2014			Analyst:	664
Analysis Date:	9/15/2014 5:27:00 PM			Prep Date:	9/15/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Arsenic	1	111	109.72	99	109.98	99	85 - 115	0	20	
Barium	1	111	108.26	98	107.45	97	85 - 115	1	20	
Chromium	1	111	111.12	100	113.03	102	85 - 115	2	20	
Copper	1	111	111.66	101	111.82	101	85 - 115	0	20	
Iron	1	1110	1082.2	97	1081.6	97	85 - 115	0	20	
Lead	1	111	108.16	97	108.22	97	85 - 115	0	20	
Manganese	1	111	111.85	101	113.25	102	85 - 115	1	20	
Nickel	1	111	112.23	101	112.25	101	85 - 115	0	20	
Selenium	1	111	102.95	93	105.82	95	85 - 115	3	20	
Vanadium	1	111	110.90	100	112.42	101	85 - 115	1	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum,Dissolved	5	22.288	21.100	5	10	
Arsenic,Dissolved	5	3.2501	3.4281	5	10	
Barium,Dissolved	5	7.4854	7.8058	4	10	
Boron,Dissolved	100	1788.1	1640.1	8	10	
Cadmium,Dissolved	5	<0.16	<0.8		10	
Calcium,Dissolved	100	524278	489993	7	10	
Chromium,Dissolved	5	0.8808	<2.7	112	10	
Cobalt,Dissolved	5	<0.26	<1.3		10	
Copper,Dissolved	5	2.4494	2.9229	19	10	
Iron,Dissolved	5	<15	81.690	9275	10	
Lead,Dissolved	5	0.2981	<1.2	18	10	
Manganese,Dissolved	5	<0.25	<1.25		10	
Molybdenum,Dissolved	5	30.979	35.153	13	10	
Nickel,Dissolved	5	1.0394	<1.75	49	10	
Potassium,Dissolved	5	349.09	323.07	7	10	
Selenium,Dissolved	5	8.7353	9.5457	9	10	
Silver,Dissolved	100	<6.2	<31		10	
Sodium,Dissolved	100	224049	199404	11	10	O1
Uranium,Dissolved	100	176.04	161.38	8	10	
Vanadium,Dissolved	5	18.203	19.780	9	10	
Zinc,Dissolved	5	<2.56	24.614	1863	10	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742348
Collection Date:	9/10/2014			Analyst:	664
Analysis Date:	9/15/2014 10:13:00 PM			Prep Date:	9/11/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Aluminum,Dissolved	1	1110	22.288	1052.4	93	1041.0	92	70 - 130		1	20	
Arsenic,Dissolved	1	111	3.2501	113.48	99	115.12	101	75 - 125		1	20	
Barium,Dissolved	1	111	7.4854	118.85	100	115.59	97	75 - 125		3	20	
Boron,Dissolved	20	5.55	1788.1	1956.7	152	1774.8	0	70 - 130	V	10	20	
Cadmium,Dissolved	1	111	<0.16	106.76	96	105.63	95	75 - 125		1	20	
Calcium,Dissolved	20	555	524278	546114	197	545299	189	70 - 130	V	0	20	
Chromium,Dissolved	1	111	0.8808	106.72	95	105.07	94	75 - 125		2	20	
Cobalt,Dissolved	1	111	<0.26	106.64	96	108.38	98	75 - 125		2	20	
Copper,Dissolved	1	111	2.4494	106.64	94	108.04	95	75 - 125		1	20	
Iron,Dissolved	1	1110	<15	1041.4	94	1081.3	97	75 - 125		4	20	
Lead,Dissolved	1	111	0.2981	100.85	91	100.08	90	75 - 125		1	20	
Manganese,Dissolved	1	111	<0.25	111.69	100	113.55	102	75 - 125		2	20	
Molybdenum,Dissolved	1	111	30.979	135.82	94	138.32	97	75 - 125		2	20	
Nickel,Dissolved	1	111	1.0394	105.42	94	107.10	96	75 - 125		2	20	
Potassium,Dissolved	1	11100	349.09	11488	100	11293	99	70 - 130		2	20	
Selenium,Dissolved	1	111	8.7353	111.94	93	112.53	94	75 - 125		1	20	
Silver,Dissolved	20	5.55	<6.2	100.12	89	94.393	84	75 - 125		6	20	
Sodium,Dissolved	20	555	224049	240006	144	239276	137	70 - 130	V	0	20	
Uranium,Dissolved	20	5.55	176.04	276.34	90	272.08	87	70 - 130		2	20	
Vanadium,Dissolved	1	111	18.203	127.63	99	125.43	97	75 - 125		2	20	
Zinc,Dissolved	1	111	<2.56	103.18	92	103.69	92	75 - 125		0	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742348
Analysis Date:	9/15/2014 10:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/11/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Aluminum,Dissolved	1	1110	22.288	1003.6	88	70-130	
Arsenic,Dissolved	1	111	3.2501	105.88	92	85-115	
Barium,Dissolved	1	111	7.4854	109.86	92	85-115	
Boron,Dissolved	20	111	1788.1	1834.4	2	70-130	O1
Cadmium,Dissolved	1	111	<0.16	99.787	90	85-115	
Calcium,Dissolved	20	11100	524278	549675	11	70-130	O1
Chromium,Dissolved	1	111	0.8808	100.32	90	85-115	
Cobalt,Dissolved	1	111	<0.26	100.22	90	85-115	
Copper,Dissolved	1	111	2.4494	99.806	88	85-115	
Iron,Dissolved	1	1110	<15	977.94	88	85-115	
Lead,Dissolved	1	111	0.2981	94.947	85	85-115	
Manganese,Dissolved	1	111	<0.25	104.08	94	85-115	
Molybdenum,Dissolved	1	111	30.979	129.64	89	85-115	
Nickel,Dissolved	1	111	1.0394	98.590	88	85-115	
Potassium,Dissolved	1	11100	349.09	10693	93	70-130	
Selenium,Dissolved	1	111	8.7353	105.86	87	85-115	
Silver,Dissolved	20	111	<6.2	111.22	5	85-115	
Sodium,Dissolved	20	11100	224049	239036	7	70-130	O1
Uranium,Dissolved	20	111	176.04	270.24	4	70-130	
Vanadium,Dissolved	1	111	18.203	120.09	92	85-115	
Zinc,Dissolved	1	111	<2.56	95.065	85	85-115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020			Matrix:	Water - ug/L
Project No:	TX000836.0008.00004			EPA ID:	TN00003
Project:	Navajo Refining Company - Artesia, NM			Analytic Batch:	WG742886
Collection Date:	9/10/2014			Analyst:	664
Analysis Date:	9/15/2014 5:27:00 PM			Prep Date:	9/15/2014
Instrument ID:	ICPMS8				
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06				

Serial Dilution

L720783-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Arsenic	5	3.1369	3.6306	16	10	
Barium	25	7.5498	<9	17	10	
Chromium	5	1.0926	<2.7	114	10	
Copper	5	1.5219	<2.6	52	10	
Iron	5	29.852	<75	0	10	
Lead	25	<1.2	<6		10	
Manganese	5	0.6898	<1.25	25	10	
Nickel	5	0.8360	<1.75	17	10	
Selenium	5	7.1998	6.7039	7	10	
Vanadium	5	18.811	21.583	15	10	

Matrix Spike / Matrix Spike Duplicate

L720783-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Arsenic	1	111	3.1369	114.11	100	111.92	98	75 - 125		2	20	
Barium	5	22.2	7.5498	123.75	105	119.51	101	75 - 125		3	20	
Chromium	1	111	1.0926	112.77	101	112.40	100	75 - 125		0	20	
Copper	1	111	1.5219	110.56	98	109.14	97	75 - 125		1	20	
Iron	1	1110	29.852	1082.7	95	1071.3	94	75 - 125		1	20	
Lead	5	22.2	<1.2	113.70	102	110.69	100	75 - 125		3	20	
Manganese	1	111	0.6898	109.23	98	108.65	97	75 - 125		1	20	
Nickel	1	111	0.8360	110.11	98	109.84	98	75 - 125		0	20	
Selenium	1	111	7.1998	104.27	87	105.24	88	75 - 125		1	20	
Vanadium	1	111	18.811	132.79	103	132.66	103	75 - 125		0	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742886
Analysis Date:	9/15/2014 5:27:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	9/15/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Post Digest Spike

L720783-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Arsenic	1	111	3.1369	107.42	94	85-115	
Barium	5	111	7.5498	135.09	23	85-115	
Chromium	1	111	1.0926	107.96	96	85-115	
Copper	1	111	1.5219	103.68	92	85-115	
Iron	1	1110	29.852	1022.0	89	85-115	
Lead	5	111	<1.2	129.24	23	85-115	
Manganese	1	111	0.6898	102.25	91	85-115	
Nickel	1	111	0.8360	102.24	91	85-115	
Selenium	1	111	7.1998	95.526	80	85-115	
Vanadium	1	111	18.811	127.53	98	85-115	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742602
Analysis Date:	9/14/2014 5:54:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.0148	91.2	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.9407	89.8	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	5.0148	91.2	4.9407	89.8	67 - 132	1.49	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742602
Analysis Date:	9/14/2014 5:54:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Matrix Spike / Matrix Spike Duplicate

L721148-13

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	<0.0314	5.1832	94	5.5664	101	50 - 143		7.13		20

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742602
Analysis Date:	9/14/2014 5:54:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L721278-01	VOCGC1	0913_52	0.193	96.5		
L721278-02	VOCGC1	0913_57	0.196	97.9		
L721278-03	VOCGC1	0913_58	0.195	97.6		
L721278-04	VOCGC1	0913_59	0.194	97.2		
L721278-05	VOCGC1	0913_60	0.196	97.8		
L721278-06	VOCGC1	0913_61	0.193	96.4		
LCS WG742602	VOCGC1	0913_37	0.197	98.4	0.224	112
LCSD WG742602	VOCGC1	0913_38	0.196	97.9	0.222	111
MS WG742602	VOCGC1	0913_39	0.199	99.3	0.222	111
MSD WG742602	VOCGC1	0913_40	0.199	99.7	0.224	112
BLANK WG742602	VOCGC1	0913_42	0.196	98.0	0.205	103

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0247	98.7	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0248	99.2	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0271	108	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0249	99.8	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0265	106	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0227	90.8	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0259	104	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0237	95	68.8 - 124	
Benzene	1	0.025	0.0274	110	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0258	103	70.2 - 123	
Chloroform	1	0.025	0.0245	97.9	76 - 121	
Ethylbenzene	1	0.025	0.0262	105	78.8 - 122	
m&p-Xylenes	1	0.05	0.0531	106	78.8 - 121	
Methylene Chloride	1	0.025	0.0259	104	70.3 - 120	
o-Xylene	1	0.025	0.0265	106	77.6 - 122	
Tetrachloroethene	1	0.025	0.0271	108	72.6 - 126	
Toluene	1	0.025	0.0266	107	79.7 - 116	
Vinyl chloride	1	0.025	0.0287	115	65.9 - 128	
Xylenes, Total	1	0.075	0.0796	106	78.7 - 121	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0236	94.4	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0244	97.5	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0276	110	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0256	102	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0258	103	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0221	88.5	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0265	106	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0239	95.5	68.8 - 124	
Benzene	1	0.025	0.0269	108	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0249	99.7	70.2 - 123	
Chloroform	1	0.025	0.0243	97.3	76 - 121	
Ethylbenzene	1	0.025	0.0261	104	78.8 - 122	
m&p-Xylenes	1	0.05	0.0521	104	78.8 - 121	
Methylene Chloride	1	0.025	0.0257	103	70.3 - 120	
o-Xylene	1	0.025	0.0259	104	77.6 - 122	
Tetrachloroethene	1	0.025	0.0253	101	72.6 - 126	
Toluene	1	0.025	0.0261	105	79.7 - 116	
Vinyl chloride	1	0.025	0.0281	112	65.9 - 128	
Xylenes, Total	1	0.075	0.0780	104	78.7 - 121	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0247	98.7	0.0236	94.4	74.2 - 124		4.44	20
1,1,1-Trichloroethane	1	0.025	0.0248	99.2	0.0244	97.5	73.2 - 123		1.77	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0271	108	0.0276	110	70.7 - 122		1.72	20
1,1,2-Trichloroethane	1	0.025	0.0249	99.8	0.0256	102	77.7 - 118		2.57	20
1,1-Dichloroethane	1	0.025	0.0265	106	0.0258	103	70.7 - 126		2.74	20
1,1-Dichloroethene	1	0.025	0.0227	90.8	0.0221	88.5	67.8 - 129		2.55	20
1,2-Dibromoethane	1	0.025	0.0259	104	0.0265	106	76.6 - 121		2.24	20
1,2-Dichloroethane	1	0.025	0.0237	95	0.0239	95.5	68.8 - 124		0.58	20
Benzene	1	0.025	0.0274	110	0.0269	108	74.8 - 121		1.63	20
Carbon tetrachloride	1	0.025	0.0258	103	0.0249	99.7	70.2 - 123		3.44	20
Chloroform	1	0.025	0.0245	97.9	0.0243	97.3	76 - 121		0.61	20
Ethylbenzene	1	0.025	0.0262	105	0.0261	104	78.8 - 122		0.45	20
m&p-Xylenes	1	0.05	0.0531	106	0.0521	104	78.8 - 121		1.84	20
Methylene Chloride	1	0.025	0.0259	104	0.0257	103	70.3 - 120		0.93	20
o-Xylene	1	0.025	0.0265	106	0.0259	104	77.6 - 122		2.1	20
Tetrachloroethene	1	0.025	0.0271	108	0.0253	101	72.6 - 126		6.76	20
Toluene	1	0.025	0.0266	107	0.0261	105	79.7 - 116		1.89	20
Vinyl chloride	1	0.025	0.0287	115	0.0281	112	65.9 - 128		2.34	20
Xylenes, Total	1	0.075	0.0796	106	0.0780	104	78.7 - 121		1.93	20

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0248	99	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0245	98	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0277	111	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0270	108	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0261	104	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0219	87.7	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0268	107	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0232	92.8	68.8 - 124	
Benzene	1	0.025	0.0267	107	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0253	101	70.2 - 123	
Chloroform	1	0.025	0.0241	96.2	76 - 121	
Ethylbenzene	1	0.025	0.0267	107	78.8 - 122	
m&p-Xylenes	1	0.05	0.0540	108	78.8 - 121	
Methylene Chloride	1	0.025	0.0254	102	70.3 - 120	
o-Xylene	1	0.025	0.0266	106	77.6 - 122	
Tetrachloroethene	1	0.025	0.0279	111	72.6 - 126	
Toluene	1	0.025	0.0266	107	79.7 - 116	
Vinyl chloride	1	0.025	0.0280	112	65.9 - 128	
Xylenes, Total	1	0.075	0.0806	107	78.7 - 121	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0245	98.1	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0240	95.8	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0265	106	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0253	101	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0258	103	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0217	86.7	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0264	105	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0236	94.5	68.8 - 124	
Benzene	1	0.025	0.0266	107	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0248	99.2	70.2 - 123	
Chloroform	1	0.025	0.0242	96.8	76 - 121	
Ethylbenzene	1	0.025	0.0267	107	78.8 - 122	
m&p-Xylenes	1	0.05	0.0524	105	78.8 - 121	
Methylene Chloride	1	0.025	0.0254	102	70.3 - 120	
o-Xylene	1	0.025	0.0261	105	77.6 - 122	
Tetrachloroethene	1	0.025	0.0266	106	72.6 - 126	
Toluene	1	0.025	0.0265	106	79.7 - 116	
Vinyl chloride	1	0.025	0.0276	111	65.9 - 128	
Xylenes, Total	1	0.075	0.0786	105	78.7 - 121	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0248	99	0.0245	98.1	74.2 - 124		0.94	20
1,1,1-Trichloroethane	1	0.025	0.0245	98	0.0240	95.8	73.2 - 123		2.22	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0277	111	0.0265	106	70.7 - 122		4.3	20
1,1,2-Trichloroethane	1	0.025	0.0270	108	0.0253	101	77.7 - 118		6.57	20
1,1-Dichloroethane	1	0.025	0.0261	104	0.0258	103	70.7 - 126		1.28	20
1,1-Dichloroethene	1	0.025	0.0219	87.7	0.0217	86.7	67.8 - 129		1.12	20
1,2-Dibromoethane	1	0.025	0.0268	107	0.0264	105	76.6 - 121		1.71	20
1,2-Dichloroethane	1	0.025	0.0232	92.8	0.0236	94.5	68.8 - 124		1.76	20
Benzene	1	0.025	0.0267	107	0.0266	107	74.8 - 121		0.18	20
Carbon tetrachloride	1	0.025	0.0253	101	0.0248	99.2	70.2 - 123		1.88	20
Chloroform	1	0.025	0.0241	96.2	0.0242	96.8	76 - 121		0.62	20
Ethylbenzene	1	0.025	0.0267	107	0.0267	107	78.8 - 122		0.18	20
m&p-Xylenes	1	0.05	0.0540	108	0.0524	105	78.8 - 121		2.93	20
Methylene Chloride	1	0.025	0.0254	102	0.0254	102	70.3 - 120		0.03	20
o-Xylene	1	0.025	0.0266	106	0.0261	105	77.6 - 122		1.76	20
Tetrachloroethene	1	0.025	0.0279	111	0.0266	106	72.6 - 126		4.69	20
Toluene	1	0.025	0.0266	107	0.0265	106	79.7 - 116		0.66	20
Vinyl chloride	1	0.025	0.0280	112	0.0276	111	65.9 - 128		1.4	20
Xylenes, Total	1	0.075	0.0806	107	0.0786	105	78.7 - 121		2.54	20

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Matrix Spike / Matrix Spike Duplicate

L721278-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0253	101	0.0237	94.6	64 - 128		6.81	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0259	104	0.0243	97.1	58.7 - 134		6.5	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0295	118	0.0284	114	56 - 132		3.78	22.2	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0268	107	0.0254	101	66.3 - 125		5.62	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0269	108	0.0260	104	58.5 - 132		3.44	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0225	90.1	0.0219	87.4	51.1 - 140		2.98	20.2	
1,2-Dibromoethane	1	0.025	<0.0004	0.0272	109	0.0262	105	67.1 - 125		3.94	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0248	99.4	0.0226	90.3	60 - 126		9.6	20	
Benzene	1	0.025	<0.0003	0.0279	112	0.0260	104	54.3 - 133		6.91	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0260	104	0.0254	102	55.7 - 134		2.52	20	
Chloroform	1	0.025	<0.0003	0.0258	103	0.0236	94.4	63 - 129		8.92	20	
Ethylbenzene	1	0.025	<0.0004	0.0272	109	0.0261	104	61.4 - 133		4.23	20	
m&p-Xylenes	1	0.05	<0.0007	0.0542	108	0.0516	103	61.7 - 133		4.94	20	
Methylene Chloride	1	0.025	<0.001	0.0261	105	0.0247	98.7	58.1 - 122		5.78	20	
o-Xylene	1	0.025	<0.0003	0.0275	110	0.0255	102	63.3 - 130		7.33	20	
Tetrachloroethene	1	0.025	<0.0004	0.0270	108	0.0259	104	53 - 139		4.22	20	
Toluene	1	0.025	<0.0008	0.0270	108	0.0252	101	61.4 - 130		6.91	20	
Vinyl chloride	1	0.025	<0.0003	0.0276	111	0.0268	107	47.8 - 137		3.04	20	
Xylenes, Total	1	0.075	<0.0011	0.0817	109	0.0771	103	63.3 - 131		5.74	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Matrix Spike / Matrix Spike Duplicate

L722004-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0273	109	0.0265	106	64 - 128		3.17	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0259	104	0.0257	103	58.7 - 134		0.77	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0296	118	0.0311	124	56 - 132		4.92	22.2	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0279	112	0.0285	114	66.3 - 125		2.26	20	
1,1-Dichloroethane	1	0.025	0.0009	0.0284	110	0.0285	110	58.5 - 132		0.22	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0237	94.6	0.0233	93.2	51.1 - 140		1.55	20.2	
1,2-Dibromoethane	1	0.025	<0.0004	0.0284	114	0.0295	118	67.1 - 125		3.65	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0257	103	0.0256	103	60 - 126		0.17	20	
Benzene	1	0.025	<0.0003	0.0284	114	0.0286	114	54.3 - 133		0.59	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0267	107	0.0269	107	55.7 - 134		0.64	20	
Chloroform	1	0.025	<0.0003	0.0256	102	0.0260	104	63 - 129		1.77	20	
Ethylbenzene	1	0.025	<0.0004	0.0289	116	0.0289	116	61.4 - 133		0.07	20	
m&p-Xylenes	1	0.05	<0.0007	0.0575	115	0.0577	115	61.7 - 133		0.34	20	
Methylene Chloride	1	0.025	<0.001	0.0268	107	0.0273	109	58.1 - 122		1.7	20	
o-Xylene	1	0.025	<0.0003	0.0281	113	0.0285	114	63.3 - 130		1.13	20	
Tetrachloroethene	1	0.025	<0.0004	0.0291	116	0.0288	115	53 - 139		1.13	20	
Toluene	1	0.025	<0.0008	0.0277	111	0.0284	113	61.4 - 130		2.32	20	
Vinyl chloride	1	0.025	<0.0003	0.0293	117	0.0294	117	47.8 - 137		0.15	20	
Xylenes, Total	1	0.075	<0.0011	0.0857	114	0.0862	115	63.3 - 131		0.6	20	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Internal Standard Response and Retention Time Summary

File ID: 0917_02
Analyzed: 09/17/14 101600

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	837485	4.27	1546277	4.59	245825	5.74	638263	8.10
Upper Limit	1670000	4.77	3090000	5.09	492000	6.24	1280000	8.60
Lower Limit	419000	3.77	773000	4.09	123000	5.24	319000	7.60
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L721278-07	885260	4.27	1599922	4.59	259081	5.74	627837	8.10
L721278-08	881573	4.27	1601306	4.59	248883	5.74	636057	8.10
L721278-01	900350	4.27	1620672	4.59	257518	5.74	653513	8.10
L721278-09	877314	4.27	1598756	4.59	255099	5.74	641773	8.10
L721278-02	882281	4.27	1604954	4.59	256179	5.74	647277	8.10
L721278-03	888878	4.27	1619224	4.59	258657	5.74	650037	8.10
L721278-05	883385	4.27	1595894	4.59	257676	5.74	630388	8.10
L721278-06	890511	4.27	1585039	4.59	259237	5.74	654224	8.10
MSD WG742668	782226	4.27	1476912	4.59	232892	5.74	601277	8.10
MS WG742668	842008	4.27	1579889	4.60	253362	5.74	652418	8.10
LCSD WG742668	847368	4.27	1569377	4.59	256319	5.74	649240	8.10
LCS WG742668	834819	4.27	1555547	4.59	251091	5.74	635692	8.10
BLANK WG742668	888626	4.27	1623489	4.59	258005	5.74	646836	8.10

Legend:

IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Internal Standard Response and Retention Time Summary

File ID: 0918_32
Analyzed: 09/18/14 153200

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	853029	4.27	1573782	4.60	250094	5.74	632167	8.10
Upper Limit	1710000	4.77	3150000	5.10	500000	6.24	1260000	8.60
Lower Limit	427000	3.77	787000	4.10	125000	5.24	316000	7.60
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L721278-04	879877	4.27	1617656	4.59	260002	5.74	629171	8.10
MSD WG743784	846200	4.27	1553716	4.60	248204	5.74	629987	8.10
MS WG743784	857800	4.27	1596468	4.60	249774	5.74	648924	8.10
LCSD WG743784	858689	4.27	1571654	4.60	254111	5.74	652402	8.10
LCS WG743784	862083	4.27	1571986	4.60	251819	5.74	652306	8.11
BLANK WG743784	889997	4.27	1602555	4.60	251159	5.74	617209	8.10

Legend:

IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742668
Analysis Date:	9/17/2014 3:37:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-01, -02, -03, -05, -06, -07, -08, -09		

Surrogate Summary

		BFB		DFM		TD8		TFT	
Laboratory									
Sample ID	Instrument File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L721278-01	VOCMS16 0917_16	0.0380	94.9	0.0384	95.9	0.0396	99.1		
L721278-02	VOCMS16 0917_19	0.0381	95.2	0.0385	96.2	0.0399	99.7		
L721278-03	VOCMS16 0917_20	0.0376	94.0	0.0386	96.4	0.0395	98.8		
L721278-05	VOCMS16 0917_22	0.0378	94.6	0.0387	96.9	0.0402	100		
L721278-06	VOCMS16 0917_23	0.0379	94.6	0.0384	95.9	0.0402	101		
L721278-07	VOCMS16 0917_10	0.0371	92.7	0.0386	96.5	0.0398	99.4		
L721278-08	VOCMS16 0917_11	0.0386	96.5	0.0384	96.0	0.0398	99.6		
L721278-09	VOCMS16 0917_18	0.0380	95.0	0.0393	98.3	0.0400	100		
LCS WG742668	VOCMS16 0917_03	0.0384	96.0	0.0385	96.2	0.0402	101	0.0400	100
LCSD WG742668	VOCMS16 0917_04	0.0388	96.9	0.0390	97.4	0.0407	102	0.0394	98.4
MS WG742668	VOCMS16 0917_06	0.0396	99.1	0.0397	99.2	0.0404	101	0.0402	100
MSD WG742668	VOCMS16 0917_07	0.0391	97.8	0.0382	95.6	0.0394	98.6	0.0390	97.6
BLANK WG742668	VOCMS16 0917_09	0.0375	93.7	0.0390	97.6	0.0400	100	0.0400	100

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG743784
Analysis Date:	9/18/2014 11:02:00 PM	Analyst:	644
Instrument ID:	VOCMS16		
Sample Numbers:	L721278-04		

Surrogate Summary

			BFB		DFM		TD8		TFT	
Laboratory	Sample ID	Instrument File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
	L721278-04	VOCMS16 0918_48	0.0364	91.1	0.0396	99.1	0.0398	99.4		
	LCS WG743784	VOCMS16 0918_33	0.0390	97.5	0.0381	95.4	0.0406	101	0.0403	101
	LCSD WG743784	VOCMS16 0918_34	0.0386	96.6	0.0384	95.9	0.0405	101	0.0402	101
	MS WG743784	VOCMS16 0918_36	0.0394	98.5	0.0397	99.2	0.0405	101	0.0400	99.9
	MSD WG743784	VOCMS16 0918_37	0.0389	97.2	0.0387	96.9	0.0401	100	0.0397	99.3
	BLANK WG743784	VOCMS16 0918_39	0.0375	93.6	0.0387	96.9	0.0397	99.2	0.0398	99.6

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Diesel Range Organics by Method 8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742865
Analysis Date:	9/17/2014 7:33:00 PM	Analyst:	546
Instrument ID:	SVGC31	Prep Date:	9/14/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C10-C28 Diesel Range		< 0.100	0.0256	
C28-C40 Oil Range		< 0.100	0.0369	
Extractable Petroleum Hydrocarbon		< 0.100	0.0494	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5673	104	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.6852	112	70 - 130	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Qual
Extractable Petroleum Hydrocarbon	1	1.5	1.5673	104	1.6852	112	70 - 130	7.25	20	



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Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test: Diesel Range Organics by Method 8015
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 9/10/2014
Analysis Date: 9/17/2014 7:33:00 PM
Instrument ID: SVGC31
Sample Numbers: L721278-01, -02, -03, -04, -05, -06

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG742865
Analyst: 546
Prep Date: 9/14/2014

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L721278-01	SVGC31	0917_20	0.0258	129
L721278-02	SVGC31	0917_21	0.0298	149
L721278-03	SVGC31	0917_22	0.0280	140
L721278-04	SVGC31	0917_28	0.0274	137
L721278-05	SVGC31	0917_29	0.0275	138
L721278-06	SVGC31	0917_30	0.0275	137
BLANK WG742865	SVGC31	0917_11	0.0266	133
LCS WG742865	SVGC31	0917_12	0.0259	129
LCSD WG742865	SVGC31	0917_13	0.0273	136

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS2, BNAMS11	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
2-Methylnaphthalene	91-57-6	< 1.00	< 0.311	
1-Methylnaphthalene	90-12-0	< 1.00	< 0.330	
Benzo(a)pyrene	50-32-8	< 1.00	< 0.340	
Naphthalene	91-20-3	< 1.00	< 0.372	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS2, BNAMS11	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	21.947	87.8	34.7 - 102	
2-Methylnaphthalene	1	25	20.493	82	33.8 - 98.6	
Benzo(a)pyrene	1	25	21.618	86.5	45.6 - 106	
Naphthalene	1	25	18.710	74.8	32.2 - 101	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	22.364	89.5	34.7 - 102	
2-Methylnaphthalene	1	25	20.417	81.7	33.8 - 98.6	
Benzo(a)pyrene	1	25	22.205	88.8	45.6 - 106	
Naphthalene	1	25	18.442	73.8	32.2 - 101	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1-Methylnaphthalene	1	25	21.947	87.8	22.364	89.5	34.7 - 102	1.88	24.9	
2-Methylnaphthalene	1	25	20.493	82	20.417	81.7	33.8 - 98.6	0.37	24.2	
Benzo(a)pyrene	1	25	21.618	86.5	22.205	88.8	45.6 - 106	2.68	20	
Naphthalene	1	25	18.710	74.8	18.442	73.8	32.2 - 101	1.44	23.8	

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS11	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0915A_02

Analyzed: 09/15/14 130200

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	122080	5.40	533369	6.65	338851	8.52	586737	10.14
Upper Limit	244000	5.90	1070000	7.15	678000	9.02	1170000	10.64
Lower Limit	61000	4.90	267000	6.15	169000	8.02	293000	9.64
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
LCSD WG742731	122892	5.40	514633	6.65	325813	8.52	552247	10.14
LCS WG742731	119146	5.40	505840	6.65	321645	8.52	552318	10.14
BLANK WG742731	123196	5.40	515277	6.65	317870	8.52	553616	10.14

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS11	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0915A_02

Analyzed: 09/15/14 130200

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	122080	5.40	602750	13.01	614810	14.49
Upper Limit	244000	5.90	1210000	13.51	1230000	14.99
Lower Limit	61000	4.90	301000	12.51	307000	13.99
Sample ID	Response	RT	Response	RT	Response	RT
LCSD WG742731	122892	5.40	565508	13.01	608600	14.48
LCS WG742731	119146	5.40	555724	13.01	606730	14.48
BLANK WG742731	123196	5.40	537476	13.01	584930	14.48

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0915_02
Analyzed: 09/15/14 144800

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	59880	5.47	261781	6.74	175962	8.63	300861	10.25
Upper Limit	120000	5.97	524000	7.24	352000	9.13	602000	10.75
Lower Limit	29900	4.97	131000	6.24	88000	8.13	150000	9.75
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L721278-01 1.11X	56910	5.47	250090	6.75	163390	8.63	284566	10.24
L721278-02	54643	5.47	235716	6.75	154659	8.63	270389	10.24
L721278-03	52284	5.47	232842	6.75	147584	8.63	253814	10.24
L721278-04 1.11X	52672	5.47	225134	6.75	141651	8.63	245897	10.24
L721278-05	49886	5.47	215987	6.74	137539	8.63	241950	10.24
L721278-06	51344	5.47	219807	6.75	141920	8.63	244625	10.24

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Internal Standard Response and Retention Time Summary

File ID: 0915_02
Analyzed: 09/15/14 144800

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	59880	5.47	351988	13.13	404284	14.66
Upper Limit	120000	5.97	704000	13.63	809000	15.16
Lower Limit	29900	4.97	176000	12.63	202000	14.16
Sample ID	Response	RT	Response	RT	Response	RT
L721278-01 1.11X	56910	5.47	314384	13.12	373083	14.64
L721278-02	54643	5.47	308111	13.12	372334	14.64
L721278-03	52284	5.47	278792	13.12	343317	14.64
L721278-04 1.11X	52672	5.47	269674	13.12	327550	14.62
L721278-05	49886	5.47	267885	13.11	321292	14.62
L721278-06	51344	5.47	273666	13.11	325247	14.61

Legend:

DCB -- 1,4-Dichlorobenzene-d4
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	9/10/2014	Analytic Batch:	WG742731
Analysis Date:	9/15/2014 10:22:00 PM	Analyst:	280
Instrument ID:	BNAMS2	Prep Date:	9/13/2014
Sample Numbers:	L721278-01, -02, -03, -04, -05, -06		

Surrogate Summary

		TBP		FBP		2FP		NBZ		
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L721278-01 1.11x	BNAMS2	0915_22	0.0201	91.5	0.00822	74.1	0.0111	50.4	0.00696	62.7
L721278-02	BNAMS2	0915_23	0.0164	82.0	0.00760	76.0	0.0119	59.6	0.00629	62.9
L721278-03	BNAMS2	0915_24	0.0162	81.1	0.00756	75.6	0.0107	53.6	0.00603	60.3
L721278-04 1.11x	BNAMS2	0915_25	0.0181	81.6	0.00917	82.6	0.00956	43.0	0.00721	64.9
L721278-05	BNAMS2	0915_26	0.0144	72.0	0.00747	74.7	0.0105	52.5	0.00583	58.3
L721278-06	BNAMS2	0915_27	0.0148	74.1	0.00749	74.9	0.00925	46.3	0.00570	57.0
BLANK WG742731	BNAMS11	0915A_21	0.0137	68.6	0.00818	81.8	0.00948	47.4	0.00569	56.9
LCS WG742731	BNAMS11	0915A_19-	0.0179	89.7	0.00876	87.6	0.0107	53.3	0.00658	65.8
LCSD WG742731	BNAMS11	0915A_20-	0.0180	90.2	0.00812	81.2	0.0106	53.0	0.00634	63.4

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1



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Quality Control Summary

SDG: L721278

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 9/10/2014 Analytic Batch: WG742731
Analysis Date: 9/15/2014 10:22:00 PM Analyst: 280
Instrument ID: BNAMS2 Prep Date: 9/13/2014
Sample Numbers: L721278-01, -02, -03, -04, -05, -06

Surrogate Summary

Laboratory	TPH					PHL	
	Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
	L721278-01 1.11x	BNAMS2	0915_22	0.00845	76.1	0.00852	38.4
	L721278-02	BNAMS2	0915_23	0.00742	74.2	0.00826	41.3
	L721278-03	BNAMS2	0915_24	0.00776	77.6	0.00765	38.3
	L721278-04 1.11x	BNAMS2	0915_25	0.00889	80.1	0.00603	27.2
	L721278-05	BNAMS2	0915_26	0.00754	75.4	0.00776	38.8
	L721278-06	BNAMS2	0915_27	0.00755	75.5	0.00678	33.9
	BLANK WG742731	BNAMS11	0915A_21	0.00852	85.2	0.00716	35.8
	LCS WG742731	BNAMS11	0915A_19-	0.00820	82.0	0.00837	41.9
	LCSD WG742731	BNAMS11	0915A_20-	0.00841	84.1	0.00830	41.5

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

ARCADIS US - TX Suite 300 2929 Briarpark Drive Houston, TX 77042				Billing Information: Attn Accounts Payable 630 Plaza Drive, Suite 600 Highlands Ranch, CO 80129				Analysis / Container / Preservative												Chain of Custody Page 1 of 1					
				Report to: Pam Krueger				Email To: jleik@trcsolutions.com				8015 GRO 8015 DRO 40 ml Amb 8012 Cyanide 250ml HDPE NaOH *** 300 Anions (Cl, F, SO4, NO2, NO3) *** 125 ml HDPE No Pres 6020 Total Metals: (As, Ba, Cr, Fe, Pb, Mn, Se, Ni, V) 7470 Hg 500 ml HDPE HNO3 6020 Field Filtered Metals: (Al, As, Ba, B, Cd, Ca, Cr, Co, Fe, Pb, Mn, Mo, Ni, K, Se, Ag, Na, U, Va, Zn) 400 ml HDPE HNO3 <2 2540 TDS 250 ml HDPE No Pres 8260 VOCs 40 ml Amb HCL 8270 SVOCs 100 ml Amb No Pres SUB - Ra226 / Ra 228 1 L HDPE - Add HNO3 <2 C238												 YOUR LAB OF CHOICE 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 L# 672/278 C238	
Project: Navajo Refining Company, Artesia, NM Description:				City/State: Collected:				Lab Project #: ARCADHTX-NAVAJO												Acctnum:					
Phone: 713-953-4800 Fax:				Client Project #: TX000836.0008.00004				P.O. #:												Template:					
Collected by (print): R. Wood				Site/Facility ID #:				Date Results Needed:												Prelogin:					
Collected by (signature): <i>R. Wood</i>				Rush? (Lab MUST Be Notified)				Email? ☐ No ☐ Yes FAX? ☐ No ☐ Yes												TSR:					
Immediately				Same Day 200% Next Day 100% Two Day 50% Three Day 25%				No. of Cntr												PB:					
Packed on ice N ☐ Y ☒																				Shipped Via:					
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntr	8015 GRO	8015 DRO	40 ml Amb	8012 Cyanide	250ml HDPE NaOH	*** 300 Anions (Cl, F, SO4, NO2, NO3) ***	125 ml HDPE No Pres	6020 Total Metals: (As, Ba, Cr, Fe, Pb, Mn, Se, Ni, V) 7470 Hg 500 ml HDPE HNO3	6020 Field Filtered Metals: (Al, As, Ba, B, Cd, Ca, Cr, Co, Fe, Pb, Mn, Mo, Ni, K, Se, Ag, Na, U, Va, Zn) 400 ml HDPE HNO3 <2	2540 TDS	250 ml HDPE No Pres	8260 VOCs	40 ml Amb HCL	8270 SVOCs	100 ml Amb No Pres	SUB - Ra226 / Ra 228	1 L HDPE - Add HNO3 <2	C238	
MW-25-0914	G	GW		9/10/14	1650	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EB-08-0914	G	W		9/10/14	1730	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MW-17-0914	G	GW		9/11/14	0845	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
UG-4-0914	G	GW		9/11/14	1010	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
EB-09-0914	G	GW		9/11/14	1030	15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dup-3-0914						15	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Trip Blank 16																									
Trip Blank 17																									
Trip Blank 18																									

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

Remarks: 6171 2086 2350
6171 2086 2360

pH _____ Temp _____
Flow _____ Other _____

Relinquished by: (Signature) <i>R. Wood</i>	Date: 9/11/14	Time: 1220	Received by: (Signature) 6171 2086 2371	Samples returned via: ☒ UPS ☐ FedEx ☐ Courier ☐ _____	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.6 °C	Bottles Received: 90 + 3TB
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9/12/14	Time: 09:00

Hold #
 COC Seal Intact: ☒ Y ☐ N
 pH Checked: 7.2 <2
 NCF:

JWS

Matt Shacklock

ESC Lab Sciences
Non-Conformance Form

Login #: L721278	Client: ARCADHTX	Date: 9/12/14	Evaluated by: Matt S
------------------	------------------	---------------	----------------------

Non-Conformance (check applicable items)

Sample Integrity		Chain of Custody Clarification	
Parameter(s) past holding time	x	Login Clarification Needed	If Broken Container:
Improper temperature		Chain of custody is incomplete	Insufficient packing material around container
Improper container type		Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation		Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.		Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.		Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.		Trip Blank not received.	If no Chain of Custody:
Broken container		Client did not "X" analysis.	Received by:
Broken container:		Chain of Custody is missing	Date/Time:
Sufficient sample remains			Temp./Cont. Rec./pH:
			Carrier:
			Tracking#

Login Comments: Received bottles for RA226/228 , but COC isnt marked for these analysis. Please advise

Please proceed with analysis for Radium 226 and Radium 228 per Pam Krueger.

Client informed by:	Call	Email	Voice Mail	Date:	Time:
TSR Initials:	Client Contact:				

Login Instructions:

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Est. 1970

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Report Summary

Wednesday October 15, 2014

Report Number: L721777

Samples Received: 09/12/14

Client Project: TX000836.0008.00004

Description: Navajo Refining Company - Artesia, NM

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Pam Langford , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/B10041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : MW25-0914-BG

Collected By : Ron Wood
Collection Date : 09/10/14 16:50

ESC Sample # : L721777-01

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	2.6	0.40	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	0.73	0.52	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-01 (RA228) - subcontracted to Environmental Health Labs

L721777-01 (RA226) - subcontracted to Environmental Health Labs



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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : EB08-0914-BG

Collected By : Ron Wood
Collection Date : 09/10/14 17:30

ESC Sample # : L721777-02

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	0.95	0.56	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	0.38	0.34	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

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Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-02 (RA228) - subcontracted to Environmental Health Labs

L721777-02 (RA226) - subcontracted to Environmental Health Labs



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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW17-0914-BG
Collected By : Ron Wood
Collection Date : 09/11/14 08:45

ESC Sample # : L721777-03

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	1.8	0.70	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	0.75	0.31	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

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Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-03 (RA226) - subcontracted to Environmental Health Labs

L721777-03 (RA228) - subcontracted to Environmental Health Labs



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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG4-0914-BG
Collected By : Ron Wood
Collection Date : 09/11/14 10:10

ESC Sample # : L721777-04

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	BDL	0.40	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	2.2	0.80	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

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Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-04 (RA228) - subcontracted to Environmental Health Labs

L721777-04 (RA226) - subcontracted to Environmental Health Labs



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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM

Sample ID : EB09-0914-BG

Collected By : Ron Wood
Collection Date : 09/11/14 10:30

ESC Sample # : L721777-05

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	1.0	0.50	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	BDL	0.38	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-05 (RA226) - subcontracted to Environmental Health Labs

L721777-05 (RA228) - subcontracted to Environmental Health Labs



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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

October 15, 2014

Project Manager
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Date Received : September 12, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : DUP3-0914-BG
Collected By : Ron Wood
Collection Date : 09/11/14 00:00

ESC Sample # : L721777-06

Site ID :

Project : TX000836.0008.00004

Parameter	Result	Det. Limit	Units	Limit	Method	Date/Time	By	Dil
Radium 226	1.7	0.60	pCi/l	3.0	7500Ra	09/25/14 1137	JDG	1
Radium 228	0.67	0.37	pCi/l	2.5	7500Ra	10/09/14 1114	JDG	1

BDL - Below Detection Limit

Det. Limit - Estimated Quantitation Limit(EQL)

Limit - Maximum Contaminant Level as established by the US EPA

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 10/15/14 14:13 Printed: 10/15/14 14:13

L721777-06 (RA228) - subcontracted to Environmental Health Labs

L721777-06 (RA226) - subcontracted to Environmental Health Labs

Summary of Remarks For Samples Printed
10/15/14 at 14:13:34

TSR Signing Reports: 633
R5 - Desired TAT

Add Copper to the metals analysis for all samples 10/13/14

Sample: L721777-01 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278 Subbed to ENVHEALT
Sample: L721777-02 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278
Sample: L721777-03 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278
Sample: L721777-04 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278
Sample: L721777-05 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278
Sample: L721777-06 Account: ARCADHTX Received: 09/12/14 09:00 Due Date: 10/13/14 00:00 RPT Date: 10/15/14 14:13
Refer to L721278

Quality Control Summary

SDG: L730438

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. Method specified holding times were not met for analyses on Nitrate and Nitrite samples.

Anions by Method 9056MOD

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG751681. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG751681 sample duplicate analysis was performed on sample L730438-05. The relative percent difference exceeded the method limits for Sulfate.

For analytical batch WG751681 sample duplicate analysis was performed on sample L730496-02. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG751681 matrix spike/matrix spike duplicate analysis was performed on sample L731399-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Total Dissolved Solids by Method 2540 C-2011

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, and -10 were analyzed in analytical batch WG751793. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L730438-11 was analyzed in analytical batch WG752000. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L730438-12 was analyzed in analytical batch WG752371. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Quality Control Summary

SDG: L730438

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Sample Duplicate Analysis

For analytical batch WG751793 sample duplicate analysis was performed on sample L730438-01. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG752000 sample duplicate analysis was performed on sample L730438-11. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG752371 sample duplicate analysis was performed on sample L730438-12. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG751793 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Precision for batch WG752000 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Precision for batch WG752371 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Cyanide by Method 9012B

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG752347. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG752347 sample duplicate analysis was performed on sample L730438-03. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG752347 sample duplicate analysis was performed on sample L730438-08. The relative percent differences were within the method limits for target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG752347 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L730438

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Mercury by Method 7470A

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG751697. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG751697 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6020

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG751952. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG752073. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG751952 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries were above laboratory control limits for Iron,Dissolved and Manganese,Dissolved. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference exceeded laboratory limits for Iron,Dissolved.

For analytical batch WG752073 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries were above laboratory control limits for Manganese. The matrix spike recoveries were below laboratory control limits for Boron. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch. Boron did not meet the method limit criteria for the serial dilution.

Blank Analysis

For batch WG751952, the concentration of Chromium,Dissolved was above the method reporting limit.

For batch WG752073, the concentration of Chromium was above the method reporting limit.

The initial and continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L730438

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Volatile TPH by Method 8015D/GRO

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG752141. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG752141 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile Organic Compounds by Method 8260B

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, and -13 were analyzed in analytical batch WG751774. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG751774 matrix spike/matrix spike duplicate analysis was performed on sample L730438-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Semi-Volatile Organic Compounds by Method 8270C

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG751801. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG751801 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Quality Control Summary

SDG: L730438

For: ARCADIS US - TX

Project: Navajo Refining Company - Artesia,

August 11, 2015

Diesel Range Organics by Method 3511/8015

Laboratory Control Sample

Samples L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, and -12 were analyzed in analytical batch WG751826. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG751826 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences



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Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

Report Summary

Tuesday August 11, 2015

Report Number: L730438

Samples Received: 10/30/14

Client Project: TX000836.0008.00004

Description: Navajo Refining Company - Artesia, NM

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Pam Langford , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BI0041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-01

Sample ID : MW-25-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 12:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	3200000	2600	50000	ug/l		9056MOD	11/06/14	50
Fluoride	610	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	U	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	2600000	3900	250000	ug/l		9056MOD	11/06/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	14000000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	16.	10.	500	ug/l	J	6020	11/10/14	5
Aluminum, Dissolved	U	10.	500	ug/l		6020	11/10/14	5
Arsenic	5.7	1.2	10.	ug/l	J	6020	11/10/14	5
Arsenic, Dissolved	4.8	1.2	10.	ug/l	J	6020	11/10/14	5
Barium	27.	1.8	25.	ug/l		6020	11/10/14	5
Barium, Dissolved	23.	1.8	25.	ug/l	J	6020	11/10/14	5
Boron	300	7.5	100	ug/l	01V	6020	11/11/14	5
Boron, Dissolved	300	7.5	100	ug/l		6020	11/10/14	5
Cadmium	U	0.80	5.0	ug/l		6020	11/10/14	5
Cadmium, Dissolved	U	0.80	5.0	ug/l		6020	11/10/14	5
Calcium	1000000	4600	100000	ug/l		6020	11/10/14	100
Calcium, Dissolved	970000	4600	100000	ug/l		6020	11/10/14	100
Chromium	U	2.7	5.0	ug/l		6020	11/10/14	5
Chromium, Dissolved	U	2.7	5.0	ug/l		6020	11/10/14	5
Copper	U	2.6	25.	ug/l		6020	11/10/14	5
Copper, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	5
Cobalt	2.2	1.3	10.	ug/l	J	6020	11/10/14	5
Cobalt, Dissolved	1.4	1.3	10.	ug/l	J	6020	11/10/14	5
Iron	U	250	500	ug/l		6020	11/10/14	5
Iron, Dissolved	U	250	500	ug/l	J3J5	6020	11/10/14	5
Lead	U	1.2	10.	ug/l		6020	11/10/14	5
Lead, Dissolved	U	1.2	10.	ug/l		6020	11/10/14	5
Manganese	830	1.2	25.	ug/l	V	6020	11/10/14	5
Manganese, Dissolved	2100	1.2	25.	ug/l	V	6020	11/10/14	5
Molybdenum	7.7	0.70	25.	ug/l	J	6020	11/10/14	5
Molybdenum, Dissolved	29.	0.70	25.	ug/l		6020	11/10/14	5
Nickel	3.3	1.8	10.	ug/l	J	6020	11/10/14	5
Nickel, Dissolved	3.0	1.8	10.	ug/l	J	6020	11/10/14	5
Potassium	7500	180	5000	ug/l		6020	11/10/14	5
Potassium, Dissolved	7400	180	5000	ug/l		6020	11/10/14	5
Selenium	46.	1.9	10.	ug/l		6020	11/10/14	5
Selenium, Dissolved	28.	1.9	10.	ug/l		6020	11/10/14	5
Silver	U	1.6	10.	ug/l		6020	11/10/14	5

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/11/15 10:56 Printed: 08/11/15 10:57

L730438-01 (GFAA METALS) - Target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-01

Sample ID : MW-25-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 12:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	1.6	10.	ug/l		6020	11/10/14	5
Sodium	2000000	11000	100000	ug/l		6020	11/10/14	100
Sodium, Dissolved	2200000	11000	100000	ug/l		6020	11/10/14	100
Uranium	14.	1.6	50.	ug/l	J	6020	11/10/14	5
Uranium, Dissolved	14.	1.6	50.	ug/l	J	6020	11/10/14	5
Vanadium	13.	0.90	25.	ug/l	J	6020	11/10/14	5
Vanadium, Dissolved	13.	0.90	5.0	ug/l		6020	11/10/14	5
Zinc	U	13.	130	ug/l		6020	11/10/14	5
Zinc, Dissolved	U	13.	130	ug/l		6020	11/10/14	5
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.6			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	106.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	114.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	100.			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	280	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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MDL = Minimum Detection Limit = LOD = TRRP SDL

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Reported: 08/11/15 10:56 Printed: 08/11/15 10:57

L730438-01 (GFAA METALS) - Target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-25-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 12:15

ESC Sample # : L730438-01

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	104.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	50.1			% Rec.		8270C	11/01/14	1
Phenol-d5	36.6			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	62.4			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	73.3			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	90.5			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	72.1			% Rec.		8270C	11/01/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

Note:

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Reported: 08/11/15 10:56 Printed: 08/11/15 10:57

L730438-01 (GFAA METALS) - Target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

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ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-02

Sample ID : MW-17-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 14:25

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	160000	1000	20000	ug/l		9056MOD	11/06/14	20
Fluoride	920	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	1600	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	1300000	1500	100000	ug/l		9056MOD	11/06/14	20
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	2100000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	16.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	12.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	0.87	0.25	2.0	ug/l	J	6020	11/10/14	1
Arsenic, Dissolved	0.82	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	13.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	13.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	140	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	140	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	410000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	400000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.9	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.9	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	U	0.52	5.0	ug/l		6020	11/10/14	1
Copper, Dissolved	U	0.52	5.0	ug/l		6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	U	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	0.91	0.25	5.0	ug/l	J	6020	11/10/14	1
Manganese, Dissolved	0.29	0.25	5.0	ug/l	J	6020	11/10/14	1
Molybdenum	8.1	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	8.3	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	U	0.35	2.0	ug/l		6020	11/10/14	1
Nickel, Dissolved	U	0.35	2.0	ug/l		6020	11/10/14	1
Potassium	2100	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	2100	37.	1000	ug/l		6020	11/10/14	1
Selenium	6.9	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	7.7	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-02

Sample ID : MW-17-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 14:25

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	74000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	78000	110	1000	ug/l		6020	11/10/14	1
Uranium	3.2	0.33	10.	ug/l	J	6020	11/10/14	1
Uranium, Dissolved	3.3	0.33	10.	ug/l	J	6020	11/10/14	1
Vanadium	5.5	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	6.2	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	U	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	3.3	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	100.			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	115.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	99.8			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-17-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 14:25

ESC Sample # : L730438-02

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	39.4			% Rec.		8270C	11/01/14	1
Phenol-d5	30.8			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	58.0			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	73.2			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	81.2			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	71.2			% Rec.		8270C	11/01/14	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-03

Sample ID : MW-136-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 17:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	240000	2600	50000	ug/l		9056MOD	11/07/14	50
Fluoride	1400	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	320	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	2500000	3900	250000	ug/l		9056MOD	11/07/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	3800000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	640	2.0	100	ug/l		6020	11/10/14	1
Aluminum, Dissolved	74.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	2.4	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	2.3	0.25	2.0	ug/l		6020	11/10/14	1
Barium	23.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	12.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	550	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	550	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	720000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	710000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.4	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	2.0	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	1.0	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	1.1	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	1.0	0.26	2.0	ug/l	J	6020	11/10/14	1
Cobalt, Dissolved	0.28	0.26	2.0	ug/l	J	6020	11/10/14	1
Iron	360	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	0.50	0.24	2.0	ug/l	J	6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	53.	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	27.	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	6.2	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	5.9	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	1.5	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	1.3	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	2900	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	2800	37.	1000	ug/l		6020	11/10/14	1
Selenium	4.2	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	3.2	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-03

Sample ID : MW-136-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 17:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	90000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	96000	110	1000	ug/l		6020	11/10/14	1
Uranium	69.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	68.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	18.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	17.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	6.0	2.6	25.	ug/l	J	6020	11/10/14	1
Zinc, Dissolved	5.2	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.4			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	115.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	98.3			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-136-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 17:15

ESC Sample # : L730438-03

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	37.4			% Rec.		8270C	11/01/14	1
Phenol-d5	32.5			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	70.4			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	82.3			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	79.9			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	74.4			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-04

Sample ID : NP-5-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 15:50

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	390000	2600	50000	ug/l		9056MOD	11/07/14	50
Fluoride	1900	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	790	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	3400000	3900	250000	ug/l		9056MOD	11/07/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	5600000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	270	2.0	100	ug/l		6020	11/10/14	1
Aluminum, Dissolved	10.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	3.5	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	3.1	0.25	2.0	ug/l		6020	11/10/14	1
Barium	13.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	7.6	0.36	5.0	ug/l		6020	11/10/14	1
Boron	1600	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	1600	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	580000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	540000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.2	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.2	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	1.2	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	0.99	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	220	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	0.25	0.24	2.0	ug/l	J	6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	2.0	0.25	5.0	ug/l	J	6020	11/10/14	1
Manganese, Dissolved	0.39	0.25	5.0	ug/l	J	6020	11/10/14	1
Molybdenum	34.	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	33.	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	1.2	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	1.2	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	510	37.	1000	ug/l	J	6020	11/10/14	1
Potassium, Dissolved	500	37.	1000	ug/l	J	6020	11/10/14	1
Selenium	10.	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	7.4	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-04

Sample ID : NP-5-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 15:50

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	250000	2200	20000	ug/l		6020	11/10/14	20
Sodium, Dissolved	240000	2200	20000	ug/l		6020	11/10/14	20
Uranium	190	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	190	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	20.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	19.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	2.7	2.6	25.	ug/l	J	6020	11/10/14	1
Zinc, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.8			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	103.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	117.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	99.3			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : NP-5-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 15:50

ESC Sample # : L730438-04

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	46.4			% Rec.		8270C	11/01/14	1
Phenol-d5	35.1			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	59.6			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	70.7			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	83.4			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	70.2			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
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August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-05

Sample ID : EB-10-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 18:05

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	280	52.	1000	ug/l	J	9056MOD	11/06/14	1
Fluoride	21.	9.9	100	ug/l	J	9056MOD	11/06/14	1
Nitrate	U	23.	100	ug/l		9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l		9056MOD	11/06/14	1
Sulfate	U	77.	5000	ug/l	P1	9056MOD	11/06/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	U	2800	10000	ug/l	T4	2540 C-	11/03/14	1
Aluminum	20.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	13.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	U	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	U	0.25	2.0	ug/l		6020	11/10/14	1
Barium	U	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	U	0.36	5.0	ug/l		6020	11/10/14	1
Boron	67.	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	73.	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	U	46.	1000	ug/l		6020	11/10/14	1
Calcium, Dissolved	160	46.	1000	ug/l	J	6020	11/10/14	1
Chromium	0.70	0.54	1.0	ug/l	JB	6020	11/10/14	1
Chromium, Dissolved	0.77	0.54	1.0	ug/l	JB	6020	11/10/14	1
Copper	U	0.52	5.0	ug/l		6020	11/10/14	1
Copper, Dissolved	U	0.52	5.0	ug/l		6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	U	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	U	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	U	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	U	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	U	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	U	0.35	2.0	ug/l		6020	11/10/14	1
Nickel, Dissolved	U	0.35	2.0	ug/l		6020	11/10/14	1
Potassium	U	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	11/10/14	1
Selenium	U	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-05

Sample ID : EB-10-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 18:05

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	U	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	280	110	1000	ug/l	J	6020	11/10/14	1
Uranium	U	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	U	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	U	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a, a, a-Trifluorotoluene(FID)	99.7			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	109.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	98.5			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB-10-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 18:05

ESC Sample # : L730438-05

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	42.8			% Rec.		8270C	11/01/14	1
Phenol-d5	32.3			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	63.3			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	72.8			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	86.0			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	71.1			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-06

Sample ID : UG-1-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 11:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	88000	52.	1000	ug/l		9056MOD	11/06/14	1
Fluoride	650	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	8900	1100	5000	ug/l	T8	9056MOD	11/07/14	50
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	1900000	3900	250000	ug/l		9056MOD	11/07/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	3000000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	66.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	16.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	1.2	0.25	2.0	ug/l	J	6020	11/10/14	1
Arsenic, Dissolved	1.2	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	14.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	13.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	500	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	490	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	520000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	520000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.3	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.6	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	0.68	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	0.92	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	U	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	0.57	0.25	5.0	ug/l	J	6020	11/10/14	1
Manganese, Dissolved	0.28	0.25	5.0	ug/l	J	6020	11/10/14	1
Molybdenum	5.2	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	5.0	0.14	5.0	ug/l	J	6020	11/10/14	1
Nickel	0.91	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	1.1	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	1200	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	1200	37.	1000	ug/l		6020	11/10/14	1
Selenium	9.5	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	8.6	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-06

Sample ID : UG-1-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 11:15

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	85000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	90000	110	1000	ug/l		6020	11/10/14	1
Uranium	21.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	22.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	13.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	13.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	3.0	2.6	25.	ug/l	J	6020	11/10/14	1
Zinc, Dissolved	2.8	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a, a, a-Trifluorotoluene(FID)	99.2			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	108.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	114.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	96.9			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-1-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 11:15

ESC Sample # : L730438-06

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	47.3			% Rec.		8270C	11/01/14	1
Phenol-d5	34.8			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	60.3			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	74.9			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	80.1			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	69.5			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-07

Sample ID : UG-2-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 16:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	81000	52.	1000	ug/l		9056MOD	11/06/14	1
Fluoride	1400	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	3300	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	150	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	1200000	1500	100000	ug/l		9056MOD	11/07/14	20
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	2200000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	33.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	11.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	2.1	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	1.9	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	16.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	14.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	290	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	280	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	410000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	400000	920	20000	ug/l		6020	11/10/14	20
Chromium	0.65	0.54	1.0	ug/l	JB	6020	11/10/14	1
Chromium, Dissolved	0.97	0.54	1.0	ug/l	JB	6020	11/10/14	1
Copper	1.8	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	1.0	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	1.2	0.26	2.0	ug/l	J	6020	11/10/14	1
Cobalt, Dissolved	1.0	0.26	2.0	ug/l	J	6020	11/10/14	1
Iron	51.	50.	100	ug/l	J	6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	140	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	130	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	9.6	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	9.4	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	10.	0.35	2.0	ug/l		6020	11/10/14	1
Nickel, Dissolved	9.7	0.35	2.0	ug/l		6020	11/10/14	1
Potassium	2100	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	2200	37.	1000	ug/l		6020	11/10/14	1
Selenium	2.2	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	2.7	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-07

Sample ID : UG-2-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 16:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	89000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	96000	110	1000	ug/l		6020	11/10/14	1
Uranium	14.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	15.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	12.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	13.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	8.7	2.6	25.	ug/l	J	6020	11/10/14	1
Zinc, Dissolved	9.3	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.4			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	117.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	97.7			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-2-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 16:00

ESC Sample # : L730438-07

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	46.1			% Rec.		8270C	11/01/14	1
Phenol-d5	32.5			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	59.0			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	70.8			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	83.7			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	70.4			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-08

Sample ID : UG-3R-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 14:45

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	24000	52.	1000	ug/l		9056MOD	11/06/14	1
Fluoride	590	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	550	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	1300000	1500	100000	ug/l		9056MOD	11/07/14	20
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	2100000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	100	2.0	100	ug/l		6020	11/10/14	1
Aluminum, Dissolved	16.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	1.4	0.25	2.0	ug/l	J	6020	11/10/14	1
Arsenic, Dissolved	1.4	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	20.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	17.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	230	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	210	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	380000	460	10000	ug/l		6020	11/10/14	10
Calcium, Dissolved	380000	460	10000	ug/l		6020	11/10/14	10
Chromium	1.2	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.2	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	0.64	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	0.95	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	96.	50.	100	ug/l	J	6020	11/10/14	1
Iron, Dissolved	55.	50.	100	ug/l	J	6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	4.2	0.25	5.0	ug/l	J	6020	11/10/14	1
Manganese, Dissolved	0.40	0.25	5.0	ug/l	J	6020	11/10/14	1
Molybdenum	3.4	0.14	5.0	ug/l	J	6020	11/10/14	1
Molybdenum, Dissolved	3.2	0.14	5.0	ug/l	J	6020	11/10/14	1
Nickel	0.69	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	0.67	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	1700	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	1700	37.	1000	ug/l		6020	11/10/14	1
Selenium	3.2	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	2.8	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-3R-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 14:45

ESC Sample # : L730438-08

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	46000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	48000	110	1000	ug/l		6020	11/10/14	1
Uranium	11.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	12.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	9.2	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	9.2	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	3.2	2.6	25.	ug/l	J	6020	11/10/14	1
Zinc, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a, a, a-Trifluorotoluene(FID)	99.3			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	115.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	99.6			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-3R-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 14:45

ESC Sample # : L730438-08

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	101.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	51.9			% Rec.		8270C	11/01/14	1
Phenol-d5	37.3			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	62.8			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	78.0			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	84.9			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	74.2			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-09

Sample ID : UG-4-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 13:25

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	48000	52.	1000	ug/l		9056MOD	11/06/14	1
Fluoride	540	9.9	100	ug/l		9056MOD	11/06/14	1
Nitrate	U	23.	100	ug/l	T8	9056MOD	11/06/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/06/14	1
Sulfate	2800000	3900	250000	ug/l		9056MOD	11/07/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	3900000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	4200	2.0	100	ug/l		6020	11/10/14	1
Aluminum, Dissolved	27.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	2.5	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	0.68	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	160	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	31.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	860	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	840	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	0.35	0.16	1.0	ug/l	J	6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	710000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	610000	920	20000	ug/l		6020	11/10/14	20
Chromium	8.8	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.4	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	6.4	0.52	5.0	ug/l		6020	11/10/14	1
Copper, Dissolved	1.6	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	3.3	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	0.26	0.26	2.0	ug/l	J	6020	11/10/14	1
Iron	4200	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	5.6	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	270	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	98.	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	6.4	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	5.4	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	7.6	0.35	2.0	ug/l		6020	11/10/14	1
Nickel, Dissolved	2.4	0.35	2.0	ug/l		6020	11/10/14	1
Potassium	4100	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	3300	37.	1000	ug/l		6020	11/10/14	1
Selenium	9.8	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	6.0	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-09

Sample ID : UG-4-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 13:25

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	250000	2200	20000	ug/l		6020	11/10/14	20
Sodium, Dissolved	250000	2200	20000	ug/l		6020	11/10/14	20
Uranium	32.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	32.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	11.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	3.9	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	40.	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	16.	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.8			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	118.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	96.0			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : UG-4-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 13:25

ESC Sample # : L730438-09

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	42.5			% Rec.		8270C	11/01/14	1
Phenol-d5	30.5			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	67.3			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	81.4			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	89.5			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	76.5			% Rec.		8270C	11/01/14	1

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-10

Sample ID : MW-55-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 10:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	190000	2600	50000	ug/l		9056MOD	11/07/14	50
Fluoride	1700	9.9	100	ug/l		9056MOD	11/07/14	1
Nitrate	5100	23.	100	ug/l	T8	9056MOD	11/07/14	1
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/07/14	1
Sulfate	2500000	3900	250000	ug/l		9056MOD	11/07/14	50
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	3800000	2800	10000	ug/l		2540 C-	11/03/14	1
Aluminum	110	2.0	100	ug/l		6020	11/10/14	1
Aluminum, Dissolved	23.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	4.7	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	4.6	0.25	2.0	ug/l		6020	11/10/14	1
Barium	13.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	10.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	840	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	800	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	540000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	560000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.6	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.9	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	0.93	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	0.89	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	1.2	0.26	2.0	ug/l	J	6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	67.	50.	100	ug/l	J	6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	0.31	0.24	2.0	ug/l	J	6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	90.	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	20.	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	27.	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	26.	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	1.4	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	1.2	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	850	37.	1000	ug/l	J	6020	11/10/14	1
Potassium, Dissolved	870	37.	1000	ug/l	J	6020	11/10/14	1
Selenium	12.	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	12.	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-10

Sample ID : MW-55-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 10:10

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	130000	2200	20000	ug/l		6020	11/10/14	20
Sodium, Dissolved	140000	2200	20000	ug/l		6020	11/10/14	20
Uranium	28.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	29.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	17.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	17.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	U	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	98.8			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	109.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	116.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	98.1			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	210	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : MW-55-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 10:10

ESC Sample # : L730438-10

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	101.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	40.4			% Rec.		8270C	11/01/14	1
Phenol-d5	28.7			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	59.9			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	70.2			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	76.4			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	71.2			% Rec.		8270C	11/01/14	1

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ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-11

Sample ID : EB-11-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 16:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	180	52.	1000	ug/l	J	9056MOD	11/07/14	1
Fluoride	19.	9.9	100	ug/l	J	9056MOD	11/07/14	1
Nitrate	U	23.	100	ug/l		9056MOD	11/07/14	1
Nitrite	U	28.	100	ug/l		9056MOD	11/07/14	1
Sulfate	340	77.	5000	ug/l	J	9056MOD	11/07/14	1
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	U	2800	10000	ug/l	T4	2540 C-	11/03/14	1
Aluminum	13.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	9.7	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	U	0.25	2.0	ug/l		6020	11/10/14	1
Arsenic, Dissolved	U	0.25	2.0	ug/l		6020	11/10/14	1
Barium	U	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	U	0.36	5.0	ug/l		6020	11/10/14	1
Boron	57.	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	59.	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	120	46.	1000	ug/l	J	6020	11/10/14	1
Calcium, Dissolved	220	46.	1000	ug/l	J	6020	11/10/14	1
Chromium	0.64	0.54	1.0	ug/l	JB	6020	11/10/14	1
Chromium, Dissolved	0.85	0.54	1.0	ug/l	JB	6020	11/10/14	1
Copper	U	0.52	5.0	ug/l		6020	11/10/14	1
Copper, Dissolved	U	0.52	5.0	ug/l		6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	U	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	U	0.25	5.0	ug/l		6020	11/10/14	1
Manganese, Dissolved	U	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	U	0.14	5.0	ug/l		6020	11/10/14	1
Molybdenum, Dissolved	U	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	U	0.35	2.0	ug/l		6020	11/10/14	1
Nickel, Dissolved	U	0.35	2.0	ug/l		6020	11/10/14	1
Potassium	U	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	U	37.	1000	ug/l		6020	11/10/14	1
Selenium	U	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	U	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

U = ND (Not Detected)

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-11

Sample ID : EB-11-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 16:30

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	200	110	1000	ug/l	J	6020	11/10/14	1
Sodium, Dissolved	260	110	1000	ug/l	J	6020	11/10/14	1
Uranium	U	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	U	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	U	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	U	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	U	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	U	2.6	25.	ug/l		6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.5			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	104.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	115.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	96.7			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

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REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : EB-11-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 16:30

ESC Sample # : L730438-11

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	102.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	46.7			% Rec.		8270C	11/01/14	1
Phenol-d5	33.1			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	66.8			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	78.1			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	86.8			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	72.1			% Rec.		8270C	11/01/14	1

U = ND (Not Detected)

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Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-12

Sample ID : DUP-04-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Chloride	88000	52.	1000	ug/l		9056MOD	11/07/14	1
Fluoride	680	9.9	100	ug/l		9056MOD	11/07/14	1
Nitrate	9700	450	2000	ug/l	T8	9056MOD	11/07/14	20
Nitrite	U	28.	100	ug/l	T8	9056MOD	11/07/14	1
Sulfate	2000000	1500	100000	ug/l		9056MOD	11/07/14	20
Cyanide	U	1.8	5.0	ug/l		9012B	11/04/14	1
Dissolved Solids	3200000	2800	10000	ug/l		2540 C-	11/04/14	1
Aluminum	68.	2.0	100	ug/l	J	6020	11/10/14	1
Aluminum, Dissolved	23.	2.0	100	ug/l	J	6020	11/10/14	1
Arsenic	1.3	0.25	2.0	ug/l	J	6020	11/10/14	1
Arsenic, Dissolved	1.2	0.25	2.0	ug/l	J	6020	11/10/14	1
Barium	14.	0.36	5.0	ug/l		6020	11/10/14	1
Barium, Dissolved	13.	0.36	5.0	ug/l		6020	11/10/14	1
Boron	500	1.5	20.	ug/l		6020	11/11/14	1
Boron, Dissolved	470	1.5	20.	ug/l		6020	11/10/14	1
Cadmium	U	0.16	1.0	ug/l		6020	11/10/14	1
Cadmium, Dissolved	U	0.16	1.0	ug/l		6020	11/10/14	1
Calcium	520000	920	20000	ug/l		6020	11/10/14	20
Calcium, Dissolved	510000	920	20000	ug/l		6020	11/10/14	20
Chromium	1.3	0.54	1.0	ug/l	B	6020	11/10/14	1
Chromium, Dissolved	1.6	0.54	1.0	ug/l	B	6020	11/10/14	1
Copper	0.69	0.52	5.0	ug/l	J	6020	11/10/14	1
Copper, Dissolved	0.67	0.52	5.0	ug/l	J	6020	11/10/14	1
Cobalt	U	0.26	2.0	ug/l		6020	11/10/14	1
Cobalt, Dissolved	U	0.26	2.0	ug/l		6020	11/10/14	1
Iron	U	50.	100	ug/l		6020	11/10/14	1
Iron, Dissolved	U	50.	100	ug/l		6020	11/10/14	1
Lead	U	0.24	2.0	ug/l		6020	11/10/14	1
Lead, Dissolved	U	0.24	2.0	ug/l		6020	11/10/14	1
Manganese	0.58	0.25	5.0	ug/l	J	6020	11/10/14	1
Manganese, Dissolved	U	0.25	5.0	ug/l		6020	11/10/14	1
Molybdenum	5.0	0.14	5.0	ug/l	J	6020	11/10/14	1
Molybdenum, Dissolved	5.1	0.14	5.0	ug/l		6020	11/10/14	1
Nickel	0.84	0.35	2.0	ug/l	J	6020	11/10/14	1
Nickel, Dissolved	1.0	0.35	2.0	ug/l	J	6020	11/10/14	1
Potassium	1200	37.	1000	ug/l		6020	11/10/14	1
Potassium, Dissolved	1300	37.	1000	ug/l		6020	11/10/14	1
Selenium	8.8	0.38	2.0	ug/l		6020	11/10/14	1
Selenium, Dissolved	7.6	0.38	2.0	ug/l		6020	11/10/14	1
Silver	U	0.31	2.0	ug/l		6020	11/10/14	1

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REPORT OF ANALYSIS

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ARCADIS US - TX
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Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-12

Sample ID : DUP-04-1014-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Silver, Dissolved	U	0.31	2.0	ug/l		6020	11/10/14	1
Sodium	85000	110	1000	ug/l		6020	11/10/14	1
Sodium, Dissolved	92000	110	1000	ug/l		6020	11/10/14	1
Uranium	21.	0.33	10.	ug/l		6020	11/10/14	1
Uranium, Dissolved	22.	0.33	10.	ug/l		6020	11/10/14	1
Vanadium	12.	0.18	5.0	ug/l		6020	11/10/14	1
Vanadium, Dissolved	14.	0.18	1.0	ug/l		6020	11/10/14	1
Zinc	U	2.6	25.	ug/l		6020	11/10/14	1
Zinc, Dissolved	3.9	2.6	25.	ug/l	J	6020	11/10/14	1
Mercury	U	0.049	0.20	ug/l		7470A	10/31/14	1
TPH (GC/FID) Low Fraction	U	31.	100	ug/l		8015D/G	11/06/14	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.3			% Rec.		8015D/G	11/06/14	1
Volatile Organics								
Benzene	U	0.33	1.0	ug/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.38	1.0	ug/l		8260B	11/02/14	1
Chloroform	U	0.32	5.0	ug/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.26	1.0	ug/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.36	1.0	ug/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.40	1.0	ug/l		8260B	11/02/14	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	11/02/14	1
Methylene Chloride	U	1.0	5.0	ug/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.13	1.0	ug/l		8260B	11/02/14	1
Toluene	U	0.78	5.0	ug/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.32	1.0	ug/l		8260B	11/02/14	1
Tetrachloroethene	U	0.37	1.0	ug/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.38	1.0	ug/l		8260B	11/02/14	1
Vinyl chloride	U	0.26	1.0	ug/l		8260B	11/02/14	1
o-Xylene	U	0.34	1.0	ug/l		8260B	11/02/14	1
m&p-Xylene	U	0.72	2.0	ug/l		8260B	11/02/14	1
Xylenes, Total	U	1.1	3.0	ug/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	115.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	99.0			% Rec.		8260B	11/02/14	1
TPH (GC/FID) High Fraction	U	25.	100	ug/l		3511/80	11/03/14	1
Surrogate recovery(%)								

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

MDL = Minimum Detection Limit = LOD = TRRP SDL

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 08/11/15 10:56 Printed: 08/11/15 10:57



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Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM
Sample ID : DUP-04-1014-BG
Collected By : Ron Wood
Collection Date : 10/27/14 00:00

ESC Sample # : L730438-12

Site ID :

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
o-Terphenyl	103.			% Rec.		3511/80	11/03/14	1
Base/Neutral Extractables								
Benzo(a)pyrene	U	0.34	1.0	ug/l		8270C	11/01/14	1
1-Methylnaphthalene	U	0.33	1.0	ug/l		8270C	11/01/14	1
2-Methylnaphthalene	U	0.31	1.0	ug/l		8270C	11/01/14	1
Naphthalene	U	0.37	1.0	ug/l		8270C	11/01/14	1
Surrogate Recovery								
2-Fluorophenol	48.5			% Rec.		8270C	11/01/14	1
Phenol-d5	35.6			% Rec.		8270C	11/01/14	1
Nitrobenzene-d5	59.5			% Rec.		8270C	11/01/14	1
2-Fluorobiphenyl	72.3			% Rec.		8270C	11/01/14	1
2,4,6-Tribromophenol	80.5			% Rec.		8270C	11/01/14	1
p-Terphenyl-d14	72.5			% Rec.		8270C	11/01/14	1

U = ND (Not Detected)

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MDL = Minimum Detection Limit = LOD = TRRP SDL

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Est. 1970

REPORT OF ANALYSIS

Pam Krueger
ARCADIS US - TX
2929 Briarpark Dr., Suite 300
Houston, TX 77042

August 11, 2015

Date Received : October 30, 2014
Description : Navajo Refining Company - Artesia, NM

ESC Sample # : L730438-13

Sample ID : TRIPBLANK-19-BG

Site ID :

Collected By : Ron Wood
Collection Date : 10/27/14 00:00

Project # : TX000836.0008.00004

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Volatile Organics								
Benzene	U	0.00033	0.0010	mg/l		8260B	11/02/14	1
Carbon tetrachloride	U	0.00038	0.0010	mg/l		8260B	11/02/14	1
Chloroform	U	0.00032	0.0050	mg/l		8260B	11/02/14	1
1,2-Dibromoethane	U	0.00038	0.0010	mg/l		8260B	11/02/14	1
1,1-Dichloroethane	U	0.00026	0.0010	mg/l		8260B	11/02/14	1
1,2-Dichloroethane	U	0.00036	0.0010	mg/l		8260B	11/02/14	1
1,1-Dichloroethene	U	0.00040	0.0010	mg/l		8260B	11/02/14	1
Ethylbenzene	U	0.00038	0.0010	mg/l		8260B	11/02/14	1
Methylene Chloride	U	0.0010	0.0050	mg/l		8260B	11/02/14	1
1,1,1,2-Tetrachloroethane	U	0.00038	0.0010	mg/l		8260B	11/02/14	1
1,1,2,2-Tetrachloroethane	U	0.00013	0.0010	mg/l		8260B	11/02/14	1
Toluene	U	0.00078	0.0050	mg/l		8260B	11/02/14	1
1,1,1-Trichloroethane	U	0.00032	0.0010	mg/l		8260B	11/02/14	1
Tetrachloroethene	U	0.00037	0.0010	mg/l		8260B	11/02/14	1
1,1,2-Trichloroethane	U	0.00038	0.0010	mg/l		8260B	11/02/14	1
Vinyl chloride	U	0.00026	0.0010	mg/l		8260B	11/02/14	1
o-Xylene	U	0.00034	0.0010	mg/l		8260B	11/02/14	1
m&p-Xylene	U	0.00072	0.0020	mg/l		8260B	11/02/14	1
Xylenes, Total	U	0.0011	0.0030	mg/l		8260B	11/02/14	1
Surrogate Recovery								
Toluene-d8	105.			% Rec.		8260B	11/02/14	1
Dibromofluoromethane	112.			% Rec.		8260B	11/02/14	1
4-Bromofluorobenzene	97.3			% Rec.		8260B	11/02/14	1

U = ND (Not Detected)

MDL = Minimum Detection Limit = LOD = TRRP SDL

RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L730438-01	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG752073	SAMP	Aluminum	R3003648	J
	WG752073	SAMP	Arsenic	R3003648	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG751952	SAMP	Barium, Dissolved	R3003776	J
	WG752073	SAMP	Boron	R3003807	01V
	WG752073	SAMP	Cobalt	R3003648	J
	WG751952	SAMP	Cobalt, Dissolved	R3003776	J
	WG751952	SAMP	Iron, Dissolved	R3003776	J3J5
	WG752073	SAMP	Manganese	R3003648	V
	WG751952	SAMP	Manganese, Dissolved	R3003776	V
	WG752073	SAMP	Molybdenum	R3003648	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Uranium	R3003648	J
	WG751952	SAMP	Uranium, Dissolved	R3003776	J
	WG752073	SAMP	Vanadium	R3003648	J
L730438-02	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Arsenic	R3003648	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Manganese	R3003648	J
	WG751952	SAMP	Manganese, Dissolved	R3003776	J
	WG752073	SAMP	Uranium	R3003648	J
	WG751952	SAMP	Uranium, Dissolved	R3003776	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J
L730438-03	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Cobalt	R3003648	J
	WG751952	SAMP	Cobalt, Dissolved	R3003776	J
	WG752073	SAMP	Lead	R3003648	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Zinc	R3003648	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J
L730438-04	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Lead	R3003648	J
	WG752073	SAMP	Manganese	R3003648	J
	WG751952	SAMP	Manganese, Dissolved	R3003776	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Potassium	R3003648	J
	WG751952	SAMP	Potassium, Dissolved	R3003776	J
	WG752073	SAMP	Zinc	R3003648	J
L730438-05	WG751681	SAMP	Chloride	R3002944	J
	WG751681	SAMP	Fluoride	R3002944	J
	WG751681	SAMP	Sulfate	R3002944	P1
	WG751793	SAMP	Dissolved Solids	R3001974	T4
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG751952	SAMP	Calcium, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	JB
	WG751952	SAMP	Chromium, Dissolved	R3003776	JB

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L730438-06	WG751952	SAMP	Sodium, Dissolved	R3003776	J
	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Arsenic	R3003648	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Manganese	R3003648	J
	WG751952	SAMP	Manganese, Dissolved	R3003776	J
	WG751952	SAMP	Molybdenum, Dissolved	R3003776	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Zinc	R3003648	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J
L730438-07	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	JB
	WG751952	SAMP	Chromium, Dissolved	R3003776	JB
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Cobalt	R3003648	J
	WG751952	SAMP	Cobalt, Dissolved	R3003776	J
	WG752073	SAMP	Iron	R3003648	J
	WG752073	SAMP	Zinc	R3003648	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J
L730438-08	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Arsenic	R3003648	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Iron	R3003648	J
	WG751952	SAMP	Iron, Dissolved	R3003776	J
	WG752073	SAMP	Manganese	R3003648	J
	WG751952	SAMP	Manganese, Dissolved	R3003776	J
	WG752073	SAMP	Molybdenum	R3003648	J
	WG751952	SAMP	Molybdenum, Dissolved	R3003776	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Zinc	R3003648	J
L730438-09	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Cadmium	R3003648	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG751952	SAMP	Cobalt, Dissolved	R3003776	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J
L730438-10	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Cobalt	R3003648	J
	WG752073	SAMP	Iron	R3003648	J
	WG752073	SAMP	Lead	R3003648	J

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L730438-11	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG752073	SAMP	Potassium	R3003648	J
	WG751952	SAMP	Potassium, Dissolved	R3003776	J
	WG751681	SAMP	Chloride	R3002944	J
	WG751681	SAMP	Fluoride	R3002944	J
	WG751681	SAMP	Sulfate	R3002944	J
	WG752000	SAMP	Dissolved Solids	R3001963	T4
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Calcium	R3003648	J
	WG751952	SAMP	Calcium, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	JB
	WG751952	SAMP	Chromium, Dissolved	R3003776	JB
L730438-12	WG752073	SAMP	Sodium	R3003648	J
	WG751952	SAMP	Sodium, Dissolved	R3003776	J
	WG751681	SAMP	Nitrate	R3002944	T8
	WG751681	SAMP	Nitrite	R3002944	T8
	WG752073	SAMP	Aluminum	R3003648	J
	WG751952	SAMP	Aluminum, Dissolved	R3003776	J
	WG752073	SAMP	Arsenic	R3003648	J
	WG751952	SAMP	Arsenic, Dissolved	R3003776	J
	WG752073	SAMP	Chromium	R3003648	B
	WG751952	SAMP	Chromium, Dissolved	R3003776	B
	WG752073	SAMP	Copper	R3003648	J
	WG751952	SAMP	Copper, Dissolved	R3003776	J
	WG752073	SAMP	Manganese	R3003648	J
	WG752073	SAMP	Molybdenum	R3003648	J
	WG752073	SAMP	Nickel	R3003648	J
	WG751952	SAMP	Nickel, Dissolved	R3003776	J
	WG751952	SAMP	Zinc, Dissolved	R3003776	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
01	(ESC) The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T4	(ESC) - Additional method/sample information: QNS - Quantity Not Sufficient
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy** - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision** - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate** - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC** - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Anions by Method 9056MOD		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751681
Analysis Date:	11/6/2014 8:10:00 PM	Analyst:	577
Instrument ID:	IC-8		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chloride	16887-00-6	< 1.00	< 0.0519	
Fluoride	16984-48-8	< 0.100	< 0.00990	
Nitrate	14797-55-8	< 0.100	< 0.0227	
Nitrite	14797-65-0	< 0.100	< 0.0277	
Sulfate	14808-79-8	< 5.00	< 0.0774	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Anions by Method 9056MOD
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 10/27/2014
Analysis Date: 11/6/2014 8:10:00 PM
Instrument ID: IC-8
Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG751681
Analyst: 577

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.150	98	90 - 110	
Fluoride	1	8	8.1951	102	90 - 110	
Nitrate	1	8	8.1146	101	90 - 110	
Nitrite	1	8	7.9505	99	90 - 110	
Sulfate	1	40	38.996	97	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Chloride	1	40	39.153	98	90 - 110	
Fluoride	1	8	8.2457	103	90 - 110	
Nitrate	1	8	8.126	102	90 - 110	
Nitrite	1	8	7.9856	100	90 - 110	
Sulfate	1	40	38.947	97	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Chloride	1	40	39.150	98	39.153	98	90 - 110	0	20		
Fluoride	1	8	8.1951	102	8.2457	103	90 - 110	1	20		
Nitrate	1	8	8.1146	101	8.126	102	90 - 110	0	20		
Nitrite	1	8	7.9505	99	7.9856	100	90 - 110	0	20		
Sulfate	1	40	38.996	97	38.947	97	90 - 110	0	20		

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Anions by Method 9056MOD
Project No: TX000836.0008.00004
Project: Navajo Refining Company - Artesia, NM
Collection Date: 10/27/2014
Analysis Date: 11/6/2014 8:10:00 PM
Instrument ID: IC-8
Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: **WG751681**
Analyst: 577

Sample Duplicate

L730438-05

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Chloride	1	0.2793	0.3091	10	20	
Fluoride	1	0.0207	0.0192	8	20	
Nitrate	1	<0.0227	<0.0227		20	
Nitrite	1	<0.0277	<0.0277		20	
Sulfate	1	<0.0774	0.1358	117	20	P1

Sample Duplicate

L730496-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Fluoride	1	0.32	0.304	5	20	

Matrix Spike / Matrix Spike Duplicate

L731399-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Nitrate	1	5	0.5152	5.4925	100	5.1794	93	80 - 120		6	20	
Nitrite	1	5	<0.0277	5.1589	103	4.9184	98	80 - 120		5	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752347
Analysis Date:	11/4/2014 2:15:00 PM	Analyst:	578
Instrument ID:	LACHAT4		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cyanide	57-12-5	< 0.00500	< 0.00180	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.1	100	90 - 110	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cyanide	1	0.1	0.0945	94.5	90 - 110	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD % RPD	Control RPD Limits	Control RPD Qual
Cyanide	1	0.1	0.1	100	0.0945	94.5	90 - 110	5.66	20		

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Cyanide by Method 9012B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752347
Analysis Date:	11/4/2014 2:15:00 PM	Analyst:	578
Instrument ID:	LACHAT4		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Sample Duplicate

L730438-03

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Sample Duplicate

L730438-08

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Cyanide	1	<0.0018	<0.0018		20	

Matrix Spike / Matrix Spike Duplicate

L730438-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cyanide	1	0.2	<0.0018	0.199	99.5	0.193	96.5	90 - 110		3.06	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751793
Analysis Date:	11/3/2014 1:50:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8600	97.7	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8720	99.1	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Dissolved Solids	1	8800	8600	97.7	8720	99.1	85 - 115	1.39	5		

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752000
Analysis Date:	11/3/2014 1:19:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-11		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8670	98.5	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8560	97.3	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Dissolved Solids	1	8800	8670	98.5	8560	97.3	85 - 115	1.28	5	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752371
Analysis Date:	11/4/2014 1:45:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Dissolved Solids	DSOLIDS	< 10.0	< 2.82	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8770	99.7	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Dissolved Solids	1	8800	8770	99.7	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	RPD Limits	Qual
Dissolved Solids	1	8800	8770	99.7	8770	99.7	85 - 115	0	5		

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751793
Analysis Date:	11/3/2014 1:50:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10		

Sample Duplicate

L730438-01

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	14240	14160	0.56	5	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752000
Analysis Date:	11/3/2014 1:19:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-11		

Sample Duplicate

L730438-11

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	<2.82	<2.82		5	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Total Dissolved Solids by Method 2540 C-2011		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752371
Analysis Date:	11/4/2014 1:45:00 PM	Analyst:	36
Instrument ID:	WETBAL1		
Sample Numbers:	L730438-12		

Sample Duplicate

L730438-12

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Dissolved Solids	1	3160	3180	0.63	5	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751697
Analysis Date:	10/31/2014 5:36:00 PM	Analyst:	572
Instrument ID:	CVAA3	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Mercury	7439-97-6	< 0.200	< 0.0490	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.0704	102	85 - 115	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Mercury	1	3	3.1081	104	85 - 115	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
Mercury	1	3	3.0704	102	3.1081	104	85 - 115	1	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Mercury by Method 7470A		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751697
Analysis Date:	10/31/2014 5:36:00 PM	Analyst:	572
Instrument ID:	CVAA3	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Serial Dilution

L730438-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Mercury	5	<0.049	<0.245		10	

Matrix Spike / Matrix Spike Duplicate

L730438-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
Mercury	1	3	<0.049	3.0384	101	2.8508	95	80 - 120		6	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751952
Analysis Date:	11/10/2014 2:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	10/31/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum,Dissolved	7429-90-5	< 100	4.32	
Arsenic,Dissolved	7440-38-2	< 2.00	< 0.250	
Barium,Dissolved	7440-39-3	< 5.00	< 0.360	
Boron,Dissolved	7440-42-8	< 20.0	< 1.5	
Cadmium,Dissolved	7440-43-9	< 1.00	< 0.160	
Calcium,Dissolved	7440-70-2	< 1000	< 46.0	
Chromium,Dissolved	7440-47-3	< 1.00	0.643	B
Cobalt,Dissolved	7440-48-4	< 2.00	< 0.260	
Copper,Dissolved	7440-50-8	< 5.00	< 0.520	
Iron,Dissolved	7439-89-6	< 100	21.6	
Lead,Dissolved	7439-92-1	< 2.00	< 0.240	
Manganese,Dissolved	7439-96-5	< 5.00	< 0.250	
Molybdenum,Dissolved	7439-98-7	< 5.00	< 0.140	
Nickel,Dissolved	7440-02-0	< 2.00	< 0.350	
Potassium,Dissolved	7440-09-7	< 1000	< 37.0	
Selenium,Dissolved	7782-49-2	< 2.00	< 0.380	
Silver,Dissolved	7440-22-4	< 2.00	< 0.310	
Sodium,Dissolved	7440-23-5	< 1000	< 110	
Uranium,Dissolved	7440-61-1	< 10.0	< 0.330	
Vanadium,Dissolved	7440-62-2	< 5.00	< 0.180	
Zinc,Dissolved	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752073
Analysis Date:	11/10/2014 5:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	11/1/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Aluminum	7429-90-5	< 100	4.57	
Arsenic	7440-38-2	< 2.00	< 0.250	
Barium	7440-39-3	< 5.00	< 0.360	
Boron	7440-42-8	< 20.0	< 1.5	
Cadmium	7440-43-9	< 1.00	< 0.160	
Calcium	7440-70-2	< 1000	< 46.0	
Chromium	7440-47-3	< 1.00	0.588	B
Cobalt	7440-48-4	< 2.00	< 0.260	
Copper	7440-50-8	< 5.00	< 0.520	
Iron	7439-89-6	< 100	< 15.0	
Lead	7439-92-1	< 2.00	< 0.240	
Manganese	7439-96-5	< 5.00	< 0.250	
Molybdenum	7439-98-7	< 5.00	< 0.140	
Nickel	7440-02-0	< 2.00	< 0.350	
Potassium	7440-09-7	< 1000	< 37.0	
Selenium	7782-49-2	< 2.00	< 0.380	
Silver	7440-22-4	< 2.00	< 0.310	
Sodium	7440-23-5	< 1000	< 110	
Uranium	7440-61-1	< 10.0	< 0.330	
Vanadium	7440-62-2	< 5.00	< 0.180	
Zinc	7440-66-6	< 25.0	< 2.56	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751952
Analysis Date:	11/10/2014 2:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	10/31/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	500	512.53	103	70 - 130	
Arsenic,Dissolved	1	50	49.072	98	85 - 115	
Barium,Dissolved	1	50	51.430	103	85 - 115	
Boron,Dissolved	1	50	50.801	102	70 - 130	
Cadmium,Dissolved	1	50	49.514	99	85 - 115	
Calcium,Dissolved	1	5000	5289.5	106	70 - 130	
Chromium,Dissolved	1	50	52.548	105	85 - 115	
Cobalt,Dissolved	1	50	50.525	101	85 - 115	
Copper,Dissolved	1	50	51.261	103	85 - 115	
Iron,Dissolved	1	500	498.25	100	85 - 115	
Lead,Dissolved	1	50	51.009	102	85 - 115	
Manganese,Dissolved	1	50	50.548	101	85 - 115	
Molybdenum,Dissolved	1	50	49.905	100	85 - 115	
Nickel,Dissolved	1	50	50.010	100	85 - 115	
Potassium,Dissolved	1	5000	5052.4	101	70 - 130	
Selenium,Dissolved	1	50	45.958	92	85 - 115	
Silver,Dissolved	1	50	47.395	95	85 - 115	
Sodium,Dissolved	1	5000	5040.1	101	70 - 130	
Uranium,Dissolved	1	50	50.802	102	70 - 130	
Vanadium,Dissolved	1	50	50.642	101	85 - 115	
Zinc,Dissolved	1	50	49.478	99	85 - 115	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751952
Analysis Date:	11/10/2014 2:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	10/31/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Aluminum,Dissolved	1	500	522.66	105	70 - 130	
Arsenic,Dissolved	1	50	47.847	96	85 - 115	
Barium,Dissolved	1	50	52.031	104	85 - 115	
Boron,Dissolved	1	50	52.157	104	70 - 130	
Cadmium,Dissolved	1	50	48.916	98	85 - 115	
Calcium,Dissolved	1	5000	4682.1	94	70 - 130	
Chromium,Dissolved	1	50	52.623	105	85 - 115	
Cobalt,Dissolved	1	50	49.643	99	85 - 115	
Copper,Dissolved	1	50	49.883	100	85 - 115	
Iron,Dissolved	1	500	497.97	100	85 - 115	
Lead,Dissolved	1	50	50.330	101	85 - 115	
Manganese,Dissolved	1	50	48.996	98	85 - 115	
Molybdenum,Dissolved	1	50	49.356	99	85 - 115	
Nickel,Dissolved	1	50	51.385	103	85 - 115	
Potassium,Dissolved	1	5000	4986.1	100	70 - 130	
Selenium,Dissolved	1	50	46.435	93	85 - 115	
Silver,Dissolved	1	50	49.671	99	85 - 115	
Sodium,Dissolved	1	5000	5039.9	101	70 - 130	
Uranium,Dissolved	1	50	50.543	101	70 - 130	
Vanadium,Dissolved	1	50	51.043	102	85 - 115	
Zinc,Dissolved	1	50	49.255	99	85 - 115	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751952
Analysis Date:	11/10/2014 2:13:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	10/31/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Serial Dilution

L730438-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum,Dissolved	25	<10	<50		10	
Arsenic,Dissolved	25	4.7965	<6.25	17	10	
Barium,Dissolved	25	23.253	21.199	9	10	
Boron,Dissolved	25	295.47	321.65	9	10	
Cadmium,Dissolved	25	<0.8	<4		10	
Chromium,Dissolved	25	<2.7	<13.5		10	
Cobalt,Dissolved	25	1.3860	<6.5	36	10	
Copper,Dissolved	25	<2.6	<13		10	
Iron,Dissolved	25	<75	<375		10	
Lead,Dissolved	25	<1.2	<6		10	
Manganese,Dissolved	25	2101.3	1975.3	6	10	
Molybdenum,Dissolved	25	28.870	26.755	7	10	
Nickel,Dissolved	25	2.9920	<8.75	61	10	
Potassium,Dissolved	25	7373.4	6676.3	9	10	
Selenium,Dissolved	25	27.680	28.263	2	10	
Silver,Dissolved	25	<1.55	<7.75		10	
Uranium,Dissolved	25	14.026	13.232	6	10	
Vanadium,Dissolved	25	13.132	10.208	22	10	
Zinc,Dissolved	25	<12.8	<64		10	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Trace Metals by Method 6020		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752073
Analysis Date:	11/10/2014 5:57:00 PM	Analyst:	664
Instrument ID:	ICPMS8	Prep Date:	11/1/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Serial Dilution

L730438-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Aluminum	25	15.806	<50	76	10	
Arsenic	25	5.7089	<6.25	18	10	
Barium	25	27.322	25.779	6	10	
Boron	25	295.12	198.83	33	10	O1
Cadmium	25	<0.8	<4		10	
Chromium	25	<2.7	<13.5		10	
Cobalt	25	2.2188	<6.5	30	10	
Copper	25	<2.6	<13		10	
Iron	25	<75	<375		10	
Lead	25	<1.2	<6		10	
Manganese	25	827.50	741.64	10	10	
Molybdenum	25	7.7113	6.5726	15	10	
Nickel	25	3.2895	<8.75	56	10	
Potassium	25	7506.2	6872.3	8	10	
Selenium	25	45.724	33.931	26	10	
Silver	25	<1.55	<7.75		10	
Uranium	25	14.167	12.933	9	10	
Vanadium	25	13.356	11.943	11	10	
Zinc	25	<12.8	<64		10	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752141
Analysis Date:	11/6/2014 6:07:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) Low Fraction	8006-61-9	< 0.100	< 0.0314	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.3445	79	67 - 132	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.3231	78.6	67 - 132	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD	% RPD	Control RPD Limits	Qual
TPH (GC/FID) Low Fraction	1	5.5	4.3445	79	4.3231	78.6	67 - 132	0.49	20			

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752141
Analysis Date:	11/6/2014 6:07:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Matrix Spike / Matrix Spike Duplicate

L730438-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
TPH (GC/FID) Low Fraction	1	5.5	<0.0314	4.4892	81.2	4.5092	81.6	50 - 143		0.44	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Volatile TPH by Method 8015D/GRO		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG752141
Analysis Date:	11/6/2014 6:07:00 AM	Analyst:	621
Instrument ID:	VOCGC1		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Surrogate Summary

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L730438-01	VOCGC1	1106_13	0.197	98.6		
L730438-02	VOCGC1	1106_14	0.200	100		
L730438-03	VOCGC1	1106_15	0.199	99.4		
L730438-04	VOCGC1	1106_16	0.198	98.8		
L730438-05	VOCGC1	1106_11	0.199	99.7		
L730438-06	VOCGC1	1106_17	0.198	99.2		
L730438-07	VOCGC1	1106_18	0.199	99.4		
L730438-08	VOCGC1	1106_19	0.199	99.3		
L730438-09	VOCGC1	1106_20	0.198	98.8		
L730438-10	VOCGC1	1106_25	0.198	98.8		
L730438-11	VOCGC1	1106_12	0.199	99.5		
L730438-12	VOCGC1	1106_26	0.199	99.3		
LCS WG752141	VOCGC1	1106_05	0.198	99.1	0.226	113
LCSD WG752141	VOCGC1	1106_06	0.199	99.7	0.228	114
MS WG752141	VOCGC1	1106_07	0.199	99.3	0.226	113
MSD WG752141	VOCGC1	1106_08	0.196	97.8	0.223	112
BLANK WG752141	VOCGC1	1106_10	0.200	100	0.213	106

--A,A,A-TRIFLUOROTOLUENE(FID)

True Value: 0.2 ppm Limits: 62 - 128

--A,A,A-TRIFLUOROTOLUENE(PID)

True Value: 0.2 ppm Limits: 55 - 122

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751774
Analysis Date:	11/2/2014 2:21:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000385	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000319	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000130	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000383	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000259	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000398	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000381	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000361	
Benzene	71-43-2	< 0.00100	< 0.000331	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000379	
Chloroform	67-66-3	< 0.00500	< 0.000324	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
m&p-Xylenes	1330-20-7	< 0.00200	< 0.000719	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
o-Xylene	95-47-6	< 0.00100	< 0.000341	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000372	
Toluene	108-88-3	< 0.00500	< 0.000780	
Vinyl chloride	75-01-4	< 0.00100	< 0.000259	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B

Project No: TX000836.0008.00004 Matrix: Water - mg/L

Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003

Collection Date: 10/27/2014 **Analytic Batch: WG751774**

Analysis Date: 11/2/2014 2:21:00 PM Analyst: 644

Instrument ID: VOCMS4

Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0256	103	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0259	104	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0238	95.1	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0235	94.1	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0254	101	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0259	104	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0249	99.7	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0243	97.2	68.8 - 124	
Benzene	1	0.025	0.0247	98.9	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0260	104	70.2 - 123	
Chloroform	1	0.025	0.0254	102	76 - 121	
Ethylbenzene	1	0.025	0.0258	103	78.8 - 122	
m&p-Xylenes	1	0.05	0.0505	101	78.8 - 121	
Methylene Chloride	1	0.025	0.0229	91.6	70.3 - 120	
o-Xylene	1	0.025	0.0250	100	77.6 - 122	
Tetrachloroethene	1	0.025	0.0272	109	72.6 - 126	
Toluene	1	0.025	0.0235	94.1	79.7 - 116	
Vinyl chloride	1	0.025	0.0268	107	65.9 - 128	
Xylenes, Total	1	0.075	0.0755	101	78.7 - 121	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 10/27/2014 Analytic Batch: **WG751774**
 Analysis Date: 11/2/2014 2:21:00 PM Analyst: 644
 Instrument ID: VOCMS4
 Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0275	110	74.2 - 124	
1,1,1-Trichloroethane	1	0.025	0.0291	116	73.2 - 123	
1,1,2,2-Tetrachloroethane	1	0.025	0.0252	101	70.7 - 122	
1,1,2-Trichloroethane	1	0.025	0.0257	103	77.7 - 118	
1,1-Dichloroethane	1	0.025	0.0283	113	70.7 - 126	
1,1-Dichloroethene	1	0.025	0.0282	113	67.8 - 129	
1,2-Dibromoethane	1	0.025	0.0272	109	76.6 - 121	
1,2-Dichloroethane	1	0.025	0.0271	108	68.8 - 124	
Benzene	1	0.025	0.0272	109	74.8 - 121	
Carbon tetrachloride	1	0.025	0.0293	117	70.2 - 123	
Chloroform	1	0.025	0.0284	113	76 - 121	
Ethylbenzene	1	0.025	0.0271	109	78.8 - 122	
m&p-Xylenes	1	0.05	0.0541	108	78.8 - 121	
Methylene Chloride	1	0.025	0.0259	104	70.3 - 120	
o-Xylene	1	0.025	0.0266	107	77.6 - 122	
Tetrachloroethene	1	0.025	0.0292	117	72.6 - 126	
Toluene	1	0.025	0.0256	103	79.7 - 116	
Vinyl chloride	1	0.025	0.0289	116	65.9 - 128	
Xylenes, Total	1	0.075	0.0807	108	78.7 - 121	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751774
Analysis Date:	11/2/2014 2:21:00 PM	Analyst:	644
Instrument ID:	VOCMS4		
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control	% Rec	Control RPD	
							Limits	Qual	% RPD	Limits Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0256	103	0.0275	110	74.2 - 124		7.09	20
1,1,1-Trichloroethane	1	0.025	0.0259	104	0.0291	116	73.2 - 123		11.4	20
1,1,2,2-Tetrachloroethane	1	0.025	0.0238	95.1	0.0252	101	70.7 - 122		5.72	20
1,1,2-Trichloroethane	1	0.025	0.0235	94.1	0.0257	103	77.7 - 118		8.69	20
1,1-Dichloroethane	1	0.025	0.0254	101	0.0283	113	70.7 - 126		11	20
1,1-Dichloroethene	1	0.025	0.0259	104	0.0282	113	67.8 - 129		8.39	20
1,2-Dibromoethane	1	0.025	0.0249	99.7	0.0272	109	76.6 - 121		8.81	20
1,2-Dichloroethane	1	0.025	0.0243	97.2	0.0271	108	68.8 - 124		10.8	20
Benzene	1	0.025	0.0247	98.9	0.0272	109	74.8 - 121		9.5	20
Carbon tetrachloride	1	0.025	0.0260	104	0.0293	117	70.2 - 123		12	20
Chloroform	1	0.025	0.0254	102	0.0284	113	76 - 121		11	20
Ethylbenzene	1	0.025	0.0258	103	0.0271	109	78.8 - 122		4.99	20
m&p-Xylenes	1	0.05	0.0505	101	0.0541	108	78.8 - 121		6.88	20
Methylene Chloride	1	0.025	0.0229	91.6	0.0259	104	70.3 - 120		12.2	20
o-Xylene	1	0.025	0.0250	100	0.0266	107	77.6 - 122		6.37	20
Tetrachloroethene	1	0.025	0.0272	109	0.0292	117	72.6 - 126		7.14	20
Toluene	1	0.025	0.0235	94.1	0.0256	103	79.7 - 116		8.6	20
Vinyl chloride	1	0.025	0.0268	107	0.0289	116	65.9 - 128		7.61	20
Xylenes, Total	1	0.075	0.0755	101	0.0807	108	78.7 - 121		6.71	20

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 10/27/2014 Analytic Batch: WG751774
 Analysis Date: 11/2/2014 2:21:00 PM Analyst: 644
 Instrument ID: VOCMS4
 Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13

Matrix Spike / Matrix Spike Duplicate

L730438-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD
1,1,1,2-Tetrachloroethane	1	0.025	<0.0004	0.0275	110	0.0267	107	70.5 - 132		3.06	20	
1,1,1-Trichloroethane	1	0.025	<0.0003	0.0281	112	0.0290	116	58.7 - 134		3.13	20	
1,1,2,2-Tetrachloroethane	1	0.025	<0.0001	0.0272	109	0.0283	113	64.9 - 145		3.84	20	
1,1,2-Trichloroethane	1	0.025	<0.0004	0.0263	105	0.0263	105	74.1 - 130		0.14	20	
1,1-Dichloroethane	1	0.025	<0.0003	0.0271	108	0.0285	114	64 - 134		5.22	20	
1,1-Dichloroethene	1	0.025	<0.0004	0.0265	106	0.0280	112	48.8 - 144		5.19	20	
1,2-Dibromoethane	1	0.025	<0.0004	0.0274	110	0.0280	112	73.8 - 131		1.95	20	
1,2-Dichloroethane	1	0.025	<0.0004	0.0259	104	0.0275	110	60.7 - 132		5.86	20	
Benzene	1	0.025	<0.0003	0.0260	104	0.0266	107	58.6 - 133		2.24	20	
Carbon tetrachloride	1	0.025	<0.0004	0.0280	112	0.0288	115	60.6 - 139		2.74	20	
Chloroform	1	0.025	<0.0003	0.0279	112	0.0288	115	66.1 - 133		3.37	20	
Ethylbenzene	1	0.025	<0.0004	0.0269	108	0.0267	107	62.7 - 136		0.65	20	
m&p-Xylenes	1	0.05	<0.0007	0.0535	107	0.0522	104	64.1 - 133		2.47	20	
Methylene Chloride	1	0.025	<0.001	0.0240	95.9	0.0254	102	61.5 - 125		5.67	20	
o-Xylene	1	0.025	<0.0003	0.0259	104	0.0259	104	67.1 - 133		0.09	20	
Tetrachloroethene	1	0.025	<0.0004	0.0265	106	0.0269	107	57.4 - 141		1.35	20	
Toluene	1	0.025	<0.0008	0.0254	102	0.0255	102	67.8 - 124		0.54	20	
Vinyl chloride	1	0.025	<0.0003	0.0244	97.5	0.0261	104	44.3 - 143		6.91	20	
Xylenes, Total	1	0.075	<0.0011	0.0795	106	0.0782	104	65.6 - 133		1.69	20	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
 Project No: TX000836.0008.00004 Matrix: Water - mg/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 10/27/2014 Analytic Batch: WG751774
 Analysis Date: 11/2/2014 2:21:00 PM Analyst: 644
 Instrument ID: VOCMS4
 Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13

Internal Standard Response and Retention Time Summary

File ID: 1102_03
 Analyzed: 11/02/14 095600

	IS1		IS2		IS3		DCB	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	262339	4.19	506988	4.52	81436	5.67	208849	8.05
Upper Limit	525000	4.69	1010000	5.02	163000	6.17	418000	8.55
Lower Limit	131000	3.69	253000	4.02	40700	5.17	104000	7.55
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L730438-05	269498	4.19	517813	4.52	82657	5.67	208531	8.05
L730438-11	255864	4.19	503111	4.52	81516	5.67	199992	8.05
L730438-13	256160	4.19	495598	4.52	80692	5.67	203455	8.05
L730438-01	252272	4.19	498392	4.52	82660	5.67	206598	8.05
L730438-02	244985	4.19	472404	4.52	76277	5.67	195608	8.05
L730438-03	245346	4.19	481363	4.52	77848	5.67	192713	8.05
L730438-04	241407	4.19	479668	4.52	76576	5.67	195368	8.05
L730438-06	241446	4.19	469983	4.52	80146	5.67	198418	8.05
L730438-07	240532	4.19	474313	4.52	78149	5.67	194852	8.05
L730438-08	239437	4.19	464102	4.52	76166	5.67	193917	8.05
L730438-09	235126	4.19	452973	4.52	76251	5.67	186330	8.05
L730438-10	231473	4.19	454562	4.52	75948	5.67	188737	8.05
L730438-12	237879	4.19	462151	4.52	74373	5.67	190353	8.05
MSD WG751774	262290	4.19	525481	4.52	86205	5.67	221748	8.05
MS WG751774	270142	4.19	523945	4.52	85829	5.67	230628	8.05
LCSD WG751774	267592	4.19	523776	4.52	85464	5.67	230706	8.05
LCS WG751774	268786	4.19	522156	4.52	82290	5.67	225031	8.05
BLANK WG751774	258114	4.19	504165	4.52	79978	5.67	192612	8.05

Legend:

IS1 -- PENTAFLUOROBENZENE
 IS2 -- 1,4-DIFLUOROBENZENE
 IS3 -- 2-BROMO-1-CHLOROPROPANE
 DCB -- 1,4-DICHLOROBENZENE-D4

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Volatile Organic Compounds by Method 8260B
Project No: TX000836.0008.00004 Matrix: Water - mg/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 10/27/2014 Analytic Batch: WG751774
Analysis Date: 11/2/2014 2:21:00 PM Analyst: 644
Instrument ID: VOCMS4
Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12, -13

Surrogate Summary

		BFB			DFM		TD8		TFT	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L730438-01	VOCMS4	1102_14	0.0401	100	0.0456	114	0.0424	106		
L730438-02	VOCMS4	1102_15	0.0399	99.8	0.0459	115	0.0419	105		
L730438-03	VOCMS4	1102_16	0.0393	98.3	0.0460	115	0.0419	105		
L730438-04	VOCMS4	1102_17	0.0397	99.3	0.0467	117	0.0414	103		
L730438-05	VOCMS4	1102_11	0.0394	98.5	0.0436	109	0.0418	104		
L730438-06	VOCMS4	1102_18	0.0387	96.9	0.0455	114	0.0431	108		
L730438-07	VOCMS4	1102_19	0.0391	97.7	0.0467	117	0.0428	107		
L730438-08	VOCMS4	1102_20	0.0398	99.6	0.0460	115	0.0429	107		
L730438-09	VOCMS4	1102_21	0.0384	96.0	0.0474	118	0.0426	107		
L730438-10	VOCMS4	1102_22	0.0392	98.1	0.0464	116	0.0435	109		
L730438-11	VOCMS4	1102_12	0.0387	96.7	0.0460	115	0.0416	104		
L730438-12	VOCMS4	1102_23	0.0396	99.0	0.0460	115	0.0428	107		
L730438-13	VOCMS4	1102_13	0.0389	97.3	0.0448	112	0.0418	105		
BLANK WG751774	VOCMS4	1102_10-2	0.0397	99.3	0.0455	114	0.0426	106	0.0420	105
LCS WG751774	VOCMS4	1102_04-2	0.0419	105	0.0442	111	0.0417	104	0.0417	104
LCSD WG751774	VOCMS4	1102_05-2	0.0419	105	0.0451	113	0.0428	107	0.0418	104
MS WG751774	VOCMS4	1102_07	0.0421	105	0.0450	113	0.0431	108	0.0420	105
MSD WG751774	VOCMS4	1102_08	0.0412	103	0.0461	115	0.0421	105	0.0412	103

BFB --4-BROMOFLUOROBENZENE

True Value: 0.04 ppm Limits: 80.1 - 120

DFM --DIBROMOFLUOROMETHANE

True Value: 0.04 ppm Limits: 79 - 121

TD8 --TOLUENE-D8

True Value: 0.04 ppm Limits: 90 - 115

TFT --A,A,A-TRIFLUOROTOLUENE

True Value: 0.04 ppm Limits: 85 - 114

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Diesel Range Organics by Method 3511/8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751826
Analysis Date:	11/3/2014 2:43:00 PM	Analyst:	546
Instrument ID:	SVGC21	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPH (GC/FID) High Fraction	68334-30-5	< 0.100	< 0.0247	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) High Fraction	1	1.5	1.4135	94.2	50 - 150	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPH (GC/FID) High Fraction	1	1.5	1.3727	91.5	50 - 150	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec	Control RPD
TPH (GC/FID) High Fraction	1	1.5	1.4135	94.2	1.3727	91.5	50 - 150	2.93	20

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Diesel Range Organics by Method 3511/8015		
Project No:	TX000836.0008.00004	Matrix:	Water - mg/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751826
Analysis Date:	11/3/2014 2:43:00 PM	Analyst:	546
Instrument ID:	SVGC21	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Surrogate Summary

o-Terphenyl

Laboratory

Sample ID	Instrument	File ID	ppm	% Rec
L730438-01	SVGC21	1103_11	0.0209	104
L730438-02	SVGC21	1103_12	0.0204	102
L730438-03	SVGC21	1103_13	0.0205	102
L730438-04	SVGC21	1103_14	0.0204	102
L730438-05	SVGC21	1103_15	0.0204	102
L730438-06	SVGC21	1103_16	0.0204	102
L730438-07	SVGC21	1103_17	0.0203	102
L730438-08	SVGC21	1103_18	0.0203	101
L730438-09	SVGC21	1103_19	0.0204	102
L730438-10	SVGC21	1103_20	0.0203	101
L730438-11	SVGC21	1103_25	0.0204	102
L730438-12	SVGC21	1103_26	0.0207	103
BLANK WG751826	SVGC21	1103_08	0.0204	102
LCS WG751826	SVGC21	1103_09	0.0198	99.0
LCSD WG751826	SVGC21	1103_10	0.0198	98.9

o-Terphenyl --O-TERPHENYL

True Value: 0.02 ppm Limits: 50 - 150

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751801
Analysis Date:	11/1/2014 6:19:00 AM	Analyst:	377
Instrument ID:	BNAMS19	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 1.00	< 0.330	
2-Methylnaphthalene	91-57-6	< 1.00	< 0.311	
Benzo(a)pyrene	50-32-8	< 1.00	< 0.340	
Naphthalene	91-20-3	< 1.00	< 0.372	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test:	Semi-Volatile Organic Compounds by Method 8270C		
Project No:	TX000836.0008.00004	Matrix:	Water - ug/L
Project:	Navajo Refining Company - Artesia, NM	EPA ID:	TN00003
Collection Date:	10/27/2014	Analytic Batch:	WG751801
Analysis Date:	11/1/2014 6:19:00 AM	Analyst:	377
Instrument ID:	BNAMS19	Prep Date:	10/30/2014
Sample Numbers:	L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	18.331	73.3	34.7 - 102	
2-Methylnaphthalene	1	25	16.380	65.5	33.8 - 98.6	
Benzo(a)pyrene	1	25	19.447	77.8	45.6 - 106	
Naphthalene	1	25	15.170	60.7	32.2 - 101	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	25	16.603	66.4	34.7 - 102	
2-Methylnaphthalene	1	25	14.934	59.7	33.8 - 98.6	
Benzo(a)pyrene	1	25	18.069	72.3	45.6 - 106	
Naphthalene	1	25	13.969	55.9	32.2 - 101	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	Control RPD Limits	Qual
1-Methylnaphthalene	1	25	18.331	73.3	16.603	66.4	34.7 - 102	9.89	24.9	
2-Methylnaphthalene	1	25	16.380	65.5	14.934	59.7	33.8 - 98.6	9.23	24.2	
Benzo(a)pyrene	1	25	19.447	77.8	18.069	72.3	45.6 - 106	7.35	20	
Naphthalene	1	25	15.170	60.7	13.969	55.9	32.2 - 101	8.25	23.8	

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
 Project No: TX000836.0008.00004 Matrix: Water - ug/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 10/27/2014 Analytic Batch: **WG751801**
 Analysis Date: 11/1/2014 6:19:00 AM Analyst: 377
 Instrument ID: BNAMS19 Prep Date: 10/30/2014
 Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Internal Standard Response and Retention Time Summary

File ID: 1031B_03

Analyzed: 11/01/14 012700

	DCB		NAP		ACE		PHEN	
	Response	RT	Response	RT	Response	RT	Response	RT
12 Hr. Std	136081	5.25	550493	6.52	364784	8.40	651703	10.01
Upper Limit	272000	5.75	1100000	7.02	730000	8.90	1300000	10.51
Lower Limit	68000	4.75	275000	6.02	182000	7.90	326000	9.51
Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
L730438-01	123415	5.25	504195	6.52	333839	8.40	591698	10.01
L730438-02	122580	5.25	496735	6.52	323690	8.40	576336	10.01
L730438-03	121160	5.25	494043	6.52	323387	8.40	569034	10.01
L730438-04	119142	5.25	490430	6.52	325293	8.40	577065	10.01
L730438-05	123037	5.25	505654	6.52	334365	8.40	598525	10.01
L730438-06	129859	5.25	528241	6.52	350396	8.40	614323	10.01
L730438-07	127110	5.25	510052	6.52	339914	8.40	606081	10.01
L730438-08	116483	5.25	485731	6.52	316780	8.40	570437	10.01
L730438-09	121515	5.25	498291	6.52	322065	8.40	573338	10.01
L730438-10	127605	5.25	516281	6.52	340723	8.40	606126	10.01
L730438-11	119491	5.25	499059	6.52	331261	8.40	584873	10.01
L730438-12	127341	5.25	522345	6.52	340067	8.40	603773	10.01
LCSD WG751801	138860	5.25	563517	6.52	375588	8.40	657720	10.01
LCSD WG751801	138860	5.25	563517	6.52	375588	8.40	657720	10.01
LCS WG751801	127491	5.25	520616	6.52	347584	8.40	609880	10.02
LCS WG751801	127491	5.25	520616	6.52	347584	8.40	609880	10.02
BLANK WG751801	130558	5.25	537018	6.52	356027	8.40	627771	10.01
BLANK WG751801	130558	5.25	537018	6.52	356027	8.40	627771	10.01

Legend:

DCB -- 1,4-Dichlorobenzene-d4
 NAP -- Naphthalene-d8
 ACE -- Acenaphthene-d10
 PHEN -- Phenanthrene-d10
 CHR -- Chrysene-d12
 PER -- Perylene-d12

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
 Project No: TX000836.0008.00004 Matrix: Water - ug/L
 Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
 Collection Date: 10/27/2014 Analytic Batch: WG751801
 Analysis Date: 11/1/2014 6:19:00 AM Analyst: 377
 Instrument ID: BNAMS19 Prep Date: 10/30/2014
 Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Internal Standard Response and Retention Time Summary

File ID: 1031B_03

Analyzed: 11/01/14 012700

	DCB		CHR		PER	
	Response	RT	Response	RT	Response	RT
12 Hr. Std	136081	5.25	737931	12.90	820512	14.67
Upper Limit	272000	5.75	1480000	13.40	1640000	15.17
Lower Limit	68000	4.75	369000	12.40	410000	14.17
Sample ID	Response	RT	Response	RT	Response	RT
L730438-01	123415	5.25	653812	12.90	740922	14.66
L730438-02	122580	5.25	656355	12.90	721513	14.66
L730438-03	121160	5.25	635464	12.90	721143	14.66
L730438-04	119142	5.25	648530	12.90	734381	14.66
L730438-05	123037	5.25	657987	12.90	742532	14.66
L730438-06	129859	5.25	695397	12.90	777301	14.66
L730438-07	127110	5.25	685942	12.90	765234	14.66
L730438-08	116483	5.25	650310	12.89	724166	14.66
L730438-09	121515	5.25	638965	12.90	712804	14.66
L730438-10	127605	5.25	685853	12.89	760797	14.66
L730438-11	119491	5.25	665700	12.90	737518	14.66
L730438-12	127341	5.25	668852	12.90	750853	14.66
LCSD WG751801	138860	5.25	745430	12.90	835674	14.67
LCSD WG751801	138860	5.25	745430	12.90	835674	14.67
LCS WG751801	127491	5.25	692314	12.90	769155	14.67
LCS WG751801	127491	5.25	692314	12.90	769155	14.67
BLANK WG751801	130558	5.25	698415	12.89	782662	14.66
BLANK WG751801	130558	5.25	698415	12.89	782662	14.66

Legend:

DCB -- 1,4-Dichlorobenzene-d4
 NAP -- Naphthalene-d8
 ACE -- Acenaphthene-d10
 PHEN -- Phenanthrene-d10
 CHR -- Chrysene-d12
 PER -- Perylene-d12



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Tax I.D 62-0814289
Est. 1970

YOUR LAB OF CHOICE

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 10/27/2014 Analytic Batch: WG751801
Analysis Date: 11/1/2014 6:19:00 AM Analyst: 377
Instrument ID: BNAMS19 Prep Date: 10/30/2014
Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Surrogate Summary

		TBP			FBP		2FP		NBZ	
Laboratory										
Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L730438-01	BNAMS19	1031B_15	0.0181	90.5	0.00733	73.3	0.0100	50.1	0.00624	62.4
L730438-02	BNAMS19	1031B_16	0.0162	81.2	0.00732	73.2	0.00788	39.4	0.00580	58.0
L730438-03	BNAMS19	1031B_17	0.0160	79.9	0.00823	82.3	0.00748	37.4	0.00704	70.4
L730438-04	BNAMS19	1031B_18	0.0167	83.4	0.00707	70.7	0.00928	46.4	0.00596	59.6
L730438-05	BNAMS19	1031B_19	0.0172	86.0	0.00728	72.8	0.00855	42.8	0.00633	63.3
L730438-06	BNAMS19	1031B_20	0.0160	80.1	0.00749	74.9	0.00946	47.3	0.00603	60.3
L730438-07	BNAMS19	1031B_21	0.0167	83.7	0.00708	70.8	0.00922	46.1	0.00590	59.0
L730438-08	BNAMS19	1031B_22	0.0170	84.9	0.00780	78.0	0.0104	51.9	0.00628	62.8
L730438-09	BNAMS19	1031B_23	0.0179	89.5	0.00814	81.4	0.00849	42.5	0.00673	67.3
L730438-10	BNAMS19	1031B_24	0.0153	76.4	0.00702	70.2	0.00808	40.4	0.00599	59.9
L730438-11	BNAMS19	1031B_25	0.0174	86.8	0.00781	78.1	0.00934	46.7	0.00668	66.8
L730438-12	BNAMS19	1031B_26	0.0161	80.5	0.00723	72.3	0.00970	48.5	0.00595	59.5
LCS WG751801	BNAMS19	1031B_05	0.0197	98.4	0.00735	73.5	0.00918	45.9	0.00665	66.5
LCS WG751801	BNAMS19	1031B_05-20	0.0197	98.4	0.00735	73.5	0.00918	45.9	0.00665	66.5
LCSD WG751801	BNAMS19	1031B_06	0.0181	90.7	0.00666	66.6	0.00855	42.8	0.00594	59.4
LCSD WG751801	BNAMS19	1031B_06-20	0.0181	90.7	0.00666	66.6	0.00855	42.8	0.00594	59.4
BLANK WG751801	BNAMS19	1031B_07	0.0152	75.9	0.00696	69.6	0.00804	40.2	0.00602	60.2
BLANK WG751801	BNAMS19	1031B_07-20	0.0152	75.9	0.00696	69.6	0.00804	40.2	0.00602	60.2

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1



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Est. 1970

Quality Control Summary

SDG: L730438

ARCADIS US - TX

Test: Semi-Volatile Organic Compounds by Method 8270C
Project No: TX000836.0008.00004 Matrix: Water - ug/L
Project: Navajo Refining Company - Artesia, NM EPA ID: TN00003
Collection Date: 10/27/2014 Analytic Batch: WG751801
Analysis Date: 11/1/2014 6:19:00 AM Analyst: 377
Instrument ID: BNAMS19 Prep Date: 10/30/2014
Sample Numbers: L730438-01, -02, -03, -04, -05, -06, -07, -08, -09, -10, -11, -12

Surrogate Summary

Laboratory	TPH				PHL	
	Sample ID	Instrument	File ID	ppm % Rec	ppm % Rec	
	L730438-01	BNAMS19	1031B_15	0.00721 72.1	0.00732 36.6	
	L730438-02	BNAMS19	1031B_16	0.00712 71.2	0.00616 30.8	
	L730438-03	BNAMS19	1031B_17	0.00744 74.4	0.00651 32.5	
	L730438-04	BNAMS19	1031B_18	0.00702 70.2	0.00703 35.1	
	L730438-05	BNAMS19	1031B_19	0.00711 71.1	0.00646 32.3	
	L730438-06	BNAMS19	1031B_20	0.00695 69.5	0.00695 34.8	
	L730438-07	BNAMS19	1031B_21	0.00704 70.4	0.00651 32.5	
	L730438-08	BNAMS19	1031B_22	0.00742 74.2	0.00746 37.3	
	L730438-09	BNAMS19	1031B_23	0.00765 76.5	0.00609 30.5	
	L730438-10	BNAMS19	1031B_24	0.00712 71.2	0.00574 28.7	
	L730438-11	BNAMS19	1031B_25	0.00721 72.1	0.00662 33.1	
	L730438-12	BNAMS19	1031B_26	0.00725 72.5	0.00712 35.6	
	LCS WG751801	BNAMS19	1031B_05	0.00684 68.4	0.00655 32.7	
	LCS WG751801	BNAMS19	1031B_05-20.00684	68.4	0.00655 32.7	
	LCSD WG751801	BNAMS19	1031B_06	0.00630 63.0	0.00615 30.7	
	LCSD WG751801	BNAMS19	1031B_06-20.00630	63.0	0.00615 30.7	
	BLANK WG751801	BNAMS19	1031B_07	0.00647 64.7	0.00592 29.6	
	BLANK WG751801	BNAMS19	1031B_07-20.00647	64.7	0.00592 29.6	

TBP --2,4,6-TRIBROMOPHENOL

True Value: 0.02 ppm Limits: 11.2 - 130

FBP --2-FLUOROBIPHENYL

True Value: 0.01 ppm Limits: 29.5 - 131

2FP --2-FLUOROPHENOL

True Value: 0.02 ppm Limits: 10 - 77.9

NBZ --NITROBENZENE-D5

True Value: 0.01 ppm Limits: 21.8 - 123

TPH --P-TERPHENYL-D14

True Value: 0.01 ppm Limits: 29.3 - 137

PHL --PHENOL-D5

True Value: 0.02 ppm Limits: 5 - 70.1

ARCADIS US - TX

2929 Briarpark Dr., Suite 300
Houston, TX 77042

Billing Information:

Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to:
Project Manager

Email To: pam.krueger@arcadis-
us.com;maisha.turner@arcadis-

Project

Description: Navajo Refining Company - Artesia, NM

City/State
Collected:

Phone: 713-953-4800
Fax:

Client Project #
TX000836.0008.00004

Lab Project #
ARCADHTX-NAVAJO

Collected by (print):

Ron Ward

Site/Facility ID #

P.O. #

Collected by (signature):

Ron Ward

Rush? (Lab MUST Be Notified)

Same Day200%
Next Day100%
Two Day50%
Three Day25%

Date Results Needed

Email? ☐ No ☒ YesFAX? ☐ No ☐ YesNo.
of
Cnts

Immediately
Packed on Ice N ☐ Y ☒

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	8270 100ml Amb NoPres	CN 250ml HDPE Amb-NaOH 712	DROLVI 40ml Amb-HCl-BT	GRO 40ml Amb HCl	Metals 500ml HDPE-HNO3 12	Metals 500ml HDPE-NoPres	Sub-Out 1L-HDPE-Add HNO3 12	TDS 250ml HDPE-NoPres	V8260 40ml Amb-HCl	Wetchem 125ml HDPE-NoPres	Rem./Contaminant	Sample # (lab only)
MW-25-1014	G	GW		10/27/14	1215	16	X	X	X	X	X	X	X	X	X	X		-01
MW-17-1014	G	GW		10/27/14	1425	16	X	X	X	X	X	X	X	X	X	X		02
MW-136-1014	G	GW		10/27/14	1715	16	X	X	X	X	X	X	X	X	X	X		03
NP-5-1014	G	GW		10/27/14	1550	16	X	X	X	X	X	X	X	X	X	X		04
EB-10-1014	G	GW		10/27/14	1805	16	X	X	X	X	X	X	X	X	X	X		05
UG-1-1014	G	GW		10/28/14	1115	16	X	X	X	X	X	X	X	X	X	X		06
UG-2-1014	G	GW		10/28/14	1600	16	X	X	X	X	X	X	X	X	X	X		07
UG-3R-1014	G	GW		10/28/14	1445	16	X	X	X	X	X	X	X	X	X	X		08
UG-4-1014	G	GW		10/28/14	1325	16	X	X	X	X	X	X	X	X	X	X		09

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks:

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Date:

10/29/14

Time:

1510

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received for lab by: (Signature)

Received for lab by: (Signature)

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: ☐ UPS☒ FedEx ☐ Courier ☐ _____

Temp: _____ °C Bottles Received:

7.2 193

Date: _____ Time: _____

10-30-14 0900

Hold #

Condition: (lab use only)

OK M

COC Seal Intact: ☒ Y ☐ N ☐ NA

pH Checked: 916f92

L2 712

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



YOUR LAB OF CHOICE

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



L# L730438-4

A237

Acctnum: ARCADHTX

Template: T97801

Prelogin: P486731

TSR: 633 - Pam Langford

PB: 10.20.12

Shipped Via: FedEx Ground

ARCADIS US - TX 2929 Briarpark Dr., Suite 300 Houston, TX 77042				Billing Information: Attn: Accounts Payable 630 Plaza Drive, Suite 600 Highlands Ranch, CO 80129				Analysis / Container / Preservative										Chain of Custody Page 2 of 2	
				Report to: Project Manager				Email To: pam.krueger@arcadis-us.com;maisha.turner@arcadis-us.com				712 2 2 2 2 2							
Project Description: Navajo Refining Company - Artesia, NM				City/State Collected:															
Phone: 713-953-4800 Fax:		Client Project # TX000836.0008.00004		Lab Project # ARCADHTX-NAVAJO															
Collected by (print): Ron Wood		Site/Facility ID #		P.O. #															
Collected by (signature): 		Rush? (Lab MUST Be Notified) Same Day200% Next Day100% Two Day50% Three Day25%		Date Results Needed Email? ☐ No ☒ Yes FAX? ☐ No ☐ Yes															
Immediately Packed on Ice N ☐ Y ☒								No. of Cntrs											
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time		8270 100ml Amb NoPres	CN 250mlHDPEAmb-NaOH	DROLVI 40mlAmb-HCl-BT	GRO 40mlAmb HCl	Metals 500mlHDPE-HNO3	Metals 500mlHDPE-NoPres	Sub-Out 1L-HDPE-Add HNO3	TDS 250mlHDPE-NoPres	V8260 40mlAmb-HCl	WetChem 125mlHDPE-NoPres			
MW-55-1014	G	GW		10/28/14	1010	16	X	X	X	X	X	X	X	X	X	X			
EB-11-1014	G	GW		10/28/14	1630	16	X	X	X	X	X	X	X	X	X	X			
DUP-4-1014	G	GW				16	X	X	X	X	X	X	X	X	X	X			
Trip Blank 19	G	GW				16	X	X	X	X	X	X	X	X	X	X			
		GW				16	X	X	X	X	X	X	X	X	X	X			
		GW				16	X	X	X	X	X	X	X	X	X	X			
		GW				16	X	X	X	X	X	X	X	X	X	X			

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Flow _____ Other _____

Remarks:

Relinquished by: (Signature) 	Date: 10/29/14	Time: 1510	Received by: (Signature) 	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ _____	Condition: (lab use only) OK
Relinquished by: (Signature) 	Date:	Time:	Received by: (Signature) 	Temp: °C 3.0	Bottles Received: 193
Relinquished by: (Signature) 	Date:	Time:	Received for lab by: (Signature) 	Date: 10-30-14	Time: 0900

COC Seal Intact: ☒ Y ☐ N ☐ NA

pH Checked: **7.2** NCF: 92 of 92

LABORATORY REPORT

This report contains 21 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at
(800) 332-4345 or (574) 233-4777.

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Eaton Analytical, Inc.*

110 South Hill Street
 South Bend, IN 46617
 Tel: (574) 233-4777
 Fax: (574) 233-8207
 1 800 332 4345

Laboratory Report

Client: Environmental Science

Report:

328286

Attn: Janice Cozby
 12065 Lebanon Road
 Mount Juliet, TN 37122

Priority:

Standard Written

Status:

Final

PWS ID:

Not Supplied

Copies
 to: None

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3131847	L730440-01	7500-Ra B	10/27/14 12:15	Client	10/31/14 09:00
3131847	L730440-01	7500-Ra D	10/27/14 12:15	Client	10/31/14 09:00
3131848	L730440-02	7500-Ra B	10/27/14 14:25	Client	10/31/14 09:00
3131848	L730440-02	7500-Ra D	10/27/14 14:25	Client	10/31/14 09:00
3131849	L730440-03	7500-Ra B	10/27/14 17:15	Client	10/31/14 09:00
3131849	L730440-03	7500-Ra D	10/27/14 17:15	Client	10/31/14 09:00
3131850	L730440-04	7500-Ra B	10/27/14 15:50	Client	10/31/14 09:00
3131850	L730440-04	7500-Ra D	10/27/14 15:50	Client	10/31/14 09:00
3131851	L730440-05	7500-Ra B	10/27/14 18:05	Client	10/31/14 09:00
3131851	L730440-05	7500-Ra D	10/27/14 18:05	Client	10/31/14 09:00
3131852	L730440-06	7500-Ra B	10/28/14 11:15	Client	10/31/14 09:00
3131852	L730440-06	7500-Ra D	10/28/14 11:15	Client	10/31/14 09:00
3131853	L730440-07	7500-Ra B	10/28/14 16:00	Client	10/31/14 09:00
3131853	L730440-07	7500-Ra D	10/28/14 16:00	Client	10/31/14 09:00
3131854	L730440-08	7500-Ra B	10/28/14 14:45	Client	10/31/14 09:00
3131854	L730440-08	7500-Ra D	10/28/14 14:45	Client	10/31/14 09:00
3131855	L730440-09	7500-Ra B	10/28/14 13:25	Client	10/31/14 09:00
3131855	L730440-09	7500-Ra D	10/28/14 13:25	Client	10/31/14 09:00
3131856	L730440-10	7500-Ra B	10/28/14 10:10	Client	10/31/14 09:00
3131856	L730440-10	7500-Ra D	10/28/14 10:10	Client	10/31/14 09:00
3131857	L730440-11	7500-Ra B	10/28/14 16:30	Client	10/31/14 09:00
3131857	L730440-11	7500-Ra D	10/28/14 16:30	Client	10/31/14 09:00
3131858	L730440-12	7500-Ra B	10/28/14 00:00	Client	10/31/14 09:00
3131858	L730440-12	7500-Ra D	10/28/14 00:00	Client	10/31/14 09:00
Report Summary					

Client Name: Environmental Science

Report #: 328286

Project: Navajo Refining Company

Note: Sample containers were provided by the client.

Note: The Method 7500-Ra B result for site L730440-09 is potentially low biased due to high biased barium carrier recovery.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Trott at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

 Analytical Services Manager

Authorized Signature

Title

02/07/2015

Date

Client Name: Environmental Science

Report #: 328286

Sampling Point: L730440-01

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.6	1.0	1.1 ± 1.1	pCi/L	11/05/14 12:56	11/11/14 16:01	3131847
15262-20-1	Radium-228	7500-Ra D	---	0.5	1.0	1.8 ± 0.6	pCi/L	11/06/14 12:10	11/24/14 12:17	3131847
---	Combined Radium	calc.	5 *	0.6	---	2.9 ± 1.3	pCi/L	11/05/14 12:56	11/24/14 12:17	3131847

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-02

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.6	1.0	2.2 ± 0.9	pCi/L	11/05/14 12:56	11/07/14 10:58	3131848
15262-20-1	Radium-228	7500-Ra D	---	0.3	1.0	1.1 ± 0.4	pCi/L	11/06/14 12:10	11/24/14 12:17	3131848
---	Combined Radium	calc.	5 *	0.6	---	3.3 ± 1.0	pCi/L	11/05/14 12:56	11/24/14 12:17	3131848

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-03

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.5	1.0	1.3 ± 0.7	pCi/L	11/05/14 12:56	11/07/14 10:58	3131849
15262-20-1	Radium-228	7500-Ra D	---	0.37	1.0	0.58 ± 0.38	pCi/L	11/06/14 12:10	11/24/14 12:17	3131849
---	Combined Radium	calc.	5 *	0.5	---	1.88 ± 0.78	pCi/L	11/05/14 12:56	11/24/14 12:17	3131849

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-04

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.55	1.00	0.00 ± 1.22	pCi/L	11/05/14 12:56	11/11/14 16:01	3131850
15262-20-1	Radium-228	7500-Ra D	---	0.29	1.0	0.29 ± 0.29	pCi/L	11/06/14 12:10	11/24/14 12:17	3131850
---	Combined Radium	calc.	5 *	0.55	---	0.29 ± 1.25	pCi/L	11/05/14 12:56	11/24/14 12:17	3131850

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-05

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.57	1.0	0.60 ± 0.58	pCi/L	11/05/14 12:56	11/07/14 10:58	3131851
15262-20-1	Radium-228	7500-Ra D	---	0.28	1.0	0.58 ± 0.30	pCi/L	11/06/14 12:10	11/24/14 12:17	3131851
---	Combined Radium	calc.	5 *	0.57	---	1.18 ± 0.65	pCi/L	11/05/14 12:56	11/24/14 12:17	3131851

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-06

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.5	1.0	1.3 ± 0.7	pCi/L	11/05/14 12:56	11/07/14 10:58	3131852
15262-20-1	Radium-228	7500-Ra D	---	0.3	1.0	1.4 ± 0.4	pCi/L	11/06/14 12:10	11/24/14 12:17	3131852
---	Combined Radium	calc.	5 *	0.5	---	2.7 ± 0.8	pCi/L	11/05/14 12:56	11/24/14 12:17	3131852

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-07

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.36	1.0	0.52 ± 0.40	pCi/L	11/06/14 10:35	11/11/14 11:27	3131853
15262-20-1	Radium-228	7500-Ra D	---	0.30	1.0	0.32 ± 0.30	pCi/L	11/06/14 12:10	11/24/14 12:17	3131853
---	Combined Radium	calc.	5 *	0.36	---	0.84 ± 0.50	pCi/L	11/06/14 10:35	11/24/14 12:17	3131853

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Sampling Point: L730440-08

PWS ID: Not Supplied

Radionuclides										
Analyte ID #	Analyte	Method	Reg Limit	MDA 95**	MRL	Result	Units	Preparation Date	Analyzed	EEA ID #
13982-63-3	Radium-226	7500-Ra B	---	0.3	1.0	1.1 ± 0.5	pCi/L	11/06/14 10:35	11/11/14 11:27	3131854
15262-20-1	Radium-228	7500-Ra D	---	0.27	1.0	0.49 ± 0.28	pCi/L	11/06/14 12:10	11/24/14 12:17	3131854
---	Combined Radium	calc.	5 *	0.3	---	1.59 ± 0.56	pCi/L	11/06/14 10:35	11/24/14 12:17	3131854

** Minimum Detectable Activity (MDA95) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Sub-Contract Chain of Custody

Environmental Science Corp
12065 Lebanon Road
Mt. Juliet, TN 37122
(615) 773-9756 (615) 758-5859 fax

Sub-Contract Lab : ENVHEALT

City / State : South Bend, IN

Results Needed by : 11/27/14

ESC Purchase Order # : S20910

Send Reports To : Janice Cozby jcozby@esclabsciences.com

WORKGROUP **WG751684**

Date Created : 10/30/2014

SAMPLENO **MATRIX** **Date / Time** **PARAMETER** **Code** **METHOD** **Comments**
Container # Collected

L730440-01	DW	10/27/2014 12:15 <u>3131847</u>	Radium 226	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------------------------	------------	-------	---------------	-----------

17593270
17593271

L730440-01	DW	10/27/2014 12:15	Radium 228	RA228	7500Ra D-2001	NM CLIENT
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17593271
17593270

L730440-02	DW	10/27/2014 14:25 <u>3131848</u>	Radium 226	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------------------------	------------	-------	---------------	-----------

17593272
17593273

L730440-02	DW	10/27/2014 14:25	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593273
17593272

L730440-03	DW	10/27/2014 17:15 <u>3131849</u>	Radium 226	RA226	7500Ra B-2001	NM CLIENT
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17593275
17593274

L730440-03	DW	10/27/2014 17:15	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593275
17593274

L730440-04	DW	10/27/2014 15:50 <u>3131850</u>	Radium 226	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------------------------	------------	-------	---------------	-----------

17593276
17593277

L730440-04	DW	10/27/2014 15:50	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593277
17593276

L730440-05	DW	10/27/2014 18:05 <u>3131851</u>	Radium 226	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------------------------	------------	-------	---------------	-----------

17593278
17593279

L730440-05	DW	10/27/2014 18:05	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

Relinquished by J Cozby

Date: 103014

Received by: [Signature]

Date: 10-31-14 0900

Relinquished by _____

Date: _____

Received by: _____

Date: _____

Liters Received = 2

Page : 1

iced

each Site
SS
10-31-14

Sub-Contract Lab : ENVHEALT

City / State : South Bend, IN

Results Needed by : 11/27/14

ESC Purchase Order # : S20910

Send Reports To : Janice Cozby jcozby@esclabsciences.com

WORKGROUP

WG751684

Date Created :

10/30/2014

SAMPLENO

Date / Time

Container #

MATRIX

Collected

PARAMETER

Code

METHOD

Comments

17593278

17593279

L730440-06	DW	10/28/2014 11:15	Radium 226 3131852	RA226	7500Ra B-2001	NM CLIENT
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17593281

17593280

L730440-06	DW	10/28/2014 11:15	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593281

17593280

L730440-07	DW	10/28/2014 16:00	Radium 226 3131853	RA226	7500Ra B-2001	NM CLIENT
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17593282

17593283

L730440-07	DW	10/28/2014 16:00	Radium 228	RA228	7500Ra D-2001	NM CLIENT
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17593283

17593282

L730440-08	DW	10/28/2014 14:45	Radium 226 3131854	RA226	7500Ra B-2001	NM CLIENT
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17593285

17593284

L730440-08	DW	10/28/2014 14:45	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593284

17593285

L730440-09	DW	10/28/2014 13:25	Radium 226 3131855	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------	-----------------------	-------	---------------	-----------

17593287

17593286

L730440-09	DW	10/28/2014 13:25	Radium 228	RA228	7500Ra D-2001	NM CLIENT
------------	----	------------------	------------	-------	---------------	-----------

17593287

17593286

L730440-10	DW	10/28/2014 10:10	Radium 226 3131856	RA226	7500Ra B-2001	NM CLIENT
------------	----	------------------	-----------------------	-------	---------------	-----------

17593288

17593289

L730440-10	DW	10/28/2014 10:10	Radium 228	RA228	7500Ra D-2001	NM CLIENT
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17593289

17593288

Mailed COC was not Signed at
Relinquished by "Relinquished by" by Client

Relinquished by

Received by

Relinquished by

Received by

Date:

Date:

Date:

Date:

Liters Received = 2 each site

SS 10-31-14

Page : 2

iced.

Sub-Contract Lab : ENVHEALT

City / State : South Bend, IN

Results Needed by : 11/27/14

ESC Purchase Order # : S20910

Send Reports To : Janice Cozby jcozby@esclabsciences.com

WORKGROUP **WG751684**

Date Created : 10/30/2014

SAMPLENO Container #	MATRIX	Date / Time Collected	PARAMETER	Code	METHOD	Comments
L730440-11 17593291 17593290	DW	10/28/2014 16:30	Radium 226 3131857	RA226	7500Ra B-2001	NM CLIENT
L730440-11 17593291 17593290	DW	10/28/2014 16:30	Radium 228	RA228	7500Ra D-2001	NM CLIENT
L730440-12 17593292 17593293	DW	10/28/2014 0:00	Radium 226 3131858	RA226	7500Ra B-2001	NM CLIENT
L730440-12 17593292 17593293	DW	10/28/2014 0:00	Radium 228 ✓	RA228	7500Ra D-2001	NM CLIENT

Liters Received = 2
each site
SS
10-31-14

Mailed COC was not Signed at
"Relinquished by" by Client

iced

Relinquished by _____ Date: _____
Received by : [Signature] Date: 10-31-14 0900
Relinquished by _____ Date: _____
Received by : _____ Date: _____