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S. Department of Commerce
ational Oceanic & Atmospheric Administration
ational Environmental Satellite, Data, and Information Service

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 02/01/2023

National Centers for Environmental Informati
151 Patton Aven
Asheville, North Carolina 288

rrent Location: Elev: 3366 ft. Lat: 32.7547° N Lon: -104.3835° W

ation: **ARTESIA 6 S, NM US USC00290600**

Observation Time Temperature: 0730 Observation Time Precipitation: 07

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		"Soil Temperature (F)"					
			"24 Hrs. Ending at Observation Time"			24 Hour Amounts Ending at Observation Time				At Obs. Time			4 in. Depth			8 in. Depth		
			Max.	Min.	At Obs.	Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	10	01	86	48	55	0.00		0.0		0.0	83.9	0.21	5	71	70			
2022	10	02	87	52	54	0.00		0.0		0.0	111.8	0.27	5	73	70			
2022	10	03	85	47	48	0.00		0.0		0.0	116.8	0.18	5	72	69			
2022	10	04	83	48	50	0.00		0.0		0.0	106.9	0.24	5	70	69			
2022	10	05	84	50	61	0.18		0.0		0.0	98.2	0.25	5	70	70			
2022	10	06	77	57	60	0.53		0.0		0.0	90.1	0.33	5	70	67			
2022	10	07	75	59	60	1.26		0.0		0.0	90.1	0.00	5	67	65			
2022	10	08	72	56	56	0.30		0.0		0.0	90.7	0.00	5	66	65			
2022	10	09	71	56	56	0.05		0.0		0.0	88.9	0.19	5	66	64			
2022	10	10	68	53	54	0.02		0.0		0.0	69.0	0.00	5	66	60			
2022	10	11	73	48	50	0.00		0.0		0.0	47.8	0.04	5	61	61			
2022	10	12	81	49	59	0.00		0.0		0.0	152.9	0.21	5	61	60			
2022	10	13	81	45	46	0.00		0.0		0.0	65.9	0.14	5	62	60			
2022	10	14	77	46	47	0.00		0.0		0.0	67.7	0.19	5	61	61			
2022	10	15	82	47	55	0.00		0.0		0.0	72.1	0.15	5	62	61			
2022	10	16	88	54	58	0.20		0.0		0.0	75.2	0.18	5	63	63			
2022	10	17	58	49	49	0.75		0.0		0.0	223.1	0.03	5	63	59			
2022	10	18	54	49	52	0.02		0.0		0.0	52.2	0.06	5	61	58			
2022	10	19	62	38	40	0.00		0.0		0.0	62.8	0.02	5	63	55			
2022	10	20	71	40	41	0.00		0.0		0.0	51.0	0.07	5	56	55			
2022	10	21	79	40	42	0.00		0.0		0.0	54.1	0.11	5	56	55			
2022	10	22	84	42	53	0.00		0.0		0.0	90.1	0.20	5	55	55			
2022	10	23	81	53	57	0.00		0.0		0.0	167.8	0.16	5	56	56			
2022	10	24	77	55	57	0.00		0.0		0.0	220.0	0.14	5	58	55			
2022	10	25	59	30	31	0.17		0.0		0.0	190.8	0.13	5	58	54			
2022	10	26	68	31	34	0.00		0.0		0.0	57.8	0.06	5	53	52			
2022	10	27	75	34	44	0.00		0.0		0.0	41.0	0.14	5	53	52			
2022	10	28	73	39	50	0.00		0.0		0.0	311.3	0.30	5	53	53			
2022	10	29	67	36	37	0.00		0.0		0.0	141.1	0.10	5	52	52			
2022	10	30	68	35	39	0.00		0.0		0.0	55.9	0.12	5	52	51			
2022	10	31	71	39	41	0.00		0.0		0.0	52.2	0.06	5	52	51			
		Summary	75	46		3.48		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

HMI Groundwater

Hydrologic Monitoring
1654 W. Sam Houston Pkwy. N.
Houston, Texas 77043

Phone 713.464.5206
Fax 713.464.5207

October 17, 2022

Ms. Julie Speer, P.G.
Sr. Project Manager
TRC
505 East Huntland Drive, Suite 250
Austin, Texas 78752

Subject: October 2022 (Fall) Groundwater Monitoring Event
Sitewide Gauging – October 11-12, 2022
Groundwater Sampling – October 11-12, 2022
HF-Navajo Refinery, Artesia, New Mexico

Dear Ms. Speer:

This document summarizes groundwater monitoring field activities conducted by Hydrologic Monitoring, LLC (HMI) on behalf of TRC at the HF-Navajo Refinery, Artesia, New Mexico.

Contents

Field Activities Narrative
Table 1: (Gauging Data, GW Field Parameters, Well Inspections, & Analytical Program)
Groundwater Sampling SOP Memo
Job Hazard Analysis (JHA) form
Groundwater Sampling Forms, followed by Field Instrument Calibration Log
(in three emails - forms in order of field-strategy, Table 1)
Chain-of-Custody

Field Activities Narrative

1. HMI conducted *Fall 2022* groundwater monitoring event in October 2022 ("SA" designations only, per Table 1). Sitewide gauging and groundwater sampling was conducted October 11-12, 2022.

2. Groundwater sampling was conducted in accordance with the Site Sampling and Analysis Plan, EPA guidance, and the attached Memorandum - Low-Flow Groundwater Monitoring Standard Operating Procedures, HF Navajo Refinery, Artesia, NM. Per regulatory directive, if measured LNAPL thickness was *less than* 0.03 feet, in any well scheduled for groundwater sampling, LNAPL is removed, and the well is sampled. If LNAPL thickness is equal to, or greater than 0.03 feet in any well scheduled for sampling, the well is not sampled. Gauging data, groundwater field parameters, and well inspection information is summarized in Table 1. Samples were shipped prepaid FedEx, to Pace Analytical, Mt. Juliet, TN (Chris McCord, PM). The groundwater sampling process is documented on the attached groundwater sampling forms.

3. Field QA/QC Sampling (per Refinery Area):

Evaporation Ponds
Duplicates:
Dup-EP-01 at MW-7A
Dup-EP-02 at MW-22A
Dup-EP-03 at MW-3
Equipment Blanks:
EB-EP-01 collected over decontaminated gauging probe after sampling MW-74
EB-EP-02 collected over decontaminated gauging probe after sampling MW-124
EB-EP-03 collected over decontaminated gauging probe after sampling MW-5A
EB-EP-04 collected over decontaminated gauging probe after sampling MW-79
Trip Blank-EP-01
Trip Blank-EP-02
Trip Blank-EP-03

NCL
Duplicate:
Dup-NCL-01 at NCL-49
Equipment Blank:
EB-NCL-01 collected over decontaminated gauging probe after sampling NCL-49
Trip Blank-NCL-01

TMD
Trip Blank-TMD-01

TEL

Duplicate:

Dup-TEL-01 at TEL-4

Equipment Blank:

EB-TEL-01 collected over decontaminated gauging probe after sampling TEL-4

Trip Blank-TEL-01

REST ("rest" of the site)

Duplicates:

Dup-REST-01 at MW-113
Dup-REST-02 at MW-102
Dup-REST-03 at MW-134
Dup-REST-04 at MW-146
Dup-REST-05 at KWB-12B

Equipment Blanks:

EB-REST-01 collected over decontaminated gauging probe after sampling MW-113
EB-REST-02 collected over decontaminated gauging probe after sampling MW-102
EB-REST-03 collected over decontaminated gauging probe after sampling MW-134
EB-REST-04 collected over decontaminated gauging probe after sampling MW-146
EB-REST-05 collected over decontaminated gauging probe after sampling KWB-12B

Trip Blank-REST-01
Trip Blank-REST-02
Trip Blank-REST-03
Trip Blank-REST-04

4. Notes:

HMI's daily JHA forms are in HMI Deliverables. HMI's "Estimated Field Hours" table + post-event "Actual Field Hours" table are provided for TRC files.

MW-48 remains "failed", e.g., in-filled by solid (dry) sediment at approximately 4-ft below grade (see form).

MW-93 - covered by construction-related gravel in 2H22 (Navajo is aware).

MW-97 - covered by construction-related gravel in 2H21; access restricted by large crane/red barrier tape in 1H22; covered by gravel, unable to locate in 2H22 (Navajo is aware).

MW-106 - covered by large steel storage container, unable to access in 2H22 (Navajo is aware).

MW-129 - relocated in 2H22.

2H22 - irrigation wells undergoing changes, per TRC (taken out of service…possible replacements, etc.), with possible renewed well-access to the Joy farm property, TBD.

Training modules: "24HFNAV HOLLYFRONTIER SITE SPECIFIC ORIENTATION ARTESIA-NM", and additional "LPS" module – both @ HASC, annually (HMI's December-cycle). HMI's DISA 2-yr backgound check/drug/alcohol requirements approved by safety-trailer personnel 2021, 2023, 2025, etc., as reported through HASC system; HMI maintains access qualifications.
Per Navajo, purgewater is disposed in the pad sump (inside, then to the left, after Main Gate-entrance). Alternately, North Bundle Pad sump (fenced area of drums, etc.), notifying FCC control room prior to entrance.
Sitewide well/gate lock combinations: "2-0-1-3" (and less often "2-0-0-2").
With suggested telephone notification, FedEx pickup from locked Artesia Refinery shed (35-25-39 lock combination), no earlier than approximately 14:00 daily, located across from Artesia Wool Co (access shed-area from inside the Refinery).
North side of Hwy 82, east of site, gate with cable and combination lock (8810).
POTW bldg, check-in as needed, to borrow a key or get gate unlocked.
HMI borrows Navajo key sets for "Evaporation Ponds" & "TEL" at permitting; returning keys upon event completion.
Update Navajo-Randy Dade of onsite personnel list for permitting plan, prior to event.
Navajo-Randy Dade/Austin-Mr. Domingo Torres and/or Eric Flores, for daily safety review & permit-issuing per team member (up to 10-pers HMI team).
HMI reports well inspections on the well sampling forms. Well inspection - items of concern (i.e., "Issues") are highlighted in yellow (Table 1).

HMI appreciates the opportunity to assist TRC with this project. If you have any questions or would like additional information please feel free to call us at 713.464.5206.

Sincerely,

HYDROLOGIC MONITORING

Scott C. Ude

STATE OF TEXAS
SCOTT C. UDE
GEOLOGY
353
LICENSED
PROFESSIONAL GEOSCIENTIST

Scott C. Ude, P.G.

The seal appearing on this document was authorized by Scott C. Ude, P.G. 353 on October 17, 2022.

Attachments

cc: Dana Helbert, P.G., TRC-Austin

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H22

HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
										Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																					
MW-6A	Monitoring	MDB				1	EP	11-Oct	1530	NP	12.57	0.00	19.04			7.40	19.2	5,280	1.0	-91.2	6.9	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-6B	Monitoring	MDB				2	EP	11-Oct	1535	NP	12.48	0.00	52.28			6.84	19.5	5,840	1.0	-120.1	2.4	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
MW-85	Monitoring	MDB		1		3	EP	11-Oct	1640	10.05	10.55	0.50	20.34			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-86	Monitoring	MDB		2		4	EP	11-Oct	1700	9.57	10.58	1.01	19.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-120	Monitoring	MDB	1			5	EP	11-Oct	840	NP	12.27	0.00	28.00	11-Oct	905	6.90	20.3	11,630	2.6	-47.6	4.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-121	Monitoring	MDB	2			6	EP	11-Oct	925	NP	12.20	0.00	27.31	11-Oct	950	6.93	21.9	7,590	1.9	62.7	8.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-84	Monitoring	MDB	3			7	EP	11-Oct	1545	NP	9.42	0.00	20.56	11-Oct	1610	6.77	23.7	11,030	2.0	-97.4	7.7	Clear, gold tint	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-122	Monitoring	MDB	4			8	EP	11-Oct	1105	NP	10.29	0.00	23.32	11-Oct	1130	7.01	21.2	5,780	2.2	-98.2	22.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-81	Monitoring	MDB				9	EP	11-Oct	1005	NP	10.65	0.00	18.62			7.20	20.6	7,680	2.1	62.3	4.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-80	Monitoring	MDB				10	EP	11-Oct	1010	NP	8.73	0.00	19.69			7.21	20.5	6,380	1.1	77.9	9.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-79	Monitoring	MDB	5			11	EP	11-Oct	1015	NP	9.88	0.00	19.24	11-Oct	1040	6.85	21.3	7,750	2.1	63.1	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-82	Monitoring	MDB				12	EP	11-Oct	1630	NP	9.45	0.00	20.02			6.97	19.3	8,360	2.2	50.7	7.2	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-74	Monitoring	MDB	6			13	EP	11-Oct	1420	NP	8.91	0.00	20.19	11-Oct	1445	6.69	22.5	11,560	2.1	56.4	19.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-73	Monitoring	MDB				14	EP	11-Oct	1520	NP	8.87	0.00	19.60			7.36	19.3	13,660	1.3	1.0	19.3	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-2A	Monitoring	MDB	7			15	EP	11-Oct	1150	NP	10.02	0.00	17.30	11-Oct	1215	6.74	23.1	15,490	2.2	83.8	7.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-2B	Monitoring	MDB				16	EP	11-Oct	1225	NP	10.94	0.00	52.00			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
MW-72	Monitoring	MDB				17	EP	11-Oct	1235	NP	6.95	0.00	13.93			7.08	20.0	12,060	1.1	85.9	6.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
OCD-6	Monitoring	MDB	8			18	EP	11-Oct	1240	NP	9.84	0.00	26.69	11-Oct	1305	6.76	22.3	16,000	2.3	-37.6	11.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
OCD-7AR	Monitoring	MDB	9			19	EP	11-Oct	1325	NP	8.82	0.00	21.28	11-Oct	1350	6.79	23.9	14,500	2.2	-92.4	24.9	Clr, lt. tan	Yes	Yes	Yes	Yes		SA	SA	SA	x
OCD-7B	Monitoring	MDB				20	EP	11-Oct	1405	NP	9.05	0.00	56.85			7.70	20.2	6,400	1.1	-127.7	6.5	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
OCD-7C	Monitoring	MDB				21	EP	11-Oct	1410	NP	8.79	0.00	71.95			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
RW-#15C	Recovery	MDB		3		22	REST	11-Oct	830	19.07	19.40	0.33	22.30										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-48	Monitoring	MDB		4		23	REST	11-Oct	825	*	*	*	32.00	* 2H22; remains "failed" @ 4.74' (sediment-filled)									Yes	Issue	Issue	Issue	Y	SA	SA	SA	x
MW-130	Monitoring	MDB	10			24	REST	12-Oct	1220	NP	22.83	0.00	45.00	12-Oct	1310	6.62	23.2	2,720	2.3	35.5	>200	Cloudy, white tint	Yes	Yes	Yes	Yes		SA	SA	SA	x
KWB-4	Monitoring	MDB		5		25	REST	11-Oct	820	26.55	29.44	2.89	41.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-19	Recovery [d]	MDB		6		26	REST	11-Oct	815	26.23	27.62	1.39	NM										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-76	Monitoring	SCD	11			27	EP	12-Oct	925	NP	10.94	0.00	20.33	12-Oct	950	6.59	21.5	7,330	1.9	-76.7	5.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-77	Monitoring	SCD				28	EP	12-Oct	1005	NP	8.92	0.00	20.52			7.25	20.0	6,850	2.0	0.7	6.2	Clr, gold tint, odor	Yes	Yes	Yes	Yes		SA	A	A	x
MW-78	Monitoring	SCD				29	EP	12-Oct	1010	NP	7.22	0.00	19.57			6.71	18.9	3,920	1.6	72.4	5.5	Clear, gold tint	Yes	Yes	Yes	Yes		SA	A	A	x
MW-75	Monitoring	SCD	12			30	EP	12-Oct	1020	NP	9.35	0.00	23.74	12-Oct	1045	6.82	22.1	8,470	2.3	-116.4	6.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-83	Monitoring	SCD	13			31	EP	12-Oct	840	NP	8.92	0.00	19.91	12-Oct	905	6.65	21.5	6,940	2.0	-27.8	5.1	Clear, gold tint	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-3	Monitoring	SCD	14			32	EP	12-Oct	900	NP	11.34	0.00	22.10	12-Oct	925	6.72	21.2	7,140	1.7	62.1	3.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x

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										Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label			Purge Parameters	General Sampling Frequency	(Analysis per COC)					
MW-88	Monitoring	SCD	15			33	EP	11-Oct	1255	NP	9.02	0.00	20.31	11-Oct	1320	7.19	22.4	7,870	1.5	15.8	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-22A	Monitoring	SCD	16			34	EP	11-Oct	1335	NP	8.28	0.00	22.65	11-Oct	1400	7.03	23.0	41,100	1.3	80.7	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-22B	Monitoring	SCD				35	EP	11-Oct	1330	NP	7.99	0.00	54.66			7.05	17.1	6,470	1.1	-96.2	5.0	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-10	Monitoring	SCD	17			36	EP	11-Oct	1455	NP	5.71	0.00	18.45	11-Oct	1520	7.04	22.4	8,540	1.5	-15.3	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-123	Monitoring	SCD	18			37	EP	12-Oct	1125	NP	6.29	0.00	25.71	12-Oct	1150	7.04	20.8	8,150	1.3	-32.7	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-4A	Monitoring	SCD	19			38	EP	11-Oct	1545	NP	11.48	0.00	16.55	11-Oct	1610	7.17	22.4	7,350	1.6	-136.9	4.8	Clr, HC odor	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-4B	Monitoring	SCD				39	EP	11-Oct	1540	NP	11.24	0.00	72.37			7.16	19.7	5,040	2.9	-139.9	6.9	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-5A	Monitoring	SCD	20			40	EP	12-Oct	1000	NP	7.35	0.00	20.15	12-Oct	1025	7.30	23.0	15,680	1.5	-113.5	3.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-5B	Monitoring	SCD				41	EP	12-Oct	1055	NP	8.48	0.00	53.54			7.13	19.5	7,560	1.0	-100.0	4.3	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-5C	Monitoring	SCD				42	EP	12-Oct	1102	NP	8.46	0.00	71.64			7.27	19.4	3,820	1.3	-70.0	6.2	Clr, white particles	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-7A	Monitoring	SCD	21			43	EP	12-Oct	840	NP	8.86	0.00	18.65	12-Oct	905	7.17	22.3	7,560	1.5	-68.1	2.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-7B	Monitoring	SCD				44	EP	12-Oct	834	NP	8.65	0.00	52.56			7.49	18.9	7,770	1.3	-90.8	6.5	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-8A	Monitoring	SCD	22			45	EP	12-Oct	815	NP	7.59	0.00	20.74	12-Oct	840	6.93	22.2	20,100	1.6	-18.1	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-8B	Monitoring	SCD				46	EP	12-Oct	810	NP	7.78	0.00	56.65			6.96	17.7	9,250	1.3	-59.5	7.4	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
KWB-P4	Monitoring	BRH				47	REST	Biennial only		NP	5.89	0.00	30.26			7.14	21.6	6,730	1.3	-44.9	3.7	Clear	Yes	Yes	Yes	Yes		B	B	B	x				
MW-25	Monitoring	BRH				48	TMD	11-Oct	1630	NP	10.32	0.00	28.18			7.48	19.2	16,750	1.4	97.8	3.3	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
NP-8	Monitoring	BRH				49	TMD	11-Oct	1635	NP	12.59	0.00	>14.95	(blockage)		Not in sampling program							Yes	Issue	Yes	Yes		SA	Not in sampling program						
MW-1R	Monitoring	BRH				50	EP	11-Oct	1645	NP	10.60	0.00	20.63			7.38	18.8	5,940	1.5	-91.8	4.1	Clear	Yes	Issue	Yes	Yes		SA	A	A	x				
MW-15	Monitoring	BRH				51	EP	11-Oct	1650	NP	11.86	0.00	21.70			7.51	18.2	7,570	2.0	62.4	4.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	x				
OCD-1R	Monitoring	BRH	23			52	EP	11-Oct	1155	NP	11.52	0.00	23.74	11-Oct	1220	6.91	23.2	10,920	1.1	-102.3	4.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-2A	Monitoring	BRH	24			53	EP	11-Oct	815	NP	11.73	0.00	27.56	11-Oct	840	6.77	20.8	7,590	1.7	41.3	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-2B	Monitoring	BRH				54	EP	11-Oct	810	NP	11.33	0.00	50.38			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
OCD-3	Monitoring	BRH	25			55	EP	11-Oct	900	NP	12.03	0.00	25.20	11-Oct	925	7.06	22.0	6,530	1.5	77.5	4.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-4	Monitoring	BRH	26			56	EP	11-Oct	945	NP	11.61	0.00	25.41	11-Oct	1010	7.02	22.4	20,300	1.3	46.2	6.2	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-11A	Monitoring	BRH	27			57	EP	11-Oct	1115	NP	8.98	0.00	22.01	11-Oct	1140	6.90	23.4	26,700	1.2	-59.2	7.4	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-11B	Monitoring	BRH				58	EP	11-Oct	1110	NP	8.96	0.00	47.30			7.02	21.5	21,300	1.1	-73.7	6.1	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-5	Monitoring	BRH	28			59	EP	11-Oct	1025	NP	9.63	0.00	25.41	11-Oct	1050	7.07	22.6	19,130	1.4	-48.5	57.0	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-87	Monitoring	BRH	29			60	EP	12-Oct	940	NP	8.16	0.00	20.39	12-Oct	1005	7.08	22.5	11,240	1.3	-21.0	1.3	Clear	Yes	Issue	Yes	Yes		SA	SA	SA	x				
MW-18A	Monitoring	BRH	30			61	EP	12-Oct	915	NP	9.95	0.00	22.58	12-Oct	940	7.08	21.9	22,500	1.8	-127.3	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-18B	Monitoring	BRH				62	EP	12-Oct	910	NP	9.96	0.00	50.59			7.23	18.2	5,910	1.4	3.5	3.1	Clear	Yes	Yes	Yes	Yes		SA	B	B	x				
MW-18T	Monitoring	BRH				63	EP	12-Oct	905	NP	10.07	0.00	50.57			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-70	Monitoring	BRH	31			64	EP	12-Oct	1045	NP	8.32	0.00	22.05	12-Oct	1110	7.12	22.4	4,880	1.1	-121.4	6.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H22

HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
										Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																				
MW-124	Monitoring	BRH	32			65	EP	12-Oct	1005	NP	9.08	0.00	22.00	12-Oct	1030	6.97	22.4	14,840	1.5	-80.9	7.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-52	Monitoring	BRH/MDB	33			66	REST	12-Oct	910	NP	21.01	0.00	34.67	12-Oct	935	6.91	20.5	3,220	4.2	83.9	6.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-109	Monitoring	BRH/RJM	34			67	REST	12-Oct	1100	NP	19.13	0.00	29.48	12-Oct	1140	7.08	23.6	3,020	2.7	-300.1	26.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-110	Monitoring	BRH/RJM	35			68	REST	12-Oct	1000	NP	15.91	0.00	29.74	12-Oct	1025	7.16	22.1	1,860	3.1	-121.6	7.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-13	Monitoring	BRH				69	EP	12-Oct	Areal flooding; owner denied access				21.10			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river		
MW-69	Monitoring	BRH				70	EP	12-Oct	Areal flooding; owner denied access				22.51			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river		
MW-12	Monitoring	BRH				71	EP	12-Oct	Areal flooding; owner denied access				17.93			Not in sampling program							Yes	Yes	Yes	Yes		SA	No sampling due to location N. of river		
MW-24	Monitoring	BRH				72	EP	12-Oct	Areal flooding; owner denied access				23.51			Not in sampling program							Yes	Yes	Issue	Yes		SA	No sampling due to location E. of river		
MW-14	Monitoring	BRH				73	EP	12-Oct	Areal flooding; owner denied access				>11.81			Not in sampling program							Yes	Issue	Yes	Yes		SA	No sampling due to location N. of river		
RW-12	Recovery [d]					Field E of Refinery				Not in gauging program						Not in sampling program												-	-	-	-
RW-12R	Recovery [d]	BTB				74	REST	11-Oct	825	NP	15.64	0.00	NM										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-113	Monitoring	BTB/GDS	36			75	REST	11-Oct	940	NP	14.92	0.00	37.80	11-Oct	1005	6.79	19.6	3,090	2.2	-1.7	7.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
KWB-8	Monitoring	BTB		7		76	REST	11-Oct	815	11.50	11.54	0.04	35.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-22	Recovery [d]	BTB		8		77	REST	11-Oct	805	11.36	11.79	0.43	NM										Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-20A	Recovery [d]	BTB				78	REST	11-Oct	808	NP	9.81	0.00	21.98			(Historical LNAPL - Top of fmr recov. pump @ 20.65 ft-toc							Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-20B	Recovery [d]	BTB				79	REST	11-Oct	812	NP	9.74	0.00	NM			(Historical LNAPL)							Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-13	Recovery [d]					Field E of Refinery				Not in gauging program						Not in sampling program											Y	-	-	-	-
RW-13R	Recovery [d]	BTB		9		80	REST	11-Oct	830	13.88	15.82	1.94	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-14	Recovery [d]					Field E of Refinery				Not in gauging program						Not in sampling program											Y	-	-	-	-
RW-14R	Recovery [d]	BTB		10		81	REST	11-Oct	800	14.58	14.87	0.29	NM			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-133	Monitoring	BTB		11		82	REST	11-Oct	1040	15.40	15.49	0.09	37.64			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-134	Monitoring	BTB/GDS	37			83	REST	11-Oct	1050	NP	17.31	0.00	32.95	11-Oct	1115	6.83	18.1	4,620	2.8	-3.7	8.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RA-4798	Irrigation	BTB				84	REST	11-Oct	820	Not sampled; pump removed/dismantled, 2H22																		NA	SA	SA	x
RA-4196	Irrigation	BTB				85	REST	11-Oct	823	Not sampled; pump removed/dismantled, 2H22																		NA	SA	SA	x
RA-1227	Irrigation	BTB				86	REST									Removed from program by Navajo, 4-13-15												NA			
RA-3156	Irrigation	BTB				87	REST	11-Oct	No gauge @ irrig well (not used - sl. elevated SC, per Chase Farms)							7.21	21.4	3,590	5.9	8.2	121.0	Brown, clr	NA	NA	NA	Yes		NA	A	A	x
RA-313	Irrigation	BTB				88	REST	11-Oct	No gauge @ irrigation well							8.09	22.7	1,702	4.1	118.3	1.8	Clear	NA	NA	NA	Yes		NA	A	A	x
KWB-7	Monitoring	BTB	38			89	REST	11-Oct	1325	NP	10.85	0.00	34.83	11-Oct	1350	6.90	21.5	3,770	1.7	-238.4	1.5	Clr, HC odor	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-20	Monitoring	BTB				91	TMD	11-Oct	1119	NP	13.03	0.00	26.66			6.76	22.6	4,540	1.7	21.0	4.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
NP-3	Monitoring	BTB				92	TMD	11-Oct	1122	NP	13.41	0.00	21.59			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
NP-4	Monitoring	BTB				93	TMD	11-Oct	1125	NP	34.88	0.00	36.98			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
NP-2	Monitoring	BTB				94	TMD	11-Oct	1129	NP	17.09	0.00	21.49			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H22

HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
							Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																									
NP-1	Monitoring	BTB	39			95	TMD	11-Oct	1245	NP	14.85	0.00	21.88	11-Oct	1310	6.77	20.3	4,440	1.9	58.7	0.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NP-6	Monitoring	BTB				96	TMD	11-Oct	1134	NP	9.70	0.00	20.35			6.53	18.1	5,350	2.2	471.1	3.4	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
MW-8	Monitoring	BTB				97	TMD	11-Oct	1115	NP	10.83	0.00	23.30			6.81	20.4	6,060	0.9	172.7	16.0	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-21	Monitoring	BTB/GDS	40			98	TMD	11-Oct	1210	NP	10.28	0.00	25.12	11-Oct	1235	6.88	20.9	5,450	1.4	210.7	7.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-9	Monitoring	BTB				99	TMD	11-Oct	1111	NP	11.37	0.00	22.25			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
MW-71	Monitoring	BTB				100	TMD	11-Oct	945	NP	12.18	0.00	21.67			6.88	20.4	6,540	2.0	132.9	2.0	Clear	Yes	Yes	Cracked pad	Yes		SA	A	A	x
MW-68	Monitoring	BTB				101	TMD	11-Oct	1050	NP	14.64	0.00	26.52			6.82	21.3	3,260	3.6	106.1	2.5	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-27	Monitoring	BTB				102	TMD	11-Oct	1054	NP	14.16	0.00	30.28			6.94	20.8	2,250	1.6	120.1	3.2	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-89	Monitoring	BTB				103	TMD	11-Oct	1058	NP	7.58	0.00	20.28			6.99	19.2	3,030	1.4	87.2	4.3	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-16	Monitoring	BTB				104	TMD	11-Oct	1102	NP	6.07	0.00	21.24			7.07	19.0	4,430	2.1	91.8	2.9	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-26	Monitoring	BTB				105	TMD	11-Oct	1106	NP	8.02	0.00	27.58			6.98	19.5	6,360	1.3	88.6	1.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
KWB-11A	Monitoring	BTB	41			106	REST	11-Oct	1405	NP	10.66	0.00	42.27	11-Oct	1430	6.72	21.1	3,680	1.5	-167.4	3.0	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
KWB-11B	Monitoring	BTB	42			107	REST	11-Oct	1445	NP	11.56	0.00	72.45	11-Oct	1510	6.80	20.9	3,240	1.4	-6.2	5.7	Clear	Yes	Yes	Cracked pad	Yes		SA	SA	SA	x
KWB-3AR	Monitoring	BTB				108	REST									Removed from program by Navajo, 4-13-15 (no access, farmer Jack Joy, 575-365-6042)														
MW-115	Monitoring	BTB	43			109	REST	11-Oct	1625	NP	13.84	0.00	27.50	11-Oct	1650	6.77	21.3	4,110	2.1	106.1	0.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-114	Monitoring	BTB	44			110	REST	11-Oct	1705	NP	15.27	0.00	38.25	11-Oct	1730	6.69	22.7	3,440	2.1	46.6	1.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-125	Monitoring	BTB	45			111	REST	11-Oct	1545	NP	18.24	0.00	28.31	11-Oct	1610	6.78	21.7	4,190	2.5	62.4	3.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-117	Monitoring	GDS/OJD	46			112	REST	11-Oct	1445	NP	12.85	0.00	27.22	11-Oct	1510	6.73	22.3	2,630	1.1	127.7	9.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-118	Monitoring	GDS/OJD	47			113	REST	11-Oct	1405	NP	18.74	0.00	28.29	11-Oct	1430	6.81	21.5	3,480	1.2	120.7	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NP-9	Monitoring	GDS				114	TMD	11-Oct	1352	NP	16.70	0.00	25.65			Not in sampling program							Yes	Yes	Closure issue	Yes		SA	Not in sampling program		
MW-119	Monitoring	GDS	48			115	REST	11-Oct	1305	NP	13.65	0.00	28.11	11-Oct	1330	6.79	21.5	3,120	1.2	102.6	5.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NP-5	Monitoring	GDS				116	REST	11-Oct	914	NP	13.80	0.00	25.09			6.87	19.0	6,430	2.2	141.7	19.9	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
MW-136	Monitoring	GDS	49			117	REST	11-Oct	835	NP	19.35	0.00	27.90	11-Oct	900	6.89	19.7	2,650	1.0	103.6	8.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-126A	Monitoring	GDS		12		118	REST	11-Oct	1029	19.20	19.47	0.27	37.51			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-126B	Monitoring	GDS	50			119	REST	11-Oct	1033	NP	19.12	0.00	51.43	11-Oct	1055	6.70	21.0	3,010	0.7	89.4	1.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-127	Monitoring	GDS		13		120	REST	11-Oct	1024	21.98	23.02	1.04	53.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-129	Monitoring	GDS		14		121	REST	11-Oct	1117	23.60	23.71	0.11	50.78										Yes	Yes	Yes	Yes	Y	SA	A	A	x
KWB-1A	Monitoring	GDS	51	15		123	REST	11-Oct	930	16.45	16.47	0.02	33.50	11-Oct	955	6.72	20.2	3,150	0.6	-47.1	1.3	Clear	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
KWB-1B	Monitoring	GDS		16		124	REST	11-Oct	1014	18.13	18.39	0.26	33.92			Not in sampling program							Yes	Yes	Yes	Yes	Y	SA	Not in sampling program		
KWB-1C	Monitoring	GDS				125	REST	11-Oct	1017	NP	18.80	0.00	52.71			6.60	20.0	5,660	1.1	141.6	23.2	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
KWB-10R	Monitoring	GDS		17		126	REST	11-Oct	923	17.63	19.18	1.55	29.46			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-131	Monitoring	GDS		18		127	REST	11-Oct	1124	25.83	26.65	0.82	53.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x

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HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
										Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																					
KWB-5	Monitoring	GDS/OJD		19		128	REST	11-Oct	1131	26.11	27.19	1.08	37.68			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-111	Monitoring	GDS/OJD		20		129	REST	11-Oct	1139	27.29	27.89	0.60	40.83			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
KWB-6	Monitoring	GDS		21		130	REST	11-Oct	1157	23.59	24.75	1.16	36.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-112	Monitoring	GDS		22		131	REST	11-Oct	1143	22.41	23.91	1.50	37.54			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-132	Monitoring	GDS		23		132	REST	11-Oct	1150	>20.10	>20.10	NM	42.66			Navajo skimmer pump in well; no sampling (historical LNAPL)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-57	Monitoring	GDS/OJD		24		133	REST	11-Oct	1500	17.15	17.93	0.78	34.32			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-#11-0[e]	Recovery [d]	GDS				134	REST	11-Oct	1203	NP	18.33	0.00	22.20										Yes	Yes	Yes	Yes	Y	SA	A	A	x
KWB-9	Monitoring	GDS				135	REST	11-Oct		(Historically-obstructed @ 15.11')						Removed from program by Navajo, 4-26-16 (farmer Jack Joy, 575-365-6042)															
KWB-12A	Monitoring	GDS/OJD	52			136	REST	11-Oct	1305	NP	20.01	0.00	25.03	11-Oct	1330	6.78	24.0	4,240	3.0	125.3	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
KWB-12B	Monitoring	GDS/OJD	53			137	REST	11-Oct	1350	NP	19.95	0.00	39.39	11-Oct	1415	6.90	23.0	3,640	3.2	-3.1	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
KWB-2R	Monitoring	GDS/OJD		25		138	REST	11-Oct	1228	25.15	25.28	0.13	39.39			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Issue	Yes	Y	SA	SA	SA	x
MW-58	Monitoring	GDS/OJD		26		139	REST	11-Oct	1237	23.89	24.44	0.55	33.06			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
KWB-13	Monitoring	GDS				140	REST	11-Oct	1217	NP	28.20	0.00	33.10			6.83	21.0	4,140	4.8	168.2	>200	Cloudy, tan	Yes	Yes	Yes	Yes		SA	A	A	x
MW-103	Monitoring	SCU				141	REST	11-Oct	1425	NP	17.33	0.00	25.22			7.14	23.6	13,430	1.7	-306.7	19.8	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-104	Monitoring	SCU	54			142	REST	11-Oct	1345	NP	11.71	0.00	21.97	11-Oct	1410	7.13	25.7	1,534	0.8	-323.4	4.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-64	Monitoring	SCU	55			143	REST	11-Oct	1515	NP	20.89	0.00	34.04	11-Oct	1545	6.91	27.5	2,460	4.7	-314.2	5.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-65	Monitoring	SCU		27		144	REST	11-Oct	1439	18.11	18.68	0.57	28.78			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-5	Recovery [d]						S Refinery			Not in gauging program						Not in sampling program											Y				
RW-5R	Recovery [d]	SCU		28		145	REST	12-Oct	900	18.46	18.68	0.22	35.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-102	Monitoring	SCU	56			146	REST	11-Oct	1640	NP	15.76	0.00	26.45	11-Oct	1705	6.91	24.5	2,290	1.7	-368.5	3.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-4	Recovery [d]	SCU				147	REST	12-Oct	1325	NP	19.13	0.00	36.62			6.80	22.0	2,880	1.6	-303.9	19.0	Clear	Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-6	Recovery [d]	SCU				148	REST	12-Oct	1330	NP	15.27	0.00	34.90										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-99	Monitoring	SCU		29		149	REST	11-Oct	1446	20.39	21.16	0.77	27.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-66	Monitoring	SCU		30		150	REST	12-Oct	907	19.22	19.42	0.20	29.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-28	Monitoring	SCU		31		151	REST	12-Oct	914	19.98	20.44	0.46	27.82			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-59	Monitoring	SCU		32		152	REST	12-Oct	1005	16.35	16.78	0.43	32.72										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-60	Monitoring	SCU		33		153	REST	12-Oct	1008	17.66	17.93	0.27	37.78			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-107	Monitoring	SCU		34		154	REST	12-Oct	921	16.37	18.03	1.66	19.05										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-128	Monitoring	SCU		35		155	REST	12-Oct	928	18.22	20.17	1.95	35.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-116	Monitoring	SCU	57			156	REST	12-Oct	1105	NP	14.30	0.00	27.63	12-Oct	1130	6.81	18.9	4,070	0.8	11.2	3.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-46R	Monitoring	SCU	58			157	TMD	12-Oct	1145	NP	10.54	0.00	19.36	12-Oct	1210	7.00	21.1	2,580	1.9	4.3	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-#18A	Recovery	SCU				157.05	REST	11-Oct	1230	NP	15.16	0.00	17.78										Yes	Yes	Yes	Yes		SA	A	A	x

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H22

HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
							Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																									
MW-145	Monitoring	SCU	59			157.1	REST	11-Oct	1240	NP	17.32	0.00	32.10	11-Oct	1305	6.83	21.2	4,780	1.8	109.7	21.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-146	Monitoring	SCU	60			157.2	REST	11-Oct	1115	NP	20.51	0.00	33.40	11-Oct	1140	6.94	20.2	4,870	1.7	126.2	3.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-135	Monitoring	SCU	61			157.25	REST	11-Oct	1035	NP	28.93	0.00	65.55	11-Oct	1100	6.86	20.5	5,960	6.8	118.5	15.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-147	Monitoring	SCU	62			157.3	REST	11-Oct	950	NP	28.73	0.00	39.83	11-Oct	1015	6.92	18.6	5,910	8.1	121.6	26.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-148	Monitoring	SCU	63			157.4	REST	11-Oct	905	NP	34.34	0.00	40.38	11-Oct	930	6.87	19.0	3,860	5.9	105.2	24.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
UG-3R	Monitoring	SCU				158	REST	Not addressed 2H22		NP	22.04	0.00	38.58	11-Apr	1810	6.80	21.3	2,810	5.8	145.0	4.1	Clear	Yes	Yes	Yes	Yes		A	A	A	x
UG-4	Monitoring	SCU				159	REST	Not addressed 2H22		NP	21.12	0.00	39.24	11-Apr	1710	6.75	21.6	3,980	2.4	136.8	22.9	Clear	Yes	Yes	Yes	Yes		A	A	A	x
UG-1	Monitoring	SCU				160	REST	Not addressed 2H22		NP	13.94	0.00	24.08	11-Apr	1625	6.94	23.6	3,430	4.3	140.9	14.7	Clear	Yes	Yes	Yes	Yes		A	A	A	x
UG-2	Monitoring	SCU				161	REST	Not addressed 2H22		NP	18.80	0.00	29.28	11-Apr	1530	7.18	23.5	2,260	6.4	146.4	4.5	Clear	Yes	Yes	Yes	Yes		A	A	A	x
MW-101	Monitoring	TAB	64			162	REST	11-Oct	1140	NP	13.51	0.00	22.15	11-Oct	1205	6.65	25.8	2,080	0.6	-372.8	3.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-105	Monitoring	TAB	65			163	REST	11-Oct	800	NP	10.20	0.00	17.20	11-Oct	825	6.14	23.1	1,034	1.0	-120.8	11.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-2	Recovery [d]	TAB				164	REST	11-Oct	1130	NP	14.85	0.00	36.13										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-61	Monitoring	TAB	66			165	REST	11-Oct	1040	NP	13.74	0.00	29.30	11-Oct	1115	6.70	23.4	3,060	1.1	-404.5	2.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-62	Monitoring	TAB/OJD	67	36		166	REST	11-Oct	900	16.61	16.62	0.01	29.50	11-Oct	925	6.57	22.5	3,150	1.1	-379.0	6.8	Clear, odor	Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-62R	Monitoring	TAB/OJD	68			166.1	REST	11-Oct	950	NP	16.40	0.00	24.51	11-Oct	1015	6.53	23.7	2,780	0.9	-375.1	1.0	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-93	Monitoring	TAB		37		167	REST	12-Oct	Not located			*	20.23	* Remains covered by construct-related gravel; unable to locate; Navajo is aware									Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-43	Monitoring	TAB		38		168	REST	11-Oct	1500	14.60	14.75	0.15	19.67	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-137	Monitoring	TAB		39		169	REST	11-Oct	1440	11.92	12.95	1.03	29.60	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-137A	Monitoring	TAB		40		169.1	REST	11-Oct	1450	12.49	13.20	0.71	14.88	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-138	Monitoring	TAB		41		170	REST	11-Oct	1430	13.22	17.55	4.33	24.81	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-138A	Monitoring	TAB		42		170.1	REST	11-Oct	1410	13.96	15.02	1.06	15.03	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-23	Monitoring	TAB		43		171	REST	11-Oct	1355	16.55	18.85	2.30	23.10	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
TEL-4	Monitoring	TAB	69			172	TEL	12-Oct	830	NP	12.68	0.00	27.27	12-Oct	855	6.60	23.9	3,630	0.7	-361.2	4.2	Clear, lt. sheen	Yes	Yes	Yes	Yes		SA	SA	SA	x
TEL-3	Monitoring	TAB		44		173	TEL	12-Oct	1010	14.08	15.31	1.23	27.19	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
TEL-2	Monitoring	TAB		45		174	TEL	12-Oct	1020	15.07	16.34	1.27	27.20	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
TEL-1	Monitoring	TAB		46		175	TEL	12-Oct	1040	14.21	14.45	0.24	27.00	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-39	Monitoring	TAB		47		176	REST	11-Oct	1515	14.91	15.46	0.55	25.44	No sampling (LNAPL 0.03' or greater)									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-98	Monitoring	TAB	70			177	REST	11-Oct	1315	NP	12.30	0.00	25.60	11-Oct	1340	6.66	24.8	3,190	0.6	-409.6	3.2	Clear, odor	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-10	Recovery [d]	TAB		48		178	REST	12-Oct	1050	14.45	17.42	2.97	22.49										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-40	Monitoring	TAB		49		179	REST	11-Oct	1530	13.03	15.86	2.83	24.75										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-41	Monitoring	TAB		50		180	REST	11-Oct	1550	12.68	14.45	1.77	21.56										Yes	Yes	Yes	Yes	Y	SA	A	A	x

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Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H22

HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
										Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																				
RW-9	Recovery [d]	TAB				181	REST	11-Oct	1540	NP	14.98	0.00	21.83			7.05	19.4	3,570	1.8	-380.4	12.1	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-42	Monitoring	TAB		51		182	REST	11-Oct	1600	15.05	15.91	0.86	24.32			6.85	24.1	3,790	1.4	-312.5	4.7	Clear	Yes	Yes	No lock	Yes	Y	SA	A	A	x
MW-29	Monitoring	TAB	71			183	REST	11-Oct	1530	NP	20.33	0.00	24.22	11-Oct	1600	6.72	23.7	4,530	3.1	-103.6	4.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-#16B	Recovery	TAB				184	REST	12-Oct	1110	NP	15.87	0.00	17.70										Yes	Yes	Yes	Yes		SA	A	A	x
MW-30	Monitoring	TAB				185	REST	11-Oct	1620	NP	13.12	0.00	23.50			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
MW-56	Monitoring	TAB				186	NCL	11-Oct	1625	NP	13.62	0.00	26.50			6.82	20.1	2,870	1.4	-24.9	3.5	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
MW-49	Monitoring	TAB	72			187	TEL	11-Oct	1225	NP	12.26	0.00	33.07	11-Oct	1250	6.67	24.5	2,470	0.8	-398.1	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-106*	Monitoring	TAB				188	REST	11-Oct	1220	Not located			22.80	* Covered by steel container, thus unable to access; Navajo aware									Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-45	Monitoring	TAB/**OJD**	73			189	NCL	11-Oct	1650	NP	7.92	0.00	15.05	11-Oct	1715	6.80	24.8	4,700	1.6	-112.6	8.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-139	Monitoring	BTA/**HAN**	74			190	REST	11-Oct	1700	NP	14.19	0.00	29.60	11-Oct	1725	6.80	21.6	3,530	2.6	-231.3	5.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-50	Monitoring	BTA/**HAN**	75			191	REST	11-Oct	1405	NP	14.92	0.00	28.22	11-Oct	1430	6.85	24.7	6,620	2.6	52.1	4.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-97*	Monitoring	BTA/**HAN**		52		192	REST	11-Oct	1450	Not located		*	21.20	* Covered by construction-related gravel; fmr crane gone, yet unable to locate									Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-92	Monitoring	BTA/**HAN**		53		193	REST	11-Oct	1445	13.96	14.92	0.96	22.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-1	Recovery [d]	BTA/**HAN**		54		194	REST	11-Oct	1330	14.86	14.92	0.06	35.39										Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-91	Monitoring	BTA/**HAN**		55		195	REST	11-Oct	1000	13.09	13.19	0.10	25.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-90	Monitoring	BTA/**HAN**	76			196	REST	11-Oct	1005	NP	12.90	0.00	22.80	11-Oct	1035	6.75	22.6	3,470	2.8	-341.9	5.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-96	Monitoring	BTA/**HAN**	77			197	REST	11-Oct	1055	NP	13.56	0.00	25.57	11-Oct	1120	6.79	23.4	2,180	3.0	-330.1	7.4	Clear	Yes	Yes	Issue	Yes	Y	SA	SA	SA	x
MW-94	Monitoring	BTA/HAN		56		198	REST	11-Oct	905	16.49	16.81	0.32	23.45			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
RW-8	Recovery [d]	BTA/HAN		57		199	REST	11-Oct	850	14.64	14.81	0.17	37.22			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	A	A	x
MW-67	Monitoring	BTA/HAN		58		200	REST	11-Oct	835	12.90	14.34	1.44	27.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x
MW-95	Monitoring	BTA/**HAN**		59		201	REST	11-Oct	1155	15.46	16.46	1.00	25.37										Yes	Yes	Yes	Yes	Y	SA	A	A	x
RW-7	Recovery [d]	BTA/HAN		60		202	REST	11-Oct	920	14.59	14.93	0.34	37.00										Yes	Yes	Yes	Yes	Y	SA	A	A	x
NCL-34A	Monitoring	BTA/HAN		61		203	NCL	11-Oct	935	14.31	17.09	2.78	19.26			No sampling (LNAPL 0.03' or greater)							Yes	Yes	No lock	Yes	Y	SA	SA	SA	x
NCL-33	Monitoring	BTA/HAN	78			204	NCL	11-Oct	1005	NP	13.31	0.00	19.60	11-Oct	1030	6.69	23.4	4,080	1.8	-57.1	13.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NCL-44	Monitoring	BTA/HAN	79			205	NCL	11-Oct	1505	NP	13.31	0.00	21.34	11-Oct	1530	6.72	23.7	2,530	1.0	-221.1	4.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NCL-32	Monitoring	BTA/HAN	80			206	NCL	11-Oct	1420	NP	13.91	0.00	20.04	11-Oct	1445	6.97	28.3	2,870	1.6	29.8	12.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-108	Monitoring	BTA/**HAN**	81			207	NCL	11-Oct	1550	NP	16.58	0.00	27.74	11-Oct	1620	6.87	24.6	2,180	2.0	-333.3	6.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
NCL-31	Monitoring	BTA/HAN	82			208	NCL	11-Oct	1335	NP	13.64	0.00	20.16	11-Oct	1400	7.00	24.5	1,881	1.6	-154.9	10.1	Clear	Issue	Yes	Yes	Yes		SA	SA	SA	x
MW-19	Monitoring	BTA/HAN				209	NCL	11-Oct	1325	NP	13.92	0.00	22.08			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program		
MW-55	Monitoring	BTA/**HAN**	83			210	NCL	11-Oct	1220	NP	14.02	0.00	26.85	11-Oct	1245	6.80	22.3	3,020	2.6	-19.8	5.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
RW-#17A	Recovery	BTA/**HAN**				211	REST	11-Oct	1205	NP	14.29	0.00	16.01										Yes	Yes	Yes	Yes		SA	A	A	x
MW-18	Monitoring	BTA/HAN				212	NCL	11-Oct	950	NP	15.28	0.00	22.20			6.96	21.7	2,940	1.3	-22.4	8.7	Clear	Yes	Yes	Yes	Yes		SA	A	A	x

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HF-Navajo Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Sampled Wells)	# wells with LNAPL	# dry wells	HMI Use (Field-Strategy)	Location	Gauge Date	Gauge Time	Depth to LNAPL (ft btoc)	Depth to Water (ft btoc)	LNAPL Column (ft)	Total Depth (ft btoc)	Sample Date	Sample Time	pH (S.U.)	T (C)	Spec. Cond. (umho/cm)	D. O. (mg/l)	ORP (mg/l)	Turb. (NTU)	Water Clarity	Cap	Casing	Well Secured	Label	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC: Purge Parameters	General Sampling Frequency	(Analysis per COC)
										Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																					
MW-54A	Monitoring	BTA/HAN	84			213	NCL	11-Oct	1100	NP	16.12	0.00	31.30	11-Oct	1125	7.28	23.3	2,930	2.0	74.1	3.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-54B	Monitoring	BTA/HAN				214	NCL	11-Oct	1140	NP	16.21	0.00	46.80			6.54	21.8	1,870	1.6	3.1	5.9	Clear	Yes	Yes	Yes	Yes		SA	B	B	x
NCL-49	Monitoring	BTA/HAN	85			215	NCL	11-Oct	1155	NP	19.76	0.00	32.18	11-Oct	1220	6.94	24.2	3,450	2.2	95.1	9.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x
MW-53R	Monitoring	BTA/HAN				216	NCL	11-Oct	1310	NP	14.11	0.00	24.05			7.26	24.1	2,350	1.4	22.2	18.6	Clear	Yes	Yes	Yes	Yes		SA	A	A	x
KWB-P3	Monitoring					Field E of Refinery				Not in gauging program						Not in sampling program												Not included in monitoring program due to distance from impacts		

Notes:

Abbreviations:

A = Annual (Mar/Apr event)
B = Biennial (starts Mar/Apr 2011)
BR = Bolton Road
DRO = Diesel Range Organics
E = East
EP = Evaporation Ponds
ft bgs = ft below ground surface
ft btoc = ft below top of casing
ft MSL = ft Mean Sea Level
GRO = Gasoline Range Organics
HR = Haldeman Road
in = inches
N = North
NA = Not accessible
NAPI = North API Separator
NCL = North Colony Landfarm
NE = Northeast
NW = Northwest
OCD = Oil Conservation District
PSH = Phase Separated Hydrocarbon
ROW = right of way
RR = Richey Road
S = South
SA = Semi-annual (Mar/Apr and Sep/Oct events)
SE = Southeast
SW = Southwest
TMD = Three Mile Ditch
TEL = Tetra Ethyl Lead Impoundment
UG = Upgradient
US285 = U.S. Highway 285
US82 = U.S. Highway 82
VOC = Volatile Organic Compounds
W = West
Y = Yes

Y = Well with gauged LNAPL (light nonaqueous phase liquid), current event

Y = Well with formerly-gauged LNAPL (light nonaqueous phase liquid), historical event(s)

Note - groundwater samples are not collected from any well with LNAPL measured 0.03-ft thick, or greater

At wells scheduled for groundwater sampling (having LNAPL <0.03-ft, LNAPL will be removed, and well will be sampled

Groundwater analytical methods can include:

1. Purge parameters to be measured and recorded in the field will include pH, temp, spec. cond., diss. oxy., and oxidation-reduction potential.
2. DRO by Method 8015Mod.
3. GRO by Method 8015Mod.
4. VOCs by Method 8260, to include methyl tert butyl ether (MTBE).
5. Total metals by Method 6010/6020 and/or 7470. Specific metals shown in heading, abbreviations from periodic chart (incl B, Cd, Co, U, per 3-7-16 State request).
6. Dissolved metals - same list as total metals but only analyzed during April event (field filtered by HMI)
7. Cyanide by Method SM4500.
8. Cations/anions to include Calcium, Potassium, and Sodium by Method 6010 or 6020 and Sulfate, Chloride and Fluoride by Method 300.
9. Nitrates/Nitrites as Nitrogen by Method 300.
10. Total Dissolved Solids by Method 2540C.

"-" indicates parameter not required.

Recovery trenches 11, 15, 16, 17 and 18 have multiple vertical "wells". Gauging & sampling points are: RW #11-0, RW #15C, RW #16B, RW #17A and RW #18A.

HMI Groundwater

HYDROLOGIC MONITORING
JOB HAZARD ANALYSIS

Activity: Groundwater Sampling	**Date:** 10/11/22 | 10/12/22
	Project: HF-Navajo Artesia GW Sampling
Description of the work: Collect fluid level information and water samples from monitoring wells. NOTE: All site workers have STOP WORK Authorization at any time site conditions change and/or become unsafe	Site Supervisor: Scott Ucht | Scott Ucht **Attendees Signatures:**

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
• General Hazards	• Accidents due to lack of training	• All workers will complete Safety Council Basic Plus Training and all site-specific training. • All workers will complete OSHA 40-hr HAZWOPER training with yearly updates. • Workers will be trained prior to performing new activities. • Tailgate safety meetings will be held daily.
	• Head Injury	• ANSI-approved hard hats will be worn at all times, in the manner they were designed (brim forward, no modifications no ball caps, etc.) Bump hats and Cowboy hard hats are not permitted.
	• Hearing Damage	• Workers will wear hearing protection whenever voices must be raised above normal conversational speech or when noise levels exceed 85 decibels due to loud noise sources such as working near heavy equipment.
	• Hand Injury	• Leather gloves will be worn when handling

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		sharp, rough, or slippery surfaces. • Appropriate gloves for chemicals will be worn per project HASP.
	• Injuries resulting from manual lifting	• Workers will be instructed in safe lifting techniques (keep back straight, bend at knees, keep load close to body, lift smoothly, and do not twist at the waist. • Split heavy loads into smaller loads when possible. • Stretch before doing task • Make sure the path of travel is clear prior to the lift.
	• Foot Injury	• Workers will wear sturdy leather safety-toed boots that reach the ankle at all times. • For wet conditions or for chemical hazards proper water resistant overboots or chemical resistant safety-toed boots must be worn.
	• Eye Injury	• Workers will wear protective eyewear with sideshields that meet ANSI Z-87 at all times. If the worker wears prescription eyeglasses they must meet the same criteria or wear ANSI Z-87 safety over glasses. • Workers must have immediate access to Chemical monogoggles. Retaining rings are not permitted.
	• Slips, trips, and falls	• Walking/working surfaces will be kept free of clutter, debris, and congestion to the greatest extent possible. • Personnel should be aware of wet/muddy surfaces and use caution. Use caution when traversing uneven ground.
	• Injuries associated with insects, snakes, spiders, alligators, and poisonous plants	• Workers will wear snake chaps, leggings or sturdy rubber knee high boots when walking in uncleared, grassy areas. • Workers will avoid walking in areas where snakes or alligators may hide. Always look ahead where you are walking for signs of either. Use caution when moving or lifting objects that could be used for cover. Never reach under or behind objects, or into other areas where snakes or alligators may hide. • Workers will use insect repellant for all types of biting / stinging insects. Use care when opening wells to avoid bites and / or stings. • Workers will always use the buddy system and have a means of contacting emergency

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
		aid if needed by cell phone or Radio. • Workers will immediately wash any areas that were exposed to poisonous plants.
	• Chemical Exposure	• MSDS will be kept onsite in a location that all workers can access. • All workers must know where the emergency rally point is located when an evacuation alarm sounds in the plant. • Workers will sign in and out when they arrive and leave the work area.
	• Heat Stress	• All workers will take routine breaks in a cool, shaded area. • Workers will drink plenty of water throughout the day. • Workers will decrease intake of coffee and caffeinated soft drinks during working hours.
	• Vehicle accidents	• All vehicles must be inspected for safe operation onsite. • Vehicle operators must have a valid driver's license and will be instructed in safe operations while on the site. • Seat belts will be worn by all occupants. • When backing, use the buddy system or get out and look at position of objects. • All vehicles must contain a fire extinguisher, first aid kit, evacuation map, and route to hospital (map/directions). • Drivers will observe and not exceed posted plant speed limits. • Cell phone use is prohibited in a moving vehicle (drivers only) - hands free device not permitted. • Use caution at railroad crossings. • Watch for pedestrians walking into driving lanes.
	• Injury due to inclement weather	• Outdoor work will cease during extreme weather conditions, such as electrical storms, high wind, rain, and dangerous temperatures. • All equipment will be shut down when lightning is visible. • Workers will seek shelter indoors when possible or stay in vehicles.
• Groundwater Sampling	• Collect Measurements and Samples	• All site workers will wear proper PPE to prevent exposure to groundwater.

Work Activity Sequence	Potential Health and Safety Hazards	Hazard Controls
	• Using peristaltic pumps	• All workers using peristaltic pumps should inspect the power cord for damage before and after each use.
	• Fire extinguishers	• Fire extinguishers should be on hand and inspected.
	• Lifting	• All workers should use proper lifting techniques when lifting objects. Mechanical assistance may be used to lift objects weighing over 50 pounds.
	• Drive All Terrain Vehicles	• All workers that will drive All-Terrain Vehicles (ATVs) will follow site specific policies regarding use and operation of ATVs. • In addition, conditions of ATV use will be addressed on Safe Work Permit(s). • All workers will be trained in operating the ATV. • The maximum speed limit is 5 miles per hour. • Read owners manual prior to operating • ATVs are not made for multiple riders. Never carry anyone else on the ATV. • Stay seated at all times while ATV is in motion. • Do not operate the ATV on streets, highways or paved roads. • Driver must have a valid driver's license. • Driver exercise caution when loading and unloading ATV.

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MMS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1530	NP	12.57	0.00	19.04	14.1	Yes	Yes	Yes	Yes		Weather: Pt. Cloudy 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-6A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MPB (2)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1535	NP	12.48	0.00	52.28	47.3	Yes	Yes	Yes	Yes		Weather: PT. Cloudy 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-6B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-85
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB (3)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-4-22	1640	~~NP~~ 10.05	10.55	0.50	20.34		Yes	Yes	Yes	Yes		Weather: Cloudy 80's
	mb					(2" off bottom of sampled)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not Sampled due to presence						B) ded bladder pump
			2.0			of LNAPL	> 0.03				C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-85				Not	Sampled					Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-86
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MWM (4)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/4/22	1700	9.57	10.58	1.01	19.21	17.21	Yes	Yes	Yes	Yes		Weather: Ptly Cloudy 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			Not Sampled due to presence of LNAPL 7/20/23					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-86			Not Sampled							Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-120
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials MCM (5)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	840	NP	12.27	0.00	28.00	17.5	Yes	Yes	Yes	Yes		Weather: Clear 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	845	12.54	0.5	6.93	19.8	11390	3.6	-51.2	8.6	Clear / Colorless	Low-flow groundwater sample:
	847	12.54	1.0	6.92	20.1	11416	3.3	-50.7	8.0		(A) peristaltic pump w/ ded tubing
	850	12.54	1.5	6.91	20.3	11450	3.2	-49.7	7.3		B) ded bladder pump
MB	~~852~~ 852	12.54	2.0	6.91	20.3	11500	3.0	-49.6	6.4		C) non-ded bladder pump; or
	855	12.54	2.5	6.90	20.3	11550	2.9	-49.2	6.0		Standard groundwater sample:
	857	12.54	3.0	6.90	20.3	11590	2.7	-49.0	5.6		D) bailer due to limited column; or
	900	12.54	3.5	6.90	20.3	11610	2.6	-48.8	5.0		E) recovery well cycling sample
	902	12.54	4.0	6.90	20.3	11630	2.6	-47.6	4.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	905	MW-120	12.54	6.90	20.3	11630	2.6	-47.6	4.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-12)
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MON (6)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	925	NP	12.20	0.00	27.31	17.5	Yes	Yes	Yes	Yes		Weather: Clear 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	930	12.32	0.5	6.98	21.2	8670	3.6	-7.3	17.6	Clear/colorless	*Low-flow groundwater sample:*
	932	12.39	1.0	6.95	21.6	8010	3.2	28.3	14.2		(A) peristaltic pump w/ ded tubing
	935	12.43	1.5	6.95	21.8	7850	2.6	42.8	11.1		B) ded bladder pump
	937	12.44	2.0	6.94	21.8	7730	2.4	51.2	9.7		C) non-ded bladder pump; or
	940	12.45	2.5	6.94	21.8	7680	2.2	57.6	9.4		*Standard groundwater sample:*
	942	12.46	3.0	6.94	21.9	7630	2.0	60.7	9.0		D) bailer due to limited column; or
	945	12.47	3.5	6.94	21.9	7600	1.9	61.3	8.6		E) recovery well cycling sample
	947	12.48	4.0	6.93	21.9	7590	1.9	62.7	8.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	950	MW-12)	12.48	6.93	21.9	7590	1.9	62.7	8.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-84
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDD (7)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1545	NP	9.47	0.00	20.56	15.2	Yes	Yes	Yes	Yes		Weather: Cloudy 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1550	9.52	0.5	6.78	24.6	11260	3.1	-85.0	14.1	Clear / gold tint	*Low-flow groundwater sample:*
	1552	9.55	1.0	6.79	23.9	11120	2.4	-98.7	12.6		(A) peristaltic pump w/ ded tubing
	1555	9.57	1.5	6.79	23.7	11060	2.1	-95.5	10.4		B) ded bladder pump
	1557	9.59	2.0	6.79	23.6	11030	2.0	-97.8	9.8		C) non-ded bladder pump; or
	1600	9.61	2.5	6.79	23.6	11020	2.0	-98.1	9.2		*Standard groundwater sample:*
	1602	9.62	3.0	6.78	23.7	11030	2.0	-97.1	8.6		D) bailer due to limited column; or
	1605	9.63	3.5	6.77	23.7	11040	2.0	-97.3	8.1		E) recovery well cycling sample
	1607	9.64	4.0	6.77	23.7	11030	2.0	-97.4	7.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1610	MW-84	9.64	6.77	23.7	11030	2.0	-97.4	7.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-122
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(8)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1105	NP	10.29	0.01	23.32	18.4	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1110	10.89	0.5	7.09	22.6	6360	3.0	-93.5	34.6	Clear/colorless	*Low-flow groundwater sample:*
	1112	11.01	1.0	7.06	21.4	6200	2.8	-96.7	33.5		(A) peristaltic pump w/ ded tubing
	1115	11.07	1.5	7.04	21.2	6060	2.7	-98.2	31.7		B) ded bladder pump
	1117	11.12	2.0	7.02	21.2	5930	2.6	-98.4	30.4		C) non-ded bladder pump; or
	1120	11.16	2.5	7.01	21.2	5850	2.4	-98.1	29.6		*Standard groundwater sample:*
	1122	11.20	3.0	7.01	21.1	5820	2.3	-98.2	25.7		D) bailer due to limited column; or
	1125	11.23	3.5	7.01	21.1	5790	2.2	-98.0	23.8		E) recovery well cycling sample
	1127	11.26	4.0	7.01	21.2	5780	2.2	-98.2	22.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1130	MW-122	11.26	7.01	21.2	5780	2.2	-98.2	22.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-81
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MPG

(9)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1005	NP	10.65	0.00	18.62	13.7	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-81								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-80
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(10)

Initials: MDS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1010	NP	8.73	0.00	19.69	14.7	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-80								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+EB-EP-04

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-79
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ~~X~~	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials MOB

(11)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1015	NP	9.88	0.00	19.24	15.0	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1020	10.06	0.5	6.91	21.7	7880	3.4	18.0	9.7	Clear / Colorless	*Low-flow groundwater sample:*
	1022	10.09	1.0	6.90	21.4	7840	3.0	53.4	8.4		(A) peristaltic pump w/ ded tubing
	1025	10.12	1.5	6.88	21.3	7810	2.7	86.0	8.0		B) ded bladder pump
	1027	10.15	2.0	6.87	21.3	7800	2.5	84.6	7.6		C) non-ded bladder pump; or
	1030	10.18	2.5	6.87	21.2	7790	2.3	83.3	7.4		*Standard groundwater sample:*
	1032	10.20	3.0	6.87	21.2	7780	2.2	71.4	7.0		D) bailer due to limited column; or
	1035	10.22	3.5	6.86	21.3	7750	2.1	68.3	6.6		E) recovery well cycling sample
	1037	10.23	4.0	6.85	21.3	7750	2.1	63.1	6.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1040	MW-79	10.23	6.85	21.3	7750	2.1	63.1	6.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓	1055	EB-EP-04	NA						→	11	11	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-82
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(12)

Initials: MDH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1630	NP	9.45	0.00	20.02	15.0	Yes	Yes	Yes	Yes		Weather: Pt. Cloudy 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-82								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+ TRIP Blank - EP-01

+ EB-EP-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-74
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB

(13)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1420	NP	8.91	0.00	20.19	14.8	Yes	Yes	Yes	Yes		Weather: Cloudy 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1425	9.02	0.5	6.72	24.2	11930	3.6	49.4	34.1	Clear/colorless	*Low-flow groundwater sample:*
	1427	9.05	1.0	6.70	23.1	11730	2.5	49.1	30.6		(A) peristaltic pump w/ ded tubing
	1430	9.06	1.5	6.70	22.8	11630	2.3	50.7	24.8		B) ded bladder pump
	1432	9.06	2.0	6.70	22.7	11600	2.2	52.3	27.6		C) non-ded bladder pump; or
	1435	9.06	2.5	6.76	22.6	11540	2.2	53.4	25.4		*Standard groundwater sample:*
	1437	9.07	3.0	6.70	22.5	11570	2.1	54.8	21.6		D) bailer due to limited column; or
	1440	9.07	3.5	6.70	22.6	11560	2.1	55.7	20.7		E) recovery well cycling sample
	1442	9.07	4.0	6.69	22.5	11560	2.1	56.4	19.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1445	MW-74	9.07	6.69	22.5	11560	2.1	56.4	19.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1500	EB-EP-01	NA	~	~	~	~	~	~	"	"	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-73
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(14)

Initials: MMOB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1520	NP	8.87	0.00	19.60	14.6	Yes	Yes	Yes	Yes		Weather: PC lowly 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-73								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: WDH

(15)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1150	NP	10.02	0.00	17.30	15.0	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1155	10.15	0.5	6.80	23.8	12840	3.4	27.4	10.6	Clear / colorless	*Low-flow groundwater sample:*
	1157	10.21	1.0	6.78	23.4	13470	2.6	49.2	9.7		(A) peristaltic pump w/ ded tubing
	1200	10.27	1.5	6.77	23.3	13910	2.4	61.2	8.6		B) ded bladder pump
	1202	10.30	2.0	6.76	23.2	14410	2.3	69.1	8.2		C) non-ded bladder pump; or
	1205	10.34	2.5	6.75	23.2	14940	2.3	75.1	8.0		*Standard groundwater sample:*
	1207	10.37	3.0	6.74	23.2	15370	2.3	79.0	7.6		D) bailer due to limited column; or
	1210	10.40	3.5	6.74	23.1	15420	2.2	81.3	7.5		E) recovery well cycling sample
	1212	10.42	4.0	6.74	23.1	15490	2.2	83.8	7.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-11-22	1215	MW-2A	10.42	6.74	23.1	15490	2.2	83.8	7.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(16)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1225	NP	10.94	0.00	52.00	NS	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-72
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(17)

Initials: JWOR

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1235	NP	6.95	0.00	13.93	11.9	Yes	Yes	Yes	Yes		Weather: Clear 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-72								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-6
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB (18)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1240	NP	9.84	0.00	26.69	21.6	Yes	Yes	Yes	Yes		Weather: Clear 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1245	9.99	0.5	6.79	23.7	15790	3.5	-51.1	21.3	Clear/colorless	*Low-flow groundwater sample:*
	1247	9.99	1.0	6.76	23.2	15970	2.8	-43.4	18.6		(A) peristaltic pump w/ ded tubing
	1250	9.99	1.5	6.76	22.6	15970	2.4	-39.8	16.4		B) ded bladder pump
	1252	9.99	2.0	6.76	22.4	15980	2.4	-38.4	14.3		C) non-ded bladder pump; or
	1255	9.99	2.5	6.76	22.4	15990	2.4	-37.6	13.7		*Standard groundwater sample:*
	1257	9.99	3.0	6.76	22.3	16000	2.4	-37.4	12.9		D) bailer due to limited column; or
	1300	9.99	3.5	6.76	22.3	16000	2.4	-37.5	12.1		E) recovery well cycling sample
	1302	9.99	4.0	6.76	22.3	16000	2.3	-37.6	11.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1305	OCD-6	9.99	6.76	22.3	16000	2.3	-37.6	11.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7AR
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MOB (19)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1325	NP	8.82	0.00	21.28	16.0	Yes	Yes	Yes	Yes		Weather: Clear 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1330	9.07	0.5	6.80	25.0	14860	2.9	-99.9	39.4	Clear / lt. tan	*Low-flow groundwater sample:*
	1332	9.10	1.0	6.80	24.5	14690	2.5	-96.5	36.2		(A) peristaltic pump w/ ded tubing
	1335	9.13	1.5	6.79	24.1	14570	2.3	-94.8	33.4		B) ded bladder pump
	1337	9.15	2.0	6.79	24.0	14560	2.3	-94.0	30.8		C) non-ded bladder pump; or
	1340	9.17	2.5	6.79	24.0	14510	2.3	-93.8	29.6		*Standard groundwater sample:*
	1342	9.19	3.0	6.79	24.6	14510	2.3	-93.5	26.4		D) bailer due to limited column; or
	1345	9.21	3.5	6.79	24.0	14510	2.2	-92.9	25.7		E) recovery well cycling sample
	1347	9.23	4.0	6.79	23.9	14500	2.2	-92.4	24.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1350	OCD-7AR	9.23	6.79	23.9	14500	2.2	-92.4	24.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB (20)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1405	NP	9.05	0.00	56.85	51.9	Yes	Yes	Yes	Yes		Weather: Clear 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7C
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MOB (21)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10.11.22	1410	NP	8.79	0.00	71.95	NS	Yes	Yes	Yes	Yes		Weather: Clear 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								~~Low-flow groundwater sample:~~
			1.0								~~A) peristaltic pump w/ ded tubing~~
			1.5								~~B) ded bladder pump~~
			2.0								~~C) non-ded bladder pump; or~~
			2.5								~~Standard groundwater sample:~~
			3.0								~~D) bailer due to limited column; or~~
			3.5								~~E) recovery well cycling sample~~
			4.0								~~F) irrigation well grab sample~~

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-7C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Annually- bagged tube + guidance device

Monitoring Well Purging and Sampling Record

(Tool Co. locks gate by 5:00 PM)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#15C
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault __	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide Sampling only BTB regardless of LNAPL

Initials: MDG

(22)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	830	19.07	19.40	0.33	22.30	20.0	Yes	Yes	Yes	Yes		Weather: Clear 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							slight black tint	*Low-flow groundwater sample:*
			1.0							small black	(A) peristaltic pump w/ ded tubing
			1.5							particles	B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1235	RW-#15C		7.30	25.6	2250	4.3	-279.6		Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-48
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: RMD 23

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	825	NM	~~4.74~~	NM	32.00	26.9	Yes	*Casing bent	Yes	Yes	*	Weather: Clear 50's

Obstruction @ 4.74

* No at grade plate

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								Low-flow groundwater sample:
			1.0		4/12/22 –						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Well located but						C) non-ded bladder pump; or
			2.5			likely destroyed					Standard groundwater sample:
			3.0								D) bailer due to limited column; or
			3.5			Obstruction at		4.74			E) recovery well cycling sample
			4.0								F) irrigation well grab sample
							(possibly	filled	with	Sediment, per historical notes	

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-48								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-130
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (24)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1220	NP	22.83	0.00	45.00	37.5	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1245	22.83	0.5	6.69	23.9	2700	3.0	32.1	7200	white / cloudy	*Low-flow groundwater sample:*
	1247	22.84	1.0	6.65	23.3	2710	2.3	35.6	7200		A) peristaltic pump w/ ded tubing
	1250	22.86	1.5	6.65	23.3	2720	2.3	35.4	7200		(B) ded bladder pump
	1253	22.86	2.0	6.64	23.2	2720	2.3	35.6	7200		C) non-ded bladder pump; or
	1255	22.86	2.5	6.63	23.2	2720	2.3	35.8	7200		*Standard groundwater sample:*
	1258	22.86	3.0	6.63	23.1	2720	2.3	35.2	7200		D) bailer due to limited column; or
	1300	22.86	3.5	6.63	23.2	2710	2.4	35.3	7200		E) recovery well cycling sample
	1302	22.86	4.0	6.62	23.2	2720	2.3	35.5	7200		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1310	MW-130	22.86	6.62	23.2	2720	2.3	35.5	7200	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-4
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MOB (25)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	820	26.55	29.44	2.89	41.75	31.7	Yes	Yes	Yes	Yes		Weather: Clear 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not sampled						B) ded bladder pump
			2.0		LNAPL > 0.03						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Gauge to top of 1-in galvanized pipe)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-19
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright __	4-in __	SS __
Vault ✓	Other ✓	Other ✓

Hydrologic Monitoring
for TRC
Houston, Texas

(26)

Well Inspection Information Sulfide sampling only GTB regardless of LNAPL

Initials: MMG

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	815	~~26.23~~ (26.23)	27.62	1.39	NM	10' off base as needed	Yes	Yes	Yes	Yes		Weather: Clear 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Sum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1220	RW-19		7.14	23.0	2896	5.4	289.4		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-76
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(27)

Initials: MDB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	925	NP	10.94	0.00	20.33	16.0	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	930	10.99	0.5	6.63	21.8	7410	3.3	-57.6	8.3	Clear/colorless	*Low-flow groundwater sample:*
	932	10.99	1.0	6.61	21.7	7380	3.1	-60.4	8.0		(A) peristaltic pump w/ ded tubing
	935	10.99	1.5	6.60	21.6	7360	2.7	-62.9	7.8		B) ded bladder pump
	937	10.99	2.0	6.60	21.5	7350	2.4	-65.7	7.4		C) non-ded bladder pump; or
	940	10.99	2.5	6.60	21.5	7350	2.1	-67.6	7.1		*Standard groundwater sample:*
	942	10.99	3.0	6.59	21.5	7330	2.0	-72.2	6.8		D) bailer due to limited column; or
	945	10.99	3.5	6.59	21.5	7330	1.9	-74.8	6.1		E) recovery well cycling sample
	947	10.99	4.0	6.59	21.5	7330	1.9	-76.7	5.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-12-22	950	MW-76	10.99	6.59	21.5	7330	1.9	-76.7	5.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-77
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(28)

Initials: MOB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1005	NP	8.92	0.00	20.52	15.2	Yes	Yes	Yes	Yes		Weather: Clear 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-77								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-78
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(29)

Initials: MOB

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1010	NP	7.22	0.00	19.57	14.6	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-78								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-75
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MDB

(30)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1020	NP	9.35	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Clear 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1025	9.38	0.5	6.77	23.1	7580	3.0	-97.2	8.9	Clear / colorless	*Low-flow groundwater sample:*
	1027	9.39	1.0	6.81	22.5	8160	2.6	-107.9	8.2		(A) peristaltic pump w/ ded tubing
	1030	9.39	1.5	6.82	22.3	8350	2.4	-112.2	7.6		B) ded bladder pump
	1032	9.39	2.0	6.82	22.2	8410	2.4	-113.6	7.4		C) non-ded bladder pump; or
	1035	9.39	2.5	6.81	22.2	8440	2.4	-114.8	7.0		*Standard groundwater sample:*
	1037	9.39	3.0	6.82	22.2	8460	2.3	-115.6	6.8		D) bailer due to limited column; or
	1040	9.39	3.5	6.82	22.1	8460	2.3	-116.1	6.4		E) recovery well cycling sample
	1042	9.39	4.0	6.82	22.1	8470	2.3	-116.4	6.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-12-22	1045	MW-75	9.39	6.82	22.1	8470	2.3	-116.4	6.0	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-83
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(31)

Initials: MNG

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	840	NP	8.92	0.00	19.91	15.6	Yes	Yes	Yes	Yes		Weather: Clear 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	845	9.01	0.5	6.70	20.8	6850	3.5	-41.6	9.3	Clear / bold tint	*Low-flow groundwater sample:*
	847	9.06	1.0	6.68	21.1	6870	3.3	-38.4	8.6		(A) peristaltic pump w/ ded tubing
	850	9.07	1.5	6.67	21.2	6890	3.0	-36.6	8.2		B) ded bladder pump
	852	9.07	2.0	6.67	21.3	6910	2.8	-35.4	8.0		C) non-ded bladder pump; or
	855	9.07	2.5	6.65	21.3	6920	2.4	-33.5	7.3		*Standard groundwater sample:*
	857	9.07	3.0	6.65	21.4	6930	2.1	-31.9	6.4		D) bailer due to limited column; or
	900	9.07	3.5	6.65	21.5	6930	2.0	-29.9	5.5		E) recovery well cycling sample
	902	9.07	4.0	6.65	21.5	6940	2.0	-27.8	5.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-12-22	905	MW-83	9.07	6.65	21.5	6940	2.0	-27.8	5.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ Dup-EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-3
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

32

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	900	NP	11.34	0.00	22.10	18.1	Yes	Yes	Yes	Yes		Weather Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	905	11.39	0.5	6.70	21.4	7410	2.9	71.9	7.8	colorless, clear	*Low-flow groundwater sample:*
↓	908	11.40	1.0	6.69	21.4	7370	2.3	70.7	6.7	↓	(A) peristaltic pump w/ ded tubing
	910	11.40	1.5	6.68	21.4	7300	2.1	69.1	5.9		B) ded bladder pump
	913	11.40	2.0	6.68	21.4	7250	2.0	67.9	5.2		C) non-ded bladder pump; or
	915	11.40	2.5	6.69	21.7	7210	1.9	66.2	4.7		*Standard groundwater sample:*
	918	11.40	3.0	6.70	21.3	7190	1.9	65.4	4.4		D) bailer due to limited column; or
	920	11.40	3.5	6.71	21.3	7160	1.8	63.9	4.0		E) recovery well cycling sample
↓	923	11.40	4.0	6.72	21.2	7140	1.7	62.1	3.7	↓ ✓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	925	MW-3	11.40	6.72	21.2	7140	1.7	62.1	3.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1100	DUP-EP-03	11.40	6.72	21.2	7140	1.7	62.1	3.7	Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-88
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (33)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1255	NP	9.02	0.00	20.31	14.8	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1300	9.07	0.5	7.50	23.7	8340	3.2	25.1	9.7	colorless, clear	*Low-flow groundwater sample:*
	1303	9.07	1.0	7.39	23.0	8060	2.1	23.9	8.4		(A) peristaltic pump w/ ded tubing
	1305	9.07	1.5	7.33	22.7	7980	1.8	21.4	7.9		B) ded bladder pump
	1308	9.07	2.0	7.28	22.6	7940	1.7	19.6	7.1		C) non-ded bladder pump; or
	1310	9.07	2.5	7.25	22.5	7910	1.6	18.0	6.3		*Standard groundwater sample:*
	1313	9.07	3.0	7.22	22.5	7890	1.6	17.1	5.8		D) bailer due to limited column; or
	1315	9.07	3.5	7.20	22.4	7880	1.5	16.3	5.4		E) recovery well cycling sample
	1318	9.07	4.0	7.19	22.4	7870	1.5	15.8	5.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1320	MW-88	9.07	7.19	22.4	7870	1.5	15.8	5.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ Dup-EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BCH (34)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1335	NP	8.28	0.00	22.65	17.4	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

*SC confirmed in 1,000 solution

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1340	8.35	0.5	7.17	23.8	37,800	2.4	96.6	9.8	colorless, clear	*Low-flow groundwater sample:*
	1343	8.41	1.0	7.12	23.3	38,900	1.9	90.4	8.2		(A) peristaltic pump w/ ded tubing
	1345	8.44	1.5	7.08	23.1	40,100	1.7	87.2	7.5		B) ded bladder pump
	1348	8.46	2.0	7.06	23.0	40,800	1.6	83.8	6.7		C) non-ded bladder pump; or
	1350	8.47	2.5	7.05	22.9	41,000	1.5	82.4	5.9		*Standard groundwater sample:*
	1353	8.48	3.0	7.04	22.9	41,100	1.4	81.9	5.3		D) bailer due to limited column; or
	1355	8.48	3.5	7.04	23.0	41,100	1.4	81.1	5.0		E) recovery well cycling sample
	1358	8.48	4.0	7.03	23.0	41,100	1.3	80.7	4.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1400	MW-22A	8.48	7.03	23.0	41,100	1.3	80.7	4.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-EP-02	8.48	7.03	23.0	41,100	1.3	80.7	4.7	same	same	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

35

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1330	NP	7.99	0.00	54.66	49.7	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-22B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-10
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (36)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1455	NP	5.71	0.00	18.45	13.3	Yes	Yes	Yes	Yes		Weather: Sunny, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1500	5.74	0.5	7.35	23.0	13,380	3.1	-7.3	11.9	colorless, clear	*Low-flow groundwater sample:*
	1503	5.74	1.0	7.24	22.7	12,590	2.3	-9.0	9.4		(A) peristaltic pump w/ ded tubing
	1505	5.74	1.5	7.18	22.6	10,220	2.0	-10.2	8.0		B) ded bladder pump
	1508	5.74	2.0	7.13	22.5	8,970	1.8	-11.6	7.2		C) non-ded bladder pump; or
	1510	5.74	2.5	7.09	22.4	8,640	1.7	-12.9	6.8		*Standard groundwater sample:*
	1513	5.74	3.0	7.07	22.4	8,580	1.6	-14.1	6.5		D) bailer due to limited column; or
	1515	5.74	3.5	7.05	22.4	8,560	1.6	-14.8	6.1		E) recovery well cycling sample
	1518	5.74	4.0	7.04	22.4	8,540	1.5	-15.3	5.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1520	MW-10	5.74	7.04	22.4	8,540	1.5	-15.3	5.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-123
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (37)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1125	NP	6.29	0.00	25.71	25.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1130	6.30	0.5	7.26	21.8	8860	2.9	-48.7	10.9	colorless, clear	*Low-flow groundwater sample:*
	1133	6.30	1.0	7.15	21.3	8,520	1.7	-44.8	8.7		(A) peristaltic pump w/ ded tubing
	1135	6.30	1.5	7.11	21.0	8,320	1.7	-41.3	7.8		B) ded bladder pump
	1138	6.30	2.0	7.08	20.9	8,280	1.6	-39.0	7.2		C) non-ded bladder pump; or
	1140	6.30	2.5	7.06	20.9	8,220	1.5	-37.4	6.5		*Standard groundwater sample:*
	1143	6.30	3.0	7.05	20.8	8,180	1.4	-35.9	5.9		D) bailer due to limited column; or
	1145	6.30	3.5	7.04	20.8	8,160	1.4	-34.2	5.3		E) recovery well cycling sample
	1148	6.30	4.0	7.04	20.8	8,150	1.3	-32.7	4.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1150	MW-123	6.30	7.04	20.8	8,150	1.3	-32.7	4.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(38)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1545	NP	11.48	0.00	16.55	Well Base	Yes	Yes	Yes	Yes		Weather: Pt. Cloudy, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1550	11.49	0.5	7.34	23.2	7,890	3.4	-107.4	9.5	colorless, clear,	*Low-flow groundwater sample:*
	1553	11.50	1.0	7.28	22.8	7,620	2.2	-118.3	8.1	HC odor	(A) peristaltic pump w/ ded tubing
	1555	11.50	1.5	7.25	22.6	7,530	1.9	-124.7	7.2		B) ded bladder pump
	1558	11.50	2.0	7.22	22.5	7,460	1.8	-129.0	6.8		C) non-ded bladder pump; or
	1600	11.50	2.5	7.20	22.4	7,410	1.7	-131.4	5.7		*Standard groundwater sample:*
	1603	11.50	3.0	7.18	22.4	7,380	1.7	-133.8	5.3		D) bailer due to limited column; or
	1605	11.50	3.5	7.17	22.4	7,360	1.6	-135.2	5.1		E) recovery well cycling sample
	1608	11.50	4.0	7.17	22.4	7,350	1.6	-136.9	4.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1610	MW-4A	11.50	7.17	22.4	7,350	1.6	-136.9	4.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(39)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1540	NP	11.24	0.00	72.37	67.4	Yes	Yes	Yes	Yes		Weather: Pt. Cloudy, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-4B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+EB-EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (40)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1000	NP	7.35	0.00	20.15	14.8	Yes	Yes	Yes	Yes		Weather Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1005	7.39	0.5	7.40	23.4	14,950	3.0	-101.9	8.1	colorless, clear	*Low-flow groundwater sample:*
↓	1008	7.40	1.0	7.38	23.3	15,210	2.7	-103.2	7.0	↓	(A) peristaltic pump w/ ded tubing
↓	1010	7.40	1.5	7.35	23.3	15,370	2.1	-105.0	6.2	↓	B) ded bladder pump
↓	1013	7.40	2.0	7.33	23.2	15,460	2.0	-107.1	5.5	↓	C) non-ded bladder pump; or
↓	1015	7.40	2.5	7.31	23.1	15,530	1.8	-109.3	4.6	↓	*Standard groundwater sample:*
↓	1018	7.40	3.0	7.31	23.0	15,600	1.6	-111.8	3.8	↓	D) bailer due to limited column; or
↓	1020	7.40	3.5	7.30	23.0	15,660	1.6	-112.7	3.4	↓	E) recovery well cycling sample
↓	1023	7.40	4.0	7.30	23.0	15,680	1.5	-113.5	3.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1025	MW-5A	7.40	7.30	23.0	15,680	1.5	-113.5	3.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓												
↓												
↓	1040	EB-EP-03	NA	—	—	—	—	—	→	Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (41)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1055	NP	8.48	0.00	53.54	48.5	Yes	Yes	Yes	Yes		Weather: Sunny, 68°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-5B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5C
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (42)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1102	NP	8.46	0.00	71.64	66.6						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-5C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+ DUP-EP-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AOS (43)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	840	NP	8.86	0.00	18.65	13.6	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	845	9.09	0.5	7.33	22.7	7460	1.9	-75.6	7.9	colorless / clear	*Low-flow groundwater sample:*
	847	9.10	1.0	7.22	22.5	7490	1.7	-72.3	5.8		(A) peristaltic pump w/ ded tubing
	850	9.10	1.5	7.20	22.4	7500	1.7	-72.5	4.7		B) ded bladder pump
	853	9.10	2.0	7.18	22.4	7500	1.6	-72.2	3.4		C) non-ded bladder pump; or
	855	9.10	2.5	7.17	22.3	7520	1.6	-71.4	2.7		*Standard groundwater sample:*
	857	9.10	3.0	7.17	22.2	7540	1.6	-69.7	2.5		D) bailer due to limited column; or
	900	9.10	3.5	7.17	22.3	7560	1.5	-68.8	2.2		E) recovery well cycling sample
	903	9.10	4.0	7.17	22.3	7560	1.5	-68.1	2.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	905	MW-7A	9.10	7.17	22.3	7560	1.5	-68.1	2.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	800	DUP-EP-01	9.10	7.17	22.3	7560	1.5	-68.1	2.4	Same	same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (44)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	834	NP	8.65	0.00	52.56	47.6	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-7B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Trip Blank - EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

45

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	815	NP	7.59	0.00	20.74	16.4	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	820	7.69	0.5	7.18	21.8	19,260	2.9	37.7	10.1	colorless, clear	*Low-flow groundwater sample:*
	823	7.75	1.0	7.09	21.9	19,580	2.3	10.8	8.7		(A) peristaltic pump w/ ded tubing
	825	7.79	1.5	7.02	22.0	19,720	2.0	-1.4	8.0		B) ded bladder pump
	828	7.81	2.0	6.99	22.0	19,930	1.8	-8.5	7.6		C) non-ded bladder pump; or
	830	7.82	2.5	6.97	22.1	20,000	1.7	-11.2	7.1		*Standard groundwater sample:*
	833	7.83	3.0	6.95	22.1	20,100	1.7	-14.6	6.9		D) bailer due to limited column; or
	835	7.83	3.5	6.94	22.2	20,100	1.6	-16.9	6.2		E) recovery well cycling sample
	838	7.83	4.0	6.93	22.2	20,100	1.6	-18.1	5.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	840	OCD-8A	7.83	6.93	22.2	20,100	1.6	-18.1	5.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (46)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	810	NP	7.78	0.00	56.65	51.7	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-8B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Biennial only - NO Activity

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-P4
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (47)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22					30.26	22.8						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-P4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-25
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (48)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1630	NP	10.32	0.00	28.18	23.2	Yes	Yes	Yes	Yes		Weather: Pt. Cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-25								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-8
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(49)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1635	NP	12.59	0.00	>14.95 (blockage)	NS	Yes	Issue	Yes	Yes		Weather: Pt. Cloudy, 70s
								*Blockage @ 14.95' TOC per historical condition				

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-1R
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (50)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1645	NP	10.60	0.00	20.63	15.6	Yes	Issue	Yes	Yes		Weather: Pt. Cloudy, 70s
								*				

Well Purging Record

Bent casing lid makes closure difficult. well still locks + is functional.

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-1R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-15
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(51)

Initials: BRH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1650	NP	11.86	0.00	21.70	17.7	Yes	Yes	Yes	Yes		Weather: Pt. cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-15								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Trip Blank - EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-1R
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (52)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1155	NP	11.52	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1200	11.77	0.5	7.06	24.5	15,930	2.9	-89.7	9.8	colorless, clear	*Low-flow groundwater sample:*
	1203	11.77	1.0	7.02	23.8	12,160	2.2	-92.9	8.4		(A) peristaltic pump w/ ded tubing
	1205	11.77	1.5	6.98	23.6	11,420	1.7	-95.1	6.9		B) ded bladder pump
	1208	11.77	2.0	6.95	23.4	11,010	1.5	-97.9	6.3		C) non-ded bladder pump; or
	1210	11.77	2.5	6.94	23.3	10,970	1.3	-99.4	5.5		*Standard groundwater sample:*
	1213	11.77	3.0	6.92	23.2	10,950	1.2	-100.7	5.1		D) bailer due to limited column; or
	1215	11.77	3.5	6.92	23.2	10,930	1.1	-101.5	4.8		E) recovery well cycling sample
	1218	11.77	4.0	6.91	23.2	10,920	1.1	-102.3	4.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1220	OCD-1R	11.77	6.91	23.2	10920	1.1	-102.3	4.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
						(10,920)						
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (53)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	815	NP	11.73	0.00	27.56	22.3	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	820	11.92	0.5	6.45	21.1	6270	3.8	78.1	9.3	colorless, clear	Low-flow groundwater sample:
	823	11.92	1.0	6.59	21.0	7120	2.7	59.3	7.9		(A) peristaltic pump w/ ded tubing
	825	11.92	1.5	6.67	21.0	7450	2.0	51.7	6.8		B) ded bladder pump
	828	11.92	2.0	6.71	20.9	7510	1.9	48.6	6.2		C) non-ded bladder pump; or
	830	11.92	2.5	6.73	20.8	7540	1.8	45.2	5.8		Standard groundwater sample:
	833	11.92	3.0	6.75	20.8	7560	1.8	44.0	5.4		D) bailer due to limited column; or
	835	11.92	3.5	6.76	20.8	7570	1.7	42.9	5.0		E) recovery well cycling sample
	838	11.92	4.0	6.77	20.8	7590	1.7	41.3	4.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	840	OCD-2A	11.92	6.77	20.8	7590	1.7	41.3	4.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (54)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	810	NP	11.33	0.00	50.38	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 50s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		OCD-2B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-3
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(55)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	900	NP	12.03	0.00	25.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	905	12.19	0.5	7.18	22.8	6640	3.3	106.2	8.2	colorless, clear	*Low-flow groundwater sample:*
	908	12.19	1.0	7.14	22.4	6590	2.2	96.4	7.9		(A) peristaltic pump w/ ded tubing
	910	12.19	1.5	7.11	22.2	6570	1.8	89.1	7.3		B) ded bladder pump
	913	12.19	2.0	7.09	22.1	6550	1.7	85.8	6.5		C) non-ded bladder pump; or
	915	12.19	2.5	7.08	22.0	6540	1.6	82.0	5.8		*Standard groundwater sample:*
	918	12.19	3.0	7.08	22.0	6540	1.6	80.7	5.4		D) bailer due to limited column; or
	920	12.19	3.5	7.07	22.0	6530	1.5	79.1	5.1		E) recovery well cycling sample
	923	12.19	4.0	7.06	22.0	6530	1.5	77.5	4.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	925	OCD-3	12.19	7.06	22.0	6530	1.5	77.5	4.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-4
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (56)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	945	NP	11.61	0.00	25.41	20.1	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	950	11.75	0.5	7.13	23.9	18,740	2.6	80.4	9.8	colorless, clear;	*Low-flow groundwater sample:*
	953	11.75	1.0	7.08	22.9	19,390	2.2	68.7	8.7	orange/gray particles	(A) peristaltic pump w/ ded tubing
	955	11.75	1.5	7.05	22.7	20,000	1.9	60.3	8.1		B) ded bladder pump
	958	11.75	2.0	7.04	22.6	20,100	1.7	55.9	7.6		C) non-ded bladder pump; or
	1000	11.75	2.5	7.03	22.5	20,200	1.5	51.3	7.2		*Standard groundwater sample:*
	1003	11.75	3.0	7.03	22.5	20,200	1.4	49.6	6.9		D) bailer due to limited column; or
	1005	11.75	3.5	7.02	22.4	20,300	1.3	47.8	6.5		E) recovery well cycling sample
	1008	11.75	4.0	7.02	22.4	20,300	1.3	46.2	6.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1010	OCD-4	11.75	7.02	22.4	20,300	1.3	46.2	6.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11A
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (57)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1115	NP	8.98	0.00	22.01	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1120	9.16	0.5	7.08	24.0	25,700	2.6	-36.4	21.5	colorless, clear -	Low-flow groundwater sample:
	1123	9.16	1.0	7.02	23.7	26,200	2.1	-44.3	14.2	w/ orange algae	(A) peristaltic pump w/ ded tubing
	1125	9.16	1.5	6.97	23.5	26,400	1.8	-49.1	12.9	particles	B) ded bladder pump
	1128	9.16	2.0	6.94	23.4	26,500	1.6	-52.6	11.6		C) non-ded bladder pump; or
	1130	9.16	2.5	6.92	23.4	26,600	1.4	-55.0	9.7		Standard groundwater sample:
	1133	9.16	3.0	6.91	23.3	26,600	1.3	-57.1	8.3		D) bailer due to limited column; or
	1135	9.16	3.5	6.91	23.3	26,700	1.2	-58.5	7.9		E) recovery well cycling sample
	1138	9.16	4.0	6.90	23.4	26,700	1.2	-59.4	7.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1140	MW-11A	9.16	6.90	23.4	26,700	1.2	-59.4	7.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11B
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (58)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1110	NP	8.96	0.00	47.30	42.3	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-11B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-5
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

59

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1025	NP	9.63	0.00	25.41	20.6	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1030	9.66	0.5	7.19	23.6	19,240	2.8	-15.1	>200	colorless, clear	*Low-flow groundwater sample:*
	1033	9.66	1.0	7.14	23.0	19,250	1.9	-27.2	148.0	w/ orange algae	(A) peristaltic pump w/ ded tubing
	1035	9.66	1.5	7.12	22.8	19,220	1.7	-34.9	101.0	particles	B) ded bladder pump
	1038	9.66	2.0	7.10	22.7	19,180	1.6	-39.0	78.0		C) non-ded bladder pump; or
	1040	9.66	2.5	7.09	22.6	19,160	1.5	-42.4	67.0		*Standard groundwater sample:*
	1043	9.66	3.0	7.08	22.6	19,150	1.5	-45.1	61.0		D) bailer due to limited column; or
	1045	9.66	3.5	7.08	22.6	19,140	1.4	-47.8	58.0		E) recovery well cycling sample
	1048	9.66	4.0	7.07	22.6	19,130	1.4	-48.5	57.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1050	OCD-5	9.66	7.07	22.6	19,130	1.4	-48.5	57.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-87
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (60)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	940	NP	8.16	0.00	20.39	15.1	Yes	Flush	Yes	Yes		Weather: Sunny, 60's
								* prot.	casing is rusted at base			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	945	8.28	0.5	7.19	23.0	10,950	1.9	-39.6	3.9	Colorless / clear	*Low-flow groundwater sample:*
	947	8.31	1.0	7.12	22.8	11,110	1.5	-28.1	2.3		(A) peristaltic pump w/ ded tubing
	950	8.36	1.5	7.09	22.5	11,170	1.3	-15.7	2.0		B) ded bladder pump
	953	8.40	2.0	7.08	22.5	11,200	1.3	-14.4	1.7		C) non-ded bladder pump; or
	955	8.44	2.5	7.08	22.5	11,220	1.3	-14.2	1.7		*Standard groundwater sample:*
	957	8.49	3.0	7.08	22.5	11,230	1.4	-15.0	1.4		D) bailer due to limited column; or
	1000	8.53	3.5	7.08	22.5	11,230	1.4	-18.1	1.5		E) recovery well cycling sample
	1003	8.57	4.0	7.08	22.5	11,240	1.3	-21.0	1.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1005	MW-87	8.57	7.08	22.5	11,240	1.3	-21.0	1.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18A
Event: 2427
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (61)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	915	NP	9.95	0.00	22.58	17.9	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	920	10.15	0.5	7.36	22.5	22,000	3.1	-96.3	10.1	colorless, clear	*Low-flow groundwater sample:*
	923	10.22	1.0	7.27	22.2	22,200	2.4	-104.5	9.4		(A) peristaltic pump w/ ded tubing
	925	10.28	1.5	7.21	22.1	22,300	2.1	-111.9	8.7		B) ded bladder pump
	928	10.33	2.0	7.16	22.0	22,400	2.0	-117.5	8.2		C) non-ded bladder pump; or
	930	10.36	2.5	7.12	22.0	22,400	1.9	-121.4	7.6		*Standard groundwater sample:*
	933	10.39	3.0	7.10	21.9	22,500	1.9	-124.0	7.0		D) bailer due to limited column; or
	935	10.42	3.5	7.09	21.9	22,500	1.8	-125.9	6.4		E) recovery well cycling sample
	938	10.45	4.0	7.08	21.9	22,500	1.8	-127.3	6.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-12-22	940	MW-18A	10.45	7.08	21.9	22,500	1.8	-127.3	6.1	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18B
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (62)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	910	NP	9.96	0.00	50.59	45.6	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

(Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18T
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(63)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	905	NP	10.07	0.00	50.57	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18T								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-70
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (64)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1045	NP	8.32	0.00	22.05	16.8	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	1050	8.40	0.5	7.21	22.6	5610	1.6	-118.3	8.8	colorless / clear	*Low-flow groundwater sample:*
↓	1053	8.40	1.0	7.16	22.4	5290	1.3	-121.1	8.1	↓	(A) peristaltic pump w/ ded tubing
	1055	8.40	1.5	7.15	22.3	5090	1.2	-124.0	7.8		B) ded bladder pump
	1057	8.40	2.0	7.14	22.3	4970	1.2	-129.1	7.4		C) non-ded bladder pump; or
	1100	8.40	2.5	7.14	22.3	4940	1.1	-129.5	7.1		*Standard groundwater sample:*
	1103	8.40	3.0	7.13	22.3	4910	1.1	-124.2	6.8		D) bailer due to limited column; or
	1105	8.40	3.5	7.13	22.4	4890	1.1	-122.9	6.9		E) recovery well cycling sample
↓	1107	8.40	4.0	7.12	22.4	4880	1.1	-121.4	6.7	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1110	MW-70	8.40	7.12	22.4	4880	1.1	-121.4	6.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

+EB-EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-124
Event: 2422
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (65)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1005	NP	9.08	0.00	22.00	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1010	9.14	0.5	7.29	23.2	15,770	2.9	-71.1	82.6	colorless, clear	*Low-flow groundwater sample:*
	1013	9.14	1.0	7.18	22.9	15,310	2.2	-73.2	10.7		(A) peristaltic pump w/ ded tubing
	1015	9.14	1.5	7.11	22.7	15,090	2.0	-75.9	10.1		B) ded bladder pump
	1018	9.14	2.0	7.08	22.6	14,950	1.8	-77.4	9.5		C) non-ded bladder pump; or
	1020	9.14	2.5	7.04	22.5	14,890	1.7	-78.6	8.4		*Standard groundwater sample:*
	1023	9.14	3.0	7.01	22.5	14,860	1.6	-79.2	7.9		D) bailer due to limited column; or
	1025	9.14	3.5	6.99	22.4	14,850	1.6	-80.1	7.3		E) recovery well cycling sample
	1028	9.14	4.0	6.97	22.4	14,840	1.5	-80.9	7.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1030	MW-124	9.14	6.97	22.4	14,840	1.5	-80.9	7.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1050	EB-EP-02	NA	~	~	~	~	~	~	Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Driveway near bldg. A/C unit

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-52
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (66)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	910	NP	21.01	0.00	34.67	29.5	Yes	Yes	Yes	Yes (Scu labeled)		Weather: Sunny 70

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	915	21.04	0.5	7.00	20.2	3260	5.2	75.2	9.2	Colorless / Clear	*Low-flow groundwater sample:*
	917	21.04	1.0	6.94	20.3	3250	5.0	78.6	9.0		(A) peristaltic pump w/ ded tubing
	920	21.04	1.5	6.92	20.4	3240	4.4	81.5	8.5		B) ded bladder pump
	922	21.04	2.0	6.91	20.4	3230	4.4	82.4	8.3		C) non-ded bladder pump; or
	925	21.04	2.5	6.91	20.5	3230	4.2	82.8	8.0		*Standard groundwater sample:*
	927	21.04	3.0	6.91	20.5	3220	4.3	83.2	7.6		D) bailer due to limited column; or
	930	21.04	3.5	6.91	20.5	3220	4.2	83.6	7.0		E) recovery well cycling sample
	933	21.04	4.0	6.91	20.5	3220	4.2	83.9	6.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	935	MW-52	21.04	6.91	20.5	3220	4.2	83.9	6.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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E. side of blue bldg.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-109
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Replaced degraded E" - cap

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (67)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1100	NP	19.13	0.00	29.48	25.5	Yes	Yes	Yes	Yes (sun labeled)	*	Weather: Sunny 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1115	19.20	0.5	7.13	24.7	2400	4.0	-310.1	72.3	Colorless / sl. cloudy	*Low-flow groundwater sample:*
	1117	19.26	1.0	7.10	24.0	2970	2.9	-311.4	60.4	↓ ↓	(A) peristaltic pump w/ ded tubing
	1120	19.30	1.5	7.10	24.0	2960	2.8	-309.6	47.8	Clear colorless	B) ded bladder pump
	1122	19.33	2.0	7.09	23.9	3000	2.9	-307.8	40.2		C) non-ded bladder pump; or
	1125	19.36	2.5	7.09	23.8	3000	2.9	-304.1	38.3		*Standard groundwater sample:*
	1127	19.38	3.0	7.09	23.7	3010	2.8	-301.3	30.3		D) bailer due to limited column; or
	1130	19.40	3.5	7.08	23.7	3010	2.8	-300.4	29.2		E) recovery well cycling sample
↓	1132	19.41	4.0	7.08	23.6	3020	2.7	-300.1	26.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1140	MW-109	19.41	7.08	23.6	3020	2.7	-300.1	26.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-110
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (68)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	1000	NP	15.91	0.00	29.74	24.7	Yes	Yes	Yes	Yes (Scn labeled)		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-12-22	1005	16.01	0.5	7.22	21.6	2100	4.9	-88.6	16.3	Colorless / Clear	*Low-flow groundwater sample:*
	1007	16.06	1.0	7.17	21.7	2020	3.9	-92.2	10.8		(A) peristaltic pump w/ ded tubing
	1010	16.10	1.5	7.16	21.8	1960	3.4	-101.3	9.4		B) ded bladder pump
	1012	16.12	2.0	7.13	21.9	1920	3.2	-105.9	9.1		C) non-ded bladder pump; or
	1015	16.13	2.5	7.14	22.0	1900	3.2	-112.1	8.4		*Standard groundwater sample:*
	1017	16.14	3.0	7.16	22.0	1850	3.1	-115.4	8.0		D) bailer due to limited column; or
	1020	16.15	3.5	7.16	22.0	1850	3.2	-119.3	7.6		E) recovery well cycling sample
	1022	16.15	4.0	7.16	22.1	1860	3.1	-121.6	7.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-12-22	1025	MW-110	16.15	7.16	22.1	1860	3.1	-121.6	7.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-13
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH

(69)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	—	—	—	—	21.10	NS	—	—	—	—	—	Weather: —

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		Unable to access due to areal flooding of property. Property owner requested we avoid accessing w/ ATV for safety purposes.						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-13								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-69
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (70)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	—			—	22.51	NS	—					Weather: —

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5		See note on MW-13 form						Low-flow groundwater sample:
			1.0								A) peristaltic pump w/ ded tubing
			1.5		(unable to access due to areal flooding						B) ded bladder pump
			2.0		of property ; Property owner						C) non-ded bladder pump; or
			2.5		requested to avoid						Standard groundwater sample:
			3.0								D) bailer due to limited column; or
			3.5		[must access w/ ATV for safety]						E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-69										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-12
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (71)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22					17.93	NS						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		See note on		MW-13 form				A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(unable to access		due to area		flooding		C) non-ded bladder pump; or
			2.5		cf property;		Property owner		requested		*Standard groundwater sample:*
			3.0		to avoid						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0		[must access		w/ ATV for		safety]		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-12								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-24
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located E. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (72)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	—	—	—	—	23.51	NS	—	—	—	—	—	Weather: —

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		see note on MW-13 form						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		(unable to access due to areal flooding						C) non-ded bladder pump; or
			2.5		of property; property owner requested						*Standard groundwater sample:*
			3.0		to avoid						D) bailer due to limited column; or
			3.5		[must access w/ ATV for safety]						E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-24								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-14
Event: 2H22
Area of Concern: EP

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Located N. of river

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRH (73)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-12-22	—					NS	—					Weather: —

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	See note on MW-13 form							A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	(unable to access due to areal flooding							C) non-ded bladder pump; or
			2.5	of property; property owner requested							*Standard groundwater sample:*
			3.0	to avoid)							D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			[Must access w/ ATV for safety]					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-14										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube; Sample via part if RW is active

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-12R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other 12-in	Other __

(RW recently off due to water rights issue)

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide Sampling BTK Regardless of LNAPL

Initials: BB (74)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	825	NP (NP)	15.64	0.00	NM	Top of Pump (if pump not operating)	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								
			4.0							or	(E) recovery well cycling sample, if recovery pump on
											F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1130	RW-12R		7.06	23.6	3130	4.0	-341.2		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Dup-Rest-01
+ EB-Rest-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-113
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: OJD (75)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	940	NP	14.92	0.00	37.80	3.8	yes	yes	yes	yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	945	14.93	0.5	7.03	20.7	3480	3.1	-17.5	11.7	Colorless/Clear	*Low-flow groundwater sample:*
	948	14.93	1.0	6.98	20.4	3340	2.8	-13.1	10.7		(A) peristaltic pump w/ ded tubing
	950	14.93	1.5	6.92	20.1	3210	2.5	-10.1	9.8		(B) ded bladder pump
	953	14.93	2.0	6.88	19.9	3190	2.4	-7.7	9.1		C) non-ded bladder pump; or
	955	14.93	2.5	6.85	19.8	3150	2.3	-6.1	8.8		*Standard groundwater sample:*
	958	14.93	3.0	6.83	19.7	3130	2.3	-5.3	8.3		D) bailer due to limited column; or
	1000	14.93	3.5	6.80	19.6	3110	2.2	-3.2	7.6		E) recovery well cycling sample
	1003	14.93	4.0	6.79	19.6	3090	2.2	-1.7	7.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1015	MW-113	14.93	6.79	19.6	3090	2.2	-1.7	7.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-Rest-01	14.93	6.79	19.6	3090	2.2	-1.7	7.2	same	same	
	1025	EB-Rest-01	NA							same	same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-8
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials BM (76)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	815	11.50	11.54	0.04	35.80	30.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		Not sampled due to presence of LNAPL >0.03'						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-22
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(77)

Well Inspection Information Sulfide Sampling only RTB Regardless of LNAPL

Initials: BB/DSD

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	805	11.36	11.79	0.43	NM	Sample part if RW active	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Gold tint, cloudy	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1050	RW-22		7.21	23.3	4.8	3.680	-261.2		Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20A
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __

metal roof canopy — RW-20A, Vault, RW-20B

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide sampling only BTB regardless of LNAPL, @ RW-20 Header

Initials: BTB / OTD (78)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	808	NP	9.81	0.00	NM *	Sample Port	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

* Likely well base @ 21.98' per Navajo

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1110	RW-20A	NM *	6.91	21.3	2894	5.9	-339.6		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓	1000	DUP-02	NM *	6.91	21.3	2894	5.9	-339.6				
			↓ (Sampled @ RW-20 Header)									

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20B
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 6-in	Other __

metal roof canopy • RW-20A ---------- [] Vault • RW-20B

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BTB (79)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	812	NP	9.74	0.00	NM	Sample Part	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-20B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged / labeled tube stored inside above-grade vault — Gauge only

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico
Gauge

Well: RW-13R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Vault ✓	Other 12-in	Other __

Above-grade

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide Sampling only BTB regardless of LNAPL

Initials: SS / OJD (80)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	830	13.88	15.82	1.94	NM	30.0	Yes	Yes	Yes	Yes		Weather: Sunny 70's
						or Sample part, if RW is active						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								or (E) recovery well cycling sample if RW is active
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1150	RW-13R		7.02	25.2	3,180	2.7	-298.7		Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico
Gauge

Well: RW-14R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other 12-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide sampling only BTB regardless of LNAPL

Initials: BB/DED (81)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	8:00	14.58	14.87	0.29	NM	Sample Port	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1035	RW-14R		7.41	22.5	2400	3.0	-190.8		Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-133
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (82)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-4-22	1040	15.40	15.49	0.09	37.64	27.9	Yes	Yes	Yes	Yes		Weather: Sunny 80S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not Sampled due to LNAPL				70.03		C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-133								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Dup-Rest-03
+ EB-Rest-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-134
Event: 2H22
Area of Concern: REST

+ Trip Blank-Rest-01

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (83)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1050	NP	17.31	0.00	32.95	28.4	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1055	17.32	0.5	7.11	19.4	4460	3.2	-30.5	18.1	Colorless/Clear	*Low-flow groundwater sample:*
	1058	17.32	1.0	7.03	19.2	4540	3.1	-21.1	15.1		(A) peristaltic pump w/ ded tubing
	1100	17.32	1.5	7.01	19.0	4580	3.0	-15.5	12.6		B) ded bladder pump
	1103	17.32	2.0	6.96	18.5	4590	2.9	-11.7	10.7		C) non-ded bladder pump; or
	1105	17.32	2.5	6.93	18.3	4600	2.9	-8.8	9.6		*Standard groundwater sample:*
	1108	17.32	3.0	6.90	18.2	4610	2.8	-5.3	9.2		D) bailer due to limited column; or
	1110	17.32	3.5	6.86	18.2	4620	2.8	-4.3	8.8		E) recovery well cycling sample
	1113	17.32	4.0	6.83	18.1	4620	2.8	-3.7	8.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1115	MW-134	17.32	6.83	18.1	4620	2.8	-3.7	8.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1400	Dup-Rest-03	17.32	6.83	18.1	4620	2.8	-3.7	8.7			
										Same	Same	
	1140	EB-Rest-03	NA							Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Sample only if pump is still in well (scheduled P&A)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4798
Event: 2H22
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; sample part (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BT (84)

Well Inspection Information (screen: 840-850)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	820	NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ Sample part						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Not Sampled, Pump removed						*Standard groundwater sample:*
			3.0		and dismantled						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Sample only if pump is still in well (Scheduled P&A)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4196
Event: 2H22
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; Sample part (faucet)

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (Screen: 280-292)

Initials: BB (85)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	823	NM	NM	NM	NM	NM	NA	NA	NA	Yes		Weather Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ Sample part						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Not sampled, pump						*Standard groundwater sample:*
			3.0		removed and dismantled						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-4196								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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DO NOT ADDRESS
Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-1227
Event: 2H22
Area of Concern: REST

Irrigation well
Removed from Program

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: (86)

Well Inspection Information (Screen: 194-246)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
	RA-1227									Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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No Activity in 2H22

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-3156
Event: 2H22
Area of Concern: REST

Irrigation well, must be turned on by Chase Farms; unused, per landowner (see below)

Hydrologic Monitoring for TRC
Houston, Texas

Initials: BB (87)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22		NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								Low-flow groundwater sample:
			1.0								A) peristaltic pump w/ ded tubing
			1.5			Inactive water well w/ sample part					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5			Chase Farms'	Chris Kuykendahl will turn				Standard groundwater sample:
			3.0			well on, for	annual	gw sampling only.			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			Per Chris, this irrigation well is not					(F) irrigation well grab sample
						used, due to slightly-elevated SC					
						well is purged 50-100 gal in preparation					for sample collection

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-3156								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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No Activity in 2H22
E. of MW-101; across street

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-313
Event: 2H22
Area of Concern: REST

[Irrigation and water-supply purpose, per Navajo]

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information (Screen: 904-1157)

Initials: (88)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22		NM	NM	NM	NM	NA	NA	NA	NA	Yes		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ sample port (By Tank 465)						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								(F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RA-313								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Pecan Grove)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-7
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (89)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1325	NP	10.85	0.00	34.83	30.6	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1330	10.87	0.5	6.96	22.7	3570	4.8	-203.8	5.3	Colorless Clear	*Low-flow groundwater sample:*
	1333	10.87	1.0	6.94	22.3	3620	3.3	-216.2	4.0	" "	(A) peristaltic pump w/ ded tubing
	1335	10.87	1.5	6.92	21.9	3650	2.6	-221.8	2.3	" "	B) ded bladder pump
	1338	10.87	2.0	6.91	21.7	3710	2.2	-227.4	1.9	" "	C) non-ded bladder pump; or
	1340	10.87	2.5	6.91	21.6	3750	2.0	-231.6	1.7	" "	*Standard groundwater sample:*
	1343	10.87	3.0	6.90	21.5	3760	1.8	-235.8	1.6	" "	D) bailer due to limited column; or
	1345	10.87	3.5	6.90	21.5	3760	1.7	-237.6	1.5	" "	E) recovery well cycling sample
	1348	10.87	4.0	6.90	21.5	3770	1.7	-238.4	1.5	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/11/22	1350	KWB-7	10.87	6.90	21.5	3770	1.7	-238.4	1.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-20
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (There is no "90") (91)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1119	NF	13.03	0.00	26.66	21.9	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-20								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-3
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (92)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1123	NP	13.41	0.00	21.59	NS	Yes	Yes	Yes	Yes		Weather: Sunny 70°F

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-4
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD (93)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1125	NP	34.88	0.00	36.98	NS	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

(Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-2
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials BD

(94)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
6/11/22	1129	NP	17.09	0.00	21.49	NS	YES	YES	YES	YES		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-1
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (95)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1245	NP	14.85	0.00	21.88	Well Base	yes	yes	yes	yes		Weather: sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1250	14.87	0.5	6.85	20.5	4510	3.5	17.8	4.4	Colorless, clear	*Low-flow groundwater sample:*
	1253	14.87	1.0	6.83	20.4	4490	2.6	39.6	3.1	" "	(A) peristaltic pump w/ ded tubing
	1255	14.87	1.5	6.80	20.4	4470	2.2	51.4	2.0	" "	B) ded bladder pump
	1258	14.87	2.0	6.79	20.3	4460	2.1	54.8	1.6	" "	C) non-ded bladder pump; or
	1300	14.87	2.5	6.79	20.3	4460	2.0	56.3	1.3	" "	*Standard groundwater sample:*
	1303	14.87	3.0	6.78	20.3	4450	2.0	57.2	1.1	" "	D) bailer due to limited column; or
	1305	14.87	3.5	6.77	20.3	4450	1.9	58.1	1.0	" "	E) recovery well cycling sample
	1308	14.87	4.0	6.77	20.3	4440	1.9	58.7	0.8	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1310	NP-1	14.87	6.77	20.3	4440	1.9	58.7	0.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-6
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JB (96)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1134	NP	9.70	0.00	20.35	18.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-8
Event: 2422
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (97)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1115	NP	10.83	0.00	23.30	18.3	Yes	Yes	Yes	Yes		Weather: Sunny 70's
			(10.83)									

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-8								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record + Trip Blank - TMD-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-21
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JST (98)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1210	NP	10.28	0.00	25.12	19.9	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1215	10.33	0.5	7.10	21.7	5260	2.1	122.7	11.7	Colorless / Clear	*Low-flow groundwater sample:*
	1218	10.37	1.0	7.08	21.3	5300	1.9	158.6	10.1		(A) peristaltic pump w/ ded tubing
	1220	10.41	1.5	7.03	21.1	5370	1.7	176.1	9.7		B) ded bladder pump
	1223	10.42	2.0	6.97	21.0	5390	1.6	187.3	9.1		C) non-ded bladder pump; or
	1225	10.42	2.5	6.95	21.0	5410	1.5	200.7	8.8		*Standard groundwater sample:*
	1228	10.42	3.0	6.92	21.0	5430	1.5	203.6	8.1		D) bailer due to limited column; or
	1230	10.42	3.5	6.90	21.0	5440	1.4	208.7	7.6		E) recovery well cycling sample
	1233	10.42	4.0	6.88	20.9	5450	1.4	210.7	7.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1235	MW-21	10.42	6.88	20.9	5450	1.4	210.7	7.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-9
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (99)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
6/15/22	1115	NP	11.37	0.00	22.25	NS	Yes	Yes	Yes	Yes		Weather: Sunny 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-71
Event: 2H22
Area of Concern: JMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BR (100)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	* Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	945	NP	12.18	0.00	21.67	20.7	Yes	Yes	Yes	Yes	X	Weather: Sunny 60's
			(12.18)									

* (Lowered to well base, permanently)

X Cracked pad

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-71										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-68
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (101)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/5/22	1050	NP	14.64	0.00	26.52	25.5	yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-68								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-27
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (102)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1054	NP	14.16	0.00	30.28	25.0	Yes	Yes	Yes	Yes		Weather: Sunny 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-27								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-89
Event: 2422
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BRS (103)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1058	NP	7.58	0.00	20.28	15.2	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-89								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-16
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD (104)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other -	
10/11/22	1102	NP	6.97	0.80	21.24	16.2	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-16										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-26
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (105)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1106	NP	8.02	0.00	27.58	22.6	Yes	Yes	Yes	Yes		Weather: Sunny 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-26								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: RJS (106)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1405	NP	10.66	0.00	42.27	37.0	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

(LNAPL 0.05' in 1H22...)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1410	10.68	0.5	6.80	21.6	3770	4.9	-162.3	6.3	Colorless	Clear
	1413	10.69	1.0	6.76	21.4	3730	2.9	-162.8	5.4	"	"
	1415	10.69	1.5	6.74	21.3	3710	2.5	-163.4	4.9	"	"
	1418	10.69	2.0	6.73	21.2	3700	1.9	-164.7	4.2	"	"
	1420	10.69	2.5	6.73	21.2	3,690	1.7	-165.6	3.7	"	"
	1423	10.69	3.0	6.73	21.1	3,690	1.6	-166.3	3.3	"	"
	1425	10.69	3.5	6.72	21.1	3,680	1.5	-167.1	3.1	"	"
	1428	10.69	4.0	6.72	21.1	3,680	1.5	-167.4	3.0	"	"

Low-flow groundwater sample:
(A) peristaltic pump w/ ded tubing
B) ded bladder pump
C) non-ded bladder pump; or
Standard groundwater sample:
D) bailer due to limited column; or
E) recovery well cycling sample
F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1430	KWB-11A	10.69	6.72	21.1	3,680	1.5	-167.4	3.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11B
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BM (107)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1445	NT	11.56	0.00	72.45	62.2	YES	Yes	YES	YES	*	Weather Sunny 80's

Well Purging Record

* Severely cracked well pad → * Same as last event

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1450	11.71	0.5	6.96	21.4	3,310	3.4	-63.8	11.6	Colorless, Clear	
	1453	11.76	1.0	6.87	21.2	3,280	2.5	-46.8	9.8	"	"
	1455	11.77	1.5	6.85	21.1	3,260	2.1	-31.4	8.1	"	"
	1458	11.78	2.0	6.83	21.0	3,250	1.8	-20.6	7.2	"	"
	1500	11.78	2.5	6.82	21.0	3,250	1.6	-11.8	6.5	"	"
	1503	11.78	3.0	6.81	20.9	3,240	1.5	-8.7	6.3	"	"
	1505	11.78	3.5	6.81	20.9	3,240	1.4	-6.9	5.9	"	"
	1508	11.78	4.0	6.80	20.9	3,240	1.4	-6.2	5.7	"	"

Low-flow groundwater sample:
(A) peristaltic pump w/ ded tubing
B) ded bladder pump
C) non-ded bladder pump; or
Standard groundwater sample:
D) bailer due to limited column; or
E) recovery well cycling sample
F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1510	KWB-11B	11.78	6.80	20.9	3,240	1.4	-6.2	5.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Removed from Program by Navajo, 4-13-15

Monitoring Well Purging and Sampling Record

(Former Jack Joy 575-365-6042)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-3AR
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(108)

Initials:

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
												Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
										Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. RO Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-115
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BT (189)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1625	NP	13.84	0.00	27.50	19.8	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1630	13.88	0.5	6.82	21.8	4080	3.8	78.2	3.2	Colorless clear	*Low-flow groundwater sample:*
	1633	13.88	1.0	6.81	21.6	4,080	2.8	84.9	2.6	" "	(A) peristaltic pump w/ ded tubing
	1635	13.88	1.5	6.80		4,090	2.4	94.7	1.9	" "	B) ded bladder pump
	1638	13.88	2.0	6.79	21.4	4,090	2.2	99.6	1.5	" "	C) non-ded bladder pump; or
	1640	13.88	2.5	6.78	21.4	4,100	2.2	103.5	1.2	" "	*Standard groundwater sample:*
	1643	13.88	3.0	6.78	21.4	4,100	2.1	104.9	1.0	" "	D) bailer due to limited column; or
	1645	13.88	3.5	6.77	21.3	4,100	2.1	105.6	1.0	" "	E) recovery well cycling sample
	1648	13.88	4.0	6.77	21.3	4,110	2.1	106.1	0.9	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1650	MW-115	13.88	6.77	21.3	4,110	2.1	106.1	0.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. RG Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-114
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

(110)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1705	NP	15.27	0.00	38.25	30.5	Yes	Yes	Yes	Yes		Weather Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1710	15.29	0.5	6.79	23.2	3,460	3.5	-0.8	4.8	Colorless, Clear	*Low-flow groundwater sample:*
	1713	15.29	1.0	6.75	22.9	3,450	2.6	+12.6	3.1	" "	(A) peristaltic pump w/ ded tubing
	1715	15.29	1.5	6.73	22.8	3,450	2.4	28.6	2.5	" "	B) ded bladder pump
	1718	15.29	2.0	6.71	22.8	3,450	2.3	39.2	1.9	" "	C) non-ded bladder pump; or
	1720	15.29	2.5	6.70	22.7	3,440	2.3	42.8	1.6	" "	*Standard groundwater sample:*
	1723	15.29	3.0	6.69	22.7	3,440	2.2	45.3	1.4	" "	D) bailer due to limited column; or
	1725	15.29	3.5	6.69	22.7	3,440	2.2	46.1	1.4	" "	E) recovery well cycling sample
	1728	15.29	4.0	6.69	22.7	3,440	2.1	46.6	1.3	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1730	MW-114	15.29	6.69	22.7	3,440	2.1	46.6	1.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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ATV - S. RO Field (mesquite !!)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-125
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (III)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1545	NP	18.24	0.00	28.31	23.5	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1550	18.29	0.5	6.88	22.3	4290	4.7	46.8	8.7	Colorless, Clear	*Low-flow groundwater sample:*
	1553	18.31	1.0	6.85	22.0	4,240	3.8	53.9	6.8	" "	(A) peristaltic pump w/ ded tubing
	1555	18.32	1.5	6.83	21.9	4,220	3.2	56.7	5.9	" "	B) ded bladder pump
	1558	18.32	2.0	6.81	21.8	4,210	2.9	59.8	4.7	" "	C) non-ded bladder pump; or
	1600	18.32	2.5	6.80	21.8	4,200	2.7	60.7	3.9	" "	*Standard groundwater sample:*
	1603	18.32	3.0	6.79	21.8	4,200	2.6	61.3	3.6	" "	D) bailer due to limited column; or
	1605	18.32	3.5	6.79	21.7	4,190	2.6	61.9	3.4	" "	E) recovery well cycling sample
	1608	18.32	4.0	6.78	21.7	4,190	2.5	62.4	3.3	" "	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1610	MW-125	18.32	6.78	21.7	4,190	2.5	62.4	3.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-117
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS (112)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1445	NP	12.85	0.00	27.22	19.7	Yes	Yes	Yes	Yes		Weather: Partly cloudy, 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1450	12.86	0.5	6.83	24.4	2770	1.5	127.4	24.9	Colorless / clear	*Low-flow groundwater sample:*
	1453	12.86	1.0	6.77	23.3	2720	1.2	127.9	20.9	↓	(A) peristaltic pump w/ ded tubing
	1455	12.86	1.5	6.75	22.9	2680	1.2	127.8	17.4	↓	B) ded bladder pump
	1457	12.86	2.0	6.74	22.8	2660	1.1	127.5	15.9	↓	C) non-ded bladder pump; or
	1500	12.86	2.5	6.74	22.6	2660	1.1	128.2	13.4	↓	*Standard groundwater sample:*
	1503	12.86	3.0	6.73	22.5	2640	1.2	127.8	11.6	↓	D) bailer due to limited column; or
	1505	12.86	3.5	6.73	22.3	2640	1.1	127.7	10.8	↓	E) recovery well cycling sample
↓	1507	12.86	4.0	6.73	22.3	2630	1.1	127.7	9.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1510	MW-117	12.86	6.73	22.3	2630	1.1	127.7	9.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-118
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: QDS (113)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1405	NP	18.74	0.00	28.29	21.0	Yes	Yes	Yes	Yes		Weather: Partly Cloudy, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1410	18.90	0.5	6.94	22.9	3480	1.7	116.3	12.2	Colorless / Clear	*Low-flow groundwater sample:*
	1413	18.94	1.0	6.85	22.1	3470	1.2	118.1	9.4		(A) peristaltic pump w/ ded tubing
	1415	18.97	1.5	6.83	21.7	3470	1.1	118.9	9.0		B) ded bladder pump
	1417	19.00	2.0	6.82	21.4	3470	1.1	120.1	7.7		C) non-ded bladder pump; or
	1420	19.02	2.5	6.82	21.5	3470	1.1	120.0	7.2		*Standard groundwater sample:*
	1423	19.04	3.0	6.81	21.5	3470	1.2	120.1	6.4		D) bailer due to limited column; or
	1425	19.06	3.5	6.81	21.5	3470	1.2	120.3	5.8		E) recovery well cycling sample
	1427	19.08	4.0	6.81	21.5	3480	1.2	120.7	5.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1430	MW-118	19.08	6.81	21.5	3480	1.2	120.7	5.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NP-9
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(114)

Initials: GDS

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1352	NA	16.70	0.00	25.65	NS	Yes	Yes	* ISSUE	Yes		Weather: Sunny, 70's

* no lock; unable to close casing lid due to PVC casing.

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-119
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDJ (115)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1305	NP	13.65	0.00	28.11	20.8	Yes	Yes	Yes	Yes		Weather: Partly Cloudy, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1310	13.71	0.5	6.99	23.3	3180	1.5	70.7	27.9	Colorless / clear	*Low-flow groundwater sample:*
	1313	13.72	1.0	6.88	22.4	3160	1.2	81.9	26.6		(A) peristaltic pump w/ ded tubing
	1315	13.72	1.5	6.82	21.8	3140	1.0	88.4	25.8		B) ded bladder pump
	1317	13.72	2.0	6.81	21.6	3140	1.1	91.8	19.9		C) non-ded bladder pump; or
	1320	13.72	2.5	6.80	21.7	3130	1.1	94.1	14.8		*Standard groundwater sample:*
	1323	13.72	3.0	6.79	21.6	3130	1.2	98.4	10.6		D) bailer due to limited column; or
	1325	13.72	3.5	6.79	21.5	3130	1.2	101.3	7.3		E) recovery well cycling sample
	1327	13.72	4.0	6.79	21.5	3120	1.2	102.6	5.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1330	MW-119	13.72	6.79	21.5	3120	1.2	102.6	5.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-5
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Located inside locked gate. Security 575-746-5438 to have gate unlocked
Initials: GJS

Hydrologic Monitoring for TRC
Houston, Texas

(116)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	914	NP	13.80	0.00	25.09	20.0	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NP-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-136
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS (117)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	835	ND	19.35	0.00	27.90	23.0	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	840	19.39	0.5	7.01	19.3	3690	1.7	68.8	31.7	Colorless / sl. Cloudy	*Low-flow groundwater sample:*
	843	19.39	1.0	6.94	19.4	2980	1.2	79.7	26.9	↓ ↓	(A) peristaltic pump w/ ded tubing
	845	19.39	1.5	6.93	19.5	2670	1.0	85.2	23.4	colorless / clear	B) ded bladder pump
	847	19.39	2.0	6.91	19.6	2660	0.9	91.6	18.8		C) non-ded bladder pump; or
	850	19.39	2.5	6.88	19.6	2650	0.9	95.8	17.3		*Standard groundwater sample:*
	853	19.39	3.0	6.89	19.6	2640	0.9	100.3	13.1		D) bailer due to limited column; or
	855	19.39	3.5	6.89	19.7	2640	1.0	102.1	10.6		E) recovery well cycling sample
↓	857	19.39	4.0	6.89	19.7	2650	1.0	103.6	8.4	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	900	MW-136	19.39	6.89	19.7	2650	1.0	103.6	8.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (118)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1029	19.20	19.47	0.27	37.51	29.5	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED Due to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL thickness						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-126A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126B
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (119)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1033	NP	19.12	0.00	51.43	48.4	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1035	19.25	0.5	6.84	22.0	3050	1.5	60.7	4.2	colorless / clear	*Low-flow groundwater sample:*
	1037	19.26	1.0	6.75	21.3	3030	1.1	70.3	3.7		(A) peristaltic pump w/ ded tubing
	1040	19.26	1.5	6.73	21.0	3020	0.9	76.3	2.9		B) ded bladder pump
	1043	19.26	2.0	6.71	20.9	3010	0.8	80.8	2.5		C) non-ded bladder pump; or
	1045	19.26	2.5	6.70	20.9	3010	0.8	83.5	1.8		*Standard groundwater sample:*
	1047	19.26	3.0	6.70	20.9	3010	0.7	85.8	2.4		D) bailer due to limited column; or
	1050	19.26	3.5	6.70	21.0	3010	0.7	88.1	2.2		E) recovery well cycling sample
	1053	19.26	4.0	6.70	21.0	3010	0.7	89.4	1.7		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1055	MW-126B	19.26	6.70	21.0	3010	0.7	89.4	1.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-127
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (120)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1024	21.98	23.02	1.04	53.21	38.4	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED DUE to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL thickness						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-127								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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(Recompleted at-grade prior to 1H20)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-129
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS (121)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1117	23.60	23.71	0.11	50.78		Yes	Yes	Yes	Yes		Weather: Sunny, 60's
						(5' off base if sampled)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0				†previously was covered by gravel;				C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0				well located by Navajo w/ metal				D) bailer due to limited column; or
			3.5				detector prior to 2H22 event.				E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-129								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDS (There is no "122") (123)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	930	16.45	16.47	0.02	33.50	25.8	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

✓ REMOVED LNAPL PRIOR TO PURGE/SAMPLE; ONLY 0.02'; SO SAMPLED PER SITE PLAN

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	935	16.49	0.5	6.86	20.7	3140	1.8	-108.4	10.7	Colorless / Clear	*Low-flow groundwater sample:*
↓	937	16.49	1.0	6.79	20.5	3140	1.2	-96.9	6.9	↓	(A) peristaltic pump w/ ded tubing
	940	16.49	1.5	6.77	20.4	3140	0.9	-87.9	4.0		B) ded bladder pump
	943	16.49	2.0	6.74	20.3	3150	0.8	-72.8	2.6		C) non-ded bladder pump; or
	945	16.49	2.5	6.73	20.2	3150	0.7	-65.7	1.2		*Standard groundwater sample:*
	947	16.49	3.0	6.73	20.2	3150	0.6	-54.1	2.4		D) bailer due to limited column; or
	950	16.49	3.5	6.72	20.3	3160	0.6	-49.5	1.8		E) recovery well cycling sample
↓	953	16.49	4.0	6.72	20.2	3150	0.6	-47.1	1.3	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/11/22	955	KWB-1A	16.49	6.72	20.2	3150	0.6	-47.1	1.3	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1B
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: MD

124

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1014	18.13	18.39	0.26	33.92	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1C
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (125)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1017	NP	18.80	0.00	52.71	42.7	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-1C								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Located ~25' N. of original KWB-10 pad)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-10R
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GJS (126)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	923	17.63	19.18	1.55	29.46	22.0	Yes	Yes	Yes	Yes		Weather: Sunny, 50's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED DUE TO WELL						C) non-ded bladder pump; or
			2.5		HAVING LNAPL THICKNESS						*Standard groundwater sample:*
			3.0		≥ 0.03'						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-10R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-131
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS

127

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1124	25.83	26.65	0.82	53.35	38.1	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED DUE TO WELL						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		HAVING LNAPL Thickness ≥ 0.03'						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-131								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-5
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS

128

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1131	26.11	27.19	1.08	37.68	30.7 (if sampled)	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		NOT SAMPLED		due to well				B) ded bladder pump *
			2.0								C) non-ded bladder pump; or
			2.5		Having LNAPL Thickness ≥ 0.03'						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-5								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

* Ded bladder pump removed by Navajo and misplaced 4/21. It was did not reinstall due to consistent LNAPL present

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-111
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AOS

(129)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1139	27.29	27.89	0.60	40.83	35.8	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								* (B) ded bladder pump
			2.0		NOT SAMPLED	Due to well					C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL	thickness					D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

*Ded bladder pump removed by Navajo and misplaced 4/21; TRC did not reinstall due to consistent LNAPL present

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-111								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-6
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS (130)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1157	23.59	24.75	1.16	36.44	27.4	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED due to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having LNAPL thickness						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			≥ 0.03'					F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-6								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-112
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS (131)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1143	22.41	23.91	1.50	37.54	32.5	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED due to well						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		having	LNAPL	thickness				D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0				≥ 0.03'				F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-112								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-132
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GOS (132)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1150	720.10	720.10	NM	42.66		Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

* Top of Navajo's LNAPL skimmer pump

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NOT SAMPLED; Historic LNAPL PRESENT,						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0		AND SKIMMER PUMP IN WELL						D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-132								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Located inside yellow vault; furthest South

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-57
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OSD

133

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-4-22	1500	17.15	17.93	0.78	34.32	32.8	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		NO SAMPLE Due to LNAPL ≥ 0.03'						(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-57								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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~32" corrugated stickup

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#11-O
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC __
Upright ✓	4-in __	SS __
Vault __	Other 32-in	Other ✓ corrugated pipe

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GAS (134)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1203	NP*	18.33	0.00	22.20	NA	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

* TRACE LNAPL SMEARS ON PROBE (Dry in 1H22...)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample
											(Historically not sampled)

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#11-O								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(until further notice, do not address in any way, per Navajo 4-26-16)

Monitoring Well Purging and Sampling Record

(Farmer - Jack Joy, 575-365-6042)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-9
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

135

Initials:

Well Inspection Information

(Historically - well casing obstructed @ 15.11')

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1208	NM	NM	NM	NM	NA	—	—	—	—		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		DO NOT ADDRESS						(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JSD (136)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1305	NP	20.01	0.00	25.03	24.9	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

(historically ... can be dry)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1310	20.05	0.5	6.98	25.1	4400	3.8	76.4	10.8	colorless / clear	*Low-flow groundwater sample:*
	1313	20.09	1.0	6.92	24.7	4350	3.5	87.1	9.8		(A) peristaltic pump w/ ded tubing
	1315	20.13	1.5	6.90	24.6	4310	3.3	98.3	9.1		B) ded bladder pump
	1318	20.13	2.0	6.87	24.5	4290	3.2	105.7	7.6		C) non-ded bladder pump; or
	1320	20.13	2.5	6.85	24.3	4270	3.1	113.1	7.2		*Standard groundwater sample:*
	1323	20.13	3.0	6.82	24.1	4250	3.1	118.7	6.6		D) bailer due to limited column; or
	1325	20.14	3.5	6.80	24.1	4240	3.0	121.1	6.3		E) recovery well cycling sample
	1328	20.14	4.0	6.78	24.0	4240	3.0	125.3	6.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1330	KWB-12A	20.14	6.78	24.0	4240	3.0	125.3	6.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Dup-Rest-05
+ EB-Rest-05

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12B
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

+ Trip Blank-Rest-02

Hydrologic Monitoring
for TRC
Houston, Texas

Initials OJD (137)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1350	NP	19.95	0.00	39.39	35.2	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1355	20.04	0.5	7.17	23.4	3810	4.5	-31.7	9.1	Colorless/Clear	*Low-flow groundwater sample:*
	1358	20.05	1.0	7.10	23.2	3750	4.2	-27.4	8.8		A) peristaltic pump w/ ded tubing
	1400	20.07	1.5	7.07	23.1	3720	4.0	-20.1	8.1		(B) ded bladder pump
	1403	20.07	2.0	7.03	23.0	3708	3.8	-17.9	7.6		C) non-ded bladder pump; or
	1405	20.07	2.5	7.01	23.0	3690	3.5	-12.5	7.2		*Standard groundwater sample:*
	1408	20.07	3.0	6.96	23.1	3670	3.3	-10.7	6.6		D) bailer due to limited column; or
	1410	20.07	3.5	6.93	23.0	3650	3.2	-7.1	6.1		E) recovery well cycling sample
	1413	20.07	4.0	6.90	23.0	3640	3.2	-3.1	5.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1415	KWB-12B	20.07	6.90	23.0	3640	3.2	-3.1	5.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	Dup-Rest-05	20.07	6.90	23.0	3640	3.2	-3.1	5.8	Same	same	
	1435	EB-Rest-05	NA							Same	same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-2R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GRS

(138)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1228	25.15	25.28	0.13	39.39	32.4	Yes	Yes	Yes	Yes	(Replaced	Weather: Sunny, 70's
								*			broken	

Well Purging Record

* REPLACED AT-GRADE COVER AG steel cover plate 2H22

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			NOT SAMPLED	Due	to			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0			well	having	LNAPL			D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0			thickness	≥	0.03'			F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-2R								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-58
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

* mark location on roadside

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDJ

(139)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1237	23.89	24.44	0.55	33.06	25.6	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5		NOT SAMPLED DUE TO WELL						B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		HAVING LNAPL THICKNESS						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5			≥ 0.03'					E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-58								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-13
Event: 2122
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Beginning 2H21, access from midway Rd. (east of field)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CDJ (140)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1217	NP	28.20	0.00	33.10	33.0	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

(* Top of pump @ 28.40')

[* may need short-cycles due to limited water column]

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								(B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		KWB-13								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Sign-in & permit from South Crude Control Room prior to entry; Hooch w/ radio

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-103
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Gauge only

Hydrologic Monitoring
for TRC
Houston, Texas

(141)

Initials: SM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1425	NP	17.33	0.00	25.22	22.2	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-103								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Sign-in & Permit from South Crude Control Room prior to entry / HOOCH w/ rad00

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-104
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(142)

Initials: SM

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1345	NP	11.71	0.00	21.97	19.0	Yes	Yes	Yes	Yes		Weather: ph. cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1350	11.84	0.5	7.09	26.0	1678	1.5	-307.2	4.6	colorless, clear	*Low-flow groundwater sample:*
	1352	11.90	1.0	7.11	26.0	1647	1.0	-311.8	4.7		(A) peristaltic pump w/ ded tubing
	1355	11.95	1.5	7.11	25.9	1604	1.0	-310.1	4.5		B) ded bladder pump
	1357	11.99	2.0	7.12	25.9	1564	0.9	-318.7	4.5		C) non-ded bladder pump; or
	1400	12.02	2.5	7.12	25.8	1544	0.9	-320.4	4.3		*Standard groundwater sample:*
	1402	12.02	3.0	7.13	25.8	1539	0.8	-322.0	4.3		D) bailer due to limited column; or
	1405	12.02	3.5	7.13	25.7	1536	0.8	-323.1	4.2		E) recovery well cycling sample
	1407	12.02	4.0	7.13	25.7	1534	0.8	-323.4	4.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1410	MW-104	12.02	7.13	25.7	1534	0.8	-323.4	4.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Bagged tube; stretch to outside of berm

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-64
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG

(143)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1515	NP	20.89	0.00	34.04	26.6	Yes	Yes	Yes	Yes		Weather: pt. cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1525	21.09	0.5	6.93	27.6	2420	5.4	-305.8	5.8	colorless, clear	*Low-flow groundwater sample:*
	1527	21.18	1.0	6.93	27.6	2420	5.2	-307.1	5.8		(A) peristaltic pump w/ ded tubing
	1530	21.25	1.5	6.92	27.6	2430	5.7	-309.4	5.6		B) ded bladder pump
	1532	21.29	2.0	6.92	27.5	2440	5.2	-310.4	5.2		C) non-ded bladder pump; or
	1535	21.30	2.5	6.91	27.5	2450	5.0	-311.2	5.2		*Standard groundwater sample:*
	1537	21.30	3.0	6.91	27.5	2460	4.8	-312.9	5.1		D) bailer due to limited column; or
	1540	21.30	3.5	6.91	27.5	2460	4.7	-313.6	5.0		E) recovery well cycling sample
	1542	21.30	4.0	6.91	27.5	2460	4.7	-314.2	5.0		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1545	MW-64	21.30	6.91	27.5	2460	4.7	-314.2	5.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube; Located in front of Navajo storage shed.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-65
Event: 2H22
Area of Concern: BEST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCY (144)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1439	18.11	18.68	0.57	28.78	23.8	yes	yes	yes	yes		Weather: ~~pt~~ cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Not Samp;		LNAPL present				*Standard groundwater sample:*
			3.0				> 0.03'				D) bailer due to limited column; or
			3.5				—				E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-65								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge to top of guide-pipe Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-5R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright __	4-in __	SS __
Above-grade Vault ✓	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide sampling only BTB Regardless of LNAPL

Initials: SCM (145)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well/Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	900	18.46	18.68	0.22	NM	24.0	yes	yes	yes	yes		Weather: pt. cloudy, 70s
(10/12/22)					(pump in well); reported total depth = 35.30 Ft-TOC)							

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								(E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1020	RW-5R	NM	6.89	21.9	2123	4.6	-342.8		Per COC	Per COC	
↓	900	DUP-01	NM	6.89	21.9	2123	4.6	-342.8				
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Bagged tube; do not dedicate, per historical observations.

+ Dup-Rest-02
+ EB-Rest-02

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-102
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCU (146)

Well Inspection Information + Sulfide Sampling SCU

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1640	NP	15.76	0.00	26.45	21.3	Yes	Yes	Yes	Yes		Weather: clear, 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1645	15.79	0.5	6.92	25.4	2270	1.7	-360.5	19.4	colorless, clear	*Low-flow groundwater sample:*
	1647	15.79	1.0	6.92	25.2	2280	1.5	-363.0	9.5		(A) peristaltic pump w/ ded tubing
	1650	15.79	1.5	6.91	24.5	2280	1.6	-365.0	7.1		B) ded bladder pump
	1652	15.79	2.0	6.91	24.6	2280	1.6	-366.0	5.5		C) non-ded bladder pump; or
	1655	15.79	2.5	6.91	24.5	2290	1.6	-367.5	4.1		*Standard groundwater sample:*
	1657	15.79	3.0	6.91	24.5	2290	1.7	-368.0	3.7		D) bailer due to limited column; or
	1700	15.79	3.5	6.91	24.5	2290	1.7	-368.2	3.5		E) recovery well cycling sample
	1702	15.79	4.0	6.91	24.5	2291	1.7	-368.5	3.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1705	MW-102	15.79	6.91	24.5	2290	1.7	-368.5	3.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1600	Dup-Rest-02	15.79	6.91	24.5	2290	1.7	-368.5	3.3	Same	Same	
	1715	EB-Rest-02	NA							Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube. Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-4
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(147)

Well Inspection Information Sulfide sampling only BTB Regardless of LNAPL Initials: SCY

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1325	NP	19.13	0.00	36.62	31.6	Yes	Yes	Yes	Yes		Weather: clear, 80s
		(No product on probe)										

Well Purging Record

* Gauge/Sample through labeled guide-pipe.
* Drawdown not measured (narrow diam guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22		NM *	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1000	RW-4		7.02	23.9	2159	5.3	-310.4		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
						(2159)						gray tint, small white particles

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube. Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-6
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other ✓	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information Sulfide sampling only BTB Regardless of LNAPL

Initials: SCH (148)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1330	NP	15.27	0.00	34.90	30.0	Yes	Yes	Yes	Yes		Weather: clear, 80s
		(No product on probe)										

Well Purging Record

* Gauge/sample through labeled guide-pipe
* Drawdown not measured (narrow diam. guide-pipe)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22		NM *	0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1010	RW-6		6.85	23.9	2463	4.2	-282.4		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
												clear, colorless, small white particles

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Position marked on adjacent fence; well is ~4' N. of chain-link fence; possibly covered by gravel/silt.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-99
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

* Replaced degraded 4-in expandable locking cap 2H22

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

149

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1446	20.39	21.16	0.77	27.80	22.8	yes	yes	yes	yes		Weather: pt. cloudy, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		No Sample;		LNAPL present				*Standard groundwater sample:*
			3.0				≥ 0.03'				D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-99										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Middle of gravel road; location marked on adjacent chain-link fence.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-66
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

(In middle of roaad!!)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM

(150)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	907	19.22	19.42	0.20	29.80	26.8	YES	YES	YES	YES		Weather: Clear 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Not Sampled; LNAPL ≥				0.03'		*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-66								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-28
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Formerly: Extended vertically through gravel berm
Converted to upright completion (in area of former berm, cut out to ground surface, pre 1Q20.

Hydrologic Monitoring
for TRC
Houston, Texas

(151)

Initials: SCH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	914	19.98	20.44	0.46	27.82	23.8	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		Not Sampled.		LNAPL ≥ 0.03'				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-28								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-59
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (152)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1005	16.35	16.78	0.43	32.72	25.3	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-59								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Support - trailer parking area)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-60
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (153)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1008	17.660	17.93	0.27	37.78	26.7	yes	yes	yes	yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		[Not Sampled; ≥ 0.03' LNAPL						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-60								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-107
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SH (154)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	921	16.37	18.03	1.66	19.05	17.1	Yes	Yes	Yes	Yes		Weather: Clear, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-107								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Located 6' NW of NW corner of berm; Commonly buried by gravel / silt

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-128
Event: 2Y22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

155

Well Inspection Information

* SCM searched for well w/ steel pry bars & shovel (well pad was covered by ~4' gravel & compacted sediment)

Initials: SCM

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	928	18.22	20.17	1.95	35.35	25.4	Yes	Yes	Yes	Yes		Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Not Sampled; LNAPL ≥ 0.03

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-128								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged extension (when Flooded)

Monitoring Well Purging and Sampling Record

+ Trip Blank - Rest - 03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-116
Event: 2022
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (156)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1105	NP	14.30	0.00	27.63	20.0	Yes	Yes	Yes	Yes		Weather: Clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	1110	14.32	0.5	6.81	19.8	4080	3.4	+8.6	7.6	Colorless, clear	*Low-flow groundwater sample:*
	1112	14.32	1.0	6.81	19.4	4080	2.4	-4.1	5.5		(A) peristaltic pump w/ ded tubing
	1115	14.32	1.5	6.81	19.2	4080	1.8	+0.3	5.0		B) ded bladder pump
	1117	14.32	2.0	6.81	19.0	4080	1.4	+2.4	4.6		C) non-ded bladder pump; or
	1120	14.32	2.5	6.81	19.0	4080	1.2	+4.6	4.3		*Standard groundwater sample:*
	1122	14.32	3.0	6.81	18.9	4070	0.9	8.7	4.1		D) bailer due to limited column; or
	1125	14.32	3.5	6.81	18.9	4070	0.8	10.4	4.0		E) recovery well cycling sample
	1127	14.32	4.0	6.81	18.9	4070	0.8	11.2	3.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	1130	MW-116	14.32	6.81	18.9	4070	0.8	11.2	3.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-46R
Event: 2H22
Area of Concern: TMD

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

N. side of dirt road; in-line with westernmost row of pecan trees; Position marked on adjacent chain-link fence (12' S. of fence)

Hydrologic Monitoring
for TRC
Houston, Texas

(157)

Initials: SCH

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1145	NP	10.54	0.00	19.36	14.1	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	1150	10.56	0.5	7.01	21.2	2620	2.5	-16.1	15.7	colorless, clear	*Low-flow groundwater sample:*
	1152	10.56	1.0	7.01	21.1	2610	2.3	-11.4	13.4		(A) peristaltic pump w/ ded tubing
	1155	10.56	1.5	7.00	21.1	2600	2.2	-7.1	9.1		B) ded bladder pump
	1157	10.56	2.0	7.00	21.1	2590	2.1	-5.4	6.4		C) non-ded bladder pump; or
	1200	10.56	2.5	7.00	21.2	2590	2.0	+0.2	5.7		*Standard groundwater sample:*
	1202	10.56	3.0	7.00	21.2	2580	1.9	+1.4	5.2		D) bailer due to limited column; or
	1205	10.56	3.5	7.00	21.1	2580	1.9	+3.7	4.4		E) recovery well cycling sample
	1207	10.56	4.0	7.00	21.1	2580	1.9	+4.3	4.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	1210	MW-46R	10.56	7.00	21.1	2580	1.9	4.3	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#18A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM

157.05

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/10/22	1230	NP	15.16	0.00	17.78	16.7	Yes	Yes	Yes	Yes	*	Weather: clear, 70s

Well Purging Record

(Dry in 1H22...)

* Sticky lock (code 2-1-L3) (lubricated)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#18A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2H22]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-145
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen: 9-29 ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SLM

157.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/4/22	1240	NP	17.32	0.00	32.10	31.10	Yes	Yes	Yes	Yes		Weather: clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1245	17.35	0.5	6.85	21.9	4770	2.9	100.1	22.1	colorless, clear	*Low-flow groundwater sample:*
	1247	17.35	1.0	6.85	21.9	4770	2.5	101.4	21.4		(A) peristaltic pump w/ ded tubing
	1250	17.35	1.5	6.84	21.8	4780	2.4	102.7	20.3		B) ded bladder pump
	1252	17.35	2.0	6.84	21.6	4780	2.3	103.2	19.0		C) non-ded bladder pump; or
	1255	17.35	2.5	6.84	21.4	4780	2.1	105.1	20.1		*Standard groundwater sample:*
	1257	17.35	3.0	6.83	21.3	4780	2.0	107.4	20.7		D) bailer due to limited column; or
	1300	17.35	3.5	6.83	21.2	4780	1.9	109.1	21.6		E) recovery well cycling sample
✓	1302	17.35	4.0	6.83	21.2	4780	1.8	109.7	21.9	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/11/22	1305	MW-145	17.35	6.83	21.2	4780	1.8	109.7	21.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2H20]

Monitoring Well Purging and Sampling Record

+ Dup-Rest-04
+ EB-Rest-04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-146
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

(Screen : 10-30 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

157.2

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1115	NP	20.51	0.00	33.40	32.40	Yes	Yes	Yes	Yes		Weather: Clear, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1120	20.52	0.5	6.97	21.3	4890	2.6	120.8	9.3	Colorless, clear	*Low-flow groundwater sample:*
	1122	20.52	1.0	6.97	21.0	4890	2.4	121.4	8.4		(A) peristaltic pump w/ ded tubing
	1125	20.52	1.5	6.96	20.9	4890	2.2	122.1	8.1		B) ded bladder pump
	1127	20.52	2.0	6.96	20.8	4890	2.1	122.9	6.4		C) non-ded bladder pump; or
	1130	20.52	2.5	6.95	20.7	4890	2.0	123.3	4.7		*Standard groundwater sample:*
	1132	20.52	3.0	6.95	20.5	4880	1.9	124.7	4.1		D) bailer due to limited column; or
	1135	20.52	3.5	6.94	20.3	4870	1.7	125.9	3.9		E) recovery well cycling sample
	1137	20.52	4.0	6.94	20.2	4870	1.7	126.2	3.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1140	MW-146	20.52	6.94	20.2	4870	1.7	126.2	3.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1100	DUP-Rest-04	20.52	6.94	20.2	4870	1.7	126.2	3.6	Same	Same	
	1150	EB-Rest-04	NA							Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-135
Event: 2/H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Confirm Pace orders MW-135 correctly in 1H23 -SCH 10/9/22 Initials: SCH

Hydrologic Monitoring
for TRC
Houston, Texas

157.25

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1035	NP	28.93	0.00	65.55	50.0	Yes	Yes	Yes	Yes		Weather: Clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1040	28.94	0.5	6.86	20.7	5960	7.0	114.8	17.9	colorless, clear	Low-flow groundwater sample:
	1042	28.94	1.0	6.86	20.7	5960	7.1	115.4	19.1		A) peristaltic pump w/ ded tubing
	1045	28.94	1.5	6.86	20.7	5960	7.1	117.0	18.5		(B) ded bladder pump
	1047	28.94	2.0	6.86	20.7	5960	7.1	117.4	18.1		C) non-ded bladder pump; or
	1050	28.94	2.5	6.86	20.6	5970	7.0	118.0	17.4		Standard groundwater sample:
	1052	28.94	3.0	6.86	20.6	5970	6.9	118.2	16.8		D) bailer due to limited column; or
	1055	28.94	3.5	6.86	20.5	5960	6.8	118.4	15.4		E) recovery well cycling sample
	1057	28.94	4.0	6.86	20.5	5960	6.8	118.5	15.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1100	MW-135	28.94	6.86	20.5	5960	6.8	118.5	15.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-147
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 20-40 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

157.3

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	950	NP	28.73	0.00	39.83	38.83	Yes	Yes	Yes	Yes		Weather: Clear, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	955	28.73	0.5	6.95	18.5	5850	7.8	116.8	57.0	colorless, v. sl. cloudy	*Low-flow groundwater sample:*
	957	28.73	1.0	6.95	18.5	5870	7.8	117.0	53.1	↓	(A) peristaltic pump w/ ded tubing
	1000	28.73	1.5	6.94	18.5	5890	7.9	117.9	40.0	↓	(B) ded bladder pump
	1002	28.73	2.0	6.94	18.6	5900	8.4	118.5	36.4	clear	C) non-ded bladder pump; or
	1005	28.73	2.5	6.93	18.6	5900	8.0	119.4	33.7	↓	*Standard groundwater sample:*
	1007	28.73	3.0	6.93	18.6	5910	8.1	120.4	30.4	↓	D) bailer due to limited column; or
	1010	28.73	3.5	6.92	18.6	5910	8.2	121.1	27.1	↓	E) recovery well cycling sample
↓	1012	28.73	4.0	6.92	18.6	5910	8.1	121.6	26.5	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/11/22	1015	MW-147	28.73	6.92	18.6	5910	8.1	121.6	26.5	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2420]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-148
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

157.4

Well Inspection Information

(Screen: 20-40 Ft)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	905	NP	34.34	0.00	40.38	39.38	yes	yes	yes	yes		Weather: clear, 70.5

Well Purging Record

* Top of pump @ 36.10

(Historical methodology requires removing pump; sample w/ bailer)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	910	34.36	0.5	6.86	19.0	3870	6.2	106.0	43.0	colorless, clear	*Low-flow groundwater sample:*
	912	34.36	1.0	6.86	19.0	3870	6.2	105.8	36.4		A) peristaltic pump w/ ded tubing
	915	34.36	1.5	6.86	19.1	3870	6.4	105.7	32.1		(B) ded bladder pump
	917	34.36	2.0	6.86	19.2	3860	6.1	105.4	32.7		C) non-ded bladder pump; or
	920	34.36	2.5	6.87	19.1	3860	6.1	105.3	29.4		*Standard groundwater sample:*
	922	34.36	3.0	6.87	19.0	3860	6.0	105.3	26.5		D) bailer due to limited column; or
	925	34.36	3.5	6.87	19.0	3860	6.0	105.2	24.3		E) recovery well cycling sample
	927	34.36	4.0	6.87	19.0	3860	5.9	105.2	24.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
10/11/22	930	MW-148	34.36	6.87	19.0	3860	5.9	105.2	24.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Furthest west "city well"

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-3R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM (158)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22					38.58	35.6						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		DO NOT ADDRESS IN 2H22						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-3R										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Location @ North-side park

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-4
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM (159)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22					39.24	34.5						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		DO	NOT	ADDRESS	IN	2H22		C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-4								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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North of elementary school

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-1
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH (160)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22					24.06	19.1						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		DO NOT ADDRESS IN 2H22						C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-1										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located near E-W alley, NW of Artesia Hotel

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-2
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCM (161)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22					29.28	24.3						Weather:

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		DO NOT ADDRESS			IN 2H22			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		UG-2										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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(Recompleted at-grade prior to 1H20)

Monitoring Well Purging and Sampling Record

+Trip Blank - Rest - 04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-101
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (162)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	1140	NP	13.51	0.00	22.15	19.15	yes	yes	yes	yes		Weather: pt/cloudy 70°

Well Purging Record

(At-grade) Next to unit X-2605

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1145	13.56	0.5	6.71	26.2	2220	1.6	-373.1	16.0	clear/colorless	*Low-flow groundwater sample:*
	1147	13.57	1.0	6.69	26.1	2210	1.4	-372.9	7.5		(A) peristaltic pump w/ ded tubing
	1150	13.58	1.5	6.67	25.9	2140	1.2	-372.7	6.9		B) ded bladder pump
	1153	13.58	2.0	6.66	25.9	2120	1.0	-373.1	6.0		C) non-ded bladder pump; or
	1155	13.58	2.5	6.65	25.8	2110	0.8	-374.0	5.1		*Standard groundwater sample:*
	1157	13.58	3.0	6.64	25.8	2090	0.8	-373.0	4.8		D) bailer due to limited column; or
	1200	13.58	3.5	6.65	25.8	2080	0.7	-372.1	3.9		E) recovery well cycling sample
	1203	13.58	4.0	6.65	25.8	2080	0.6	-372.8	3.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1205	MW-101	13.58	6.65	25.8	2080	0.6	-372.8	3.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-105
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information +Sulfide sampling TAB (See prepared bottle in kit)

Initials: TAB (163)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	800	ND	10.20	0.60	17.20	14.2	yes	yes	yes	yes		Weather: 61/cloudy/60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	805	10.25	0.5	6.20	22.7	1078	1.6	-104.2	42.6	slcloudy colorless	Low-flow groundwater sample:
	807	10.25	1.0	6.19	22.8	1053	1.4	-102.2	18.7	clear	(A) peristaltic pump w/ ded tubing
	810	10.25	1.5	6.19	23.0	1041	1.3	-100.6	15.4		B) ded bladder pump
	813	10.25	2.0	6.17	23.0	1038	1.2	-115.2	13.8		C) non-ded bladder pump; or
	815	10.25	2.5	6.16	23.1	1036	1.2	-116.8	13.0		Standard groundwater sample:
	817	10.25	3.0	6.16	23.1	1035	1.1	-118.7	12.7		D) bailer due to limited column; or
	820	10.25	3.5	6.15	23.1	1035	1.0	-120.1	12.5		E) recovery well cycling sample
	823	10.25	4.0	6.14	23.1	1034	1.0	-120.8	11.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	825	MW-105	10.25	6.14	23.1	1034	1.0	-120.8	11.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located in "Doghouse"; Gauge only
Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-2
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(164)

Well Inspection Information + Sulfide Sampling only BTB Regardless of LNAPL

Initials: TAS

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1130	NP	14.85	0.00	36.13	31.1	YES	YES	YES	YES		Weather: PT/Cloudy 75°

Well Purging Record * Gauge/Sample through labeled 1-in guide-pipe

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Black tint,	*Low-flow groundwater sample:*
			1.0							small Blk particles	(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	945	RW-2		7.00	23.6	2776 (2776)	5.1	-334.4		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-61
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TA RS (165)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1040	NP	13.74	0.00	29.30	24.3	yes	yes	yes	yes		Weather: PT cloudy 75

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1045	13.92	0.5	6.76	23.3	2930	1.7	-390.8	8.5	clear/colorless	Low-flow groundwater sample:
	1047	14.04	1.0	6.75	23.4	3010	1.5	-397.2	6.9		(A) peristaltic pump w/ ded tubing
	1050	14.23	1.5	6.74	23.5	3030	1.4	-399.7	5.8		B) ded bladder pump
	1053	14.35	2.0	6.72	23.5	3040	1.4	-401.8	4.9		C) non-ded bladder pump; or
	1055	14.45	2.5	6.72	23.5	3050	1.3	-402.4	4.4		Standard groundwater sample:
	1100	14.55	3.0	6.71	23.5	3050	1.2	-403.4	3.1		D) bailer due to limited column; or
	1105	14.65	3.5	6.70	23.4	3060	1.1	-403.9	2.8		E) recovery well cycling sample
↓	1110	14.71	4.0	6.70	23.4	3060	1.1	-404.5	2.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1115	MW-61	14.71	6.70	23.4	3066	1.1	-404.5	2.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

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Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	900	16.61	16.62	0.01	29.50	21.3	yes	yes	yes	yes		Weather: pt/cloud/ 60°

Well Purging Record

(Removed LNAPL w/ sorbent pad tie-wrapped to gauging probe prior to sampling)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	905	16.83	0.5	6.53	22.2	2770	2.6	-365.8	15.8	clear colorless	*Low-flow groundwater sample:*
	907	16.97	1.0	6.54	22.2	2870	2.2	-366.9	11.7	odor	(A) peristaltic pump w/ ded tubing
	910	17.03	1.5	6.55	22.3	3050	1.6	-372.1	10.2		B) ded bladder pump
	913	17.09	2.0	6.56	22.3	3080	1.3	-373.3	10.0		C) non-ded bladder pump; or
	915	17.13	2.5	6.56	22.4	3120	1.2	-375.5	8.7		*Standard groundwater sample:*
	917	17.16	3.0	6.56	22.5	3140	1.2	-377.8	8.5		D) bailer due to limited column; or
	920	17.19	3.5	6.56	22.5	3150	1.1	-378.9	6.9		E) recovery well cycling sample
	923	17.21	4.0	6.57	22.5	3150	1.1	-379.0	6.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	925	MW-62	17.21	6.57	22.5	3150	1.1	-379.0	6.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62R
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

(Screen: 5'-25 Ft)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (1661)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	950	NP	16.40	0.00	24.51	22.51	yes	yes	yes	yes		Weather: Pt Cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	955	16.60	0.5	6.62	23.6	2950	1.7	-358.4	2.5	clear/colorless	Low-flow groundwater sample:
	957	16.65	1.0	6.59	23.6	2860	1.5	-368.3	2.0	↓	(A) peristaltic pump w/ ded tubing
	1000	16.67	1.5	6.57	23.6	2810	1.3	-369.5	1.8	↓	B) ded bladder pump
	1003	16.67	2.0	6.56	23.6	2770	1.2	-372.0	1.6	↓	C) non-ded bladder pump; or
	1005	16.67	2.5	6.55	23.6	2780	1.1	-373.8	1.5	↓	Standard groundwater sample:
	1007	16.67	3.0	6.54	23.6	2780	1.0	-374.6	1.3	↓	D) bailer due to limited column; or
	1010	16.67	3.5	6.53	23.7	2790	0.9	-374.9	1.2	↓	E) recovery well cycling sample
↓	1013	16.67	4.0	6.53	23.7	2780	0.9	-375.1	1.0	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1015	MW-62R	16.67	6.53	23.7	2780	0.9	-375.1	1.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-93
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (167)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1009	*	*	*	20.23	15.9	*	*	*	*		Weather:

Well Purging Record

* well is covered by gravel unable to locate 10/12/22

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0		Navajo is	informed and	aware				(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-93								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-43
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in.	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAR (168)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1500	14.60	14.75	0.15	19.67	16.5	Yes	Yes	Yes	Yes		Weather: PC/cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not Sampled Due to LNAPL 2003'							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-43								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

169

Initials: TAG

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/11/22	1440	11.92	12.95	1.03	29.60	24.6	yes	yes	yes	yes		Weather: PT/Cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not	Sampled	Due	to	LNAPL	≥0.03'		*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments Lab: Pace National, Mt. Juliet, TN
		MW-137								Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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[New well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

169.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1450	12.49	13.20	0.71	14.88	*	yes	yes	yes	yes		Weather: pc/cloudy 70s
						* Intake at base of well (if not dry; if no LNAPL; if scheduled for sampling)						

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not Sampled	Due to LNAPL ≥ 0.03'						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-137A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAS (170)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1430	13.22	17.55	4.33	24.81	19.8	yes	yes	yes	yes		Weather: pt/cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due To LNAPL ≥0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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New Well installed pre-2H20

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

170.1

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1410	13.96	15.02	1.06	15.03		yes	yes	yes	yes		Weather: 70° Cloudy
						(Intake at	base of well	(if not	dry; if no	LNAPL; if scheduled for	sampling)	

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	Not Sampled	Due to	LNAPL>0.03'					*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-138A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-23
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: JAR (171)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1355	16.55 (16.55)	18.85	2.30	23.10	17.9	yes	yes	yes	yes		Weather: Cl/Cloudy/70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due TO LNAPL ≥ 0.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-23								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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+DUP-TEL-01
+EB-TEL-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-4
Event: 2H22
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

+Trip Blank-TEL-01

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

172

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10/12/22	830	NP	12.68 (12.68)	0.00	27.27	22.2	yes	yes	yes	yes		Weather: pt/cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22	835	12.92	0.5	6.84	23.4	3550	1.6	-331.8	25.1	Clear colorless	*Low-flow groundwater sample:*
	837	12.92	1.0	6.78	23.5	3610	1.3	-339.5	12.6	light sheen	A) peristaltic pump w/ ded tubing
	840	12.92	1.5	6.63	23.8	3630	1.2	-354.9	11.8		B) ded bladder pump
	843	12.92	2.0	6.61	23.8	3640	1.0	-357.7	9.0		C) non-ded bladder pump; or
	845	12.92	2.5	6.60	23.8	3640	0.9	-358.8	6.4		*Standard groundwater sample:*
	847	12.92	3.0	6.60	23.9	3640	0.8	-360.9	5.8		D) bailer due to limited column; or
	850	12.92	3.5	6.59	23.9	3640	0.7	-361.7	5.0		E) recovery well cycling sample
	853	12.92	4.0	6.60	23.9	3630	0.7	-361.2	4.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	855	TEL-4	12.92	6.60	23.9	3630	0.7	-361.2	4.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1000	DUP-TEL-01	12.92	6.60	23.9	3630	0.7	-361.2	4.2	Same	Same	
	920	EB-TEL-01	NA							Same	Same	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-3
Event: 2H22
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAS (173)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1010	14.08	15.31	1.23	27.19	22.2	yes	yes	yes	yes		Weather: pt/cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT SAMPLED DUE LNAPL 20.03'							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-3								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-2
Event: 2H22
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(174)

Initials: TAR

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1020	15.07	16.34	1.27	27.20	22.1	yes	yes	yes	yes		Weather: PT/Cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/12/22			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	Not Sampled Due to LNAPL 20.03'							C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22		TEL-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-1
Event: 2H22
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (175)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1040	14.21	14.45	0.24	27.00	22.9	yes	yes	yes	yes		Weather: clear 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT Sampled due to LNAPL ≥ 0.03				(0.03)			C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		TEL-1								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-39
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (176)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1515	14.91	15.46	0.55	25.44	20.4	yes	yes	yes	yes		Weather: pt/cloudy 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5	NOT SAMPLED DUE TO LNAPL ≥ 0.03							*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-39								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-98
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

(177)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1315	NP	12.30	0.00	25.60	21.5	yes	yes	yes	yes		Weather: PT/Cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1320	12.35	0.5	6.77	25.8	3080	1.6	-397.7	20.7	Clear colorless	*Low-flow groundwater sample:*
	1323	12.35	1.0	6.75	25.8	3110	1.2	-399.6	13.4	odor	(A) peristaltic pump w/ ded tubing
	1325	12.35	1.5	6.74	25.6	3150	1.1	-403.1	11.8		B) ded bladder pump
	1327	12.36	2.0	6.72	25.6	3160	1.0	-404.9	10.3		C) non-ded bladder pump; or
	1330	12.36	2.5	6.70	25.6	3180	0.9	-406.0	6.4		*Standard groundwater sample:*
	1333	12.37	3.0	6.68	25.5	3190	0.8	-406.2	4.8		D) bailer due to limited column; or
	1335	12.37	3.5	6.67	24.8	3190	0.7	-407.8	3.6		E) recovery well cycling sample
↓	1337	12.37	4.0	6.66	24.8	3190	0.6	-409.6	3.2	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/11/22	1340	MW-98	12.37	6.66	24.8	3190	0.6	-409.6	3.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Gauge only

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-10
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

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Well Inspection Information The former RW-10 is permanently covered by heavy steel box. Current RW-10 is the stand-pipe ~50' South of former RW-10 per Navajo. Initials: TAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1050	14.45	17.42	2.97	22.49	17.5	yes	yes	yes	yes		Weather: Clear 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-10								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Gauge only

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-40
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB

(179)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
12/11/22	1530	13.03	15.86	2.83	24.75	21.8	yes	yes	yes	yes	*	Weather: pt/cloudy 70°

Well Purging Record

(* Erosion under well pad)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-40										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-41
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (180)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1550	12.68 (12.68)	14.45	1.77	21.56	18.6	YES	YES	YES	YES		Weather: Clear, 70S

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-41								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-9
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

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Well Inspection Information The former RW-9 is permanently covered by heavy steel box, Current RW-9 is the stand-pipe ~50' East of former RW-9, per Navajo. Initials: JAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1540	NP	14.98	0.00	21.83	Well Base	yes	yes	yes	yes		Weather: PT/Cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-9								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-42
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (182)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1600	15.05	15.91	0.86	24.32	21.3	yes	yes	yes *	yes		Weather: PT/Cloudy 70°

Well Purging Record

* No lock

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-42								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-29
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (183)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1530	NP	20.33	0.00	24.22	19.2	Yes	Yes	Yes	Yes		Weather: Overcast 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1535	20.35	0.5	6.92	24.3	4890	4.1	-203.4	8.9	Colorless / Clear	Low-flow groundwater sample:
	1538	20.36	1.0	6.87	24.1	4630	3.8	-157.6	8.1		(A) peristaltic pump w/ ded tubing
	1540	20.36	1.5	6.80	24.0	4600	3.6	-136.2	7.7		B) ded bladder pump
	1543	20.36	2.0	6.77	24.0	4580	3.4	-121.5	7.1		C) non-ded bladder pump; or
	1545	20.36	2.5	6.75	23.9	4560	3.3	-116.2	5.5		Standard groundwater sample:
	1550	20.36	3.0	6.73	23.8	4550	3.2	-110.3	5.1		D) bailer due to limited column; or
	1553	20.36	3.5	6.72	23.7	4540	3.2	-107.4	4.8		E) recovery well cycling sample
	1555	20.36	4.0	6.72	23.7	4530	3.1	-103.6	4.2		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1600	MW-29	20.36	6.72	23.7	4530	3.1	-103.6	4.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#16B
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 8-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (184)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/12/22	1110	NP	15.89	0.00	17.70	14.7	Yes	Yes	Yes	Yes		Weather: Clear 70s

Well Purging Record

(commonly well dry...)

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#16B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-30
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD

185

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1620	NP	13.12	0.00	23.50	NS	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-30								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-56
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (186)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1625	NP	13.62	0.00	26.50	21.4	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-56								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Located under yellow barricade

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-49
Event: 2H22
Area of Concern: TEL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: TAB (187)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1225	NP	12.26	0.00	33.07	27.8	yes	yes	yes	yes		Weather: pt cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10/11/22	1230	12.46	0.5	6.74	25.8	2430	1.9	-392.9	18.6	clear colorless	Low-flow groundwater sample:
	1233	12.48	1.0	6.72	25.6	2440	1.6	-393.7	17.2	white particles	(A) peristaltic pump w/ ded tubing
	1235	12.48	1.5	6.70	25.1	2460	1.4	-394.6	15.4		B) ded bladder pump
	1237	12.48	2.0	6.69	24.7	2480	1.2	-396.0	11.6		C) non-ded bladder pump; or
	1240	12.48	2.5	6.68	24.7	2490	1.1	-396.4	10.1		Standard groundwater sample:
	1243	12.48	3.0	6.68	24.6	2480	0.9	-397.3	8.7		D) bailer due to limited column; or
	1245	12.48	3.5	6.69	24.5	2470	0.8	-397.9	6.4		E) recovery well cycling sample
	1247	12.48	4.0	6.67	24.5	2470	0.8	-398.1	5.8		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/11/22	1250	MW-49	12.48	6.67	24.5	2470	0.8	-398.1	5.8	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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May get covered with gravel

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-106
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(188)

Well Inspection Information *Located in-line with the Final letter "A" from "Ammonia" sign on gray tank with yellow ladder. Initials: TAB

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10/11/22	1220	~	~	~	22.80	17.5	~	~	~	~	~	Weather: pt/cloudy 70°

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0	NOT Sampled / covered with steel container							(A) peristaltic pump w/ ded tubing
			1.5	(Navajo notified and informed)							B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5	Unable to access							E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-106										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-45
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: DSD (189)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1650	NP	7.92	0.00	15.05	12.3	yes	yes	yes	yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1655	8.10	0.5	7.01	23.9	5010	2.3	-187.4	30.1	Colorless / Clear	*Low-flow groundwater sample:*
	1658	8.15	1.0	6.97	24.1	4830	2.1	-163.6	21.4		(A) peristaltic pump w/ ded tubing
	1700	8.15	1.5	6.95	24.3	4790	1.9	-192.4	16.7		B) ded bladder pump
	1703	8.15	2.0	6.92	24.4	4750	1.8	-137.7	13.1		C) non-ded bladder pump; or
	1705	8.15	2.5	6.89	24.5	4730	1.8	-130.3	10.7		*Standard groundwater sample:*
	1708	8.15	3.0	6.85	24.7	4710	1.7	-122.5	9.6		D) bailer due to limited column; or
	1710	8.15	3.5	6.83	24.7	4700	1.7	-117.4	9.1		E) recovery well cycling sample
	1713	8.15	4.0	6.80	24.8	4700	1.6	-112.6	8.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1715	MW-45	8.15	6.80	24.8	4700	1.6	-112.6	8.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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SW corner of Louden Bldg.
Installed 2H19.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-139
Event: 2H22
Area of Concern: REST

Completion		Casing Diam.		Casing Material	
At-Grade	✓	2-in	✓	PVC	✓
Upright	__	4-in	__	SS	__
Vault	__	Other	__	Other	__

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN

(190)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-11-22	1700	NP	14.19	0.00	29.60	24.6	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1705	14.21	0.5	6.88	22.7	3800	3.5	-172.1	8.1	Colorless / Clear	*Low-flow groundwater sample:*
	1707	14.22	1.0	6.85	22.2	3630	3.0	-204.3	7.7		A) peristaltic pump w/ ded tubing
	1710	14.23	1.5	6.83	22.0	3560	3.0	-212.7	7.1		B) ded bladder pump
	1712	14.23	2.0	6.84	21.8	3550	2.8	-216.4	6.9		C) non-ded bladder pump; or
	1715	14.24	2.5	6.82	21.7	3550	2.8	-220.9	6.6		*Standard groundwater sample:*
	1717	14.25	3.0	6.81	21.7	3540	2.7	-224.4	6.4		D) bailer due to limited column; or
	1720	14.25	3.5	6.81	21.7	3540	2.6	-228.3	5.9		E) recovery well cycling sample
	1722	14.25	4.0	6.80	21.6	3530	2.6	-231.3	5.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1725	mw-139	14.25	6.80	21.6	3530	2.6	-231.3	5.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-50
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

(191)

Well Inspection Information *Located in Artesia Wool laydown yard, N. of main warehouse.

Initials: JAN

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1405	NP	14.92	0.00	28.22	24.1	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1410	14.93	0.5	6.95	26.1	6800	4.0	45.3	6.4	Colorless / clear	*Low-flow groundwater sample:*
	1412	14.93	1.0	6.93	25.5	6900	3.9	48.9	6.1		(A) peristaltic pump w/ ded tubing
	1415	14.93	1.5	6.89	25.2	6940	3.6	49.3	6.0		B) ded bladder pump
	1417	14.93	2.0	6.86	25.0	6900	2.6	51.7	5.8		C) non-ded bladder pump; or
	1420	14.93	2.5	6.86	25.0	6840	3.0	52.8	5.5		*Standard groundwater sample:*
	1422	14.93	3.0	6.85	25.0	6750	2.7	53.4	5.1		D) bailer due to limited column; or
	1425	14.93	3.5	6.87	24.9	6680	2.5	53.8	4.8		E) recovery well cycling sample
	1427	14.93	4.0	6.85	24.7	6620	2.6	52.1	4.6		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1430	MW-50	14.93	6.85	24.7	6620	2.6	52.1	4.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-97
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AAN

192

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1450	NM	NM	NM	21.20	5' ~~off~~ base	NA	NA	NA	NA		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5			Unable to access well location					B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5			Searched unsuccessfully for well					*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5			Covered by soil; former crane from					E) recovery well cycling sample
			4.0							1H22 was	F) irrigation well grab sample
										gone	

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-97										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-92
Event: 2Q22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (193)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1445	13.96	14.92	0.96	22.60	17.6	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Not Sampled		LNAPL	≥ 0.03		C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22		MW-92								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-1
Event: 2H22
Area of Concern: REST
+ Sulfide Sampling only BTB Regardless of LNAPL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information In doghouse"; gauge/sample through 1-in guide-pipe

Initials: HAN (194)

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1330	14.86	14.92	0.06	35.39	30.4	Yes	Yes	Yes	Yes		Weather: Sunny 85's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Black tint	*Low-flow groundwater sample:*
			1.0							Black particles	(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10/12/22	930	RW-1		6.90	24.0	3040	4.8	-340.6		Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-91
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAV (195)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1000	13.09	13.19	0.10	25.35	17.9	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Not	sampled	; LNAPL ≥ 0.03				C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-91								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-90
Event: 2422
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (196)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1005	NP	12.90	0.00	22.80	21.5	Yes	Yes	Yes	Yes		Weather: Sunny 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1015	12.95	0.5	6.77	22.4	3490	3.6	-309.2	9.2	Colorless / Clear	*Low-flow groundwater sample:*
	1017	12.95	1.0	6.76	22.4	3500	3.1	-316.4	8.9		(A) peristaltic pump w/ ded tubing
	1020	12.95	1.5	6.76	22.3	3490	3.0	-321.8	8.6		B) ded bladder pump
	1022	12.95	2.0	6.76	22.2	3480	2.9	-327.5	8.3		C) non-ded bladder pump; or
	1025	12.95	2.5	6.75	21.9	3470	2.8	-331.6	7.7		*Standard groundwater sample:*
	1027	12.95	3.0	6.76	21.2	3470	2.8	-335.2	6.4		D) bailer due to limited column; or
	1030	12.95	3.5	6.76	22.5	3470	2.8	-338.1	6.0		E) recovery well cycling sample
	1032	12.95	4.0	6.75	22.6	3470	2.8	-341.9	5.9		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1035	MW-90	12.95	6.75	22.6	3470	2.8	-341.9	5.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-96
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN

(197)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1055	NP	13.56	0.00	25.57	21.2	Yes	Yes	No	Yes		Weather: sunny 70's
									↑			

Cone on top (well was struck in 2017; hinge damaged)

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1100	13.64	0.5	6.83	24.0	2500	3.7	-307.2	15.9	Colorless / Clear	*Low-flow groundwater sample:*
	1102	13.64	1.0	6.80	24.3	2420	2.9	-312.3	10.8		(A) peristaltic pump w/ ded tubing
	1105	13.64	1.5	6.79	23.5	2350	2.9	-318.6	9.9		B) ded bladder pump
	1107	13.68	2.0	6.79	23.4	2290	2.9	-321.4	9.4		C) non-ded bladder pump; or
	1110	13.69	2.5	6.79	23.4	2250	3.1	-324.9	8.7		*Standard groundwater sample:*
	1112	13.70	3.0	6.79	23.3	2200	3.1	-327.5	8.1		D) bailer due to limited column; or
	1115	13.71	3.5	6.79	23.3	2200	3.0	-329.8	7.7		E) recovery well cycling sample
	1117	13.71	4.0	6.79	23.4	2180	3.0	-330.1	7.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-11-22	1120	MW-96	13.71	6.79	23.4	2180	3.0	-330.1	7.4	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-94
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

198

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	905	16.49	16.81	0.32	23.45	16.0	Yes	Yes	Yes	Yes	Sock in well	Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		NO SAMPLE; LNAPL ≥ 0.03						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-94								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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P

Bagged tube Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-8
Event: 2422
Area of Concern: REST

Completion: At-Grade ___ Upright ✓ Vault ___
Casing Diam.: 2-in ___ 4-in ✓ Other ___
Casing Material: PVC ✓ SS ___ Other ___

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

199

Sulfide Sampling only BTB Regardless of LNAPL

Well Inspection Information In "doghouse"; gauge/sample through 1-in. guide-pipe.

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-11-22	850	14.64	14.81	0.17	37.22	35.2	Yes	Yes	Yes	Yes		Weather Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Colorless, clear	*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	920	RW-8		7.08	22.6	2793	5.4	-319.9		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-67
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in __	PVC ✓
Upright __	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (200)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	835	12.90	14.34	1.44	27.30	19.9	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		NO SAMPLE; ≥0.03 LNAPL						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-67								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-95
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (201)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1155	15.46	16.46	.100	25.37	20.4	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-95								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company Gauge only
Artesia Refinery
Artesia, New Mexico
Sulfide Sampling only BTB

Well: RW-7
Event: 2H22
Area of Concern: REST Regardless of LNAPL

Completion		Casing Diam.		Casing Material	
At-Grade	__	2-in	__	PVC	✓
Upright	✓	4-in	✓	SS	__
Vault	__	Other	__	Other	__

Hydrologic Monitoring
for TRC
Houston, Texas

(202)

Initials: BA

Well Inspection Information In "doghouse"; gauge / sample through 1-in guide-pipe.

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection: Cap	Casing	Well Secured	Label	Other	Comments
10-11-22	920	14.59	14.93	0.34	37.00	32.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5							Black tint / Blk particles	*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10/12/22	910	RW-7	14.59	7.03	22.4	2105	4.9	-307.2		Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-34A
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (203)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	935	14.31	17.09	2.78	19.26	10.8	Yes	Yes	Yes	Yes		Weather: SWNY, 60's
									No Lock			

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5		NO SAMPLE; LNAPL ≥ 0.03						*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		NCL-34A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-33
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (204)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1005	NP	13.31	0.00	19.60	17.7	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1010	13.44	0.5	6.70	23.5	4130	2.8	-67.7	17.8	colorless, clear	*Low-flow groundwater sample:*
	1013	13.53	1.0	6.67	23.5	4100	2.4	-66.5	17.0		(A) peristaltic pump w/ ded tubing
	1015	13.60	1.5	6.65	23.5	4090	2.1	-64.3	16.1		B) ded bladder pump
	1018	13.66	2.0	6.65	23.4	4090	2.0	-62.1	15.6		C) non-ded bladder pump; or
	1020	13.70	2.5	6.67	23.4	4090	2.0	-60.9	15.0		*Standard groundwater sample:*
	1023	13.75	3.0	6.68	23.4	4090	1.9	-59.5	14.2		D) bailer due to limited column; or
	1025	13.78	3.5	6.68	23.4	4080	1.9	-57.8	13.8		E) recovery well cycling sample
	1028	13.81	4.0	6.69	23.4	4080	1.8	-57.1	13.4		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1030	NCL-33	13.81	6.69	23.4	4080	1.8	-57.1	13.4	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-44
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (205)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1505	NS	13.31	0.00	21.34	16.3	Yes	Yes	Yes	Yes		Weather: Sunny, 60s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1510	13.37	0.5	6.77	24.6	2440	2.0	-205.5	8.1	colorless, clear	*Low-flow groundwater sample:*
"	1513	13.38	1.0	6.76	24.5	2440	1.8	-207.9	7.7	"	(A) peristaltic pump w/ ded tubing
"	1515	13.38	1.5	6.74	24.3	2450	1.5	-210.1	6.9	"	B) ded bladder pump
"	1518	13.38	2.0	6.74	24.2	2470	1.3	-213.6	6.1	"	C) non-ded bladder pump; or
"	1520	13.38	2.5	6.73	24.0	2500	1.2	-215.2	5.5	"	*Standard groundwater sample:*
"	1523	13.38	3.0	6.73	23.8	2520	1.2	-217.9	4.7	"	D) bailer due to limited column; or
"	1525	13.38	3.5	6.72	23.7	2520	1.1	-219.4	4.4	"	E) recovery well cycling sample
"	1528	13.38	4.0	6.72	23.7	2530	1.0	-221.1	4.2	"	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-11-22	1530	NCL-44	13.38	6.72	23.7	2530	1.0	-221.1	4.2	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-32
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (206)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1420	NP	13.91	0.00	20.04	18.1	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1425	13.99	0.5	7.11	29.1	2920	2.1	14.1	19.1	colorless, clear	*Low-flow groundwater sample:*
|	1428	14.02	1.0	7.07	29.0	2910	2.0	17.4	16.5	|	(A) peristaltic pump w/ ded tubing
|	1430	14.04	1.5	7.05	28.8	2900	1.9	19.1	15.7	|	B) ded bladder pump
|	1433	14.04	2.0	7.03	28.8	2900	1.9	21.9	14.5	|	C) non-ded bladder pump; or
|	1435	14.04	2.5	7.01	28.7	2890	1.8	23.6	13.7	|	*Standard groundwater sample:*
|	1438	14.04	3.0	6.99	28.6	2880	1.7	25.4	13.0	|	D) bailer due to limited column; or
|	1440	14.04	3.5	6.98	28.4	2880	1.7	27.1	12.6	|	E) recovery well cycling sample
↓	1443	14.04	4.0	6.97	28.3	2870	1.6	29.8	12.1	↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-11-22	1445	NCL-32	14.04	6.97	28.3	2870	1.6	29.8	12.1	Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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*Access on foot

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-108
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in ✓	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAV (207)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1550	NP	16.58	0.00	27.74	22.5	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1600	16.64	0.5	6.96	25.3	2300	2.3	-299.9	10.1	Colorless / Clear	*Low-flow groundwater sample:*
	1602	16.70	1.0	6.94	25.2	2290	2.2	-301.4	9.7		(A) peristaltic pump w/ ded tubing
	1605	16.75	1.5	6.92	25.1	2280	2.1	-308.5	9.1		B) ded bladder pump
	1607	16.80	2.0	6.90	25.0	2240	2.1	-312.4	8.6		C) non-ded bladder pump; or
	1610	16.83	2.5	6.89	24.9	2230	2.1	-317.1	7.9		*Standard groundwater sample:*
	1612	16.86	3.0	6.88	24.8	2210	2.1	-320.6	7.4		D) bailer due to limited column; or
	1615	16.89	3.5	6.87	24.7	2190	2.0	-328.2	6.4		E) recovery well cycling sample
↓	1617	16.91	4.0	6.87	24.6	2180	2.0	-333.3	6.9	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
10-11-22	1620	MW-108	16.91	6.87	24.6	2180	2.0	-333.3	6.9	Per COC	Per COC	

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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SW of NCL field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-31
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

(208)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1335	NP	13.64	0.00	20.16	17.4	NO	Yes	Yes	Yes		Weather: Sunny, 78
			(13.64)									

Unable to close lid and fit cap, therefore no cap present

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1340	13.83	0.5	7.21	25.6	2010	2.7	-162.5	14.9	colorless, clear	*Low-flow groundwater sample:*
	1343	13.87	1.0	7.14	25.3	1979	2.2	-161.1	13.5		(A) peristaltic pump w/ ded tubing
	1345	13.88	1.5	7.09	25.0	1956	2.0	-160.2	12.9		B) ded bladder pump
	1348	13.88	2.0	7.07	24.9	1933	1.8	-159.3	12.2		C) non-ded bladder pump; or
	1350	13.88	2.5	7.05	24.7	1919	1.8	-157.9	11.7		*Standard groundwater sample:*
	1353	13.88	3.0	7.03	24.6	1901	1.7	-156.8	11.0		D) bailer due to limited column; or
	1355	13.88	3.5	7.01	24.5	1889	1.6	-155.4	10.6		E) recovery well cycling sample
	1358	13.88	4.0	7.00	24.5	1881	1.6	-154.9	10.1		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1400	NCL-31	13.88	7.00	24.5	1881	1.6	-154.9	10.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge only

Monitoring Well Purging and Sampling Record (Not in "Sampling" Program)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-19
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

209

Initials: BA

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1325	NP	13.92	0.00	22.08	NS	Yes	Yes	Yes	Yes		Weather: Sunny, 78s
									1			

1 No outer protective casing

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-19										Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-55
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: AAD (210)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1220	NP	14.02	0.00	26.85	21.7	Yes	Yes	Yes	Yes		Weather: Sunny 80s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1225	14.08	0.5	6.93	23.8	2900	3.6	-25.4	15.2	Colorless / clear	*Low-flow groundwater sample:*
	1227	14.08	1.0	6.86	23.3	2960	3.3	-20.2	14.6		(A) peristaltic pump w/ ded tubing
	1230	14.08	1.5	6.84	23.0	2990	2.8	-19.3	10.8		B) ded bladder pump
	1232	14.08	2.0	6.81	22.7	3010	2.9	-18.9	9.6		C) non-ded bladder pump; or
	1235	14.08	2.5	6.80	22.5	3020	3.1	-17.6	7.4		*Standard groundwater sample:*
	1237	14.08	3.0	6.78	22.5	3000	2.8	-17.4	6.9		D) bailer due to limited column; or
	1240	14.08	3.5	6.80	22.4	3020	2.6	-19.6	6.2		E) recovery well cycling sample
	1242	14.08	4.0	6.80	22.3	3020	2.6	-19.8	5.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1245	MW-55	14.08	6.80	22.3	3020	2.6	-19.8	5.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#17A
Event: 2H22
Area of Concern: REST

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Bell-shaped PVC stickup w/ PVC slip cap

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: HAN (211)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1205	NP	14.29	0.00	16.01	14.0	Yes	Yes	Yes	Yes		Weather: Sunny 80's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		RW-#17A								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in __	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other 6-in	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BF

212

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	950	NP	15.28	0.00	22.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny, 60's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-18								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54A
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA (213)

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1100	NP	16.12	0.00	31.30	23.6	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1105	16.17	0.5	7.36	24.4	3050	3.0	51.5	10.1	clear less, clear	*Low-flow groundwater sample:*
	1108	16.18	1.0	7.33	24.2	3030	2.8	56.9	8.9		(A) peristaltic pump w/ ded tubing
	1110	16.18	1.5	7.31	23.9	3010	2.7	61.2	7.0		B) ded bladder pump
	1113	16.18	2.0	7.30	23.8	3000	2.6	66.8	5.6		C) non-ded bladder pump; or
	1115	16.18	2.5	7.30	23.5	2980	2.4	68.1	4.9		*Standard groundwater sample:*
	1118	16.18	3.0	7.29	23.4	2960	2.2	70.4	4.2		D) bailer due to limited column; or
	1120	16.18	3.5	7.28	23.4	2940	2.1	72.6	3.8		E) recovery well cycling sample
	1123	16.18	4.0	7.28	23.3	2930	2.0	74.1	3.3		F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1125	MW-54A	16.18	7.28	23.3	2930	2.0	74.1	3.3	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Gauge Only

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54B
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC ✓
Upright ✓	4-in __	SS __
Vault __	Other __	Other __

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

214

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-1-22	1140	NP	16.21	0.00	46.80	41.8	Yes	Yes	Yes	Yes		Weather: Sunny, 78s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
		MW-54B								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

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Monitoring Well Purging and Sampling Record

+ Dup-NCL-01
+ EB-NCL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-49
Event: 2022
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade __	2-in ✓	PVC __
Upright ✓	4-in __	SS ✓
Vault __	Other __	Other __

+ Trip Blank-NCL-01

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

215

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1155	NP	19.76	0.00	32.18	27.2	Yes	Yes	Yes	Yes		Weather: Sunny, 70's

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
10-11-22	1200	19.84	0.5	7.40	25.3	3410	3.2	74.8	22.4	colorless; clear	Low-flow groundwater sample:
↓	1203	19.84	1.0	7.19	24.9	3420	2.8	81.2	17.1	↓ ↓	(A) peristaltic pump w/ ded tubing
	1205	19.84	1.5	7.11	24.7	3430	2.7	84.9	14.7		B) ded bladder pump
	1208	19.84	2.0	7.10	24.5	3430	2.5	86.1	12.4		C) non-ded bladder pump; or
	1210	19.84	2.5	6.99	24.4	3430	2.5	89.2	10.9		Standard groundwater sample:
	1213	19.84	3.0	6.97	24.3	3440	2.4	91.4	10.4		D) bailer due to limited column; or
	1215	19.84	3.5	6.95	24.3	3440	2.3	93.6	9.4		E) recovery well cycling sample
↓	1218	19.84	4.0	6.94	24.2	3450	2.2	95.1	9.0	↓ ↓	F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
10-11-22	1220	NCL-49	19.84	6.94	24.2	3450	2.2	95.1	9.0	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
	930	DUP-NCL-01	19.84	6.94	24.2	3450	2.2	95.1	9.0	Same	Same	
↓	1240	EB-NCL-01	NA	~~~

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(Replacement well for MW-53, that was destroyed by construction activities)

Monitoring Well Purging and Sampling Record

Gauge only

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-53R
Event: 2H22
Area of Concern: NCL

Completion	Casing Diam.	Casing Material
At-Grade ✓	2-in ✓	PVC ✓
Upright __	4-in __	SS __
Vault __	Other __	Other __

Located ~15' North of 70 mi marker (Hwy 285 Northbound)

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BA

216

Well Inspection Information

Date	Time	Depth to LNAPL (Ft-TOC)	Depth to Water (Ft-TOC)	LNAPL Thickness (Ft)	Well Total Depth (Ft-TOC)	Sample Intake (Ft-TOC)	Well Inspection					Comments
							Cap	Casing	Well Secured	Label	Other	
10-11-22	1310	NP	14.11	0.00	24.05	19.1	Yes	Yes	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

Date	Time	Depth to Water (Ft-TOC)	Cum. Vol. Purged (L)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Water Color / Clarity	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								E) recovery well cycling sample
			4.0								F) irrigation well grab sample

Well Sampling Record

Date	Time	Sample I.D.	Depth to Water (Ft-TOC)	pH (std units)	T (C)	SC (umho/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction-Potential (mV)	Turbidity (NTU)	Parameter	Preserv	Comments
												Lab: Pace National, Mt. Juliet, TN
										Per COC	Per COC	
			No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample									

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Instrument Calibration Log

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Hydrologic Monitoring
for TRC
Houston, Texas

Date	Time	pH Hanna (Std. units)	Specific Conductivity Hanna (umho/cm)	Dissolved Oxygen Hanna (Slope Cal. in saturated air)	Turbidity Lamotte (NTU)	ORP Hanna HI 7020 Soln (200-275 mV)	PID Thermo Environmental 100 ppm Isobutylene	Initials / Comments
10/11/22	630	4.01 / 7.00	1,000	100%	10.0	242.1	NA	SCH
10-11-22	633	4.01 / 7.00	1,000	100%	10.0	229.7	NA	BA
10/11/22	636	4.01 / 7.00	1,000	100%	10.0	238.4	NA	BJ
10/11/22	0642	4.01 / 7.00	1,000	100%	10.0	244.9	NA	CDS
10/11/22	0647	4.01 / 7.00	1,000	100%	10.0	231.4	NA	BRH
10-11-22	0650	4.01 / 7.00	1,000	100%	10.0	234.7	NA	MOB
10-11-22	0700	4.01 / 7.00	1000	100%	10.0	263.5	NA	HAN
10-11-22	0703	4.01 / 7.00	1,000	100%	10.0	258.6	NA	OJD
10-11-22	0705	4.01 / 7.00	1,000	100%	10.0	248.7	NA	TAB
10/12/22	0640	4.01 / 7.00	1,000	100%	10.0	244.1	NA	SCH
10/12/22	0646	4.01 / 7.00	1,000	100%	10.0	240.1	NA	CDS
10/12/22	0648	4.01 / 7.00	1,000	100%	10.0	215.3	NA	HAN
10-12-22	0650	4.01 / 7.00	1,000	100%	10.0	234.9	NA	MOB
10/12/22	0654	4.01 / 7.00	1,000	100%	10.0	229.6	NA	BRH
10/12/22	0657	4.01 / 7.00	1,000	100%	10.0	239.2	NA	BJ
10-12-22	0700	4.01 / 7.00	1,000	100%	10.0	231.6	NA	BA
10/12/22	0703	4.01 / 7.00	1,000	100%	10.0	257.4	NA	OJD
10/12/22	0705	4.01 / 7.00	1,000	100%	10.0	248.7	NA	TAB

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Shipment #1

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #
(Navajo - Artesia)

P.O. #
181054

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 1 of 19

Pace Analytical® National Center for Testing & Innovation

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

L# L1546101

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-85	Grab	GW				10	X	X	X	X	X	X				Not Sampled; LNAPL		
MW-86	Grab	GW				11	X	X	X		X	X	X	X		Not Sampled; LNAPL		
MW-120	Grab	GW		10/11/22	905	12	X	X	X	X	X	X						-01
MW-121	Grab	GW		10/11/22	950	7		X	X	X	X	X						-02
MW-84	Grab	GW		10/11/22	1610	7		X	X	X	X	X						-03
MW-122	Grab	GW		10/11/22	1130	7		X	X	X	X	X						-04
MW-79	Grab	GW		10/11/22	1040	7		X	X	X	X	X						-05
MW-74	Grab	GW		10/11/22	1445	7		X	X	X	X	X						-06
MW-2A	Grab	GW		10/11/22	1215	7		X	X	X	X	X						-07
OCD-6	Grab	GW		10/11/22	1305	7		X	X	X	X	X						-08

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:
Cations are being analyzed with Total Metals except where noted.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP / Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	10/12/22	1415	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No HCL / MeoH TBR 10

Temp: °C Bottles Received: 987

Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 2 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
OCD-7AR	Grab	GW		10/11/22	1350	7		X	X	X	X	X						-09
MW-48	Grab	GW				10	X	X	X	X	X	X					(well destroyed, as in recent past)	
MW-130	Grab	GW		10/12/22	1310	10	X	X	X	X	X	X						-10
KWB-4	Grab	GW				8	X	X		X	X	X				Not	sampled;	LNAPL
EB-EP-01	Grab	GW		10/11/22	1500	7		X	X	X	X	X						-11
EB-EP-04	Grab	GW		10/11/22	1055	7		X	X	X	X	X						-12
TRIP BLANK-EP-01	Grab	GW		10/11/22	—	1	X											-13

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 3 of 19

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-76	Grab	GW		10/12/22	950	7		X	X	X	X	X						-14
MW-75	Grab	GW		10/12/22	1045	7		X	X	X	X	X						-15
MW-83	Grab	GW		10/12/22	905	7		X	X	X	X	X						-16
MW-3	Grab	GW		10/12/22	925	7		X	X	X	X	X						-17
MW-88	Grab	GW		10/11/22	1320	5		X	X	X							No Cations	-18
MW-22A	Grab	GW		10/11/22	1400	7		X	X	X	X	X						-19
MW-10	Grab	GW		10/11/22	1520	7		X	X	X	X	X						-20
MW-123	Grab	GW		10/12/22	1150	7		X	X	X	X	X						-21
MW-4A	Grab	GW		10/11/22	1610	7		X	X	X	X	X						-22
MW-5A	Grab	GW		10/12/22	1025	7		X	X	X	X	X						-23

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ___Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		NO
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX **505 E. Huntland Dr, Ste 250** **Austin, TX 78752**	Billing Information: **Accounts Payable** **21 Griffin Road North** **Windsor, CT 06095** **apinvoiceapproval@trcsolutions.com**
Report to: **Julie Speer**	Email To: **jspeer@trccompanies.com**
Project Description: **Artesia Fall 2022**	City/State Collected: **Artesia, NM**
Phone: **512-684-3170** Fax:	Client Project # Lab Project # **TRCATX-ARTESIA**
Collected by (print): **Scott Ude/HMI Team**	Site/Facility ID # **(Navajo - Artesia)** P.O. # **181054**
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y ✓	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Quote # Date Results Needed

Chain of Custody Page 4 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI-40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-7A	Grab	GW		10/12/22	905	10	X	X	X	X	X	X						-24
OCD-8A	Grab	GW		10/12/22	840	8		X	X		X	X	X	X				-25
DUP-EP-01	Grab	GW		10/12/22	800	10	X	X	X	X	X	X						-26
DUP-EP-02	Grab	GW		10/11/22	1200	7		X	X	X	X	X						-27
DUP-EP-03	Grab	GW		10/12/22	1040	7		X	X	X	X	X						-28
EB-EP-03	Grab	GW		10/12/22	1100	7		X	X	X	X	X						-29
TRIP BLANK-EP-02	Grab	GW		10/12/22	—	1	X											-30

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N

Relinquished by : (Signature) Scott Ude	Date: 10/12/22	Time: 1415	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeOH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 5 of 19

Pace Analytical® National Center for Testing & Innovation

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

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
OCD-1R	Grab	GW		10/11/22	1220	7		X	X	X	X	X						-31
OCD-2A	Grab	GW		10/11/22	840	5		X	X	X							No Cations	-32
OCD-3	Grab	GW		10/11/22	925	5		X	X	X							No Cations	-33
OCD-4	Grab	GW		10/11/22	1010	5		X	X	X							No Cations	-34
MW-11A	Grab	GW		10/11/22	1140	3				X	X	X					Only Cats.	-35
OCD-5	Grab	GW		10/11/22	1050	7		X	X	X	X	X						-36
MW-87	Grab	GW		10/12/22	1005	5		X	X	X							No Cations	-37
MW-18A	Grab	GW		10/12/22	940	6		X			X	X	X	X				-38
MW-70	Grab	GW		10/12/22	1110	5		X	X	X							No Cations	-39
MW-124	Grab	GW		10/12/22	1030	7		X	X	X	X	X						-40

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #
(Navajo - Artesia)

P.O. #
181054

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI-40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-52	Grab	GW		10/12/22	935	11	X	X	X		X	X	X	X				-41
MW-109	Grab	GW		10/12/22	1140	12	X	X	X	X	X	X						-42
MW-110	Grab	GW		10/12/22	1025	12	X	X	X	X	X	X						-43
EB-EP-02	Grab	GW		10/12/22	1050	7		X	X	X	X	X						-44
TRIP BLANK-EP-03	Grab	GW		10/11/22	—	1	X											-45

Chain of Custody Page 6 of 19

Pace Analytical® National Center for Testing & Innovation

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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP/__Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0902
				Hold: Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #: **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N___ Y✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 7 of 19

Pace Analytical®
National Center for Testing & Innovation

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Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L#

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-113	Grab	GW		10/11/22	1005	10	X	X	X	X	X	X						-46
~~KWB-8~~	~~Grab~~	~~GW~~				~~9~~	~~X~~	~~X~~			~~X~~	~~X~~	~~X~~	~~X~~		No	Sample; LNAPL	
~~MW-133~~	~~Grab~~	~~GW~~				~~10~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~					No Sample; LNAPL	
MW-134	Grab	GW		10/11/22	1115	10	X	X	X	X	X	X						-47
~~RA-4798~~	~~Grab~~	~~GW~~				~~6~~	~~X~~			~~X~~	~~X~~	~~X~~					~~Only Cats.~~	pump retrieved
~~RA-4196~~	~~Grab~~	~~GW~~				~~10~~	~~X~~			~~X~~	~~X~~	~~X~~			~~X~~	~~X~~	~~Only Cats.~~	pump retrieved
KWB-7	Grab	GW		10/11/22	1350	9	X	X			X	X	X	X				-48
MW-135	Grab	GW		10/11/22	1100	10	X	X	X	X	X	X						-49
NP-1	Grab	GW		10/11/22	1310	3	X											-50
MW-21	Grab	GW		10/11/22	1235	10	X	X	X	X	X	X						-51

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/13/22 Time: 0900
				Hold: Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 8 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
KWB-11A	Grab	GW		10/11/22	1430 16	11	X	X	X		X	X	X	X	X	X		-52
KWB-11B	Grab	GW		10/11/22	1510	11	X	X	X		X	X	X	X				-53
MW-115	Grab	GW		10/11/22	1650	10	X	X	X	X	X	X						-54
MW-114	Grab	GW		10/11/22	1730	10	X	X	X	X	X	X						-55
MW-125	Grab	GW		10/11/22	1610	10	X	X	X	X	X	X						-56
DUP-REST-01	Grab	GW		10/11/22	1200	10	X	X	X	X	X	X						-57
EB-REST-01	Grab	GW		10/11/22	1025	10	X	X	X	X	X	X						-58
DUP-REST-03	Grab	GW		10/11/22	1400	10	X	X	X	X	X	X						-59
EB-REST-03	Grab	GW		10/11/22	1140	10	X	X	X	X	X	X						-60
TRIP BLANK-REST-01	Grab	GW		10/11/22	—	1	X											-61

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: KWB-11A COC was corrected to match correctly-provided bottle kit.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/12/22	1415		10	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/13/22 Time: 0900	Hold: Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #: **181054**

Collected by (signature): Scott Ude

Immediately Packed on ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 9 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI-40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions, TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
TRIP BLANK-TMD-01	Grab	GW		10/11/22	—	1	X											-62
MW-117	Grab	GW		10/11/22	1510	10	X	X	X	X	X	X						-63
MW-118	Grab	GW		10/11/22	1430	10	X	X	X	X	X	X						-64
MW-119	Grab	GW		10/11/22	1330	10	X	X	X	X	X	X						-65
MW-136	Grab	GW		10/11/22	900	11	X	X	X		X	X	X	X				-66
~~MW-126A~~	~~Grab~~	~~GW~~				10	X	X	X	X	X	X					No Sample ; LNAPL	
MW-126B	Grab	GW		10/11/22	1055	10	X	X	X	X	X	X						-67
~~MW-127~~	~~Grab~~	~~GW~~				14	X	X	X	X	X	X			X	X	No Sample, LNAPL	
KWB-1A	Grab	GW		10/11/22	955	9	X	X			X	X	X	X				68
~~KWB-10R~~	~~Grab~~	~~GW~~				10	X	X		X	X	X				X	No Sample, LNAPL	

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0700

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #
(Navajo - Artesia)

P.O. #
181054

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions, TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-131	Grab	GW				10	X	X	X	X	X	X				ND	Sample; LNAPL	
KWB-5	Grab	GW				8	X	X		X	X	X				NO	Sample; LNAPL	
MW-111	Grab	GW				14	X	X	X	X	X	X			X	X	NO Sample; LNAPL	
KWB-6	Grab	GW				12	X	X		X	X	X			X	X	NO Sample; LNAPL	
MW-112	Grab	GW				10	X	X	X	X	X	X					NO Sample, LNAPL	
MW-132	Grab	GW				10	X	X	X	X	X	X				ND	sample; skimmer LNAPL pump in well	
MW-57	Grab	GW				10	X	X	X	X	X	X				NO	Sample; LNAPL	
KWB-12A	Grab	GW		10/11/22	1330	11	X	X	X		X	X	X	X				-69
KWB-12B	Grab	GW		10/11/22	1415	11	X	X	X		X	X	X	X				-70
KWB-2R	Grab	GW				10	X	X		X	X	X				X	NO Sample; LNAPL	

Chain of Custody Page 10 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #: **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 11 of 19

Pace Analytical® National Center for Testing & Innovation

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions, TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-58	Grab	GW				9	X	X			X	X	X	X	—	No	Sample; LNAPL	
DUP-REST-05	Grab	GW		10/11/22	1200	11	X	X	X		X	X	X	X				-71
EB-REST-05	Grab	GW		10/11/22	1435	11	X	X	X		X	X	X	X				-72
TRIP BLANK-REST-02	Grab	GW		10/11/22	—	1	X											-73

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 98
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0801

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 12 of 19

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-104	Grab	GW		10/11/22	1410	10	X	X	X	X	X	X						-74
MW-64	Grab	GW		10/11/22	1545	10	X	X	X	X	X	X				~~No Sample, LNAPL~~		~~-75~~
MW-65	Grab	GW				10	X	X	X	X	X	X				No Sample; LNAPL		
MW-102	Grab	GW		10/11/22	1705	10	X	X	X	X	X	X						-76
MW-99	Grab	GW				10	X	X	X	X	X	X				No	Sample; LNAPL	
MW-66	Grab	GW				11	X	X	X		X	X	X	X		No	Sample; LNAPL	
MW-28	Grab	GW				13	X	X	X		X	X	X	X		X	No Sample; LNAPL	
MW-60	Grab	GW				15	X	X	X		X	X	X	X	X	X	No sample; LNAPL	
MW-128	Grab	GW				12	X	X	X	X	X	X				X	No Sample; LNAPL	
MW-116	Grab	GW		10/12/22	1130	10	X	X	X	X	X	X						-77

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR	If preservation required by Login: Date/Time
Scott Ude	10/12/22	1415		NO	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900	Hold: Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #: **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 13 of 19

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions, TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-46R	Grab	GW		10/12/22	1210	8	X	X		X	X	X						-78
MW-145	Grab	GW		10/11/22	1305	9	X	X	X	X	X							-79
MW-146	Grab	GW	10/11/22	~~1140~~ SH	1140	9	X	X	X	X	X							-80
MW-147	Grab	GW		10/11/22	1015	9	X	X	X	X	X						NOT REQUESTED SH	-81
MW-148	Grab	GW		10/11/22	930	9	X	X	X	X	X							-82
DUP-REST-02	Grab	GW		10/11/22	1600	14	X	X	X	X	X	X			X	X		-83
EB-REST-02	Grab	GW		10/11/22	1715	14	X	X	X	X	X	X			X	X		-84
DUP-REST-04	Grab	GW		10/11/22	1100	9	X	X	X	X	X						~~No Cations~~ analyze SH	-85
EB-REST-04	Grab	GW		10/11/22	1150	9	X	X	X	X	X					SH	~~No Cations~~ analyze SH	-86
TRIP BLANK-REST-03	Grab	GW		10/12/22	—	1	X									SH		-87

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes / No) HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 14 of 19

Pace Analytical® National Center for Testing & Innovation
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI-40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	SVOCs/8270DIOXANE-100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-101	Grab	GW		10/11/22	1205	10	X	X	X	X	X	X						-88
MW-105	Grab	GW		10/11/22	825	10	X	X	X	X	X	X						-89
MW-61	Grab	GW		10/11/22	1115	12	X	X	X	X	X	X				X	SVOCs only	-90
MW-62	Grab	GW		10/11/22	925	12	X	X	X	X	X	X				X	SVOCs only	-91
MW-62R	Grab	GW		10/11/22	1015	10	X	X	X	X	X	X						-92
~~MW-43~~	~~Grab~~	~~GW~~				15	X	X	X		X	X	X	X		X	No Sample, LNAPL	
~~MW-137~~	~~Grab~~	~~GW~~				13	X	X	X		X	X	X	X		X	SVOCs only	No Sample, LNAPL
~~MW-137A~~	~~Grab~~	~~GW~~				11	X	X	X		X	X	X	X			No Sample, LNAPL	
~~MW-138~~	~~Grab~~	~~GW~~				15	X	X	X		X	X	X	X		X	No Sample, LNAPL	
~~MW-138A~~	~~Grab~~	~~GW~~				11	X	X	X		X	X	X	X			No Sample, LNAPL	

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
___ UPS ✓ FedEx ___ Courier ___ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: ___NP ✓Y ___N
COC Signed/Accurate: ✓Y ___N
Bottles arrive intact: ✓Y ___N
Correct bottles used: ✓Y ___N
Sufficient volume sent: ✓Y ___N
If Applicable
VOA Zero Headspace: ✓Y ___N
Preservation Correct/Checked: ✓Y ___N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes / No) (HCl / MeoH) TBR	If preservation required by Login: Date/Time
Scott Ude	10/12/22	1415		10	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900	Hold: / Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #
(Navajo - Artesia)

P.O. #
181054

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 15 of 19

Pace Analytical®
National Center for Testing & Innovation

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	SVOCs/8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
~~MW-23~~	~~Grab~~	~~GW~~		10/11/22		14	X	X	X	X	X	X				X	No Sample; LNAPL	
TEL-4	Grab	GW		10/12/22	855	10	X	X	X	X	X	X						93
~~TEL-3~~	~~Grab~~	~~GW~~				10	X	X	X	X	X	X					No Sample; LNAPL	
~~TEL-2~~	~~Grab~~	~~GW~~				10	X	X	X	X	X	X					No Sample; LNAPL	
~~TEL-1~~	~~Grab~~	~~GW~~				10	X	X	X	X	X	X					No Sample; LNAPL	
~~MW-39~~	~~Grab~~	~~GW~~				12	X	X	X	X	X	X				X	1,4-D only	NO Sample; LNAPL
MW-98	Grab	GW		10/11/22	1340	10	X	X	X	X	X	X						94
MW-49	Grab	GW		10/11/22	1250	11	X	X	X		X	X	X	X				95
~~MW-106~~	~~Grab~~	GW	unable to access; covered by steel container			12	X	X	X	X	X	X				X	1,4-D only	
MW-45	Grab	GW		10/11/22	1715	9	X	X			X	X	X	X				96

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #
TRCATX-ARTESIA

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #
(Navajo - Artesia)

P.O. #
181054

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Chain of Custody Page 16 of 19

Pace Analytical* National Center for Testing & Innovation

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

L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
MW-29	Grab	GW		10/11/22	1600	10	X	X	X	X	X	X						-97
DUP-TEL-01	Grab	GW		10/12/22	1000	10	X	X	X	X	X	X						-98
EB-TEL-01	Grab	GW		10/12/22	920	10	X	X	X	X	X	X						-99
TRIP BLANK-REST-04	Grab	GW		10/11/22	—	1	X											-100
TRIP BLANK-TEL-01	Grab	GW		10/12/22	—	1	X											-101

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		10
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	SVOCs/8270DIOXANE-100mlAmb-NoPres	Remarks	Sample # (lab only)
MW-139	Grab	GW		10/11/22	1725	10	X	X	X	X	X	X						-102
MW-50	Grab	GW		10/11/22	1430	8	X	X		X	X	X						-103
~~MW-97~~	~~Grab~~	~~GW~~				~~12~~	X	X	X	X	X	X				X	SVOCs only	Not located
~~MW-92~~	~~Grab~~	~~GW~~				~~12~~	X	X	X	X	X	X				X	1,4-D only	Not Sampled, LNAPL
~~MW-91~~	~~Grab~~	~~GW~~				~~12~~	X	X	X	X	X	X				X	1,4-D only	Not Sampled, LNAPL
MW-90	Grab	GW		10/11/22	1035	10	X	X	X	X	X	X						-104
MW-96	Grab	GW		10/11/22	1120	10	X	X	X	X	X	X						-105
~~MW-94~~	~~Grab~~	~~GW~~				~~12~~	X	X	X	X	X	X				X	1,4-D only	No sample, LNAPL
~~MW-67~~	~~Grab~~	~~GW~~				~~13~~	X	X	X		X	X	X	X		X	1,4-D only	No sample, LNAPL
MW-55	Grab	GW		10/11/22	1245	11	X	X	X		X	X	X	X				-106

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Trip Blank Received: Yes / No
HCl / MeoH
TBR

Temp: °C Bottles Received: 10 987

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: NP ✓Y N
COC Signed/Accurate: ✓Y N
Bottles arrive intact: ✓Y N
Correct bottles used: ✓Y N
Sufficient volume sent: ✓Y N
If Applicable
VOA Zero Headspace: ✓Y N
Preservation Correct/Checked: ✓Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Scott Ude	10/12/22	1415	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Date: 10.13.22 Time: 0900

Chain of Custody Page 17 of 19

Pace Analytical®
National Center for Testing & Innovation

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

L#

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Pres Chk

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project # **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID # **(Navajo - Artesia)**

P.O. # **181054**

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI-40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
NCL-34A	Grab	GW				8	X	X		X	X	X					No Sample	LMAP(
NCL-33	Grab	GW		10/11/22	1030	8	X	X		X	X	X						-107
NCL-44	Grab	GW		10/11/22	1530	8	X	X		X	X	X						-108
NCL-32	Grab	GW		10/11/22	1445	8	X	X		X	X	X						-109
MW-108	Grab	GW		10/11/22	1620	8	X	X		X	X	X						-110
NCL-31	Grab	GW		10/11/22	1400	8	X	X		X	X	X						-111
MW-54A	Grab	GW		10/11/22	1125	8	X	X		X	X	X						-112
NCL-49	Grab	GW		10/11/22	1220	8	X	X		X	X	X						-113
DUP-NCL-01	Grab	GW		10/11/22	930	8	X	X		X	X	X						-114
EB-NCL-01	Grab	GW		10/11/22	1240	8	X	X		X	X	X						-115

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier __ _____

Tracking #

Relinquished by : (Signature) Scott Ude — Date: 10/12/22 — Time: 1415 — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature)

Trip Blank Received: Yes / No HCl / MeoH TBR

Temp: °C Bottles Received: 987

Date: 10.13.22 Time: 0900

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Chain of Custody Page 18 of 19

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National Center for Testing & Innovation

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

L #

Table #

Acctnum: TRCATX
Template: T194233
Prelogin: P955027
TSR: 526
PB:

Shipped Via:

TRC Solutions - Austin, TX
505 E. Huntland Dr, Ste 250
Austin, TX 78752

Billing Information:
Accounts Payable
21 Griffin Road North
Windsor, CT 06095
apinvoiceapproval@trcsolutions.com

Report to: **Julie Speer**

Email To: **jspeer@trccompanies.com**

Project Description: **Artesia Fall 2022**

City/State Collected: **Artesia, NM**

Phone: **512-684-3170**
Fax:

Client Project #

Lab Project #: **TRCATX-ARTESIA**

Collected by (print): **Scott Ude/HMI Team**

Site/Facility ID #: **(Navajo - Artesia)**

P.O. #: **181054**

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260OXY - 40mlAmb HCl	DROLVI- 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Anions. TDS - 500mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 40mlClr-NaThio	8270DIOXANE - 100ml Amb-NoPres	Remarks	Sample # (lab only)
TRIP BLANK-NCL-01	Grab	GW		10/11/22	—	1	X											-116

Chain of Custody Page 19 of 19

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L #

Table #

Acctnum: **TRCATX**
Template: **T194233**
Prelogin: **P955027**
TSR: **526**
PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
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Remarks:

pH _____ Temp _____
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Samples returned via:
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Sample Receipt Checklist
COC Seal Present/Intact: NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: ✓Y __N
Preservation Correct/Checked: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Scott Ude	10/12/22	1415		NO
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 987
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10.13.22 Time: 0800

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Released to Imaging: 10/3/2023 9:35:25 AM
Received by OCD: 6/14/2023 1:57:55 PM

L1546101

Tracking Numbers	Temperature
5882 7563 7102	GBAG 0.9 +0 = 0.9
5882 7563 5544	GBAG 0.8 +0 = 0.8
5882 7563 7113	GBAG 3.9 +0 = 3.9
6053 3811 6653	GBAG 3.6 +0 = 3.6
5719 6175 7457	GBAG 2.6 +0 = 2.6
5882 7563 5533	GBAG 5.5 +0 = 5.5

Released to Imaging: 10/3/2023 9:35:25 AM
Received by OCD: 6/14/2023 1:57:55 PM

Tracking Numbers	Temperature
6053 3811 6664	GBAG 0.5 +0 = 0.5
5719 6175 7479	GBAG 1.4 +0 = 1.4
5882 7563 7124	GBAG 4.4 +0 = 4.4
5163 7721 1299	GBAG 3.0 +0 = 3.0
5719 6175 6829	GBAG 1.5 +0 = 1.5
5719 6175 7468	GBAG 2.3 +0 = 2.3

Released to Imaging: 10/3/2023 9:35:25 AM

Received by OCD: 6/14/2023 1:57:55 PM

Tracking Numbers	Temperature
5163 7721 1325	~~GBA6~~ 3.4+0= 2.1
5163 7721 1303	GBA6 1.2+0= 1.2
5719 6175 6830	GBA6 0.9+0= 0.9
5719 6175 7446	GBA6 0.4+0= 0.4
5882 7563 7135	GBA6 2.8+0= 2.8
5882 7563 7146	GBA6 3.5+0= 3.5
5163 7721 1314	GBA6 3.1+0= 3.1

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 227916

CONDITIONS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 227916
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
lbarr	None	10/3/2023