S. Department of Commerce
ational Oceanic & Atmospheric Administration
ational Environmental Satellite, Data, and Information Service
rrent Location: Elev: 3366 ft. Lat: 32.7547° N Lon: -104.3835° W
ation: **ARTESIA 6 S, NM US USC00290600**

Record of Climatological Observations

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

Generated on 01/28/2021

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

Observation Time Temperature: 0730 Observation Time Precipitation: 07

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
20	10	01	91	46	49	0.00		0.0		0.0	72.7	0.20	5	67	67			
20	10	02	86	42	43	0.00		0.0		0.0	128.0	0.19	5	66	66			
20	10	03	86	43	47	0.00		0.0		0.0	170.9	0.23	5	66	65			
20	10	04	84	43	46	0.00		0.0		0.0	126.1	0.24	5	66	66			
20	10	05	81	44	44	0.00		0.0		0.0	96.9	0.16	5	66	65			
2020	10	06	95	44	49	0.00		0.0		0.0	95.7	0.20	5	66	65			
2020	10	07	92	47	48	0.00		0.0		0.0		0.16	5	66	65			
2020	10	08	92	45	45	0.00		0.0		0.0	100.0	0.21	5	69	65			
2020	10	09	92	43	46	0.00		0.0		0.0	119.3	0.20	5	66	66			
2020	10	10	95	46	50	0.00		0.0		0.0	70.2	0.13	5	66	66			
2020	10	11	96	49	49	0.00		0.0		0.0	103.8	0.23	5	66	66			
2020	10	12	89	48	52	0.00		0.0		0.0	172.7	0.32	5	68	65			
2020	10	13	78	41	42	0.00		0.0		0.0	85.1	0.17	5	68	65			
2020	10	14	91	42	45	0.00		0.0		0.0	59.0	0.14	5	66	65			
2020	10	15	96	44	53	0.00		0.0		0.0	124.9	0.22	5	66	64			
2020	10	16	72	46	46	0.00		0.0		0.0	128.0	0.20	5	66	64			
2020	10	17	68	42	43	0.00		0.0		0.0	200.7	0.40	5	65	63			
2020	10	18	93	41	59	0.00		0.0		0.0	88.9	0.15	5	64	62			
2020	10	19	91	40	40	0.00		0.0		0.0	116.2	0.24	5	65	63			
2020	10	20	80	39	41	0.00		0.0		0.0	137.9	0.19	5	65	63			
2020	10	21	90	41	45	0.00		0.0		0.0	69.0	0.16	5	64	63			
2020	10	22	91	44	48	0.00		0.0		0.0	116.2	0.22	5	64	62			
2020	10	23	91	44	45	0.00		0.0		0.0	180.2	0.29	5	64	62			
2020	10	24	60	37	38	0.00		0.0		0.0	121.2	0.25	5	64	61			
2020	10	25	78	38	63	0.00		0.0		0.0	218.7	0.18	5	60	60			
2020	10	26	83	33	33	0.00		0.0		0.0	261.0	0.28	5	61	60			
2020	10	27	34	23	23	0.02		T		0.0	139.2	0.00	5	60	55			
2020	10	28	29	23	29	0.03		0.0		0.0	167.8	0.00	5	53	37			
2020	10	29	47	23	34	0.00		0.0		0.0	110.0	0.02	5	52	51			
2020	10	30	64	23	29	0.00		0.0		0.0	49.1	0.08	5	52	51			
2020	10	31	71	28	37	0.00		0.0		0.0	134.2	0.20	5	53	52			
		Summary	80	40		0.05		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, 2020

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

Subject: October 2020 (Fall) Groundwater Monitoring Event
Sitewide Gauging – October 6, 2020
Groundwater Sampling – October 6-7, 2020
Navajo Refining Company, 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 Navajo Refining Company, Artesia Refinery, Artesia, New Mexico.

Contents

Field Activities Narrative

1. Historically-conducted in April, the 1H20 event was delayed until June 2020, due to COVID 19 concerns. HMI conducted the *Fall 2020* groundwater monitoring event in October 2020 (i.e., "SA" designations only, in Table 1). Sitewide gauging was conducted October 6, 2020. Groundwater sampling was conducted October 6-7 with HMI team; 20 cooler-entire project shipped from Roswell, New Mexico FedEx location, October 7, 2020.

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, Navajo Refining Co. - Artesia, New Mexico. Per regulatory request, if measured LNAPL thickness was *less than* 0.03 feet, in any well scheduled for groundwater sampling, LNAPL was removed, and the well was sampled. If LNAPL thickness was equal to, or greater than 0.03 feet, in any well scheduled for sampling, the well was not sampled. Gauging data, groundwater field parameters, and well inspection information is summarized in Table 1. Samples were shipped overnight FedEx, to Pace National, Mt. Juliet, TN. 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 at MW-74
   EB-EP-02 collected over decontaminated gauging probe after sampling at MW-124
   EB-EP-03 collected over decontaminated gauging probe after sampling at MW-5A
   EB-EP-04 collected over decontaminated gauging probe after sampling at MW-79
   Trip Blank-EP-01
   Trip Blank-EP-02
   Trip Blank-EP-03
   Trip Blank-EP-04

   NCL
   Duplicate:
   Dup-NCL-01 at NCL-49
   Equipment Blank:
   EB-NCL-01 collected over decontaminated gauging probe after sampling at NCL-32
   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 at TEL-2
Trip Blank-TEL-01

REST ("rest" of the site)
Duplicates:
Dup-REST-01 at MW-113
Dup-REST-02 at MW-104
Dup-REST-03 at MW-134
Dup-REST-04 at MW-60
Dup-REST-05 at KWB-12B
Equipment Blanks:
EB-REST-01 collected over decontaminated gauging probe after sampling at MW-113
EB-REST-02 collected over decontaminated gauging probe after sampling at MW-104
EB-REST-03 collected over decontaminated gauging probe after sampling at MW-134
EB-REST-04 collected over decontaminated gauging probe after sampling at MW-60
EB-REST-05 collected over decontaminated gauging probe after sampling at KWB-12B
Trip Blank-REST-01
Trip Blank-REST-02
Trip Blank-REST-03
Trip Blank-REST-04

4. Notes:

1H20 & 2H20: Per TRC, Pace chain-of-custodies, reference PO # 150726

TRC notes from October 2020:
HMI's daily JHA forms to be included in deliverables package.
Email TRC "Estimated Field Hours" table, pre-event, and followup with "Actual Field Hours" table, post-event.
Pre-2H20 - Wood installed wells MW-137A, MW-138A, and MW-62R inside Refinery; TRC installed MW-145 (+Dup-01, +EB-01), MW-146, MW-147, and MW-148 (East Field/Chase Farms), for VOC only, on separate COC and TRC invoice.
TRC also installed replacement well MW-53R.
Pre-1H20, MW-101 recompleted at-grade (due to in-plant construction), then pre-2H20, MW-101 surrounding area was excavated on all four sides, approximately 4-ft deep; and planned to be refilled, not affecting MW-101, per Navajo (photo).

MW-101 area, 10-6-20

Irrigation wells may experience upcoming changes, per TRC (TBD, replacements, etc.), with possible renewed well-access on the Joy farm property upcoming, per TRC.

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 on 10-3-17 (updated 2019), as reported through HASC system; HMI maintains its 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" (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 upon event completion.
Navajo's Mr. Robert Combs, Randy Dade, Richard Orosco, for daily safety review & permit-issue per team member (typically 8-10 HMI team-).
Navajo completed well surface completion upgrades in a phased-approach, beginning 2018. HMI's well inspections are documented on well gauging and sampling forms. Well inspection items of concern (i.e., "Issues") 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, 2020.

Attachments

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

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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-6A	Monitoring	MDB		1	EP	6-Oct	1515	NP	14.28	0.00	19.04										Yes	Yes	Yes	Yes		SA	A	A					
MW-6B	Monitoring	MDB		2	EP	6-Oct	1520	NP	14.18	0.00	52.28										Yes	Yes	Yes	Yes		SA	B	B					
MW-85	Monitoring	MDB		3	EP	6-Oct	1650	11.71	12.28	0.57	20.34			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-86	Monitoring	MDB		4	EP	6-Oct	1610	NP	11.45	0.00	19.21	6-Oct	1635	6.91	23.5	7,570	1.0	-355.7	8.8	Yellow tint, black particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-120	Monitoring	MDB		5	EP	6-Oct	835	NP	14.02	0.00	28.00	6-Oct	900	7.19	21.1	8,370	1.2	-132.6	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-121	Monitoring	MDB		6	EP	6-Oct	915	NP	14.12	0.00	27.31	6-Oct	940	7.23	22.3	5,740	1.4	34.9	9.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-84	Monitoring	MDB		7	EP	6-Oct	1525	NP	10.81	0.00	20.56	6-Oct	1550	7.13	24.4	10,100	1.0	-134.0	7.6	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-122	Monitoring	MDB		8	EP	6-Oct	1050	NP	12.02	0.00	23.32	6-Oct	1115	7.32	21.5	5,500	1.1	-123.1	28.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-81	Monitoring	MDB		9	EP	6-Oct	955	NP	12.42	0.00	18.62										Yes	Yes	Yes	Yes		SA	A	A					
MW-80	Monitoring	MDB		10	EP	6-Oct	1000	NP	10.44	0.00	19.69										Yes	Yes	Yes	Yes		SA	A	A					
MW-79	Monitoring	MDB		11	EP	6-Oct	1005	NP	11.71	0.00	19.24	6-Oct	1030	7.19	20.8	8,650	1.2	-54.4	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-82	Monitoring	MDB		12	EP	6-Oct	1605	NP	11.29	0.00	20.02										Yes	Yes	Yes	Yes		SA	A	A					
MW-74	Monitoring	MDB		13	EP	6-Oct	1410	NP	11.01	0.00	20.19	6-Oct	1435	7.10	22.6	10,530	1.0	58.0	3.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-73	Monitoring	MDB		14	EP	6-Oct	1500	NP	11.92	0.00	19.60										Yes	Yes	Yes	Yes		SA	A	A					
MW-2A	Monitoring	MDB		15	EP	6-Oct	1130	NP	11.65	0.00	17.30	6-Oct	1155	7.23	23.6	6,400	1.4	-20.3	6.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-2B	Monitoring	MDB		16	EP	6-Oct	1210	NP	12.69	0.00	52.00			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-72	Monitoring	MDB		17	EP	6-Oct	1220	NP	9.17	0.00	13.93										Yes	Yes	Yes	Yes		SA	A	A					
OCD-6	Monitoring	MDB		18	EP	6-Oct	1225	NP	11.90	0.00	26.69	6-Oct	1250	7.08	21.8	15,850	1.0	-96.5	5.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-7AR	Monitoring	MDB		19	EP	6-Oct	1305	NP	11.01	0.00	21.28	6-Oct	1330	7.11	24.3	13,070	1.3	-135.5	7.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
OCD-7B	Monitoring	MDB		20	EP	6-Oct	1345	NP	11.00	0.00	56.85										Yes	Yes	Yes	Yes		SA	B	B	x				
OCD-7C	Monitoring	MDB		21	EP	6-Oct	1350	NP	10.73	0.00	71.95			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
RW-#15C	Recovery	MDB		22	REST	6-Oct	810	19.26	19.30	0.04	22.30										Yes	Yes	Yes	Yes	Y	SA	A	A					
MW-48	Monitoring	MDB		23	REST	6-Oct	805	21.41	21.49	0.08	32.00			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Issue	Yes	Y	SA	SA	SA	x				
MW-130	Monitoring	MDB		24	REST	6-Oct	800	NP	23.19	0.00	45.00	7-Oct	855	6.70	21.6	3,010	2.3	51.2	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
KWB-4	Monitoring	MDB		25	REST	6-Oct	1730	27.03	28.31	1.28	41.75			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-19	Recovery [d]	MDB		26	REST	6-Oct	815	27.80	27.89	0.09	NM										Yes	Yes	Yes	Yes	Y	SA	A	A					
MW-76	Monitoring	SCD		27	EP	6-Oct	1655	NP	12.77	0.00	20.33	6-Oct	1720	6.83	20.2	7,750	1.8	-205.6	7.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-77	Monitoring	SCD		28	EP	6-Oct	1650	NP	11.01	0.00	20.52										Yes	Yes	Yes	Yes		SA	A	A					
MW-78	Monitoring	SCD		29	EP	6-Oct	1645	NP	11.04	0.00	19.57										Yes	Yes	Yes	Yes		SA	A	A					
MW-75	Monitoring	SCD		30	EP	6-Oct	1600	NP	11.07	0.00	23.74	6-Oct	1625	7.18	20.2	7,060	1.3	-153.8	7.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-83	Monitoring	SCD		31	EP	6-Oct	1745	NP	11.01	0.00	19.91	7-Oct	845	6.96	20.6	6,140	1.7	-145.9	6.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-3	Monitoring	SCD		32	EP	6-Oct	1750	NP	13.08	0.00	22.10	7-Oct	930	7.00	19.5	6,540	2.0	-16.5	6.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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		33	EP	6-Oct	1230	NP	10.71	0.00	20.31	6-Oct	1255	7.01	20.6	6,860	1.5	-52.3	6.8	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-22A	Monitoring	SCD		34	EP	6-Oct	1315	NP	9.92	0.00	22.65	6-Oct	1340	6.94	21.2	14,440	1.8	-97.9	6.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-22B	Monitoring	SCD		35	EP	6-Oct	1415	NP	9.76	0.00	54.66										Yes	Yes	Yes	Yes		SA	B	B				
MW-10	Monitoring	SCD		36	EP	6-Oct	1420	NP	7.46	0.00	18.45	6-Oct	1445	6.93	21.1	6,750	2.3	-107.5	5.9	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-123	Monitoring	SCD		37	EP	6-Oct	1505	NP	7.94	0.00	25.71	6-Oct	1530	6.91	20.2	6,430	1.8	-145.2	7.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-4A	Monitoring	SCD		38	EP	6-Oct	1135	NP	13.23	0.00	16.55	6-Oct	1200	7.00	22.1	6,730	2.5	-149.6	7.0	Clr, black particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-4B	Monitoring	SCD		39	EP	6-Oct	1220	NP	13.00	0.00	72.37										Yes	Yes	Yes	Yes		SA	B	B				
MW-5A	Monitoring	SCD		40	EP	6-Oct	1025	NP	10.32	0.00	20.15	6-Oct	1050	7.08	20.4	9,570	1.6	-138.1	6.2	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-5B	Monitoring	SCD		41	EP	6-Oct	1125	NP	10.41	0.00	53.54										Yes	Yes	Yes	Yes		SA	B	B				
MW-5C	Monitoring	SCD		42	EP	6-Oct	1120	NP	10.61	0.00	71.64										Yes	Yes	Yes	Yes		SA	B	B				
MW-7A	Monitoring	SCD		43	EP	6-Oct	915	NP	10.99	0.00	18.65	6-Oct	940	7.06	20.2	8,450	1.5	-93.3	5.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-7B	Monitoring	SCD		44	EP	6-Oct	1015	NP	10.81	0.00	52.56										Yes	Yes	Yes	Yes		SA	B	B				
OCD-8A	Monitoring	SCD		45	EP	6-Oct	815	NP	10.70	0.00	20.74	6-Oct	840	6.92	18.8	17,880	1.7	-110.9	7.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
OCD-8B	Monitoring	SCD		46	EP	6-Oct	905	NP	10.67	0.00	56.65										Yes	Yes	Yes	Yes		SA	B	B				
KWB-P4	Monitoring	BRH		47	REST	6-Oct					30.26			DO NOT ADDRESS IN 2H20, per Navajo												B	B	B				
MW-25	Monitoring	BRH		48	TMD	6-Oct	920	NP	15.96	0.00	28.18										Yes	Yes	Yes	Yes		SA	A	A				
NP-8	Monitoring	BRH		49	TMD	6-Oct	925	NP	14.27	0.00	>14.95			Not in sampling program; Navajo added PVC riser in 1H18							Yes	Issue	Yes	Yes		SA	Not in sampling program					
MW-1R	Monitoring	BRH		50	EP	6-Oct	930	NP	12.51	0.00	20.63										Yes	Issue	Yes	Yes		SA	A	A				
MW-15	Monitoring	BRH		51	EP	6-Oct	934	NP	13.42	0.00	21.70										Yes	Yes	Yes	Yes		SA	A	A				
OCD-1R	Monitoring	BRH		52	EP	6-Oct	902	NP	13.03	0.00	23.74	7-Oct	1000	7.22	18.4	6,840	1.5	14.9	5.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
OCD-2A	Monitoring	BRH		53	EP	6-Oct	825	NP	13.26	0.00	27.56	7-Oct	830	7.26	17.5	5,650	2.0	-124.9	5.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
OCD-2B	Monitoring	BRH		54	EP	6-Oct	828	NP	13.18	0.00	50.38			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program					
OCD-3	Monitoring	BRH		55	EP	6-Oct	832	NP	13.68	0.00	25.20	6-Oct	1640	7.52	20.1	4,050	1.4	-12.4	6.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
OCD-4	Monitoring	BRH		56	EP	6-Oct	837	NP	13.22	0.00	25.41	6-Oct	1600	7.26	20.8	14,950	1.3	-85.7	6.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-11A	Monitoring	BRH		57	EP	6-Oct	850	NP	10.93	0.00	22.01	7-Oct	915	6.78	19.3	25,200	1.8	33.0	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-11B	Monitoring	BRH		58	EP	6-Oct	853	NP	10.89	0.00	47.30										Yes	Yes	Yes	Yes		SA	B	B				
OCD-5	Monitoring	BRH		59	EP	6-Oct	842	NP	11.44	0.00	25.41	6-Oct	1520	7.25	20.4	15,790	1.3	-72.6	28.9	Clear, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-87	Monitoring	BRH		60	EP	6-Oct	1125	NP	10.26	0.00	20.39	6-Oct	1150	7.13	20.4	14,670	1.6	-73.4	4.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-18A	Monitoring	BRH		61	EP	6-Oct	1205	NP	11.68	0.00	22.58	6-Oct	1230	7.22	20.2	18,870	1.3	-163.4	2.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-18B	Monitoring	BRH		62	EP	6-Oct	1240	NP	11.67	0.00	50.59										Yes	Yes	Yes	Yes		SA	B	B				
MW-18T	Monitoring	BRH		63	EP	6-Oct	1245	NP	11.80	0.00	50.57			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program					
MW-70	Monitoring	BRH		64	EP	6-Oct	1255	NP	10.08	0.00	22.05	6-Oct	1320	7.16	21.2	6,260	1.0	-102.4	7.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
								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-124	Monitoring	BRH		65	EP	6-Oct	1340	NP	10.78	0.00	22.00	6-Oct	1405	7.19	21.2	11,790	1.4	-94.2	6.7	Clr, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-52	Monitoring	BRH/MDB		66	REST	6-Oct	1720	NP	21.54	0.00	34.67	7-Oct	940	6.84	20.7	3,190	1.7	58.3	4.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-109	Monitoring	BRH/RJM		67	REST	6-Oct	1725	NP	19.52	0.00	29.48	7-Oct	900	7.23	24.0	2,690	1.3	-355.9	5.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-110	Monitoring	BRH/RJM		68	REST	6-Oct	1730	NP	16.12	0.00	29.74	7-Oct	1000	7.23	24.1	1,741	1.2	-271.7	6.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-13	Monitoring	BRH		69	EP	6-Oct	1015	NP	12.89	0.00	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	6-Oct	1020	NP	11.61	0.00	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	6-Oct	1025	NP	10.03	0.00	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	6-Oct	1040	NP	12.04	0.00	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	6-Oct	1045	NP	>11.81	0.00	>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	6-Oct	1621	NP	21.74	0.00	NM										Yes	Yes	Yes	Yes		SA	A	A				
MW-113	Monitoring	BTB/GDS		75	REST	6-Oct	1702	NP	21.49	0.00	37.80	7-Oct	900	6.64	20.1	3,620	1.6	-150.2	7.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
KWB-8	Monitoring	BTB		76	REST	6-Oct	1225	NP	18.86	0.00	35.80	6-Oct	1250	6.89	21.6	5,198	0.8	-308.5	7.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RW-22	Recovery [d]	BTB		77	REST	6-Oct	1640	23.46	24.34	0.88	NM										Yes	Yes	Yes	Yes	Y	SA	A	A				
RW-20A	Recovery [d]	BTB		78	REST	6-Oct	1635	>20.65	>20.65	NM	NM			Top of recovery pump @ 20.65 ft-toc							Yes	Yes	Yes	Yes	Y	SA	A	A				
RW-20B	Recovery [d]	BTB		79	REST	6-Oct	1630	20.51	20.70	0.19	NM										Yes	Yes	Yes	Yes	Y	SA	A	A				
RW-13	Recovery [d]			Field E of Refinery				Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-
RW-13R	Recovery [d]	BTB		80	REST	6-Oct	1616	20.02	20.13	0.11	NM										Yes	Yes	Yes	Yes	Y	SA	A	A				
RW-14	Recovery [d]			Field E of Refinery				Not in gauging program						Not in sampling program											Y	-	-	-	-	-	-	-
RW-14R	Recovery [d]	BTB		81	REST	6-Oct	1610	21.78	21.97	0.19	NM										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-133	Monitoring	BTB		82	REST	6-Oct	1604	19.40	19.62	0.22	37.64			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-134	Monitoring	BTB/GDS		83	REST	6-Oct	1605	NP	19.73	0.00	32.95	6-Oct	1630	6.83	22.1	6,250	0.9	123.5	2.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RA-4798	Irrigation	BTB		84	REST	6-Oct	No gauging @ irrigation well					6-Oct	1315	7.21	21.4	2,396	3.8	-43.9	0.8	Clear	NA	NA	NA	Yes		NA	SA	SA	x			
RA-4196	Irrigation	BTB		85	REST	6-Oct	No gauging @ irrigation well					6-Oct	1330	7.19	23.7	2,186	3.1	-39.8	0.9	Clear	NA	NA	NA	Yes		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	6-Oct	Do not address in 2H20														NA	NA	NA	Yes		NA	A	A				
RA-313	Irrigation	BTB		88	REST	6-Oct	Do not address in 2H20														NA	NA	NA	Yes		NA	A	A				
KWB-7	Monitoring	BTB		89	REST	6-Oct	1135	NP	17.75	0.00	34.83	6-Oct	1200	6.89	23.2	2,369	1.9	-194.3	2.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-135	Monitoring	BTB/GDS		90	REST	6-Oct	1715	NP	31.02	0.00	65.55	7-Oct	1030	6.74	19.7	7,400	3.6	46.1	17.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-20	Monitoring	BTB		91	TMD	6-Oct	1542	NP	18.33	0.00	26.66										Yes	Yes	Yes	Yes		SA	A	A				
NP-3	Monitoring	BTB		92	TMD	6-Oct	1549	NP	20.47	0.00	21.59			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program					
NP-4	Monitoring	BTB		93	TMD	6-Oct	1556	NP	33.81	0.00	36.98			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program					

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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)				
NP-2	Monitoring	BTB		94	TMD	6-Oct	1559	NP	20.56	0.00	21.49			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
NP-1	Monitoring	BTB		95	TMD	6-Oct	1350	NP	18.74	0.00	21.88	6-Oct	1415	6.74	20.6	4,625	1.6	36.3	1.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
NP-6	Monitoring	BTB		96	TMD	6-Oct	1526	NP	15.14	0.00	20.35										Yes	Yes	Yes	Yes		SA	B	B				
MW-8	Monitoring	BTB		97	TMD	6-Oct	1532	NP	16.59	0.00	23.30										Yes	Yes	Yes	Yes		SA	A	A				
MW-21	Monitoring	BTB/GDS		98	TMD	6-Oct	1520	NP	15.76	0.00	25.12	6-Oct	1545	6.91	23.3	7,460	1.0	128.9	3.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-9	Monitoring	BTB		99	TMD	6-Oct	1538	NP	17.12	0.00	22.25			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-71	Monitoring	BTB		100	TMD	6-Oct	1522	NP	17.41	0.00	21.67										Yes	Yes	Yes	Yes		SA	A	A				
MW-68	Monitoring	BTB		101	TMD	6-Oct	1516	NP	21.12	0.00	26.52										Yes	Yes	Yes	Yes		SA	A	A				
MW-27	Monitoring	BTB		102	TMD	6-Oct	1505	NP	20.42	0.00	30.28										Yes	Yes	Yes	Yes		SA	A	A				
MW-89	Monitoring	BTB		103	TMD	6-Oct	1458	NP	13.08	0.00	20.28										Yes	Yes	Yes	Yes		SA	A	A				
MW-16	Monitoring	BTB		104	TMD	6-Oct	1445	NP	10.39	0.00	21.24										Yes	Yes	Yes	Yes		SA	A	A				
MW-26	Monitoring	BTB		105	TMD	6-Oct	1449	NP	14.00	0.00	27.58										Yes	Yes	Yes	Yes		SA	A	A				
KWB-11A	Monitoring	BTB		106	REST	6-Oct	1000	NP	17.56	0.00	42.27	6-Oct	1025	6.77	19.4	3,861	1.0	14.5	17.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
KWB-11B	Monitoring	BTB		107	REST	6-Oct	1045	NP	18.31	0.00	72.45	6-Oct	1110	6.93	20.1	3,143	1.1	120.8	4.7	Clear	Yes	Yes	Cracked pad	Yes		SA	SA	SA	x			
KWB-3AR	Monitoring	BTB		108	REST									Removed from program by Navajo, 4-13-15 (farmer Jack Joy, 575-365-6042)																		
MW-115	Monitoring	BTB		109	REST	6-Oct	1655	NP	17.89	0.00	27.50	7-Oct	915	6.80	19.5	5,048	2.6	67.5	1.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-114	Monitoring	BTB		110	REST	6-Oct	1659	NP	17.38	0.00	38.25	7-Oct	1000	6.67	21.4	3,428	1.9	96.3	1.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-125	Monitoring	BTB		111	REST	6-Oct	1708	NP	20.32	0.00	28.31	7-Oct	1050	6.80	19.7	4,371	2.1	61.2	4.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-117	Monitoring	GDS/OJD		112	REST	6-Oct	1355	NP	16.17	0.00	27.22	6-Oct	1420	6.71	21.2	3,010	2.5	55.7	8.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-118	Monitoring	GDS/OJD		113	REST	6-Oct	1310	NP	19.35	0.00	28.29	6-Oct	1335	6.87	20.4	2,940	3.8	58.3	9.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
NP-9	Monitoring	GDS		114	TMD	6-Oct	842	NP	18.40	0.00	25.65			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-119	Monitoring	GDS		115	REST	6-Oct	855	NP	17.21	0.00	28.11	6-Oct	920	6.81	20.4	5,950	1.8	59.8	14.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
NP-5	Monitoring	GDS		116	REST	6-Oct	1231	NP	16.91	0.00	25.09										Yes	Yes	Yes	Yes		SA	B	B				
MW-136	Monitoring	GDS		117	REST	6-Oct	1155	NP	18.40	0.00	27.90	6-Oct	1220	6.75	22.0	5,380	1.6	110.6	13.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-126A	Monitoring	GDS		118	REST	6-Oct	945	NP	21.41	0.00	37.51	6-Oct	1010	6.63	21.4	4,570	1.3	-77.4	6.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-126B	Monitoring	GDS		119	REST	6-Oct	1025	NP	21.29	0.00	51.43	6-Oct	1050	6.67	21.2	5,360	1.8	82.5	3.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-127	Monitoring	GDS		120	REST	6-Oct	1117	22.96	24.88	1.92	53.21			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-129	Monitoring	GDS		121	REST	6-Oct	1125	23.66	24.75	1.09	50.78										Yes	Yes	Yes	Yes	Y	SA	A	A				
RW-#18A	Recovery	GDS		122	REST	6-Oct	1351	NP	17.60	0.00	17.78										Yes	Yes	Yes	Yes		SA	A	A				
KWB-1A	Monitoring	GDS		123	REST	6-Oct	1300	NP	18.49	0.00	33.50	6-Oct	1325	6.70	22.1	5,770	1.0	128.4	4.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
KWB-1B	Monitoring	GDS		124	REST	6-Oct	1337	NP	20.14	0.00	33.92			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
KWB-1C	Monitoring	GDS		125	REST	6-Oct	1340	NP	20.75	0.00	52.71										Yes	Yes	Yes	Yes		SA	B	B				

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																	PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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)				
KWB-10R	Monitoring	GDS		126	REST	6-Oct	1346	18.80	21.79	2.99	29.46			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-131	Monitoring	GDS		127	REST	6-Oct	1121	25.95	27.58	1.63	53.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
KWB-5	Monitoring	GDS/OJD		128	REST	6-Oct	1235	25.97	28.09	2.12	37.68			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-111	Monitoring	GDS/OJD		129	REST	6-Oct	1225	27.39	27.64	0.25	40.83			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
KWB-6	Monitoring	GDS		130	REST	6-Oct	1436	23.98	26.61	2.63	36.44			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-112	Monitoring	GDS		131	REST	6-Oct	1449	23.23	25.29	2.06	37.54			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-132	Monitoring	GDS		132	REST	6-Oct	1430	21.32	23.80	2.48	42.66			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-57	Monitoring	GDS/OJD		133	REST	6-Oct	1105	NP	21.73	0.00	34.32	6-Oct	1130	6.48	20.5	3,220	3.3	107.3	7.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RW-#11-0[e]	Recovery [d]	GDS		134	REST	6-Oct	1424	Dry	Dry	Dry	22.20										Yes	Yes	Yes	Yes		SA	A	A				
KWB-9	Monitoring	GDS		135	REST			(Historically-obstructed @ 15.11')						Removed from program by Navajo, 4-26-16 (farmer Jack Joy, 575-365-6042)																		
KWB-12A	Monitoring	GDS/OJD		136	REST	6-Oct	905	NP	23.11	0.00	25.03	6-Oct	930	6.34	19.1	2,460	3.4	51.3	8.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
KWB-12B	Monitoring	GDS/OJD		137	REST	6-Oct	950	NP	23.07	0.00	39.39	6-Oct	1015	6.39	19.4	3,020	4.1	112.1	5.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
KWB-2R	Monitoring	GDS/OJD		138	REST	6-Oct	1150	25.10	25.29	0.19	39.39			No sampling (LNAPL 0.03' or greater)							Issue	Issue	Issue	Issue	Y	SA	SA	SA	x			
MW-58	Monitoring	GDS/OJD		139	REST	6-Oct	1210	23.76	24.71	0.95	33.06			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
KWB-13	Monitoring	GDS		140	REST	6-Oct	1412	NP	28.00	0.00	33.10										Yes	Yes	Yes	Yes		SA	A	A				
MW-103	Monitoring	SCU		141	REST	6-Oct	1147	NP	18.30	0.00	25.22										Yes	Yes	Yes	Yes		SA	A	A				
MW-104	Monitoring	SCU		142	REST	6-Oct	1145	NP	14.31	0.00	21.97	6-Oct	1210	6.77	28.2	1,688	1.9	-333.9	4.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-64	Monitoring	SCU		143	REST	6-Oct	1240	NP	21.67	0.00	34.08	6-Oct	1305	6.68	34.6	2,320	3.6	-322.3	20.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-65	Monitoring	SCU		144	REST	6-Oct	1330	19.12	19.62	0.50	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		145	REST	6-Oct	1340	21.04	21.33	0.29	NM										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-102	Monitoring	SCU		146	REST	6-Oct	1345	NP	17.00	0.00	26.45	6-Oct	1410	6.72	28.5	2,240	3.1	-297.2	8.4	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RW-4	Recovery [d]	SCU		147	REST	6-Oct	1425	NP	15.58	0.00	36.62										Yes	Yes	Yes	Yes		SA	A	A				
RW-6	Recovery [d]	SCU		148	REST	6-Oct	1420	17.51	21.25	3.74	34.90										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-99	Monitoring	SCU		149	REST	6-Oct	1510	20.46	21.52	1.06	27.80			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-66	Monitoring	SCU		150	REST	6-Oct	1517	NP	19.95	0.00	29.80	7-Oct	925	6.60	22.4	1,529	2.0	-214.7	7.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-28	Monitoring	SCU/OJD		151	REST	6-Oct	1525	NP	21.03	0.00	27.82	7-Oct	1110	7.32	23.4	3,100	1.1	-197.3	8.1	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-59	Monitoring	SCU		152	REST	6-Oct	1618	NP	18.11	0.00	32.72										Yes	Yes	Yes	Yes		SA	A	A				
MW-60	Monitoring	SCU		153	REST	6-Oct	1620	NP	19.35	0.00	37.78	7-Oct	1025	6.55	24.0	3,470	2.0	-315.6	5.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-107	Monitoring	SCU		154	REST	6-Oct	1527	17.35	18.68	1.33	19.05										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-128	Monitoring	SCU		155	REST	6-Oct	1540	19.06	21.20	2.14	35.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-116	Monitoring	SCU/OJD		156	REST	6-Oct	1600	NP	17.18	0.00	27.63	7-Oct	1025	6.73	20.2	3,510	1.9	-4.6	4.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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-46R	Monitoring	SCU/OJD		157	TMD	6-Oct	1610	NP	14.56	0.00	19.36	7-Oct	940	6.82	18.4	3,090	2.1	40.5	9.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-145	Monitoring	SCU		157.1	REST	6-Oct	1105	NP	20.04	0.00	32.10	6-Oct	1130	6.72	24.0	4,670	2.3	129.7	29.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-146	Monitoring	SCU		157.2	REST	6-Oct	1035	NP	23.30	0.00	33.40	6-Oct	1100	6.81	24.5	4,740	2.4	123.1	17.7	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-147	Monitoring	SCU		157.3	REST	6-Oct	955	NP	30.70	0.00	39.83	6-Oct	1020	6.65	21.3	5,310	5.3	152.5	170.0	Sl. Cloudy	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-148	Monitoring	SCU		157.4	REST	6-Oct	910	NP	34.40	0.00	40.38	6-Oct	940	6.47	22.3	3,610	5.9	159.7	62.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
UG-3R	Monitoring	SCU		158	REST	City well - Not addressed in 2H20					38.58										Yes	Yes	Yes	Yes		A	A	A				
UG-4	Monitoring	SCU		159	REST	City well - Not addressed in 2H20					39.24										Yes	Yes	Yes	Yes		A	A	A				
UG-1	Monitoring	SCU		160	REST	City well - Not addressed in 2H20					24.08										Yes	Yes	Yes	Yes		A	A	A				
UG-2	Monitoring	SCU		161	REST	City well - Not addressed in 2H20					29.28										Yes	Yes	Yes	Yes		A	A	A				
MW-101	Monitoring	TAB/RJM		162	REST	6-Oct	835	NP	15.06	0.00	24.10	6-Oct	900	6.71	24.7	1,734	2.0	-311.8	5.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-105	Monitoring	TAB		163	REST	6-Oct	1450	NP	11.18	0.00	17.20	6-Oct	1515	6.75	27.4	1,254	0.7	-362.6	10.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RW-2	Recovery [d]	TAB		164	REST	6-Oct	1400	15.60	16.88	1.28	36.13										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-61	Monitoring	TAB		165	REST	6-Oct	1300	NP	14.97	0.00	29.30	6-Oct	1335	6.87	27.2	2,310	1.0	-354.7	4.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-62	Monitoring	TAB/OJD		166	REST	6-Oct	1510	NP	17.56	0.00	29.50	6-Oct	1535	6.57	22.3	2,570	1.3	-353.1	7.8	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-62R	Monitoring	TAB/OJD		166.1	REST	6-Oct	1555	NP	17.29	0.00	24.51	6-Oct	1620	6.61	23.6	2,200	1.3	-298.8	8.1	Clear, gray tint	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-93	Monitoring	TAB		167	REST	6-Oct	1420	11.86	11.90	0.04	20.23										Yes	Yes	Yes	Yes	Y	SA	A	A				
MW-43	Monitoring	TAB/RJM		168	REST	6-Oct	1445	NP	15.85	0.00	19.67	6-Oct	1510	6.75	26.8	3,120	1.6	-382.7	7.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-137	Monitoring	TAB/RJM		169	REST	6-Oct	1405	13.41	14.97	1.56	29.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-137A	Monitoring	TAB/RJM		169.1	REST	6-Oct	1425	13.49	14.62	1.13	14.88			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-138	Monitoring	TAB/RJM		170	REST	6-Oct	1330	14.81	17.88	3.07	24.81			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-138A	Monitoring	TAB/RJM		170.1	REST	6-Oct	1345	14.59	No water	>0.44	15.03			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-23	Monitoring	TAB/OJD		171	REST	6-Oct	1230	NP	18.31	0.00	23.10	6-Oct	1705	6.93	23.2	2,320	1.1	-334.4	7.3	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	x			
TEL-4	Monitoring	TAB		172	TEL	6-Oct	930	NP	14.80	0.00	27.27	6-Oct	955	6.48	24.2	3,210	0.8	-308.1	0.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
TEL-3	Monitoring	TAB		173	TEL	6-Oct	820	NP	15.90	0.00	27.19	6-Oct	845	6.52	23.4	2,250	3.0	-356.8	0.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
TEL-2	Monitoring	TAB		174	TEL	6-Oct	900	16.87	17.25	0.38	27.20			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
TEL-1	Monitoring	TAB		175	TEL	6-Oct	740	16.14	16.80	0.66	27.00			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x			
MW-39	Monitoring	TAB/RJM		176	REST	6-Oct	945	NP	16.84	0.00	25.44	6-Oct	1010	7.26	25.2	2,730	1.6	-299.1	6.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-98	Monitoring	TAB		177	REST	6-Oct	1040	NP	13.54	0.00	25.60	6-Oct	1105	6.62	25.6	2,650	0.8	-380.0	0.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
RW-10	Recovery [d]	TAB		178	REST	6-Oct	750	NP	16.76	0.00	22.49										Yes	Yes	Yes	Yes		SA	A	A				
MW-40	Monitoring	TAB		179	REST	6-Oct	1200	NP	15.40	0.00	24.75										Yes	Yes	Yes	Yes		SA	A	A				
MW-41	Monitoring	TAB/RJM		180	REST	6-Oct	930	NP	14.74	0.00	21.56										Yes	Yes	Yes	Yes		SA	A	A				

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC						
								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)				
RW-9	Recovery [d]	TAB/RJM		181	REST	6-Oct	935	NP	16.75	0.00	21.83										Yes	Yes	Yes	Yes		SA	A	A					
MW-42	Monitoring	TAB		182	REST	6-Oct	1150	NP	17.04	0.00	24.32										Yes	Yes	Yes	Yes		SA	A	A					
MW-29	Monitoring	TAB		183	REST	6-Oct	1220	NP	22.19	0.00	24.22	7-Oct	925	7.23	22.9	3,070	1.2	-309.9	2.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-#16B	Recovery	TAB/RJM		184	REST	6-Oct	925	Dry	Dry	Dry	17.70										Yes	Yes	Cracked pad	Yes		SA	A	A					
MW-30	Monitoring	TAB		185	REST	6-Oct	1130	NP	17.71	0.00	23.50			Not in sampling program							Yes	Yes	Yes	Yes		SA	Not in sampling program						
MW-56	Monitoring	TAB		186	NCL	6-Oct	1140	NP	18.51	0.00	26.50										Yes	Yes	Yes	Yes		SA	A	A					
MW-49	Monitoring	TAB/RJM		187	TEL	6-Oct	1235	NP	14.15	0.00	33.07	6-Oct	1300	6.55	25.7	2,870	2.5	-371.2	7.5	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-106	Monitoring	TAB/RJM		188	REST	6-Oct	1035	NP	11.81	0.00	22.80	6-Oct	1200	6.53	25.6	3,320	1.9	-392.9	7.3	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-45	Monitoring	TAB		189	NCL	6-Oct	1545	NP	13.20	0.00	15.05	6-Oct	1610	7.48	24.2	2,720	0.9	-226.3	3.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-139	Monitoring	CJH		190	REST	6-Oct	1030	NP	14.51	0.00	29.60	6-Oct	1055	6.70	22.5	4,190	1.6	-150.0	9.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-50	Monitoring	CJH		191	REST	6-Oct	1100	NP	15.41	0.00	28.22	6-Oct	1125	6.81	25.0	8,820	1.6	-6.1	7.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-97	Monitoring	CJH		192	REST	6-Oct	NM	NM	NM	NM	Construction in area; entire area covered with soil and gravel; not located, in conjunction with Navajo; Historical LNAPL														Y	SA	SA	SA	x				
MW-92	Monitoring	CJH		193	REST	6-Oct	1150	14.68	17.69	3.01	22.60			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-1	Recovery [d]	CJH		194	REST	6-Oct	1200	17.61	18.21	0.60	35.39										Yes	Yes	Yes	Yes	Y	SA	A	A					
MW-91	Monitoring	CJH		195	REST	6-Oct	1210	14.87	14.91	0.04	25.35			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-90	Monitoring	CJH		196	REST	6-Oct	1220	NP	14.47	0.00	22.80	6-Oct	1245	6.65	23.6	3,540	1.6	-370.2	7.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-96	Monitoring	CJH		197	REST	6-Oct	1425	NP	15.03	0.00	25.57	6-Oct	1450	6.67	25.1	2,180	1.4	-365.1	6.5	Clear	Yes	Closure	Issue	Yes		SA	SA	SA	x				
MW-94	Monitoring	CJH		198	REST	6-Oct	1505	16.94	22.45	5.51	23.45			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
RW-8	Recovery [d]	CJH		199	REST	6-Oct	1515	18.17	21.72	3.55	37.22										Yes	Yes	Yes	Yes	Y	SA	A	A					
MW-67	Monitoring	CJH		200	REST	6-Oct	1525	14.42	16.28	1.86	27.30			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Yes	Yes	Y	SA	SA	SA	x				
MW-95	Monitoring	CJH		201	REST	6-Oct	1535	NP	17.13	0.00	25.37										Yes	Yes	Yes	Yes		SA	A	A					
RW-7	Recovery [d]	CJH		202	REST	6-Oct	1550	18.79	20.95	2.16	37.00										Yes	Yes	Yes	Yes	Y	SA	A	A					
NCL-34A	Monitoring	CJH		203	NCL	6-Oct	1605	15.01	No water	>4.25	19.26			No sampling (LNAPL 0.03' or greater)							Yes	Yes	Issue	Yes	Y	SA	SA	SA	x				
NCL-33	Monitoring	CJH		204	NCL	6-Oct	1620	NP	14.04	0.00	19.60	7-Oct	1030	6.44	22.8	4,770	1.6	-68.4	9.1	Clear, orange particles	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-44	Monitoring	CJH		205	NCL	6-Oct	1630	NP	13.81	0.00	21.34	7-Oct	950	6.61	20.8	3,050	1.7	-207.1	5.9	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-32	Monitoring	CJH		206	NCL	6-Oct	1635	NP	13.96	0.00	20.04	7-Oct	905	6.78	20.5	3,150	1.6	31.3	9.6	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
MW-108	Monitoring	CJH		207	NCL	6-Oct	1345	NP	17.89	0.00	27.74	6-Oct	1410	6.80	26.7	1,632	1.4	-389.6	9.0	Clear, yellow tint	Yes	Yes	Yes	Yes		SA	SA	SA	x				
NCL-31	Monitoring	CJH		208	NCL	6-Oct	1300	NP	14.44	0.00	20.16	6-Oct	1325	7.05	26.0	2,710	1.2	-286.1	5.4	Clear	Issue	Yes	Yes	Yes		SA	SA	SA	x				
MW-19	Monitoring	CJH		209	NCL	6-Oct	1340	NP	14.80	0.00	22.08			Not in sampling program							Yes	Yes	Issue	Yes		SA	Not in sampling program						
MW-55	Monitoring	BRH/TAB		210	NCL	6-Oct	1755	NP	16.64	0.00	26.85	7-Oct	825	6.59	20.9	2,900	2.0	38.8	1.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x				
RW-#17A	Recovery	CJH		211	REST	6-Oct	1650	Dry	Dry	Dry	16.01										Yes	Yes	Yes	Yes		SA	A	A					
MW-18	Monitoring	CJH		212	NCL	6-Oct	1645	NP	15.85	0.00	22.20										Yes	Yes	Yes	Yes		SA	A	A					

Table 1: Gauging Data, Groundwater Field Parameters and Well Inspections, 2H20

Navajo Refining Company - Artesia Refinery, Artesia, New Mexico

Well ID	Well Type	HMI Use	HMI Use (# Samp Wells)	HMI Use (Field-Strategy Order)	Location	Gauge Date	Gauge Time	Hydrologic Monitoring-Collected Data (Gauging/Groundwater Field Parameter/Well Inspection)																PSH Expected?	Gauging Frequency	GW Sampling Frequency / Analysis per COC							
								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-54A	Monitoring	CJH		213	NCL	6-Oct	905	NP	16.50	0.00	31.30	6-Oct	930	6.50	21.7	2,590	1.9	32.9	6.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-54B	Monitoring	CJH		214	NCL	6-Oct	940	NP	16.52	0.00	46.80										Yes	Yes	Yes	Yes		SA	B	B				
NCL-49	Monitoring	CJH		215	NCL	6-Oct	945	NP	19.62	0.00	32.18	6-Oct	1010	6.87	21.9	3,570	2.6	81.7	5.2	Clear	Yes	Yes	Yes	Yes		SA	SA	SA	x			
MW-53R	Monitoring	CJH		216	NCL	6-Oct	825	NP	14.56	0.00	24.05	6-Oct	850	6.88	21.7	2,190	2.9	71.4	8.0	Clear	Yes	Yes	Yes	Yes		SA	SA	SA*	x	future frequency TBD		
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

= Well with recently gauged LNAPL (light nonaqueous phase liquid)

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, will have LNAPL removed), then 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.

Wells installed prior to 2H20:

MW-53R; replaced MW-53 which was destroyed by road construction
MW-145
MW-146
MW-147
MW-148
MW-62R

HMI Groundwater

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

Phone 713.464.5206
Fax 713.464.5207

M E M O R A N D U M

Groundwater Monitoring Standard Operating Procedures
Navajo Refining LLC – Artesia, New Mexico

HMI conducts low-flow groundwater sampling in accordance with the site Sampling and Analysis Plan and EPA guidance (including Puls and Barcelona, 1996 EPA Guidance on Low-Flow Groundwater Sampling; REV No. 4, September 19, 2017, and Yeskis & Zavala, 2002, EPA/542:S-02/00, Groundwater Sampling Guidelines for Superfund and RCRA Project Managers).

Groundwater Sampling Methodology

HMI conducts low-flow groundwater sampling using a peristaltic pump and dedicated polyethylene tubing at wells with requisite depths-to-water. At a limited number of wells with depths-to-water greater than peristaltic range, low-flow groundwater sampling is conducted using dedicated or non-dedicated bladder pumps. In 2016, at no cost to TRC, HMI installed HMI-owned bladder pumps in a limited number of wells (approximately four). At such time that HMI no longer conducts routine groundwater monitoring at the site, it respectfully requests the opportunity to recover these dedicated bladder pumps. Sample intakes are set at midscreen, when possible (generally at least two feet from the base of the well). Sample intake depths are permanently marked, ensuring future sampling events consistently monitor the targeted water-bearing interval. During sampling with a peristaltic pump, the sample tube is attached to the pump using a one-foot section of dedicated, flexible silicone tubing (item #5703, Geotech Environmental Equipment, Inc.). A two-foot segment of polyethylene tubing connects the silicone tubing in the pump to the flow-through cell, using a disposable segment of silicone tubing. Purging commences through a sealed flow-through cell at EPA-recommended purge rates (generally 0.1 to 0.2 liters/minute), while well drawdown is monitored. Groundwater field parameter readings are measured at 0.5-liter intervals (generally an equivalent of one cell-volume "turnover"). Field parameters of pH, specific conductivity, temperature, dissolved oxygen, and oxidation-reduction potential are monitored inside the cell. Turbidity is monitored outside the cell. Groundwater field instrumentation is calibrated and recorded daily in accordance with manufacturer specifications.

Purging continues until a requisite volume of groundwater is purged (generally a minimum of 3,000 ml or six flow-through cell volumes), and field parameters have stabilized in accordance with EPA guidance:

Water Quality Parameters (Stabilization Parameters in Accordance with EPA (2002), Groundwater Sampling Guidelines for Superfund and RCRA Project Managers, Yeskis & Zavala, EPA/542:S-02/001)

• pH	+/- 0.1 units;
• Temperature	-
• Conductivity	+/- 3%
• Dissolved Oxygen	+/- 0.3 mg/L
• ORP	+/- 10%
• Turbidity	10%

Immediately prior to sampling, the input tubing to the flow-through cell is disconnected from the disposable silicone receiving tubing on the input barb on the flow-through cell, and groundwater samples are collected directly into lab-supplied containers. Groundwater samples are placed in iced coolers, and remain in HMI's custody until shipped to ESC Lab Sciences via FedEx-overnight. Peristaltic tubes and/or dedicated bladder pumps may be dedicated in respective wells. Alternatively, dedicated tubing may be retrieved, bagged, labeled, and stored in tubs maintained at HMI. Wells with very limited water column thicknesses may be sampled with disposable bailers. Active recovery well and irrigation wells are sampled using sample ports. The purging and sampling process is documented on groundwater sampling field forms.

Cross-Contamination Prevention Program

Dedicated peristaltic tubing and dedicated bladder pumps are used as possible, to minimize any potential cross-contamination issues during the groundwater monitoring process. Remaining non-dedicated equipment (e.g., electronic gauging probes or non-dedicated bladder pumps, etc.) is properly decontaminated prior to use and between wells. The decontamination procedure may include a combination of chemical and mechanical decontamination. For example, scrubbing with ethyl alcohol (isopropanol) as warranted, followed by scrubbing using an Alconox-water solution, and distilled water rinse. The decontamination procedure for non-dedicated bladder pumps consists of cycling an Alconox-water solution through the pump bladder. Distilled water is cycled through the pump bladder, followed by decontaminating the exterior body of the pump, using the methods outlined above.

HMI Deliverables

HMI provides field documentation of groundwater monitoring activities in a deliverables package that includes a brief narrative, summary table (with gauging data, field parameters, well inspection data, and required analytical scope), groundwater sampling forms, field instrument calibration log, and chain-of-custody forms (by Refinery "Area"), and a groundwater sampling SOP memo.

HMI Groundwater

HYDROLOGIC MONITORING
JOB HAZARD ANALYSIS

Activity: Groundwater Sampling	**Date:** 6/16/20 6/17/20 10/6/20 – 10/7/20
	Project: Navajo-Artesia GW Samp.
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 Ude Scott Ude Scott Ude **Attendees Signatures:** Scott Ude Scott Ude Scott Ude

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.

6/16/20 Statewide 6/17/20 Statewide 10/6/20 - 10/7/20 Statewide

Hydrologic Monitoring, LLC (HMI) Job Hazard Analysis (JHA) Job Safety Analysis (JSA) and Personal Protective Equipment (PPE) Assessment	**Task Title:** Mitigating *Exposure to Coronavirus "COVID-19"*		**Date:** HMI Groundwater **New: 4-7-20; Revised:**
	Title: HMI employees, contractors, and visitors	**Supervisor (Print and Sign):**	**Prepared by:** HMI Contractor Safety and Crisis Support
Client Name / Site Location: HF / Artesia & Lovington	**Locations:** HMI-wide	**Business Unit:** All	**Reviewed By:** HMI Committee **Approved By:** HMI Committee

Required or Recommended Personal Protective Equipment:

☐ Hard Hat ☒ Safety Glasses ☐ HiVis Vest ☐ Safety Toe Boots ☒ Gloves: Disposable, Work, etc based on task ☐ Hearing Protection ☒ Other: See below

For certain tasks (see JHA below) the following are required:

- Potable water and soap (preferable) or hand sanitizer with 60%> alcohol
- Paper towels
- Disinfectant wipes
- Tissues
- Nitrile gloves
- Safety glasses or goggles
- Disinfectant spray list of cleaning products to kill Coronavirus

Diluted household bleach solutions can be used in place of disinfectant wipes or sprays if appropriate for the surface. Be sure to test the surface for color-fastness prior to use. Follow manufacturer's instructions for application and proper ventilation. Check that the product is not past its expiration date. Never mix household bleach with ammonia or other cleanser. Unexpired household bleach is effective against coronaviruses when properly diluted.

- Prepare a bleach solution by mixing:
  - 5 tablespoons (1/3rd cup) bleach per gallon of water or 4 teaspoons bleach per quart of water

This JHA applies to the 2019 Novel Coronavirus (SARS-CoV-2) or the disease known as "COVID-19". The Centers for Disease Control and Prevention (CDC), World Health Organization, (WHO), Occupational Safety and Health Administration (OSHA), and other public health agencies are considering the outbreak of COVID-19 to be a pandemic. It is important that employees, contractors, and visitors take standard precautions recommended by CDC and OSHA. For OSHA's guidance related to Hazard Recognition regarding COVID-19 visit https://www.osha.gov/SLTC/covid-19/hazardrecognition.html.

Risk Assessment: Incomplete information about incubation, infectious period, and transmissibility, as well as evolving circumstances make a definitive risk assessment challenging. In light of this, awareness and operationally informed precautions are warranted. Risk increases with increased exposure to persons potentially infected with COVID-19, warranting enhanced precautions described below. HMI will continue to monitor the situation closely in coordination with appropriate stakeholders and will adjust guidance as appropriate. HMI employees, contractors, and visitors should continue to maintain situational awareness for this outbreak.

Personnel should practice good hygiene, wash hands frequently, and cover their cough or sneeze. Stay away from work if you are ill and contact your health provider for guidance. Avoid unnecessary congregate settings where COVID-19 exposure is more probable. Keep your hands below your chin, and avoid touching mouth, eyes, nose and mucous membranes where contaminated hands can spread the disease to your respiratory system. These basic preventative measures reduce the exposure potential for personnel and slow the spread of communicable diseases.

While most COVID-19 lab confirmed cases do display symptoms, some persons may display mild or no symptoms. Symptoms may appear at different stages of the disease.

Operations/Contractor Work	Risk Category	Hazards	Protective Measures / PPE Guidance
1. Fitness for Duty (working from home or before reporting to work)	**Low**	**1. Being unfit for duty – impacted by illness (e.g coronavirus)**	**1a**. Check that you are fit for duty. If you feel unwell or show signs or symptoms of the coronavirus, do not come to work. Current CDC guidance is that if you have a temperature above 100.4 F [37.8 C], or in close contact with someone suspected of having the coronavirus, then you must stay home. If you have an elevated temperature, do not come to work and contact your healthcare provider. Also, contact your supervisor. By coming to work and onto the project site, employees are self-certifying that they do not have a temperature or show other signs of being unwell and are able to work within the guidelines of the CDC.
2. General Field Work	**Low**	**2a. Working around others** **Signs and Symptoms of** COVID-19 include; • Fever • Cough	**2a**. If experiencing signs or symptoms of COVID-19 infection, such as fever, dry cough, or other flu-like symptoms, do not report to work. If symptoms begin while at work, stop what you are doing immediately and contact your supervisor and an HMI Representative. HMI employees and/or their immediate supervisor are also to contact Human Resources immediately. Personnel and contractors shall maintain at least 6-foot distance from each other. Practice social distancing at tailgate meetings and in break rooms and job trailers.

		• Extreme Fatigue • Difficulty breathing • Other Flu Like Symptoms	Limit the number of people in job trailers and other confined areas so that this distance can be maintained. If possible, hold meetings outside. If indoors, open window(s) for circulation. Wipe down window handles prior to opening and use gloves to open. Even when practicing social distancing, limit the amount of people in groups to less than 10 people, or fewer if directed by a particular jurisdictional order.
		2b. Encountering frequent touch points and shared equipment	**2b**. Wipe down and disinfect equipment before use with soap and water or alcohol wipes. Wear disposable gloves if possible or regularly wash hands when handling tools or equipment. Replace gloves regularly or wash hands, especially before eating or drinking. Clean hands often with soap and water for at least 20 seconds: • after using the restroom, • after you have been in a public place, • before and after eating, • after blowing your nose, coughing, or sneezing, • after smoking or vaping in designated areas. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands, including around and under fingernails, and rub your hands together until they feel dry. Wear safety glasses and gloves (nitrile or other work gloves) to avoid contact and to reduce touching face, eyes, nose, and mouth. Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw used tissues in the trash. Immediately wash or sanitize your hands.
		2c. Eating lunch and bathroom breaks	**2c**. Be sure to wash hands with soap and water whenever a bathroom is nearby. At minimum, do so during bathroom and lunch breaks. Use a paper towel to door handle when exiting bathroom. If using outside toilet facilities (i.e. Porta Johns), wash hands with soap and water or hand sanitizer both before and after opening or closing the door. If wearing nitrile gloves, change gloves prior to using the toilet and remove and dispose of them in a trash receptacle when finished. Use hand sanitizer after you dispose of the gloves. Where possible, personnel are encouraged to pack meals and snacks as needed for the duration of the work day and avoid visiting stores and restaurants. If necessary, modify your schedule to avoid restaurants and public restrooms during peak (i.e., crowded), periods to minimize contact with the public. Use drive-through service for

			food pick-up if available. When eating lunch as a group, try to do so outside or in a space with windows open. Wipe down windows prior to opening. Maintain a distance of at least 6 feet and do not share dishes (e.g., bag of chips, communal salad bowl, etc.). Refrain from sharing a field office coffee pot.
3. General Office Work	**Low**	**3a. Working around others**	**3a**. Work from home when possible. Clean hands often with soap and water for at least 20 seconds: • after using the restroom, • after you have been in a public place, • before and after eating, or • after blowing your nose, coughing, or sneezing. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands, including around and under fingernails, and rub your hands together until your hands feel dry. Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw used tissues in the trash. Immediately wash or sanitize your hands. Sit at least six feet apart from others. Change work stations to accommodate this. Even if you are practicing social distancing, you must still limit groups of people to 10 or fewer. Do not hold in-person meetings. After tailgate meetings and/or JHA reviews, supervisors should seek verbal agreement from each attendee and note each acknowledgement rather than passing around for signature. Make hand-sanitizers, sanitizing wipes, and other hygienic supplies readily available. Do not eat or hang out in common areas.
		3b. Encountering frequent "touch points" and handling shared equipment	**3b**. Wipe down keyboards, mouse, phone, headset/headphones, and other "touch points". Limit contact of shared items. Wipe down surfaces before coming into contact with them. Wash hands after handling or wear disposable gloves. In reception areas, use your own pen to sign in and out of offices. Do not eat candy out of candy dishes.

			Assign someone to clean and disinfect frequently touched surfaces daily. Follow the manufacturer's instructions for cleaning and disinfection products (e.g., concentration, application method, and contact time).
4. Essential Work (deemed by Operations, Project Manager, EHS) where a continued 6 foot distance between persons in not possible.	**Low-Medium**	**4a.**Examples such as Operation and Maintenance tasks, groundwater and potable water monitoring, ballast water sampling, post-closure care services, etc.	4a. Mitigation tactics such as cloth face covers, face shields, gloves, facing away from another person, etc. must be implemented.

Additional Information

Prior to starting work, check that required supplies (i.e., disinfectant spray and wipes, soap, hand sanitizer, nitrile gloves) are available. Request re-supply if stock runs low.

Use alcohol-based hand sanitizer that contains at least 60% alcohol. Wash hands with soap and water whenever available. Remember that soap, including bar soap, is generally available and is considered superior to hand sanitizer or disinfectant wipes and sprays. If disinfectants are unavailable, prepare diluted bleach solution as described on page 1 and use in their place.

Common touch points and surfaces include but are not limited to:

*Arms on chairs *Table tops *Doorknobs and handles *Countertops *Elevator Buttons *Coffee Pots
*Refrigerator, microwave, dishwasher, toaster handles *Water Dispensers *Cabinet and file drawer knobs and handles
*Phone receivers, keypads *Copier, printer, and fax control buttons *Sink faucets *Light switches
*Shared office supplies such as staplers, paper cutters, scissors, packaging tape dispensers, writing utensils *Vehicle handles, tailgates, etc.

If personnel are showing possible symptoms of or have been in recent direct contact with others showing symptoms of coronavirus, stop work and notify the site supervisor and HR.

Visit the CDC webpage on cleaning and disinfecting procedures: CDC Guidance for Community and Residential Cleaning-Disinfection for Coronavirus

A list of approved disinfectants for use against COVID-19, is available here: US EPA List of Disinfectants Effective Against Coronaviruses.

Special Considerations:

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6A
Event: 2H20
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

(1)

Well Inspection Information

Initials: MDB

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	
10-6-20	1515	NP	14.26	0.00	19.04	14.1	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge	Only				*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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-6B
Event: 2H20
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

(2)

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	
10-6-20	1520	NP	14.18	0.00	52.28	47.3	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	
			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			Gauge	Only				*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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-85
Event: 2H20
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

(3)

Initials: MMA

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	
10.6.20	1650	11.71	12.28	0.57	20.34		Yes	Yes	Yes	Yes		Weather: Clear 90s
						(2' off bottom, if sampled)						

* pulled oil-sorbant sock and allowed well to equilibrate prior to gauging

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
		MW-85			Not Sampled					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-86
Event: 2H20
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

(4)

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	
10-6-20	1610	NP	11.45	0.00	19.21	17.21	Yes	Yes	Yes	Yes		Weather: Clear 90s

Well Purging Record

*Removed oil-sorbent sock and allowed well to equilibrate prior to gauging

* Product on probe

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	
10-6-20	1615	11.58	0.5	7.09	25.2	7800	1.6	-333.4	21.9	Clear/yellow tint/odor/	Low-flow groundwater sample:
↓	1617	11.65	1.0	7.03	24.5	7680	1.3	-339.5	19.4	black particles	(A) peristaltic pump w/ ded tubing
	1620	11.71	1.5	6.98	24.0	7650	1.0	-343.6	17.3	↓	B) ded bladder pump
	1622	11.77	2.0	6.97	23.8	7640	0.9	-345.6	15.8	↓	C) non-ded bladder pump; or
	1625	11.81	2.5	6.95	23.6	7620	0.9	-348.2	13.0	↓	Standard groundwater sample:
	1627	11.86	3.0	6.93	23.6	7600	1.0	-351.2	10.7	↓	D) bailer due to limited column; or
↓	1630	11.90	3.5	6.92	23.5	7590	1.0	-353.1	9.3	↓	E) recovery well cycling sample
	1632	11.94	4.0	6.91	23.5	7570	1.0	-355.7	8.8	✓	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
10-6-20	1635	MW-86	11.94	6.91	23.5	7570	1.0	-355.7	8.8	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-120
Event: 21120
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

(5)

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	
10-6-20	835	NP	14.02	0.00	28.00	17.5	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	
10-6-20	840	14.29	0.5	7.02	21.0	8850	2.9	-89.6	10.3	Clear/colorless	*Low-flow groundwater sample:*
↓	842	14.29	1.0	7.07	21.1	8630	2.1	-109.3	8.7	↓	(A) peristaltic pump w/ ded tubing
	845	14.29	1.5	7.12	21.1	8460	1.6	-119.3	8.1		B) ded bladder pump
	847	14.29	2.0	7.13	21.1	8460	1.4	-122.4	6.3		C) non-ded bladder pump; or
	850	14.29	2.5	7.14	21.1	8410	1.2	-125.1	6.2		*Standard groundwater sample:*
	852	14.29	3.0	7.16	21.1	8390	1.2	-128.6	6.0		D) bailer due to limited column; or
	855	14.29	3.5	7.18	21.1	8360	1.2	-132.1	5.4		E) recovery well cycling sample
↓	857	14.29	4.0	7.19	21.1	8370	1.2	-132.6	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
10-6-20	900	MW-120	14.29	7.19	21.1	8370	1.2	-132.6	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-121
Event: 2H20
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 (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	
10-6-20	915	NP	14.12	0.00	27.31	17.5	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	
10-6-20	920	14.24	0.5	7.32	22.6	5830	2.1	33.9	19.6	Clear w orange particles	*Low-flow groundwater sample:*
	922	14.31	1.0	7.30	22.4	5760	1.9	34.0	14.3	colorless	(A) peristaltic pump w/ ded tubing
	925	14.35	1.5	7.28	22.3	5750	1.7	33.6	12.6		B) ded bladder pump
	927	14.37	2.0	7.26	22.3	5730	1.6	33.9	10.8		C) non-ded bladder pump; or
	930	14.38	2.5	7.25	22.3	5730	1.5	34.1	10.1	Clear	*Standard groundwater sample:*
	932	14.39	3.0	7.24	22.3	5730	1.5	34.3	9.8		D) bailer due to limited column; or
	935	14.40	3.5	7.24	22.3	5740	1.4	34.5	9.6		E) recovery well cycling sample
	937	14.41	4.0	7.23	22.3	5740	1.4	34.9	9.5	↓	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
10-6-20	940	MW-121	14.41	7.23	22.3	5740	1.4	34.9	9.5	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-84
Event: 2H20
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: MNB (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	
10-6-20	1525	NP	10.81	0.00	20.56	15.2	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1530	10.91	0.5	7.24	25.9	10100	1.8	-138.4	17.3	Clear / Yellow tint	*Low-flow groundwater sample:*
↓	1532	10.95	1.0	7.21	25.4	10140	1.7	-136.2	14.8	↓	(A) peristaltic pump w/ ded tubing
	1535	10.98	1.5	7.19	24.9	10120	1.4	-135.3	13.4		B) ded bladder pump
	1537	11.01	2.0	7.17	24.8	10120	1.3	-135.2	10.5		C) non-ded bladder pump; or
	1540	11.03	2.5	7.16	24.7	10110	1.2	-135.0	9.8		*Standard groundwater sample:*
	1542	11.06	3.0	7.15	24.4	10140	1.0	-134.8	9.4		D) bailer due to limited column; or
	1545	11.08	3.5	7.14	24.4	10100	1.0	-134.7	8.1		E) recovery well cycling sample
	1547	11.11	4.0	7.13	24.4	10100	1.0	-134.0	7.6		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
10-6-20	1550	MW-84	11.11	7.13	24.4	10100	1.0	-134.0	7.6	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-122
Event: 2H20
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 (8)

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	
10-6-20	1050	NP	12.02	0.00	23.32	18.4	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	
10-6-20	1055	12.62	0.5	7.50	23.2	6340	2.2	-124.0	41.4	Clear/Colorless	*Low-flow groundwater sample:*
	1057	12.70	1.0	7.43	21.9	5878	1.8	-123.7	40.2		(A) peristaltic pump w/ ded tubing
	1100	12.75	1.5	7.40	21.7	5710	1.4	-123.0	38.5		B) ded bladder pump
	1102	12.82	2.0	7.38	21.7	5630	1.3	-122.4	35.8		C) non-ded bladder pump; or
	1105	12.86	2.5	7.36	21.5	5590	1.1	-121.8	32.4		*Standard groundwater sample:*
	1107	12.90	3.0	7.34	21.4	5540	1.1	-122.0	30.3		D) bailer due to limited column; or
	1110	12.93	3.5	7.33	21.4	5530	1.1	-124.2	29.2		E) recovery well cycling sample
	1112	12.96	4.0	7.32	21.5	5500	1.1	-123.1	28.9		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
10-6-20	1115	MW-122	12.96	7.32	21.5	5500	1.1	-123.1	28.9	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-81
Event: 2H20
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 (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	
10-6-20	955	NP	12.42	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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-80
Event: 2H20
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: MPB

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	
10-6-20	1000	NP	10.44	0.00	19.69	14.7	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			Gauge Only					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

Monitoring Well Purging and Sampling Record

+ EB-EP-04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-79
Event: 2420
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: MJB (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	
10-6-20	1005	NP	11.71	0.00	19.24	15.0	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	
10-6-20	1010	11.89	0.5	7.36	22.2	8440	2.7	-29.8	13.6	Clear / colorless	*Low-flow groundwater sample:*
↓	1012	11.92	1.0	7.29	20.9	8590	2.0	-44.6	10.4	↓	(A) peristaltic pump w/ ded tubing
	1015	11.94	1.5	7.26	20.9	8610	1.5	-48.3	9.6		B) ded bladder pump
	1017	11.96	2.0	7.24	20.8	8620	1.3	-49.9	8.3		C) non-ded bladder pump; or
	1020	11.99	2.5	7.22	20.8	8640	1.1	-51.0	7.2		*Standard groundwater sample:*
	1022	12.01	3.0	7.21	20.8	8640	1.2	-52.2	5.1		D) bailer due to limited column; or
	1025	12.03	3.5	7.20	20.8	8640	1.2	-53.4	4.8		E) recovery well cycling sample
↓	1027	12.05	4.0	7.19	20.8	8650	1.2	-54.4	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
10-6-20	1030	MW-79	12.05	7.19	20.8	8650	1.2	-54.4	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1045	EB-EP-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-82
Event: 2H20
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: 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	
10-6-20	1605	NP	11.29	0.00	20.02	15.0	Yes	Yes	Yes	Yes		Weather: Clear 90s

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		Gauge	Only					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

Monitoring Well Purging and Sampling Record

+ EB-EP-01

+ Trip Blank-EP-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-74
Event: 2H20
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

(13)

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	
10-6-20	1410	NP	11.01	0.00	20.19	14.8	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	
10-6-20	1415	11.11	0.5	7.29	24.6	10680	2.0	46.7	8.3	Clear / colorless	*Low-flow groundwater sample:*
↓	1417	11.15	1.0	7.23	23.8	10650	1.8	50.9	7.7	↓	(A) peristaltic pump w/ ded tubing
	1420	11.16	1.5	7.18	23.3	10590	1.6	53.8	7.3		B) ded bladder pump
	1422	11.17	2.0	7.18	23.1	10590	1.3	55.0	6.4		C) non-ded bladder pump; or
	1425	11.17	2.5	7.13	22.7	10550	1.1	56.3	6.1		*Standard groundwater sample:*
	1427	11.17	3.0	7.12	22.7	10578	1.1	56.9	5.8		D) bailer due to limited column; or
↓	1430	11.17	3.5	7.11	22.7	10540	1.1	57.5	4.9	↓	E) recovery well cycling sample
	1432	11.17	4.0	7.10	22.6	10530	1.0	58.0	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
10-6-20	1435	MW-74	11.17	7.10	22.6	10530	1.0	58.0	3.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1450	EB-EP-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-73
Event: 2H20
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: 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	
10-6-20	1500	NP	11.92	0.00	19.60	14.6	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2A
Event: 2H20
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

(15)

Initials: MMB

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	
10-6-20	1130	NP	11.65	0.00	17.30	15.0	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1135	11.88	0.5	7.49	24.5	6150	2.2	-3.3	10.2	Clear/colorless	*Low-flow groundwater sample:*
↓	1137	11.94	1.0	7.41	24.2	6070	2.0	-10.6	8.7	↓	(A) peristaltic pump w/ ded tubing
	1140	12.00	1.5	7.36	23.9	6070	1.7	-11.6	8.1		B) ded bladder pump
	1142	12.03	2.0	7.34	23.7	6110	1.5	-11.0	7.7		C) non-ded bladder pump; or
	1145	12.05	2.5	7.30	23.6	6210	1.4	-16.8	7.4		*Standard groundwater sample:*
	1147	12.07	3.0	7.26	23.6	6370	1.4	-14.3	7.1		D) bailer due to limited column; or
	1150	12.10	3.5	7.24	23.6	6390	1.4	-17.5	6.7		E) recovery well cycling sample
↓	1152	12.12	4.0	7.23	23.6	6400	1.4	-20.3	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
10-6-20	1155	MW-2A	12.12	7.23	23.6	6400	1.4	-20.3	6.0	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									

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-2B
Event: 2H20
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 (16)

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	
10-6-20	1210	NP	12.69	0.00	52.00	NS	Yes	Yes	Yes	Yes		Weather: Clear 80's
									*			

* Needs new 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	
10-6-20			0.5		Gauge	Only					*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-72
Event: 2H20
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: 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	
10-6-20	1220	NP	9.17	0.00	13.93	11.9	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge		Only			*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-6
Event: 2H20
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

(18)

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	
10-6-20	1225	NP	11.90	0.00	26.69	21.6	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1230	12.05	0.5	7.20	25.0	15310	1.9	-101.7	26.4	Clear/colorless	*Low-flow groundwater sample:*
	1232	12.05	1.0	7.17	23.1	15630	1.7	-101.9	20.5		(A) peristaltic pump w/ ded tubing
	1235	12.05	1.5	7.15	22.5	15640	1.5	-101.9	17.6		B) ded bladder pump
	1237	12.05	2.0	7.13	22.0	15760	1.2	-101.2	12.8		C) non-ded bladder pump; or
	1240	12.05	2.5	7.11	21.9	15800	1.1	-100.2	9.4		*Standard groundwater sample:*
	1242	12.05	3.0	7.10	21.9	15800	1.0	-98.7	8.5		D) bailer due to limited column; or
	1245	12.05	3.5	7.09	21.8	15830	1.0	-97.2	6.3		E) recovery well cycling sample
	1247	12.05	4.0	7.08	21.8	15850	1.0	-96.5	5.5		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
10-6-20	1250	OCD-6	12.05	7.08	21.8	15850	1.0	-96.5	5.5	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7AR
Event: 2H20
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 (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	
10-6-20	1305	NP	11.01	0.00	21.28	16.0	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1310	11.22	0.5	7.21	27.3	13300	1.9	-135.4	15.6	Clear/colorless	*Low-flow groundwater sample:*
	1312	11.25	1.0	7.18	25.9	13240	1.7	-134.7	12.4		(A) peristaltic pump w/ ded tubing
	1315	11.27	1.5	7.15	25.2	13200	1.6	-134.9	10.6		B) ded bladder pump
	1317	11.30	2.0	7.14	25.0	13160	1.5	-135.1	9.9		C) non-ded bladder pump; or
	1320	11.32	2.5	7.13	24.8	13180	1.4	-135.3	9.1		*Standard groundwater sample:*
	1322	11.35	3.0	7.12	24.6	13130	1.3	-135.3	8.7		D) bailer due to limited column; or
	1325	11.37	3.5	7.12	24.4	13090	1.3	-135.4	8.0		E) recovery well cycling sample
	1327	11.39	4.0	7.11	24.3	13070	1.3	-135.5	7.9		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
10-6-20	1330	OCD-7AR	11.39	7.11	24.3	13070	1.3	-135.5	7.9	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

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7B
Event: 21120
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	
10-6-20	1345	NP	11.00	0.00	56.85	51.9	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge Only					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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-7C
Event: 2H20
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 (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	
10-6-20	1350	NP	10.73	0.00	71.95	NS	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	
			0.5								*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Gauge	Only					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									

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: 2H20
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

(22)

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	
10-6-20	810	19.26	19.30	0.04	22.30	20.0	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								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5			Gauge Only					*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-#15C									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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-48
Event: 2H20
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: MBM (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	
10-6-20	805	21.41	21.49	0.08	32.00	26.9	Yes	Yes	*Issue	Yes		Weather: Clear 50s

Well Purging Record

* Product on probe

* At-grade plate missing, At-grade pad cracked per 1#19 ; completion needs complete re-do

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-48			Not	Sampled				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-130
Event: 2H20
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 (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	
10-6-20	800	NP	23.19	0.00	45.00	37.4	Yes	Yes	Yes	Yes		Weather: Clear 60s
10-7-20	830	NP	23.20	0.00								

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	
10-7-20	835	23.26	0.5	6.82	22.3	3170	3.1	25.7	15.2	Clear/colorless	*Low-flow groundwater sample:*
	837	23.28	1.0	6.79	21.7	3140	2.7	33.9	12.3		(A) peristaltic pump w/ ded tubing
	840	23.28	1.5	6.77	21.5	3110	2.5	40.8	10.1		B) ded bladder pump
	842	23.28	2.0	6.74	21.5	3070	2.5	44.6	8.7		C) non-ded bladder pump; or
	845	23.28	2.5	6.73	21.6	3050	2.5	46.8	7.2		*Standard groundwater sample:*
	847	23.28	3.0	6.71	21.6	3040	2.4	48.2	6.5		D) bailer due to limited column; or
	850	23.28	3.5	6.70	21.6	3010	2.3	50.0	6.1		E) recovery well cycling sample
	852	23.28	4.0	6.70	21.6	3010	2.3	51.2	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
10-7-20	855	MW-130	23.28	6.70	21.6	3010	2.3	51.2	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-4
Event: 2H20
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

(25)

Initials: MDW

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	
10/6/20	1730	27.03	28.31	1.28	41.75	31.7	Yes	Yes	Yes	Yes		Weather: Clear 90s

Well Purging Record

* Pulled sock and allowed well to equilibrate prior to gauging

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
		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

(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: 2H20
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)

Initials: MMM

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	
10-6-20	815	27.80	27.89	0.09	NM	10' off	Yes	Yes	Yes	Yes		Weather: Clear 50's
						base as needed						

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	
10-6-20			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0					(Gauge Only			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-19								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-76
Event: 2H20
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: SCD (27)

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	
10/6/20	1655	NP	12.77	0.00	20.33	16.0	Yes	Yes	Yes	Yes		Weather: Clear 90'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	
10/6/20	1700	12.82	0.5	6.95	20.5	7870	3.1	-189.5	10.1	colorless/clear	*Low-flow groundwater sample:*
	1702	12.82	1.0	6.90	20.3	7820	2.5	-192.5	9.5		(A) peristaltic pump w/ ded tubing
	1705	12.82	1.5	6.87	20.2	7790	2.1	-196.8	9.0		B) ded bladder pump
	1707	12.82	2.0	6.85	20.2	7780	2.0	-199.1	8.7		C) non-ded bladder pump; or
	1710	12.82	2.5	6.84	20.1	7770	1.9	-201.5	8.2		*Standard groundwater sample:*
	1712	12.82	3.0	6.84	20.1	7760	1.9	-203.8	7.9		D) bailer due to limited column; or
	1715	12.82	3.5	6.83	20.1	7760	1.8	-204.5	7.5		E) recovery well cycling sample
	1717	12.82	4.0	6.83	20.2	7750	1.8	-205.6	7.0		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
10/6/20	1720	MW-76	12.82	6.83	20.2	7750	1.8	-205.6	7.0	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-77
Event: 2H20
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: SCD (28)

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	
10/6/20	1650	NP	11.01	0.00	20.52	15.2	Yes	Yes	Yes	Yes		Weather: Clear 90'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			Gauge Only					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-78
Event: 2H20
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: SCD (29)

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	
10/6/20	1645	NP	11.04	0.00	19.57	14.6	Yes	Yes	Yes	Yes		Weather: Clear 90'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

Gauge Only

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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-75
Event: 2H20
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: SCD (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	
10/6/20	1600	NP	11.07	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Clear 90'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	
10/6/20	1605	11.10	0.5	7.28	20.6	7130	2.2	-141.2	13.2	colorless / clear	*Low-flow groundwater sample:*
	1607	11.11	1.0	7.22	20.3	7090	1.7	-145.9	10.9		(A) peristaltic pump w/ ded tubing
	1610	11.11	1.5	7.20	20.2	7070	1.5	-149.2	10.2		B) ded bladder pump
	1612	11.11	2.0	7.19	20.2	7060	1.4	-150.6	9.5		C) non-ded bladder pump; or
	1615	11.11	2.5	7.19	20.1	7060	1.4	-151.2	8.9		*Standard groundwater sample:*
	1617	11.11	3.0	7.18	20.1	7050	1.3	-151.5	8.2		D) bailer due to limited column; or
	1620	11.11	3.5	7.18	20.1	7050	1.3	-152.1	7.9		E) recovery well cycling sample
	1622	11.11	4.0	7.18	20.2	7060	1.3	-153.8	7.5		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
10/6/20	1625	MW-75	11.11	7.18	20.2	7060	1.3	-153.8	7.5	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-83
Event: 2H20
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: SCD (31)

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	
10/6/20	1745	NP	11.01	0.00	19.91	15.6	Yes	Yes	Yes	Yes		Weather: Clear 60's
10/7/20	820	NP	11.03	0.00								

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	
10/7/20	825	11.12	0.5	7.07	21.6	5920	2.9	-121.5	10.5	colorless/clear	*Low-flow groundwater sample:*
	827	11.17	1.0	7.03	21.3	5980	2.1	-126.3	9.1		(A) peristaltic pump w/ ded tubing
	830	11.18	1.5	7.00	21.0	6010	1.9	-131.5	8.6		B) ded bladder pump
	832	11.18	2.0	6.98	20.8	6080	1.8	-135.9	8.3		C) non-ded bladder pump; or
	835	11.18	2.5	6.97	20.7	6120	1.8	-139.2	7.5		*Standard groundwater sample:*
	837	11.18	3.0	6.97	20.7	6130	1.7	-141.5	7.1		D) bailer due to limited column; or
	840	11.18	3.5	6.96	20.6	6130	1.7	-143.8	6.9		E) recovery well cycling sample
	842	11.18	4.0	6.96	20.6	6140	1.7	-145.9	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
10/7/20	845	MW-83	11.18	6.96	20.6	6140	1.7	-145.9	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

+ Dup-EP-03

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-3
Event: 2H20
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: SCD (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	
10/6/20	1750	NP	13.08	0.00	22.10	18.1	Yes	Yes	Yes	Yes		Weather: Clear - 60's
10/7/20	905	NP	13.10	0.00								

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	
10/7/20	910	13.15	0.5	7.12	20.1	6620	3.5	-19.4	10.1	colorless/clear	*Low-flow groundwater sample:*
	912	13.16	1.0	7.08	19.8	6590	2.5	-18.5	9.2		(A) peristaltic pump w/ ded tubing
	915	13.16	1.5	7.05	19.7	6570	2.2	-17.9	8.9		B) ded bladder pump
	917	13.16	2.0	7.02	19.6	6560	2.1	-17.3	8.7		C) non-ded bladder pump; or
	920	13.16	2.5	7.01	19.6	6560	2.1	-17.0	8.0		*Standard groundwater sample:*
	922	13.16	3.0	7.01	19.5	6550	2.0	-16.8	7.5		D) bailer due to limited column; or
	925	13.16	3.5	7.00	19.5	6550	2.0	-16.7	7.1		E) recovery well cycling sample
	927	13.16	4.0	7.00	19.5	6540	2.0	-16.5	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
10/7/20	930	MW-3	13.16	7.00	19.5	6540	2.0	-16.5	6.8	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	900	Dup-EP-03	13.16	7.00	19.5	6540	2.0	-16.5	6.8	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-88
Event: 2H20
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: SCD

(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	
10/6/20	1230	NP	10.71	0.00	20.31	14.8	Yes	Yes	Yes	Yes		Weather: Clear 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	
10/6/20	1235	10.76	0.5	7.12	21.0	6730	2.5	-33.4	12.5	colorless/ clear w/	*Low-flow groundwater sample:*
	1237	10.77	1.0	7.08	20.8	6790	2.0	-39.6	10.2	orange particles	(A) peristaltic pump w/ ded tubing
	1240	10.77	1.5	7.05	20.7	6820	1.7	-41.3	9.7		B) ded bladder pump
	1242	10.77	2.0	7.03	20.7	6840	1.6	-45.9	8.9		C) non-ded bladder pump; or
	1245	10.77	2.5	7.02	20.6	6850	1.6	-47.2	8.5		*Standard groundwater sample:*
	1247	10.77	3.0	7.02	20.6	6850	1.5	-49.1	7.6		D) bailer due to limited column; or
	1250	10.77	3.5	7.01	20.6	6860	1.5	-50.2	7.1		E) recovery well cycling sample
↓	1252	10.77	4.0	7.01	20.6	6860	1.5	-52.3	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
10/6/20	1255	MW-88	10.77	7.01	20.6	6860	1.5	-52.3	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

Monitoring Well Purging and Sampling Record

+ DUP-EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22A
Event: 2H20
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: SCD (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	
10/6/20	1315	NP	9.92	0.00	22.65	17.4	Yes	Yes	Yes	Yes		Weather: Clear 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	
10/6/20	1320	9.98	0.5	7.09	21.6	14,270	2.7	-81.3	9.1	colorless / clear	*Low-flow groundwater sample:*
↓	1322	10.04	1.0	7.05	21.6	14,300	2.3	-85.1	8.6	↓	(A) peristaltic pump w/ ded tubing
	1325	10.07	1.5	7.01	21.5	14,330	2.1	-89.5	8.0		B) ded bladder pump
	1327	10.08	2.0	6.99	21.5	14,370	1.9	-92.1	7.6		C) non-ded bladder pump; or
	1330	10.09	2.5	6.96	21.4	14,390	1.9	-94.8	7.1		*Standard groundwater sample:*
	1332	10.09	3.0	6.95	21.3	14,420	1.8	-96.1	6.9		D) bailer due to limited column; or
	1335	10.10	3.5	6.95	21.2	14,430	1.8	-97.5	6.7		E) recovery well cycling sample
↓	1337	10.10	4.0	6.94	21.2	14,440	1.8	-97.9	6.5	↓	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
10/6/20	1340	MW-22A	10.10	6.94	21.2	14,440	1.8	-97.9	6.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1100	DUP-EP-02	10.10	6.94	21.2	14,440	1.8	-97.9	6.5	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-22B
Event: 21420
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: SCD (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	
10/6/20	1415	NP	9.76	0.00	54.66	49.7	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge Only					*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-10
Event: 2H20
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

(36)

Initials: SCD

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	
10/6/20	1420	NP	7.46	0.00	18.45	13.3	Yes	Yes	Yes	Yes		Weather: Clear 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	
10/6/20	1425	7.47	0.5	7.02	21.5	6910	3.0	-134.6	9.1	colorless/clear w/	Low-flow groundwater sample:
↓	1427	7.48	1.0	6.97	21.2	6850	2.7	-121.3	8.5	orange particles	(A) peristaltic pump w/ ded tubing
	1430	7.48	1.5	6.95	21.1	6810	2.5	-115.6	8.0	↓	B) ded bladder pump
	1432	7.48	2.0	6.94	21.1	6790	2.4	-112.8	7.3		C) non-ded bladder pump; or
	1435	7.48	2.5	6.94	21.0	6770	2.4	-110.3	7.0		Standard groundwater sample:
	1437	7.48	3.0	6.93	21.0	6760	2.3	-109.5	6.8		D) bailer due to limited column; or
	1440	7.48	3.5	6.93	21.0	6750	2.3	-108.7	6.2		E) recovery well cycling sample
↓	1442	7.48	4.0	6.93	21.1	6750	2.3	-107.5	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
												Lab: Pace National, Mt. Juliet, TN
10/6/20	1445	MW-10	7.48	6.93	21.1	6750	2.3	-107.5	5.9	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-123
Event: 2H20
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: SCD

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	
10/6/20	1505	NP	7.94	0.00	25.71	25.0	Yes	Yes	Yes	Yes		Weather: Clear 90'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	
10/6/20	1510	7.95	0.5	7.01	20.7	6580	3.2	-191.5	10.1	colorless/ clear	*Low-flow groundwater sample:*
	1512	7.95	1.0	6.95	20.5	6530	2.5	-168.9	9.6		(A) peristaltic pump w/ ded tubing
	1515	7.95	1.5	6.93	20.4	6500	2.2	-155.2	9.0		B) ded bladder pump
	1517	7.95	2.0	6.92	20.3	6470	2.0	-151.3	8.7		C) non-ded bladder pump; or
	1520	7.95	2.5	6.92	20.3	6450	1.9	-147.2	8.3		*Standard groundwater sample:*
	1522	7.95	3.0	6.91	20.2	6440	1.9	-146.1	8.0		D) bailer due to limited column; or
	1525	7.95	3.5	6.91	20.2	6430	1.8	-145.8	7.5		E) recovery well cycling sample
	1527	7.95	4.0	6.91	20.2	6430	1.8	-145.2	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
10/6/20	1530	MW-123	7.95	6.91	20.2	6430	1.8	-145.2	7.1	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4A
Event: 2H20
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: SCD

(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	
10/6/20	1135	NP	13.23	0.00	16.55	Well Base	Yes	Yes	Yes	Yes		Weather: Clear 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	
10/6/20	1140	13.24	0.5	7.10	22.7	6850	3.2	-138.1	10.5	colorless/clear w/	*Low-flow groundwater sample:*
↓	1142	13.24	1.0	7.07	22.5	6810	2.9	-142.5	9.7	black particles	(A) peristaltic pump w/ ded tubing
	1145	13.24	1.5	7.04	22.3	6786	2.7	-145.9	8.9	↓	B) ded bladder pump
	1147	13.24	2.0	7.02	22.3	6760	2.6	-147.1	8.5		C) non-ded bladder pump; or
	1150	13.24	2.5	7.01	22.2	6750	2.6	-148.2	8.2		*Standard groundwater sample:*
	1152	13.24	3.0	7.01	22.2	6740	2.5	-148.7	7.8		D) bailer due to limited column; or
	1155	13.24	3.5	7.00	22.1	6740	2.5	-149.1	7.5		E) recovery well cycling sample
↓	1157	13.24	4.0	7.00	22.1	6730	2.5	-149.6	7.0	↓	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
10/6/20	1200	MW-4A	13.24	7.00	22.1	6730	2.5	-149.6	7.0	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									

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-4B
Event: 2H20
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: SCD

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	
10/6/20	1220	NP	13.00	0.00	72.37	67.4	Yes	Yes	Yes	Yes		Weather: Clear 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			Gauge Only					*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

+EB-EP-03

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5A
Event: 2H20
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: SLD (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	
10/6/20	1025	NP	10.32	0.00	20.15	14.8	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	
10/6/20	1030	10.38	0.5	7.25	21.3	9410	2.9	-125.4	10.9	clear/colorless w/	*Low-flow groundwater sample:*
↓	1032	10.38	1.0	7.19	21.0	9470	2.5	-127.5	9.1	orange particles	(A) peristaltic pump w/ ded tubing
↓	1035	10.38	1.5	7.15	20.9	9500	2.2	-130.6	8.6	↓	B) ded bladder pump
↓	1037	10.38	2.0	7.12	20.7	9520	2.1	-133.9	8.0	↓	C) non-ded bladder pump; or
↓	1040	10.38	2.5	7.10	20.7	9540	1.9	-134.5	7.5	↓	*Standard groundwater sample:*
↓	1042	10.38	3.0	7.09	20.5	9560	1.7	-136.8	7.1	↓	D) bailer due to limited column; or
↓	1045	10.38	3.5	7.09	20.4	9570	1.6	-137.5	6.8	↓	E) recovery well cycling sample
↓	1047	10.38	4.0	7.08	20.4	9570	1.6	-138.1	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
10/6/20	1050	MW-5A	10.38	7.08	20.4	9570	1.6	-138.1	6.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1110	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5B
Event: 2H20
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: scp (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	
10/6/20	1125	NP	10.41	0.00	53.54	48.5	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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-5C
Event: 2H20
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: SCD (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	
10/6/20	1120	NP	10.61	0.00	71.64	66.6	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Gauge	Only				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									

Monitoring Well Purging and Sampling Record

+ DUP-EP-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7A
Event: 2H20
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: SCD (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	
10/6/20	915	NP	10.99	0.00	18.65	13.6	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	
10/6/20	920	11.08	0.5	7.19	19.6	8540	2.7	-76.5	11.9	Clear / colorless	*Low-flow groundwater sample:*
	922	11.09	1.0	7.12	19.9	8520	2.1	-81.2	9.8		(A) peristaltic pump w/ ded tubing
	925	11.09	1.5	7.16	20.1	8490	1.9	-84.9	7.5		B) ded bladder pump
	927	11.09	2.0	7.08	20.1	8470	1.7	-87.1	7.0		C) non-ded bladder pump; or
	930	11.09	2.5	7.07	20.2	8460	1.6	-90.2	6.7		*Standard groundwater sample:*
	932	11.09	3.0	7.07	20.2	8460	1.6	-91.9	6.2		D) bailer due to limited column; or
	935	11.09	3.5	7.06	20.2	8450	1.5	-92.5	5.9		E) recovery well cycling sample
	937	11.09	4.0	7.06	20.2	8450	1.5	-93.3	5.2		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
10/6/20	940	MW-7A	11.09	7.06	20.2	8450	1.5	-93.3	5.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	900	DUP-EP-01	11.09	7.06	20.2	8450	1.5	-93.3	5.2	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-7B
Event: 2H20
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: SCD (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	
10/6/20	1015	NP	10.81	0.00	52.56	47.6	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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

+ Trip Blank - EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8A
Event: 2H20
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: SCD

(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	
10/6/20	815	NP	10.70	0.00	20.74	16.4	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	
10/6/20	820	10.76	0.5	7.05	17.9	16,670	3.3	-108.9	11.2	Clear/colorless	*Low-flow groundwater sample:*
	822	10.86	1.0	6.99	18.4	17,590	2.5	-109.2	9.8		(A) peristaltic pump w/ ded tubing
	825	10.93	1.5	6.96	18.6	17,760	2.1	-109.5	8.6		B) ded bladder pump
	827	10.98	2.0	6.94	18.7	17,810	1.9	-109.9	8.3		C) non-ded bladder pump; or
	830	11.00	2.5	6.93	18.7	17,840	1.8	-110.2	8.0		*Standard groundwater sample:*
	832	11.01	3.0	6.93	18.8	17,860	1.8	-110.4	7.7		D) bailer due to limited column; or
	835	11.02	3.5	6.92	18.8	17,870	1.7	-110.8	7.5		E) recovery well cycling sample
↓	837	11.02	4.0	6.92	18.8	17,880	1.7	-110.9	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
10/6/20	840	OCD-8A	11.02	6.92	18.8	17,880	1.7	-110.9	7.1	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-8B
Event: 2H20
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: SCD (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	
10/6/20	905	NP	10.67	0.00	56.65	51.7	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				Gauge Only				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									

DO NOT ADDRESS AT ALL, 2H20

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-P4
Event: 2H20
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	
10/6/20					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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-25
Event: 2H20
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	
10-6-20	920	NP	15.96	0.00	28.18	23.2	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		Gauge	Only					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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-8
Event: 2H20
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	
10-6-20	925	NP	14.27	0.00	>14.95 (blockage)	NS	Yes	Issue	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		Gauge Only						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

- Navajo added PVC riser in 1H18
- blockage @ 14.95'

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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-1R
Event: 2H20
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	
10-6-20	930	NP	12.51	0.00	20.63	15.6	Yes	Yes*	Yes	Yes		Weather: Sunny, 70s

* Bent casing lid (post.); well still functional; closure difficult

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			Gauge Only					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-15
Event: 2H20
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: BJH

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	
10-6-20	934	NP	13.42	0.00	21.70	17.7	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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

+ Trip Blank - EP-03

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-1R
Event: 2H20
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: BJH

(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	
10-6-20	902	NP	13.03	0.00	23.74	18.4	Yes	Yes	Yes	Yes		Weather: Sunny, 60s
10-7-20	935	NP	13.04	0.00								

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	
10-7-20	940	13.30	0.5	7.67	19.1	8890	3.0	-11.8	12.6	colorless, clear	*Low-flow groundwater sample:*
↓	943	13.30	1.0	7.50	18.8	7620	2.3	-4.7	10.2	↓	(A) peristaltic pump w/ ded tubing
	945	13.30	1.5	7.41	18.5	7310	2.1	-1.8	8.9		B) ded bladder pump
	948	13.30	2.0	7.33	18.4	6990	1.8	3.6	7.8		C) non-ded bladder pump; or
	950	13.30	2.5	7.27	18.4	6910	1.7	7.9	7.2		*Standard groundwater sample:*
	953	13.30	3.0	7.24	18.4	6870	1.6	10.2	6.4		D) bailer due to limited column; or
	955	13.30	3.5	7.23	18.4	6850	1.6	12.6	6.1		E) recovery well cycling sample
↓	958	13.30	4.0	7.22	18.4	6840	1.5	14.9	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
												Lab: Pace National, Mt. Juliet, TN
10-7-20	1000	OCD-1R	13.30	7.22	18.4	6840	1.5	14.9	5.9	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2A
Event: 2H20
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	
10-6-20	825	NP	13.26	0.00	27.56	22.3	Yes	Yes	Yes	Yes		Weather: Sunny, 60s
10-7-20	805	NP	13.28	0.00								

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	
10-7-20	810	13.46	0.5	7.62	16.4	5460	4.3	-109.5	9.2	colorless, clear	*Low-flow groundwater sample:*
	813	13.46	1.0	7.49	16.7	5500	3.0	-110.1	8.6		(A) peristaltic pump w/ ded tubing
	815	13.46	1.5	7.42	16.9	5530	2.7	-110.5	7.9		B) ded bladder pump
	818	13.46	2.0	7.33	17.2	5570	2.4	-114.3	7.3		C) non-ded bladder pump; or
	820	13.46	2.5	7.30	17.3	5610	2.2	-117.1	6.8		*Standard groundwater sample:*
	823	13.46	3.0	7.28	17.4	5630	2.1	-120.6	6.4		D) bailer due to limited column; or
	825	13.46	3.5	7.27	17.4	5640	2.0	-122.4	5.9		E) recovery well cycling sample
	828	13.46	4.0	7.26	17.5	5650	2.0	-124.9	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
10-7-20	830	OCD-2A	13.46	7.26	17.5	5650	2.0	-124.9	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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-2B
Event: 2H20
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: BLH (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	
10-6-20	828	NP	13.18	0.00	50.38	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		Gauge	Only					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-3
Event: 2H20
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	
10-6-20	832	NP	13.68	0.00	25.20	20.2	Yes	Yes	Yes	Yes		Weather: Sunny, 80s
↓	1615	NP	13.69	0.00								

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	
10-6-20	1620	13.84	0.5	7.87	22.6	5420	2.4	13.6	11.9	colorless, clear	*Low-flow groundwater sample:*
	1623	13.84	1.0	7.74	21.0	4610	2.0	15.9	9.6		(A) peristaltic pump w/ ded tubing
	1625	13.84	1.5	7.66	20.6	4300	1.8	14.0	8.4		B) ded bladder pump
	1628	13.84	2.0	7.59	20.4	4190	1.6	6.3	7.9		C) non-ded bladder pump; or
	1630	13.84	2.5	7.57	20.2	4140	1.5	-1.2	7.2		*Standard groundwater sample:*
	1633	13.84	3.0	7.55	20.2	4080	1.5	-6.4	6.8		D) bailer due to limited column; or
	1635	13.84	3.5	7.53	20.1	4060	1.4	-10.8	6.5		E) recovery well cycling sample
↓	1638	13.84	4.0	7.52	20.1	4050	1.4	-12.4	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
10-6-20	1640	OCD-3	13.84	7.52	20.1	4050	1.4	-12.4	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-4
Event: 21420
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	
~~9-27-20 BRH~~	937	NP	13.22	0.00	25.41	20.1	Yes	Yes	Yes	Yes		Weather: Sunny, 90s
10-6-20	1535	NP	13.22	0.00								

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	
10-6-20	1540	13.36	0.5	7.54	23.3	15,220	2.9	-73.9	11.5	Colorless, clear	*Low-flow groundwater sample:*
	1543	13.36	1.0	7.44	21.7	15,130	2.1	-80.0	9.6		(A) peristaltic pump w/ ded tubing
	1545	13.36	1.5	7.39	21.2	15,070	1.7	-81.7	8.4		B) ded bladder pump
	1548	13.36	2.0	7.32	21.0	15,020	1.5	-83.1	7.9		C) non-ded bladder pump; or
	1550	13.36	2.5	7.29	20.9	14,990	1.4	-83.6	7.7		*Standard groundwater sample:*
	1553	13.36	3.0	7.27	20.8	14,980	1.4	-84.9	7.2		D) bailer due to limited column; or
	1555	13.36	3.5	7.26	20.8	14,960	1.3	-85.2	6.9		E) recovery well cycling sample
	1558	13.36	4.0	7.26	20.8	14,950	1.3	-85.7	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
10-6-20	1600	OCD-4	13.36	7.26	20.8	14,950	1.3	-85.7	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11A
Event: 2H20
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	
10-6-20	850	NP	10.93	0.00	22.01	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60s
10-7-20	850	NP	10.95	0.00								

Well Purging Record

#Confirmed SC

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	
10-7-20	855	11.14	0.5	7.23	18.5	22,900	3.5	3.1	7.3	Colorless, Clear	*Low-flow groundwater sample:*
	858	11.14	1.0	7.10	18.7	23,900	2.6	14.7	6.8		(A) peristaltic pump w/ ded tubing
	900	11.14	1.5	6.97	18.9	24,600	2.3	20.4	6.1		B) ded bladder pump
	903	11.14	2.0	6.90	19.1	24,800	2.1	24.5	5.9		C) non-ded bladder pump; or
	905	11.14	2.5	6.85	19.2	25,000	2.0	27.6	5.4		*Standard groundwater sample:*
	908	11.14	3.0	6.81	19.2	25,100	1.9	30.2	5.2		D) bailer due to limited column; or
	910	11.14	3.5	6.79	19.2	25,100	1.8	31.9	4.9		E) recovery well cycling sample
	913	11.14	4.0	6.78	19.3	25,200	1.8	33.0	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
												Lab: Pace National, Mt. Juliet, TN
10-7-20	915	MW-11A	11.14	6.78	19.3	25,200	1.8	33.0	4.7	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-11B
Event: 2H20
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	
10-6-20	853	NP	10.09	0.00	47.30	42.3	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			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: OCD-5
Event: 2H20
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	
10-6-20	842	NP	11.44	0.00	25.41	20.6	Yes	Yes	Yes	Yes		Weather: Sunny, 90s
↓	1455	NP	11.44	0.00								

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	
10-6-20	1500	11.46	0.5	7.44	22.3	15,510	2.8	-85.4	77.0	Clear w/ orange	*Low-flow groundwater sample:*
	1503	11.46	1.0	7.37	21.0	15,620	2.0	-82.9	49.6	algae particles	(A) peristaltic pump w/ ded tubing
	1505	11.46	1.5	7.32	20.7	15,680	1.7	-81.2	38.2		B) ded bladder pump
	1508	11.46	2.0	7.29	20.5	15,730	1.5	-79.8	31.9		C) non-ded bladder pump; or
	1510	11.46	2.5	7.27	20.4	15,760	1.4	-77.2	28.7		*Standard groundwater sample:*
	1513	11.46	3.0	7.26	20.4	15,780	1.4	-75.9	28.4		D) bailer due to limited column; or
	1515	11.46	3.5	7.26	20.4	15,790	1.3	-73.7	29.6		E) recovery well cycling sample
↓	1518	11.46	4.0	7.25	20.4	15,790	1.3	-72.6	28.9	↓	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
10-6-20	1520	OCD-5	11.46	7.25	20.4	15,790	1.3	-72.6	28.9	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-87
Event: 2H20
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 (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	
10-6-20	1125	NP	10.26	0.00	20.39	15.1	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	
10-6-20	1130	10.42	0.5	6.92	21.3	15,010	2.8	-55.4	7.4	colorless, clear	*Low-flow groundwater sample:*
	1133	10.46	1.0	7.03	20.9	14,910	2.7	-59.0	6.9		(A) peristaltic pump w/ ded tubing
	1135	10.50	1.5	7.06	20.7	14,830	2.3	-61.9	6.2		B) ded bladder pump
	1138	10.53	2.0	7.09	20.6	14,760	2.0	-64.8	5.8		C) non-ded bladder pump; or
	1140	10.56	2.5	7.11	20.6	14,720	1.9	-67.3	5.1		*Standard groundwater sample:*
	1143	10.59	3.0	7.12	20.5	14,700	1.7	-70.2	4.7		D) bailer due to limited column; or
	1145	10.62	3.5	7.13	20.5	14,690	1.7	-71.9	4.4		E) recovery well cycling sample
↓	1148	10.65	4.0	7.13	20.4	14,670	1.6	-73.4	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
10-6-20	1150	MW-87	10.65	7.13	20.4	14,670	1.6	-73.4	4.0	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18A
Event: 2H20
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	
10-6-20	1205	NP	11.68	0.00	22.58	17.9	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	
10-6-20	1210	11.89	0.5	7.42	22.2	18,680	2.6	-136.1	8.1	Colorless, clear	*Low-flow groundwater sample:*
	1213	11.96	1.0	7.37	21.2	18,730	2.0	-143.2	6.0		(A) peristaltic pump w/ ded tubing
	1215	12.02	1.5	7.33	20.7	18,790	1.8	-149.7	4.9		B) ded bladder pump
	1218	12.06	2.0	7.29	20.6	18,810	1.6	-153.9	4.4		C) non-ded bladder pump; or
	1220	12.09	2.5	7.26	20.4	18,830	1.5	-156.0	3.7		*Standard groundwater sample:*
	1223	12.12	3.0	7.24	20.3	18,850	1.4	-159.2	3.2		D) bailer due to limited column; or
	1225	12.15	3.5	7.23	20.2	18,860	1.3	-161.1	2.8		E) recovery well cycling sample
	1228	12.18	4.0	7.22	20.2	18,870	1.3	-163.4	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
10-6-20	1230	MW-18A	12.18	7.22	20.2	18,870	1.3	-163.4	2.4	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18B
Event: 2H20
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	
10-6-20	1240	NP	11.67	0.00	50.59	45.6	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			Gauge		Only			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									

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18T
Event: 21420
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	
10-6-20	1245	NP	11.80	0.00	50.57	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			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-70
Event: 2H20
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

(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	
10-6-20	1255	NP	10.08	0.00	22.05	16.8	Yes	Yes	Yes	Yes		Weather: Sunny, 90s

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	
10-6-20	1300	10.14	0.5	7.49	24.9	7660	2.3	-121.9	12.1	colorless, clear	*Low-flow groundwater sample:*
	1303	10.14	1.0	7.37	22.8	6980	1.7	-116.2	9.6		(A) peristaltic pump w/ ded tubing
	1305	10.14	1.5	7.31	22.0	6630	1.4	-112.5	9.0		B) ded bladder pump
	1308	10.14	2.0	7.22	21.6	6420	1.2	-109.3	8.4		C) non-ded bladder pump; or
	1310	10.14	2.5	7.19	21.4	6320	1.2	-107.0	8.2		*Standard groundwater sample:*
	1313	10.14	3.0	7.17	21.3	6290	1.1	-105.8	7.6		D) bailer due to limited column; or
	1315	10.14	3.5	7.16	21.3	6270	1.1	-103.7	7.3		E) recovery well cycling sample
	1318	10.14	4.0	7.16	21.2	6260	1.0	-102.4	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
10-6-20	1320	MW-70	10.14	7.16	21.2	6260	1.0	-102.4	7.1	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

Monitoring Well Purging and Sampling Record

+ EB-EP-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-124
Event: 2H20
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	
10-6-20	1340	NP	10.78	0.00	22.00	17.0	Yes	Yes	Yes	Yes		Weather: Sunny, 90s

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	
10-6-20	1345	10.83	0.5	7.36	23.8	11,450	4.3	-108.7	21.4	colorless, clear	*Low-flow groundwater sample:*
↓	1348	10.83	1.0	7.29	22.6	11,570	2.2	-104.1	17.2	w/ slight orange	(A) peristaltic pump w/ ded tubing
	1350	10.83	1.5	7.25	21.9	11,640	1.8	-100.5	14.6	algae particles	B) ded bladder pump
	1353	10.83	2.0	7.22	21.3	11,700	1.6	-98.8	11.8	↓	C) non-ded bladder pump; or
	1355	10.83	2.5	7.21	21.2	11,730	1.5	-97.4	10.2		*Standard groundwater sample:*
	1358	10.83	3.0	7.19	21.2	11,760	1.5	-96.3	7.4		D) bailer due to limited column; or
	1400	10.83	3.5	7.20	21.2	11,780	1.4	-95.1	6.9		E) recovery well cycling sample
↓	1403	10.83	4.0	7.19	21.2	11,790	1.4	-94.2	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
10-6-20	1405	MW-124	10.83	7.19	21.2	11,790	1.4	-94.2	6.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1420	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

Driveway near bldg. A/C unit

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-52
Event: 2H20
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 / MDB (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	
10-6-20	1720	NP	21.54	0.00	34.67	29.5	Yes	Yes	Yes	Yes		Weather: Clear 60's
10-7-20	915	NP	21.58	0.00								

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	
10-7-20	920	21.61	0.5	6.96	21.2	3150	2.2	56.4	8.9	Clear / odorless	*Low-flow groundwater sample:*
	922	21.61	1.0	6.90	21.1	3140	2.0	57.8	8.0		(A) peristaltic pump w/ ded tubing
	925	21.61	1.5	6.87	20.9	3170	1.7	58.3	7.3		B) ded bladder pump
	927	21.61	2.0	6.86	20.8	3170	1.6	58.7	6.4		C) non-ded bladder pump; or
	930	21.61	2.5	6.86	20.8	3170	1.6	58.6	6.1		*Standard groundwater sample:*
	932	21.61	3.0	6.85	20.7	3180	1.6	58.5	5.5		D) bailer due to limited column; or
	935	21.61	3.5	6.85	20.7	3190	1.7	58.4	5.0		E) recovery well cycling sample
	937	21.61	4.0	6.84	20.7	3190	1.7	58.3	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
10-7-20	940	MW-52	21.61	6.84	20.7	3190	1.7	58.3	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									

E. side of blue bldg.

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-109
Event: 2H20
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 / RJM (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	
10-6-20	1725	NP	19.52	0.00	29.48	25.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's
10-7-20	835	NP	19.59	0.00								

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	
10-7-20	840	19.70	0.5	7.26	24.8	2760	2.1	-336.4	13.2	Clear / colorless	*Low-flow groundwater sample:*
	842	19.76	1.0	7.24	24.6	2750	1.8	-344.6	10.4		(A) peristaltic pump w/ ded tubing
	845	19.81	1.5	7.27	24.4	2760	1.6	-348.5	9.1		B) ded bladder pump
	847	19.84	2.0	7.26	24.3	2740	1.5	-350.2	8.6		C) non-ded bladder pump; or
	850	19.87	2.5	7.25	24.3	2730	1.4	-352.8	8.3		*Standard groundwater sample:*
	852	19.89	3.0	7.24	24.1	2710	1.4	-355.3	7.2		D) bailer due to limited column; or
	855	19.90	3.5	7.24	24.0	2700	1.4	-354.4	6.7		E) recovery well cycling sample
	857	19.91	4.0	7.23	24.0	2690	1.3	-355.9	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
10-7-20	900	MW-109	19.91	7.23	24.0	2690	1.3	-355.9	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-110
Event: 2H20
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 / RJM (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	
10-6-20	1730	NP	16.12	0.00	29.74	24.7	Yes	Yes	Yes	Yes		Weather: Sunny 70's
10.7.20	935	NP	16.19	0.00								

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	
10.7.20	940	16.30	0.5	7.31	24.8	1890	2.0	-264.7	10.2	Clear / Colorless	*Low-flow groundwater sample:*
↓	942	16.36	1.0	7.28	24.6	1859	1.7	-265.9	9.8	↓	(A) peristaltic pump w/ ded tubing
	945	16.39	1.5	7.27	24.5	1845	1.5	-266.7	9.5		B) ded bladder pump
	947	16.40	2.0	7.25	24.2	1822	1.4	-268.5	9.1		C) non-ded bladder pump; or
	950	16.41	2.5	7.24	24.2	1797	1.3	-269.5	8.6		*Standard groundwater sample:*
	952	16.42	3.0	7.24	24.1	1763	1.2	-269.9	8.1		D) bailer due to limited column; or
	955	16.42	3.5	7.24	24.0	1755	1.2	-270.6	7.3		E) recovery well cycling sample
↓	957	16.42	4.0	7.23	24.1	1741	1.2	-271.7	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
10.7.20	1000	MW-110	16.42	7.23	24.1	1741	1.2	-271.7	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									

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-13
Event: 2H20
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	
10-6-20	1015	NP	12.89	0.00	21.10	NS	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				Gauge	Only			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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-69
Event: 2H20
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: BPH (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	
10-6-20	1020	NP	11.61	0.00	22.51	NS	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

Gauge Only

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								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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-12
Event: 2H20
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	
10-6-20	1025	NP	10.03	0.00	17.93	NS	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		Gauge	Only					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-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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-24
Event: 2H20
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	
10-6-20	1040	NP	12.04	0.00	23.51	NS	Yes	Yes	Issue	Yes		Weather: Sunny, 70s
									↳ Broken hasp hinge			

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			Gauge Only					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-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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-14
Event: 2H20
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	
10-6-20	1045	NM	>11.81	NA	>11.31	NS	Yes	Issue	Yes	Yes		Weather: Sunny, 70s

Well Purging Record

*Blockage @ 11.81' TOC.

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			Gauge Only					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-14								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

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: REST
Area of Concern:

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

Initials: BD (74)

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
10/6/22	1621	NP	21.74	0.00	NM	Top of Pump yes (if pump not operating)	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		Gauge		Only				*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5								or (E) recovery well cycling sample, if recovery pump on.
			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-12R								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

+ Dup-REST-01
+ EB-REST-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-113
Event: 2H26
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 (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	
10/6/20	1702	NP	21.49	0.00	37.80	33.8	Yes	Yes	Yes	Yes		Weather: Sunny, 60's
10/7/20	835	NP	21.51									

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	
10/7/20	840	21.59	0.5	6.76	18.3	3750	2.7	-162.3	26.8	colorless / clear	*Low-flow groundwater sample:*
	843	21.61	1.0	6.71	19.6	3670	2.4	-160.7	20.1	ODOR	(A) peristaltic pump w/ ded tubing
	845	21.61	1.5	6.67	19.8	3640	2.1	-158.7	14.9		B) ded bladder pump
	847	21.61	2.0	6.65	20.0	3650	1.7	-156.5	11.6		C) non-ded bladder pump; or
	850	21.61	2.5	6.64	20.0	3640	1.7	-154.9	9.5		*Standard groundwater sample:*
	853	21.61	3.0	6.63	20.0	3640	1.6	-153.5	8.7		D) bailer due to limited column; or
	855	21.61	3.5	6.64	20.1	3640	1.6	-151.7	8.1		E) recovery well cycling sample
	857	21.61	4.0	6.64	20.1	3620	1.6	-150.2	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
10/7/20	900	MW-113	21.61	6.64	20.1	3620	1.6	-150.2	7.7	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	800	DUP-REST-01	21.61	6.64	20.1	3620	1.6	-150.2	7.7	Same	Same	
	920	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-8
Event: 2H20
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 (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	
10/6/20	1225	NP	18.86	0.00	35.80	30.8	Yes	Yes	Yes	YES		Weather: Sunny 80's

Well Purging Record

* started signaling product during Purge.

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	
10/6/20	1230	18.98	0.5	6.93	23.7	5064	3.9	-259.4	10.3	Colorless, clear	Low-flow groundwater sample:
	1233	19.00	1.0	6.93	22.9	5082	2.7	-279.9	9.4	" "	(A) peristaltic pump w/ ded tubing
	1235	19.01	1.5	6.92	22.4	5134	1.6	-287.6	8.7	" clear (sheen)	B) ded bladder pump
	1238	19.02	2.0	6.91	22.0	5156	1.3	-294.4	8.4	" " (purge-water)	C) non-ded bladder pump; or
	1240	19.02	2.5	6.90	21.8	5174	1.1	-301.6	8.1	" " "	Standard groundwater sample:
	1243	19.02	3.0	6.90	21.7	5193	0.9	-304.8	7.9	" " "	D) bailer due to limited column; or
	1245	19.02	3.5	6.89	21.7	5195	0.8	-307.4	7.9	" " "	E) recovery well cycling sample
	1248	19.02	4.0	6.89	21.6	5198	0.8	-308.5	7.8	" " "	F) irrigation well grab sample
	DTP at the end of purge					19.00	(0.02)				

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
10/6/20	1250	KWB-8	19.02	6.89	21.6	5198	0.8	-308.5	7.8	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-22
Event: 2H20
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

Initials: BB (77)

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	
10/6/22	1640	23.46	24.34	0.88	NM	Sample port if RW active	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			Gauge		Only			*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-22								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN

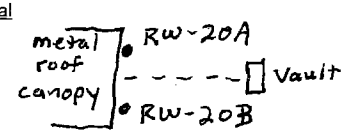
No groundwater sample collected if LNAPL thickness is greater than, or equal to 0.03'; if LNAPL thickness is measured at 0.01' or 0.02', remove LNAPL, and collect groundwater sample

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20A
Event: 2H20
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: BS (78)

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
10/6/20	1635	>20.65 top of pump →			NM *	Sample Pt	Yes	Yes	Yes	Yes		Weather: Sunny 80's

* Likely well base @ 21.98' per Navajo

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		Gauge Only						*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-20A								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

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-20B
Event: 2H20
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: BB

(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	
10/6/20	1630	20.51	20.70	0.19	NM	Sample Port	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			Gauge		Only			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

Bagged / labeled tube stored inside above-grade vault

Monitoring Well Purging and Sampling Record (Historical LNAPL)

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-13R
Event: 2H20
Area of Concern: REST Above-grade

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

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB (80)

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	
10/6/20	1616	20.02	20.13	0.11	NM	30.0	yes	yes	yes	yes		Weather: Sunny 80'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			Gauge	Only				*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
		RW-13R								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-14R
Event: 2H20
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

Initials: RD (81)

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	
10/6/20	1610	21.78	21.97	0.19	NM	Sample Port	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		Gauge	Only					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-14R								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-133
Event: 21420
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: BD (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	
10/6/20	1604	19.40	19.62	0.22	37.64	27.9	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	Not Sampled due to							(A) peristaltic pump w/ ded tubing
			1.5	LNAPL being ≥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-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									

Monitoring Well Purging and Sampling Record

4 Dup-REST-03
+ EB-REST-03
+ Trip Blank-REST-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-134
Event: 2H20
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 (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	
10/6/20	1605	NP	19.73	0.00	32.95	28.4	Yes	Yes	Yes	Yes		Weather: Sunny, 90'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	
10/6/20	1610	19.76	0.5	7.11	25.5	6390	2.0	132.4	9.6	colorless/clear	*Low-flow groundwater sample:*
	1613	19.76	1.0	6.97	23.4	6370	1.3	136.2	6.8		(A) peristaltic pump w/ ded tubing
	1615	19.76	1.5	6.92	22.8	6350	1.1	135.2	4.6		B) ded bladder pump
	1617	19.76	2.0	6.88	22.3	6320	1.0	129.9	3.7		C) non-ded bladder pump; or
	1620	19.76	2.5	6.86	22.2	6290	1.0	127.6	3.1		*Standard groundwater sample:*
	1623	19.76	3.0	6.84	22.1	6260	0.9	125.8	2.9		D) bailer due to limited column; or
	1625	19.76	3.5	6.83	22.1	6250	0.9	124.3	2.7		E) recovery well cycling sample
	1627	19.76	4.0	6.83	22.1	6250	0.9	123.5	2.9		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
10/6/20	1630	MW-134	19.76	6.83	22.1	6250	0.9	123.5	2.9	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-REST-03								Same	Same	
↓	1650	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4798
Event: 2H20
Area of Concern: REST

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

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BD

(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	
10/6/20	1315	NM	NM	NM	NM	NM	NA	NA	NA	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							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ sample port						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
10/6/20	1315	RA-4798	NM	7.21	21.4	2396	3.8	-43.9	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-4196
Event: 2H20
Area of Concern: REST

Irrigation well
Inside green, block bldg.
No purge; sample port (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	
10/6/20	1330	NM	NM	NM	NM	NM	NA	NA	NA	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							Colorless, clear	*Low-flow groundwater sample:*
			1.0								A) peristaltic pump w/ ded tubing
			1.5		No purge; active water well w/ Sample port						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
10/6/20	1330	RA-4196	NM	7.19	23.7	2186	3.1	-39.8	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

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: 2H20
Area of Concern: REST

Irrigation well
Removed from Program

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: BB

(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	
												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

DO NOT ADDRESS IN 2H20

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-3156
Event: 2H20
Area of Concern: REST

Irrigation well
No purge; sample port

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	
		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						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-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

E. of MW-101; across street

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RA-313
Event: 2H20
Area of Concern: REST DO NOT ADDRESS IN 2H20 [Irrigation and water-supply purpose, per Navajo]

Hydrologic Monitoring
for TRC
Houston, Texas

Well Inspection Information

(Screen: 904-1157)

Initials: BB (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	
		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

(Pecan Grove)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-7
Event: 21H20
Area of Concern: REST

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

* Removed sock to gauge & sample. Reinstalled sock.

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	
10/6/20	1135	NP	17.75	0.00	34.83	30.6	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	
10/6/20	1340	17.75	0.5	6.98	25.2	2496	2.9	-149.6	4.9	Colorless/clear	Low-flow groundwater sample:
	1343	17.75	1.0	6.96	24.4	2431	2.6	-171.8	4.1	" (Strong HC odor)	(A) peristaltic pump w/ ded tubing
	1345	17.75	1.5	6.92	23.7	2396	2.4	-179.4	3.7	" "	B) ded bladder pump
	1348	17.75	2.0	6.91	23.5	2385	2.3	-184.3	3.1	" "	C) non-ded bladder pump; or
	1350	17.75	2.5	6.90	23.4	2379	2.1	-189.6	2.7	" "	Standard groundwater sample:
	1353	17.75	3.0	6.90	23.3	2375	2.0	-192.4	2.4	" "	D) bailer due to limited column; or
	1355	17.76	3.5	6.89	23.2	2372	2.0	-193.7	2.2	" "	E) recovery well cycling sample
	1358	17.76	4.0	6.89	23.2	2369	1.9	-194.3	2.2	" "	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
10/6/20	1200	KWB-7	17.76	6.89	23.2	2369	1.9	-194.3	2.2	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-135
Event: 2Q20
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 (90)

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	
10/6/20	1715	NP	31.02	0.00	65.55	50.0	Yes	Yes	Yes	Yes		Weather: Sunny, 60's
10/7/20	1005	NP	31.03									

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	
10/7/20	1010	31.04	0.5	7.18	21.4	7040	4.7	16.9	49.1	colorless / sl. cloudy	Low-flow groundwater sample:
↓	1013	31.04	1.0	6.97	19.5	7360	4.0	28.3	37.2	↓	A) peristaltic pump w/ ded tubing
	1015	31.04	1.5	6.83	19.3	7530	3.8	31.9	30.6		(B) ded bladder pump
	1017	31.04	2.0	6.79	19.4	7570	3.7	33.8	25.3	colorless / clear	C) non-ded bladder pump; or
	1020	31.04	2.5	6.78	19.5	7570	3.7	37.4	22.1		Standard groundwater sample:
	1023	31.04	3.0	6.75	19.6	7570	3.6	41.3	19.4		D) bailer due to limited column; or
	1025	31.04	3.5	6.75	19.7	7550	3.6	44.1	18.1		E) recovery well cycling sample
↓	1027	31.04	4.0	6.74	19.7	7400	3.6	46.1	17.0	↓	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
10/7/20	1030	MW-135	31.04	6.74	19.7	7400	3.6	46.1	17.0	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-20
Event: 2H20
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 (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	
10/6/20	1542	NP	18.33	0.00	26.66	21.9	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			Gauge		Only			*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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-3
Event: 2H20
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	
10/6/20	1549	NP	20.47	0.00	21.59	NS	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				Gauge Only				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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-4
Event: 2H20
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 (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	
10/6/20	1556	NP	33.81	0.00	36.98	NS	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				Gauge Only				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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-2
Event: 2H20
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 (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	
10/6/20	1559	NP	20.56	0.00	21.49	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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-1
Event: 2H20
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 (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	
10/6/20	1350	NP	18.74	0.00	21.88	19.6	Yes	Yes	Yes	Yes		Weather: Sunny 90'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	
10/6/20	1355	18.74	0.5	6.99	22.5	4468	2.6	26.7	3.9	Colorless, clear	*Low-flow groundwater sample:*
	1358	18.74	1.0	6.93	21.1	4,580	1.9	30.8	3.1	" "	(A) peristaltic pump w/ ded tubing
	1400	18.74	1.5	6.85	20.9	4,595	1.9	33.6	2.7	" "	B) ded bladder pump
	1403	18.74	2.0	6.79	20.8	4,610	1.8	34.8	2.3	" "	C) non-ded bladder pump; or
	1405	18.74	2.5	6.76	20.7	4,613	1.7	35.1	2.1	" "	*Standard groundwater sample:*
	1408	18.74	3.0	6.75	20.7	4,620	1.7	35.4	2.0	" "	D) bailer due to limited column; or
	1410	18.74	3.5	6.75	20.7	4,623	1.7	35.7	1.9	" "	E) recovery well cycling sample
	1413	18.74	4.0	6.74	20.6	4,625	1.6	36.3	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
												Lab: Pace National, Mt. Juliet, TN
10/6/20	1415	NP-1	18.74	6.74	20.6	4,625	1.6	36.3	1.7	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-6
Event: 2H20
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 (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	
10/6/20	1526	NP	15.14	0.00	20.35	15.4	Yes	Yes	Yes	Yes		Weather: 80's Sunny

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			Gauge Only					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-8
Event: 2H20
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	
10/6/20	1532	NP	16.59	0.00	23.30	18.3	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	
			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			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

+ Trip Blank-TMD-01

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-21
Event: 2H20
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: GOS (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	
10/6/20	1520	NP	15.76	0.00	25.12	19.9	Yes	Yes	Yes	Yes		Weather: Sunny, 90'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	
10/6/20	1525	15.86	0.5	7.24	27.1	7060	2.1	123.8	10.9	colorless / clear	*Low-flow groundwater sample:*
	1527	15.89	1.0	7.05	24.7	7340	1.4	127.5	6.3		(A) peristaltic pump w/ ded tubing
	1530	15.90	1.5	6.99	23.9	7410	1.2	131.8	4.5		B) ded bladder pump
	1533	15.90	2.0	6.95	23.6	7440	1.2	130.6	3.9		C) non-ded bladder pump; or
	1535	15.91	2.5	6.93	23.7	7430	1.1	130.3	3.7		*Standard groundwater sample:*
	1537	15.91	3.0	6.92	23.6	7450	1.0	129.7	4.6		D) bailer due to limited column; or
	1540	15.91	3.5	6.91	23.4	7460	1.0	129.3	3.9		E) recovery well cycling sample
	1543	15.91	4.0	6.91	23.3	7460	1.0	128.9	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
10/6/20	1545	MW-21	15.91	6.91	23.3	7460	1.0	128.9	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									

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-9
Event: 2H20
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	
10/6/22	1538	NP	17.12	0.00	22.25	NS	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				Gauge		Only		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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-71
Event: 2H20
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 (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	
10/6/20	1522	NP	17.41	0.00	21.67	16.9	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			Gauge Only					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								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-68
Event: 2H20
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	
10/6/20	1516	NP	21.12	0.00	26.52	23.5	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-27
Event: 2H20
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: KBJ (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	
10/6/20	1505	NP	20.42	0.00	30.28	25.0	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			Gauge	Only				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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-89
Event: 2H20
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 (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	
10/6/20	1458	NP	13.08	0.00	20.28	15.2	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			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-16
Event: 2420
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 (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	
10/6/20	1445	NP	10.39	0.00	21.24	16.2	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			Gauge Only					*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								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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-26
Event: 2H20
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	
10/6/22	1449	NP	14.00	0.00	27.58	22.6	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0				Gauge Only				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

(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11A
Event: 2H20
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

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	
10/6/20	1000	NA	17.56	0.00	42.27	37.0	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	
10/6/20	1005	17.62	0.5	6.85	20.9	2426	1.9	-69.3	17.6	Clear colorless	*Low-flow groundwater sample:*
	1008	17.62	1.0	6.81	19.9	3765	1.7	-53.2	20.9	" "	(A) peristaltic pump w/ ded tubing
	1010	17.62	1.5	6.80	19.8	3,854	1.5	-40.8	17.4	" "	B) ded bladder pump
	1013	17.62	2.0	6.78	19.6	3,840	1.3	-13.2	17.1	" "	C) non-ded bladder pump; or
	1015	17.62	2.5	6.78	19.5	3,843	1.2	+0.8	17.0	" "	*Standard groundwater sample:*
	1018	17.62	3.0	6.77	19.4	3860	1.2	13.7	18.1	" "	D) bailer due to limited column; or
	1020	17.62	3.5	6.77	19.4	3,858	1.1	14.3	17.8	" "	E) recovery well cycling sample
	1023	17.62	4.0	6.77	19.4	3,861	1.0	14.5	17.6	" "	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
10/6/20	1025	KWB-11A	17.62	6.77	19.4	3861	1.0	14.5	17.6	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									

(Pecan grove access from 82 gate)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-11B
Event: 21120
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 (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	
10/6/20	1045	NP	18.31	0.00	72.45	62.2	Yes	Yes	Yes	Yes	*	Weather: Sunny 70's

Well Purging Record

* (Severely cracked pad same as last events, needs new 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	
10/6/20	1050	18.56	0.5	7.09	20.5	3182	2.6	107.8	10.6	Clear, colorless	*Low-flow groundwater sample:*
	1053	18.68	1.0	6.98	20.3	3186	1.6	109.3	9.2	" "	(A) peristaltic pump w/ ded tubing
	1055	18.77	1.5	6.98	20.1	3098	1.3	112.8	7.0	" "	B) ded bladder pump
	1058	18.84	2.0	6.95	20.1	3096	1.2	114.1	5.7	" "	C) non-ded bladder pump; or
	1100	18.87	2.5	6.95	20.1	3128	1.1	117.2	5.2	" "	*Standard groundwater sample:*
	1103	18.90	3.0	6.94	20.1	3137	1.1	119.8	5.0	" "	D) bailer due to limited column; or
	1105	18.91	3.5	6.93	20.1	3141	1.1	120.2	4.8	" "	E) recovery well cycling sample
	1108	18.91	4.0	6.93	20.1	3143	1.1	120.8	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
10/6/20	1110	KWB-11B	18.91	6.93	20.1	3143	1.1	120.8	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

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: 2H20
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

(108)

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

ATV - S. Ro Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-115
Event: 21420
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 (109)

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	
10/6/20	1655	NP	17.89	0.03	27.50	19.8	Yes	Yes	Yes	Yes		Weather: Sunny 70's
10/7/20	850	NP	17.91	0.00								

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	
10/7/20	855	17.93	0.5	6.89	20.2	5093	4.7	48.4	3.2	Colorless, Clear	*Low-flow groundwater sample:*
	858	17.94	1.0	6.85	19.8	5080	3.9	56.8	2.2	" "	(A) peristaltic pump w/ ded tubing
	900	17.95	1.5	6.83	19.7	5072	3.2	60.2	2.0	" "	B) ded bladder pump
	903	17.95	2.0	6.82	19.6	5068	2.9	63.8	1.8	" "	C) non-ded bladder pump; or
	905	17.95	2.5	6.81	19.6	5061	2.8	65.1	1.5	" "	*Standard groundwater sample:*
	908	17.95	3.0	6.81	19.5	5056	2.7	66.7	1.3	" "	D) bailer due to limited column; or
	910	17.95	3.5	6.80	19.5	5051	2.7	67.2	1.2	" "	E) recovery well cycling sample
	913	17.95	4.0	6.80	19.5	5048	2.6	67.5	1.1	" "	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
10/7/20	915	MW-115	17.95	6.80	19.5	5048	2.6	67.5	1.1	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									

ATV - S. RO Field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-114
Event: 2H20
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

(110)

Initials: BB

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	
10/6/20	1659	NP	17.38	0.00	38.25	30.5	Yes	Yes	Yes	Yes		Weather: Sunny 70's
10/7/20	935	NP	17.39	0.00								

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	
10/7/20	940	17.42	0.5	6.83	22.0	3,740	3.7	79.2	5.2	Colorless, Clear	*Low-flow groundwater sample:*
	943	17.42	1.0	6.74	21.7	3,610	2.9	84.7	3.8	" "	(A) peristaltic pump w/ ded tubing
	945	17.42	1.5	6.71	21.6	3,542	2.6	91.2	2.9	" "	B) ded bladder pump
	948	17.42	2.0	6.69	21.6	3,496	2.2	93.7	2.5	" "	C) non-ded bladder pump; or
	950	17.42	2.5	6.68	21.5	3,472	2.0	94.8	2.2	" "	*Standard groundwater sample:*
	953	17.42	3.0	6.68	21.5	3,450	1.9	95.1	2.0	" "	D) bailer due to limited column; or
	955	17.42	3.5	6.67	21.5	3,436	1.9	95.6	1.9	" "	E) recovery well cycling sample
↓	958	17.42	4.0	6.67	21.4	3,428	1.9	96.3	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
												Lab: Pace National, Mt. Juliet, TN
10/7/20	1000	MW-114	17.42	6.67	21.4	3,428	1.9	96.3	1.7	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									

ATV - S. RO Field (mesquite !!)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-125
Event: 2H20
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 (111)

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	
10/6/20	1708	NP	20.32	0.00	28.31	23.5	yes	yes	yes	yes		Weather: Sunny 70's
10/7/20	1025	NP	20.33	0.00								

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	
10/7/20	1030	20.36	0.5	6.92	22.7	4534	3.5	47.8	9.7	Colorless, Clear	*Low-flow groundwater sample:*
	1033	20.38	1.0	6.85	22.1	4476	3.1	54.2	7.8	" "	(A) peristaltic pump w/ ded tubing
	1035	20.39	1.5	6.83	21.6	4410	2.5	56.3	6.7	" "	B) ded bladder pump
	1038	20.39	2.0	6.82	21.2	4391	2.3	56.9	6.3	" "	C) non-ded bladder pump; or
	1040	20.39	2.5	6.82	20.0	4384	2.2	58.7	5.9	" "	*Standard groundwater sample:*
	1043	20.39	3.0	6.81	19.8	4379	2.2	60.0	5.7	" "	D) bailer due to limited column; or
	1045	20.39	3.5	6.80	19.7	4375	2.2	60.8	5.2	" "	E) recovery well cycling sample
	1048	20.39	4.0	6.80	19.7	4371	2.1	61.2	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
												Lab: Pace National, Mt. Juliet, TN
10/7/20	1050	MW-125	20.39	6.80	19.7	4371	2.1	61.2	4.8	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-117
Event: 2H20
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 (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	
10-6-20	1355	NP	16.17	0.00	27.22	19.7	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1400	16.17	0.5	6.89	21.9	2840	3.3	29.5	19.6	Colorless/Clear	*Low-flow groundwater sample:*
	1403	16.17	1.0	6.87	21.6	2870	3.0	34.1	15.3		(A) peristaltic pump w/ ded tubing
	1405	16.17	1.5	6.84	21.4	2910	2.7	37.8	13.4		B) ded bladder pump
	1408	16.17	2.0	6.81	21.4	2930	2.6	40.5	12.5		C) non-ded bladder pump; or
	1410	16.17	2.5	6.79	21.3	2960	2.6	44.2	11.3		*Standard groundwater sample:*
	1413	16.17	3.0	6.75	21.3	2980	2.5	49.9	10.8		D) bailer due to limited column; or
	1415	16.17	3.5	6.73	21.2	2990	2.5	52.3	9.5		E) recovery well cycling sample
	1418	16.17	4.0	6.71	21.2	3010	2.5	55.7	8.6		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
10-6-20	1420	MW-117	16.17	6.71	21.2	3010	2.5	55.7	8.6	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-118
Event: 2H20
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

(113)

Initials: OSD

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	
10/6/20	1310	NP	19.35	0.00	28.29	21.0	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	
10-6-20	1315	19.42	0.5	7.03	21.3	2750	5.2	43.5	33.6	Colorless/Cloudy	*Low-flow groundwater sample:*
	1318	19.54	1.0	6.98	21.1	2780	4.8	38.4	27.1		(A) peristaltic pump w/ ded tubing
	1320	19.58	1.5	6.95	20.7	2820	4.5	42.5	24.5		B) ded bladder pump
	1323	19.61	2.0	6.93	20.7	2850	4.3	46.7	19.9		C) non-ded bladder pump; or
	1325	19.62	2.5	6.90	20.6	2880	4.1	49.3	14.5		*Standard groundwater sample:*
	1328	19.62	3.0	6.88	20.5	2910	3.9	53.1	12.6		D) bailer due to limited column; or
	1330	19.62	3.5	6.87	20.5	2930	3.9	56.6	10.3	Colorless/Clear	E) recovery well cycling sample
	1333	19.62	4.0	6.87	20.4	2940	3.8	58.3	9.5		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
10-6-20	1335	mw-118	19.62	6.87	20.4	2940	3.8	58.3	9.5	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									

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-9
Event: 2H20
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: GDS (114)

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	
10/6/20	842	NP	18.40	0.00	25.65	NS	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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-119
Event: 2H20
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: GMJ (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	
10/6/20	855	NA	17.21	0.00	28.11	20.8	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	
10/6/20	900	17.25	0.5	7.19	20.1	6160	3.0	135.6	29.5	colorless / clear	*Low-flow groundwater sample:*
	903	17.25	1.0	7.01	20.1	6120	2.1	84.7	23.5		(A) peristaltic pump w/ ded tubing
	905	17.25	1.5	6.91	20.1	6030	2.0	79.2	20.2		B) ded bladder pump
	907	17.25	2.0	6.88	20.2	6070	1.9	72.1	19.6		C) non-ded bladder pump; or
	910	17.25	2.5	6.83	20.4	6000	1.8	67.4	17.0		*Standard groundwater sample:*
	913	17.25	3.0	6.82	20.4	5990	1.8	64.6	15.5		D) bailer due to limited column; or
	915	17.25	3.5	6.81	20.4	5960	1.8	62.1	14.9		E) recovery well cycling sample
	917	17.25	4.0	6.81	20.4	5950	1.8	59.8	14.0		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
10/6/20	920	MW-119	17.25	6.81	20.4	5950	1.8	59.8	14.0	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NP-5
Event: 2H20
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 (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	
10/6/20	1231	NP	16.91	0.00	25.09	20.0	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	
10/6/20			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			Gauge Only					*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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-136
Event: 2H20
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 (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	
10/6/20	1155	NP	18.40	0.00	27.90	23.0	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	
10/6/20	1200	18.43	0.5	7.12	24.7	5330	2.4	103.8	64.1	Colorless / Sl. Cloudy	*Low-flow groundwater sample:*
↓	1203	18.43	1.0	6.92	23.1	5370	1.9	105.5	39.2	↓	(A) peristaltic pump w/ ded tubing
	1205	18.44	1.5	6.84	22.4	5380	1.6	108.8	23.1	Colorless / Clear	B) ded bladder pump
	1207	18.44	2.0	6.79	22.1	5390	1.6	106.7	19.1		C) non-ded bladder pump; or
	1210	18.44	2.5	6.77	22.1	5370	1.7	108.5	18.5	↓	*Standard groundwater sample:*
	1213	18.44	3.0	6.75	22.0	5380	1.7	109.9	16.9		D) bailer due to limited column; or
	1215	18.44	3.5	6.75	22.0	5380	1.6	110.2	15.1		E) recovery well cycling sample
↓	1217	18.44	4.0	6.75	22.0	5380	1.6	110.6	13.9	↓	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
10/6/20	1220	MW-136	18.44	6.75	22.0	5380	1.6	110.6	13.9	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126A
Event: 2H20
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	
10/6/20	945	NP	21.41	0.00	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	
10/6/20	950	21.41	0.5	7.01	22.5	4780	3.8	-19.8	30.3	Clear/Colorless	*Low-flow groundwater sample:*
	953	21.41	1.0	6.77	21.5	4760	2.1	-40.7	25.1		(A) peristaltic pump w/ ded tubing
	955	21.41	1.5	6.70	21.2	4700	1.7	-50.9	23.0		B) ded bladder pump
	957	21.41	2.0	6.67	21.2	4670	1.5	-60.1	13.2		C) non-ded bladder pump; or
	1000	21.41	2.5	6.65	21.2	4640	1.4	-69.3	10.6		*Standard groundwater sample:*
	1003	21.41	3.0	6.64	21.2	4620	1.3	-72.1	8.1		D) bailer due to limited column; or
	1005	21.41	3.5	6.63	21.3	4580	1.3	-75.1	7.7		E) recovery well cycling sample
	1007	21.41	4.0	6.63	21.4	4570	1.3	-77.4	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
10/6/20	1010	MW-126A	21.41	6.63	21.4	4570	1.3	-77.4	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-126B
Event: 2H20
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	
10/6/20	1025	NP	21.29	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	
10/6/20	1030	21.35	0.5	6.88	23.1	5170	3.5	33.8	7.7	Colorless / clear	*Low-flow groundwater sample:*
	1033	21.36	1.0	6.77	22.3	5270	2.2	55.7	5.2		(A) peristaltic pump w/ ded tubing
	1035	21.36	1.5	6.73	22.0	5280	1.9	66.4	4.5		B) ded bladder pump
	1037	21.36	2.0	6.71	21.7	5330	1.8	68.6	4.0		C) non-ded bladder pump; or
	1040	21.36	2.5	6.69	21.7	5320	1.9	75.1	3.6		*Standard groundwater sample:*
	1043	21.36	3.0	6.68	21.6	5320	1.9	78.6	3.5		D) bailer due to limited column; or
	1045	21.36	3.5	6.67	21.4	5350	1.8	80.9	3.2		E) recovery well cycling sample
	1047	21.36	4.0	6.67	21.2	5360	1.8	82.5	3.4		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
10/6/20	1050	MW-126B	21.36	6.67	21.2	5360	1.8	82.5	3.4	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-127
Event: 2H20
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: GS (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	
10/6/20	1117	22.96	24.88	1.92	53.21	38.4	Yes	Yes	Yes	Yes		Weather: Sunny, 30'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 having				C) non-ded bladder pump; or
			2.5			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
		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									

(Recompleted at-grade prior to 1H20)

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-129
Event: 2H20
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 (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	
10/6/20	1125	23.66	24.75	1.09	50.78	NA (5' off base 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								B) ded bladder pump
			2.0			Gauge		Only			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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#18A
Event: 2H20
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: GBS (122)

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	
10/6/20	1351	NP	17.60	0.00	17.78	16.7	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			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1A
Event: 2H20
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: CWS (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	
10/6/20	1300	NP	18.49	0.00	33.50	25.8	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	
10/6/20	1305	18.50	0.5	6.99	25.9	5640	2.5	114.9	21.2	Colorless / clear	*Low-flow groundwater sample:*
	1307	18.50	1.0	6.77	23.0	5760	1.5	121.9	17.2		(A) peristaltic pump w/ ded tubing
	1310	18.50	1.5	6.73	22.8	5780	1.4	124.3	14.4		B) ded bladder pump
	1313	18.50	2.0	6.71	22.4	5770	1.2	127.5	9.5		C) non-ded bladder pump; or
	1315	18.50	2.5	6.70	22.2	5780	1.1	129.2	7.2		*Standard groundwater sample:*
	1317	18.50	3.0	6.69	22.0	5790	1.1	131.6	6.1		D) bailer due to limited column; or
	1320	18.50	3.5	6.69	22.1	5770	1.0	129.2	5.6		E) recovery well cycling sample
	1323	18.50	4.0	6.70	22.1	5770	1.0	128.4	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
10/6/20	1325	KWB-1A	18.50	6.70	22.1	5770	1.0	128.4	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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1B
Event: 2H20
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: AMS

(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	
10/6/20	1337	NP	20.14	0.00	33.92	NS	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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-1C
Event: 2H20
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 (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	
10/6/20	1340	NP	20.75	0.00	52.71	42.7	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			Gauge	Only				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									

(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: 2H20
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 (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	
10/6/20	1346	18.80	21.79	2.99	29.46	22.0	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	
10/6/20			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 well 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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-131
Event: 2H20
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 (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	
10/6/22	1121	25.95	27.58	1.63	53.35	38.1	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	
			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
		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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-5
Event: 21120
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 (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	
10-6-20	1235	25.97	28.09	2.12	37.68	30.7	Yes	Yes	Yes	Yes		Weather: Clear 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		Not Sampled Due to						(B) ded bladder pump
			2.0		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
		KWB-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-111
Event: 2H20
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: OSO (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	
10-6-20	1225	27.39	27.64	0.25	40.83	35.8	Yes	Yes	Yes	Yes		Weather: Clear 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			NOT	SAMPLED Due		to		(B) ded bladder pump
			2.0			HAVING	LNAPL		THICKNESS		C) non-ded bladder pump; or
			2.5				>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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-6
Event: 2H20
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: GPS (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	
10/6/20	1436	23.98	26.61	2.63	36.44	27.4	Yes	Yes	Yes	Yes		Weather: Sunny, 90'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	
10/6/20			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-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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-112
Event: 2H20
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 (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	
10/6/20	1449	24.23	25.29	2.06	37.54	32.5	Yes	Yes	Yes	Yes		Weather: Sunny, 90'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	
10/6/20			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 well						*Standard groundwater sample:*
			3.0		having LNAPL thickness						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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-132
Event: 2H20
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: GPS (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	
10/6/20	1430	21.32	23.80	2.48	42.66	NA	Yes	Yes	Yes	Yes		Weather: Sunny, 90'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	
10/6/20			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
		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									

Located inside yellow vault; furthest South

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-57
Event: 2H20
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	
10-6-20	1105	NP	21.73	0.00	34.32	32.8	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	
10-6-20	1110	21.84	0.5	6.75	21.3	2990	4.3	80.4	12.1	Colorless/Clear	*Low-flow groundwater sample:*
	1113	21.87	1.0	6.71	21.1	3070	4.1	87.3	11.5		A) peristaltic pump w/ ded tubing
	1115	21.96	1.5	6.66	21.1	3120	3.8	90.6	10.6		(B) ded bladder pump
	1117	21.92	2.0	6.63	20.7	3150	3.6	94.8	9.8		C) non-ded bladder pump; or
	1120	21.95	2.5	6.59	20.6	3180	3.5	97.7	9.2		*Standard groundwater sample:*
	1122	21.98	3.0	6.54	20.5	3190	3.4	102.5	8.7		D) bailer due to limited column; or
	1125	21.99	3.5	6.51	20.5	3210	3.4	105.7	8.3		E) recovery well cycling sample
	1128	22.02	4.0	6.48	20.5	3220	3.3	107.3	7.8		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
10-6-20	1130	MW-57	22.02	6.48	20.5	3220	3.3	107.3	7.8	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									

~32" corrugated stickup

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#11-O
Event: 2H20
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

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: GDS

(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	
10/6/20	1424	Dry	Dry	Dry	22.20	NA	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			Gauge	Only				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

(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: 2H20
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: GDS

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	
10/6/20	1426	NM	NM	NM	NM	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		DO NOT ADDRESS						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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-12A
Event: 2H20
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

(136)

Initials: O SD

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	
10-6-20	905	NP	23.11	0.00	25.03	24.9	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	
10-6-20	910	23.25	0.5	6.48	19.5	2260	4.1	69.6	14.5	Colorless/Clear	*Low-flow groundwater sample:*
	913	23.31	1.0	6.43	19.3	2280	3.9	67.3	12.6		(A) peristaltic pump w/ ded tubing
	915	23.35	1.5	6.42	19.3	2320	3.7	65.1	11.5		B) ded bladder pump
	918	23.39	2.0	6.40	19.2	2370	3.5	63.2	10.8		C) non-ded bladder pump; or
	920	23.42	2.5	6.39	19.2	2410	3.5	60.4	10.2		*Standard groundwater sample:*
	923	23.45	3.0	6.37	19.1	2430	3.4	57.1	9.8		D) bailer due to limited column; or
	925	23.47	3.5	6.35	19.1	2450	3.4	54.5	9.1		E) recovery well cycling sample
	928	23.48	4.0	6.34	19.1	2460	3.4	51.3	8.3		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
10-6-20	930	KWB-12A	23.48	6.34	19.1	2460	3.4	51.3	8.3	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

Monitoring Well Purging and Sampling Record

+ DUP-REST-05
+ EB-REST-05
+ Trip Blank-REST-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KwB-12B
Event: 2H20
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

(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	
10-6-20	950	NP	23.07	0.00	39.39	35.2	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	
10-6-20	955	23.15	0.5	6.64	20.1	2930	4.6	89.6	8.5	colorless/clear	*Low-flow groundwater sample:*
	958	23.15	1.0	6.61	20.1	2950	4.4	93.4	8.1		A) peristaltic pump w/ ded tubing
	1000	23.15	1.5	6.57	19.8	2960	4.4	96.7	7.8		(B) ded bladder pump
	1003	23.15	2.0	6.51	19.8	2970	4.3	99.5	7.3		C) non-ded bladder pump; or
	1005	23.15	2.5	6.48	19.7	2990	4.3	103.4	6.7		*Standard groundwater sample:*
	1008	23.15	3.0	6.45	19.5	3010	4.2	107.5	6.3		D) bailer due to limited column; or
	1010	23.15	3.5	6.43	19.4	3020	4.2	110.6	5.5		E) recovery well cycling sample
	1013	23.15	4.0	6.39	19.4	3020	4.1	112.1	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
10-6-20	1015	KwB-12B	23.15	6.39	19.4	3020	4.1	112.1	5.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1200	DUP-REST-05	23.15	6.39	19.4	3020	4.1	112.1	5.1	Same	Same	
	1035	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-2R
Event: 2H20
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 (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	
10-6-20	1150	25.10	25.29	0.19	39.39	32.4	Issue	Issue	Issue	Issue	*	Weather: clear 80s

* At Grade completion damaged; needs replacing; pvc well remains functional

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			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
		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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-58
Event: 2H20
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: OSO (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	
10-6-20	1210	23.76	24.71	0.95	33.06	25.6	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			Not	SAMPLED Due to				C) non-ded bladder pump; or
			2.5			Well	having LNAPL				*Standard groundwater sample:*
			3.0			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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: KWB-13
Event: 2H20
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: GGS (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	
10/6/20	1412	NP	28.00	0.00	33.10	30.1	Yes	Yes	Yes	Yes	#	Weather: Sunny, 80's
										# cracked pad		

Top of pump @ 27.40'

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			Gauge	Only				*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

Sign-in & permit From South Crude Control Room prior to entry

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-103
Event: 2H20
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 (141)

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	
10/6/20	1147	NP	18.30	0.00	25.22	22.2	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			Gauge Only					*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

Sign-in & Permit from South Crude Control Room prior to entry

Monitoring Well Purging and Sampling Record

+ Dup-Rest-02
+ EB-Rest-02

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-104
Event: 2H20
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

(142)

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	
10/6/20	1145	NP	14.31	0.00	21.97	19.0	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	
10/6/20	1150	14.44	0.5	6.74	28.8	1803	1.8	-318.3	12.3	colorless; clear	*Low-flow groundwater sample:*
	1152	14.50	1.0	6.72	28.7	1761	1.8	-323.3	8.4		(A) peristaltic pump w/ ded tubing
	1155	14.55	1.5	6.73	28.3	1747	1.8	-325.1	7.9		B) ded bladder pump
	1157	14.59	2.0	6.74	28.4	1729	1.8	-327.5	6.1		C) non-ded bladder pump; or
	1200	14.62	2.5	6.75	28.4	1717	1.8	-329.7	4.9		*Standard groundwater sample:*
	1202	14.65	3.0	6.77	28.3	1696	1.9	-332.4	4.6		D) bailer due to limited column; or
	1205	14.68	3.5	6.77	28.2	1690	1.9	-333.3	4.2		E) recovery well cycling sample
	1207	14.71	4.0	6.77	28.2	1688	1.9	-333.9	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
10/6/20	1210	MW-104	14.71	6.77	28.2	1688	1.9	-333.9	4.1	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1100	Dup-Rest-02	14.71	6.77	28.2	1688	1.9	-333.9	4.1	same	same	
	1220	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									

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: 2H20
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

(143)

Well Inspection Information

(Removed sock prior to sampling; replaced following sampling)

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	
10/6/20	1240	NP	21.67	0.00	34.08	26.6	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	
10/6/20	1245	21.87	0.5	6.74	35.0	2280	4.7	-311.7	23.1	colorless; clear	*Low-flow groundwater sample:*
	1247	21.96	1.0	6.72	34.9	2290	4.6	-313.1	23.0		(A) peristaltic pump w/ ded tubing
	1250	22.03	1.5	6.71	34.8	2300	4.6	-315.5	22.7		B) ded bladder pump
	1252	22.07	2.0	6.71	34.8	2310	4.2	-317.1	21.4		C) non-ded bladder pump; or
	1255	22.08	2.5	6.70	34.7	2310	3.9	-318.6	20.9		*Standard groundwater sample:*
	1257	22.08	3.0	6.70	34.7	2310	3.7	-319.5	20.9		D) bailer due to limited column; or
	1300	22.08	3.5	6.69	34.6	2320	3.6	-321.5	20.7		E) recovery well cycling sample
↓	1302	22.08	4.0	6.68	34.6	2320	3.6	-322.3	20.5		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
10/6/20	1305	MW-64	22.08	6.68	34.6	2320	3.6	-322.3	20.5	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									

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: 2H20
Area of Concern: BEST

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

Oil-Saturated sock could be replaced w/ new sock w) slightly shorter cord -SCH 10/6/20

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCH

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	
10/6/20	1330	19.12	19.62	0.50	28.78	23.8	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0		NO	SAMPLE;		LNAPL PRESENT			C) non-ded bladder pump; or
			2.5								*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

Gauge to top of guide-pipe

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-5R
Event: 2H20
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

Initials: SCH (145)

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	
10/6/20	1340	21.04	21.33	0.29	NM	24.0	Yes	Yes	Yes	Yes		Weather: Clear, 80s
					(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			Gauge Only					*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-5R								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

Bagged tubes; do not dedicate, per historical observations.

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-102
Event: 2H20
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 (146)

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	
10/6/20	1345	NP	17.00	0.00	26.45	21.3	Yes	Yes	Yes	Yes		Weather: Clear, 90s

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	
10/6/20	1350	17.03	0.5	6.84	29.8	2200	2.8	-286.2	16.3	colorless / clear	*Low-flow groundwater sample:*
↓	1352	17.03	1.0	6.82	29.4	2220	2.9	-289.7	15.4	↓	(A) peristaltic pump w/ ded tubing
	1355	17.03	1.5	6.79	29.3	2230	3.0	-291.4	12.1		B) ded bladder pump
	1357	17.03	2.0	6.77	29.1	2230	3.1	-293.9	11.4		C) non-ded bladder pump; or
	1400	17.03	2.5	6.75	28.9	2240	3.1	-295.5	9.7		*Standard groundwater sample:*
	1402	17.03	3.0	6.74	28.8	2240	3.1	-297.3	8.9		D) bailer due to limited column; or
	1405	17.03	3.5	6.72	28.6	2240	3.1	-297.3	8.5		E) recovery well cycling sample
↓	1407	17.03	4.0	6.72	28.5	2240	3.1	-297.2	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
10/6/20	1410	MW-102	17.03	6.72	28.5	2240	3.1	-297.2	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									

Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RW-4
Event: 2H20
Area of Concern: REST

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

Recovery Well Dog house
[Bracket is broken; prop open w/ pry bar

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG (147)

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	
10/6/20	1425	NP	15.58	0.00	36.62	31.6	YES	YES	YES	YES		Weather: Clear, 90s

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	
		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			Gauge Only					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-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

Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: RW-6
Event: 2H20
Area of Concern: REST

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

Recovery well Doghouse

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: SCG (148)

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	
10/6/20	1420	17.51	21.25	3.74	34.90	30.0	Yes	Yes	Yes	Yes		Weather: clear, 90s

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	
		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			Gauge	Only				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-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

Position marked on adjacent fence; well is ~4' N. of chainlink fence; possibly covered by gravel/silt.

Monitoring Well Purging and Sampling Record

Navajo Refining Company — **Well:** MW-99
Artesia Refinery — **Event:** 2H20
Artesia, New Mexico — **Area of Concern:** REST

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

(Sock in well)
LNAPL background confirmed w/ Navajo Rep (Domingo)

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	
10/6/20	1510	20.46	21.52	1.06	27.80	22.8	Yes	Yes	Yes	Yes		Weather: Clear, 90s
~~10/7/20~~	SCH											

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	
~~10/7/20~~ SCH			0.5								*Low-flow groundwater sample:*
			1.0							if sampled;	(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0	NOT SAMPLED; LNAPL PRESENT,					≥ 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
~~10/7/20~~ SCH		MW-99								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

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: 2H20
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 (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	
10/6/20	1517	NP	19.95	0.00	29.80	24.6	Yes	Yes	Yes	Yes		Weather: Clear, 90s
10/7/20	900	NP	20.00									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	
10/7/20	905	20.15	0.5	6.58	22.3	1472	3.4	-194.0	9.6	colorless; clear	*Low-flow groundwater sample:*
	907	20.22	1.0	6.59	22.3	1487	2.3	-198.3	9.1		(A) peristaltic pump w/ ded tubing
	910	20.23	1.5	6.60	22.3	1495	2.2	-200.8	8.7		B) ded bladder pump
	912	20.23	2.0	6.60	22.4	1502	2.0	-204.2	8.4		C) non-ded bladder pump; or
	915	20.23	2.5	6.60	22.4	1513	2.0	-207.4	8.1		*Standard groundwater sample:*
	917	20.23	3.0	6.60	22.4	1521	2.0	-211.0	7.8		D) bailer due to limited column; or
	920	20.23	3.5	6.60	22.4	1525	2.0	-212.4	7.8		E) recovery well cycling sample
	922	20.23	4.0	6.60	22.4	1529	2.0	-214.7	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
10/7/20	925	MW-66	20.23	6.60	22.4	1529	2.0	-214.7	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

Bagged tube.

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-28
Event: 2Q20
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

Initials: SCU / OJD (151)

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	
10/6/20	1525	NP	21.03	0.00	27.82	23.8	Yes	Yes	Yes	Yes		Weather: Clear, 90s
10/7/20	1045	NP	21.04	0.00								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	
10/7/20	1050	21.11	0.5	7.13	22.1	3290	1.8	-175.6	21.5	colorless/clear	*Low-flow groundwater sample:*
	1053	21.16	1.0	7.16	22.6	3170	1.5	-180.5	13.6		(A) peristaltic pump w/ ded tubing
	1055	21.19	1.5	7.19	22.8	3150	1.3	-184.4	11.5		B) ded bladder pump
	1058	21.21	2.0	7.22	23.1	3130	1.3	-187.5	10.2		C) non-ded bladder pump; or
	1100	21.23	2.5	7.25	23.1	3120	1.2	-190.3	9.8		*Standard groundwater sample:*
	1103	21.24	3.0	7.28	23.2	3110	1.2	-192.5	9.1		D) bailer due to limited column; or
	1105	21.25	3.5	7.30	23.3	3110	1.2	-195.6	8.5		E) recovery well cycling sample
↓	1108	21.26	4.0	7.32	23.4	3100	1.1	-197.3	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
												Lab: Pace National, Mt. Juliet, TN
10/7/20	1110	MW-28	21.26	7.32	23.4	3100	1.1	-197.3	8.1	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-59
Event: 2H20
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: SCy (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	
10/6/20	1618	NP	18.11	0.00	32.72	25.3	Yes	Yes	Yes	Yes		Weather: Clear, 90s

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			Gauge Only					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

(Support - trailer parking area)

Monitoring Well Purging and Sampling Record

+ Dup-REST-04
+ EB-REST-04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-60
Event: 2H20
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	
10/6/20	1620	NP	19.35	0.00	37.78	26.7	Yes	Yes	Yes	Yes		Weather: clear, 90s
10/7/20	1000	NP	19.38	0.00								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	
10/7/20	1005	19.52	0.5	6.56	23.8	3330	1.6	-301.1	7.3	colorless; clear	*Low-flow groundwater sample:*
	1007	19.58	1.0	6.56	23.8	3380	1.9	-307.2	7.1		(A) peristaltic pump w/ ded tubing
	1010	19.63	1.5	6.55	23.8	3410	2.0	-310.4	6.8		B) ded bladder pump
	1012	19.64	2.0	6.55	23.8	3430	2.0	-312.4	6.4		C) non-ded bladder pump; or
	1015	19.65	2.5	6.55	23.8	3440	2.0	-313.7	6.1		*Standard groundwater sample:*
	1017	19.65	3.0	6.55	23.8	3450	1.9	-314.8	5.7		D) bailer due to limited column; or
	1020	19.65	3.5	6.55	23.9	3470	2.0	-315.1	5.6		E) recovery well cycling sample
	1022	19.65	4.0	6.55	24.0	3470	2.0	-315.6	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
10/7/20	1025	MW-60	19.65	6.55	24.0	3470	2.0	-315.6	5.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	800	DUP-REST-04	19.65	6.55	24.0	3470	2.0	-315.6	5.6	Same	Same	
	1045	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-107
Event: 2H20
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 (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	
10/6/20	1527	17.35	18.68	1.33	19.05	17.1	Yes	Yes	Yes	Yes		Weather: clear, 90s

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							when Sampled	(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5			Gauge		Only			*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									

Located 15' 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: 2H20
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: SC4

(155)

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	
10/6/20	1540	19.06	21.20	2.14	35.35	25.4	yes	yes	yes	yes		Weather: clear, 90s

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/ 20~~	SC4		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		NO SAMPLE;		LNAPL	present	≥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
~~10/ 20~~	SC4	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

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: 2H20
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/OJD (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	
10/6/20	1600	NP	17.18	0.00	27.63	20.0	Yes	Yes	Yes	Yes		Weather: clear, 90s
10/7/20	1000	NP	17.21	0.00								Clear

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	
10/7/20	1005	17.23	0.5	6.89	21.3	3350	2.8	-17.8	7.5	Colorless/Clear	*Low-flow groundwater sample:*
	1008	17.23	1.0	6.85	21.1	3380	2.5	-13.4	7.1		(A) peristaltic pump w/ ded tubing
	1010	17.23	1.5	6.83	20.8	3410	2.3	-11.5	6.6		B) ded bladder pump
	1013	17.23	2.0	6.80	20.7	3430	2.1	-10.3	6.3		C) non-ded bladder pump; or
	1015	17.23	2.5	6.78	20.5	3460	2.1	-8.6	5.7		*Standard groundwater sample:*
	1018	17.23	3.0	6.77	20.3	3470	2.0	-6.1	5.4		D) bailer due to limited column; or
	1020	17.23	3.5	6.75	20.3	3490	2.0	-5.3	5.1		E) recovery well cycling sample
	1023	17.23	4.0	6.73	20.2	3510	1.9	-4.6	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
10/7/20	1025	MW-116	17.23	6.73	20.2	3510	1.9	-4.6	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-46R
Event: 2H20
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

Initials: SCH/DSD (157)

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
10/6/20	1610	NP	14.56	0.00	19.36	14.1	Yes	Yes	Yes	Yes		Weather: Clear, 92S
10/7/20	915	NP	14.58	0.00								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	
10/7/20	920	14.60	0.5	6.92	19.3	3150	2.8	13.9	21.4	colorless/clear	*Low-flow groundwater sample:*
	923	14.60	1.0	6.87	19.1	3130	2.5	17.6	16.5		(A) peristaltic pump w/ ded tubing
	925	14.60	1.5	6.83	18.8	3120	2.3	22.5	13.1		B) ded bladder pump
	928	14.60	2.0	6.83	18.6	3110	2.2	27.3	11.5		C) non-ded bladder pump; or
	930	14.60	2.5	6.83	18.6	3110	2.2	30.6	10.8		*Standard groundwater sample:*
	933	14.60	3.0	6.82	18.5	3100	2.1	34.4	10.3		D) bailer due to limited column; or
	935	14.60	3.5	6.82	18.5	3090	2.1	38.1	9.8		E) recovery well cycling sample
	938	14.60	4.0	6.82	18.4	3090	2.1	40.5	9.3		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
10/7/20	940	MW-46R	14.60	6.82	18.4	3090	2.1	40.5	9.3	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

[New well installed pre-2H20]

MW-145, 146, 147, 148 on separate COC, 2H20, per TRC

+ EB-01
+ Dup-01

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-145
Event: 2H20
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

Screen: 9-29 Ft-bgs (Stickup = 2.6')

Initials: SCH

(157.1)

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	
10/5/20	1600	NP	20.06	0.00	32.10	31.10	Yes	Yes	Yes	Yes		Weather: clear, 70s
10/6/20	1105	NP	20.04	0.00	(hard)	(1 Ft off 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	
10/6/20	1110	20.07	0.5	6.86	24.5	4650	2.7	130.5	170	cloudy	*Low-flow groundwater sample:*
	1112	20.07	1.0	6.79	24.7	4670	2.3	131.0	71.4	sl. cloudy	(A) peristaltic pump w/ ded tubing
	1115	20.07	1.5	6.77	24.3	4670	2.2	130.9	50.2	↓	B) ded bladder pump
	1117	20.07	2.0	6.75	24.1	4670	2.2	130.8	36.4	clear	C) non-ded bladder pump; or
	1120	20.07	2.5	6.74	24.0	4670	2.2	130.7	33.1		*Standard groundwater sample:*
	1122	20.07	3.0	6.73	24.0	4670	2.3	130.4	31.7		D) bailer due to limited column; or
	1125	20.07	3.5	6.72	24.0	4670	2.3	129.9	30.4		E) recovery well cycling sample
↓	1127	20.07	4.0	6.72	24.0	4670	2.3	129.7	29.7	↓	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
												Lab: Pace National, Mt. Juliet, TN
10/6/20	1130	MW-145	20.07	6.72	24.0	4670	2.3	129.7	29.7	Per COC	Per COC	(VOC only)
↓	1000	DUP-01	20.07	6.72	24.0	4670	2.3	129.7	29.7	"	"	(VOC only)
↓	1135	EB-01	NA	~	~	~	~	~	→	"	"	(VOC only)
		(collected over deconned gauging probe; all pumps/tubing ded'icated in respective wells)										

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

[New well installed pre-2H20] MW-145, 146, 147, 148 on separate COC, 2H20, per TRC

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-146
Event: 2H20
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

157.2

Well Inspection Information

Screen: 10-30 ft-bgs (Stickup = 2.4')

Initials: 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	
10/5/20	1610	NP	23.31	0.00	33.40	32.40	Yes	Yes	Yes	Yes		Weather: Clear, 70s
10/6/20	1035	NP	23.30	0.00	(hard)	(1 ft off 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	
10/6/20	1040	23.30	0.5	6.96	25.5	4740	2.9	117.0	88	sl. cloudy	*Low-flow groundwater sample:*
	1042	23.30	1.0	6.92	25.3	4750	2.7	118.4	30.7	clear	(A) peristaltic pump w/ ded tubing
	1045	23.30	1.5	6.89	25.1	4750	2.5	119.6	29.1		B) ded bladder pump
	1047	23.30	2.0	6.88	25.0	4750	2.4	120.2	25.1		C) non-ded bladder pump; or
	1050	23.30	2.5	6.86	25.0	4750	2.4	120.7	23.7		*Standard groundwater sample:*
	1052	23.30	3.0	6.83	24.9	4740	2.4	121.8	20.4		D) bailer due to limited column; or
	1055	23.30	3.5	6.81	24.7	4740	2.4	122.7	18.1		E) recovery well cycling sample
↓	1057	23.30	4.0	6.81	24.5	4740	2.4	123.1	17.7	↓	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
												Lab: Pace National, Mt. Juliet, TN
10/6/20	1100	MW-146	23.30	6.81	24.5	4740	2.4	123.1	17.7	Per COC	Per COC	(VOC only)
			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									

[New well installed pre-2H20] MW-145, 146, 147, 148 on separate COC, 2H20, per TRC

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-147
Event: 2H20
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 (157.3)

Screen: 20-40 ft-bgs

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	
10/5/20	1630	NP	30.68	0.00	39.83	38.83	Yes	Yes	Yes	Yes		Weather: Clear, 70S
10/6/20	955	NP	30.70	0.00	(hard)	(1 ft off	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	
10/6/20	1000	30.70	0.5	6.74	22.2	5210	5.3	148.6	>200	cloudy	*Low-flow groundwater sample:*
	1002	30.70	1.0	6.71	21.9	5240	5.3	150.7	>200	↓	A: peristaltic pump w/ ded tubing
	1005	30.70	1.5	6.69	21.8	5260	5.3	152.0	>200	↓	(B) ded bladder pump
	1007	30.70	2.0	6.68	21.7	5270	5.2	152.5	>200	↓	C) non-ded bladder pump; or
	1010	30.70	2.5	6.66	21.5	5280	5.3	153.0	>200	↓	*Standard groundwater sample:*
	1012	30.70	3.0	6.65	21.4	5300	5.3	152.7	178	sl. cloudy	D) bailer due to limited column; or
	1015	30.70	3.5	6.65	21.3	5310	5.3	152.5	171	↓	E) recovery well cycling sample
↓	1017	30.70	4.0	6.65	21.3	5310	5.3	152.5	170	↓	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
10/6/20	1020	MW-147	30.70	6.65	21.3	5310	5.3	152.5	170	Per COC	Per COC	(VOC only)
			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									

[New well installed pre-2H20] MW-145, 146, 147, 148 on separate CoC, 2H20, per TRC

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-148
Event: 2H20
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-bgs

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
10/5/20	1700	NP	34.37	0.00	40.38	39.38	Yes	Yes	Yes	Yes		Weather: clear, 60s
10/6/20	910	NP	34.40	0.00	(hard)	(1 ft off base)						

Well Purging Record

(pulled pump to collect static DTW)

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	
10/6/20	920	*top of	0.5	5.98	22.5	3650	6.1	158.9	>200	cloudy	*Low-flow groundwater sample:*
	922	pump	1.0	6.14	22.5	3670	6.0	161.2	131		A) peristaltic pump w/ ded tubing
	925		1.5	6.31	22.3	3650	5.8	161.5	109		(B) ded bladder pump
	929		2.0	6.38	22.3	3640	5.7	160.8	94		C) non-ded bladder pump; or
	930		2.5	6.43	22.3	3620	5.8	160.3	81	sl. cloudy	*Standard groundwater sample:*
	932		3.0	6.43	22.3	3620	5.9	160.2	69		D) bailer due to limited column; or
	935		3.5	6.46	22.3	3620	5.9	159.8	64		E) recovery well cycling sample
	937		4.0	6.47	22.3	3610	5.9	159.7	62		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
10/6/20	940	MW-148	*top of pump	6.47	22.3	3610	5.9	159.7	62	Per COC	Per COC	(VOC only)
			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									

Furthest west "city well"

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: UG-3R
Event: 2H20
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 (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	
10/6/20					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								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

DO NOT ADDRESS

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								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

Location @ North-side park

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-4
Event: 2H20
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 (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	
10/6/20					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								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0								D) bailer due to limited column; or
			3.5				DO NOT		ADDRESS		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									

North of elementary school

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: UG-1
Event: 2H20
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: SCL (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	
10/6/20					24.08	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								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

DO NOT ADDRESS

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								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

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: 2H20
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 (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	
10/6/20					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								C) non-ded bladder pump; or
			2.5								*Standard groundwater sample:*
			3.0					DO NOT	ADDRESS		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								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

(Recompleted at-grade prior to 1H20) (prior to 2H20, Navajo excavated ~ feet deep around entire well)

Monitoring Well Purging and Sampling Record

+ Trip Blank-REST-04

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-101
Event: 2H20
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: RJM (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					Comments
							Cap	Casing	Well Secured	Label	Other	
10.6.20	835	NP	15.06	0.00	24.10	20.75	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	
10.6.20	840	15.09	0.5	6.70	25.3	1826	3.2	-769.3	7.3	clear / colorless	*Low-flow groundwater sample:*
↓	842	15.09	1.0	6.68	25.2	1815	2.8	-782.5	7.1	↓	(A) peristaltic pump w/ ded tubing
	845	15.10	1.5	6.67	25.2	1742	2.5	-301.2	6.8		B) ded bladder pump
	847	15.10	2.0	6.63	25.1	1773	2.3	-305.4	6.5		C) non-ded bladder pump; or
	850	15.10	2.5	6.69	25.0	1761	2.2	-307.7	6.1		*Standard groundwater sample:*
	852	15.10	3.0	6.69	24.8	1752	2.1	-309.0	6.0		D) bailer due to limited column; or
	855	15.10	3.5	6.70	24.8	1741	2.1	-310.4	5.7		E) recovery well cycling sample
↓	857	15.10	4.0	6.71	24.7	1734	2.0	-311.8	5.2	↓	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
10.6.20	900	MW-101	15.10	6.71	24.7	1734	2.0	-311.8	5.2	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-105
Event: 2H20
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: AB (163)

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	
10/6/20	1450	NP	11.18	0.00	17.20	14.2	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	
10/6/20	1455	11.23	0.5	7.15	29.0	1374	1.4	-357.7	20.3	clear	*Low-flow groundwater sample:*
	1457	11.23	1.0	6.89	28.1	1318	1.2	-363.5	17.4		(A) peristaltic pump w/ ded tubing
	1500	11.23	1.5	6.87	27.8	1312	1.1	-364.5	15.6		B) ded bladder pump
	1503	11.23	2.0	6.79	27.5	1290	1.0	-363.2	15.0		C) non-ded bladder pump; or
	1505	11.23	2.5	6.78	27.5	1260	0.9	-361.7	14.8		*Standard groundwater sample:*
	1507	11.23	3.0	6.77	27.4	1258	0.8	-360.0	11.5		D) bailer due to limited column; or
	1510	11.23	3.5	6.76	27.4	1256	0.7	-361.7	10.3		E) recovery well cycling sample
	1513	11.23	4.0	6.75	27.4	1254	0.7	-362.6	10.0		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
10/6/20	1515	MW-105	11.23	6.75	27.4	1254	0.7	-362.6	10.0	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									

Located in "Doghouse"; Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-2
Event: 21120
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 (164)

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	
10/6/20	1400	15.60	16.88	1.28	36.13	31.1	yes	yes	yes	yes		Weather: Clear 85°

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	
10/6/20			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			Gauge	Only				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
10/6/20		RW-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-61
Event: 2H20
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 (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	
10/6/20	1300	NP	14.97	0.00	29.30	24.3	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	
10/6/20	1305	15.15	0.5	6.95	28.9	2430	1.1	-359.4	17.6	Clear	Low-flow groundwater sample:
	1307	15.27	1.0	6.92	28.4	2410	0.9	-362.6	13.6		(A) peristaltic pump w/ ded tubing
	1310	15.38	1.5	6.91	28.0	2360	0.9	-364.3	11.4		B) ded bladder pump
	1313	15.46	2.0	6.90	27.5	2340	0.8	-363.1	10.1		C) non-ded bladder pump; or
	1315	15.56	2.5	6.89	27.2	2310	0.9	-358.1	9.8		Standard groundwater sample:
	1320	15.66	3.0	6.89	27.2	2300	0.9	-357.1	6.0		D) bailer due to limited column; or
	1325	15.76	3.5	6.88	27.2	2300	1.0	-355.0	5.6		E) recovery well cycling sample
	1330	15.80	4.0	6.87	27.2	2310	1.0	-354.7	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
10/6/20	1335	MW-61	15.80	6.87	27.2	2310	1.0	-354.7	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62
Event: 2H20
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 (166)

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	
10-6-20	1510	NP	17.56	0.00	29.50	21.3	Yes	Yes	Yes	Yes		Weather: Clear 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	
10-6-20	1515	17.75	0.5	6.81	23.5	2680	1.9	-331.4	10.8	Gray Tint/Clear	*Low-flow groundwater sample:*
	1518	17.82	1.0	6.75	23.3	2650	1.6	-338.6	9.8	Odor	(A) peristaltic pump w/ ded tubing
	1520	17.89	1.5	6.71	23.1	2630	1.5	-342.5	9.3		B) ded bladder pump
	1523	17.97	2.0	6.68	22.8	2620	1.5	-345.6	8.6		C) non-ded bladder pump; or
	1525	18.06	2.5	6.65	22.5	2610	1.4	-347.8	8.2		*Standard groundwater sample:*
	1528	18.12	3.0	6.62	22.4	2590	1.3	-350.6	8.5		D) bailer due to limited column; or
	1530	18.19	3.5	6.59	22.4	2580	1.3	-352.4	8.1		E) recovery well cycling sample
	1533	18.22	4.0	6.57	22.3	2570	1.3	-353.1	7.8		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
10-6-20	1535	MW-62	18.22	6.57	22.3	2570	1.3	-353.1	7.8	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

[New well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-62R
Event: 2H20
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 (166.1)

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	
10-6-20	1555	NP	17.29	0.00	24.51	22.51	Yes	Yes	Yes	Yes		Weather: Clear 80s
						(screen:	5-25 Ft-bgs)					

(Intake = 2 ft off 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	
10-6-20	1600	17.41	0.5	6.68	24.5	2260	2.1	-324.1	12.4	Gray tint/clear	*Low-flow groundwater sample:*
	1603	17.49	1.0	6.65	24.3	2250	1.8	-317.5	11.5	small gray particles	(A) peristaltic pump w/ ded tubing
	1605	17.51	1.5	6.63	24.1	2230	1.7	-313.2	10.8	↓	B) ded bladder pump
	1607	17.51	2.0	6.62	23.8	2230	1.5	-310.8	10.2	↓	C) non-ded bladder pump; or
	1610	17.51	2.5	6.62	23.7	2220	1.4	-308.4	9.6	↓	*Standard groundwater sample:*
	1612	17.52	3.0	6.62	23.7	2220	1.4	-303.6	9.1	Gray tint/clear	D) bailer due to limited column; or
	1615	17.52	3.5	6.61	23.6	2210	1.3	-300.5	8.4	↓	E) recovery well cycling sample
↓	1617	17.52	4.0	6.61	23.6	2200	1.3	-298.8	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
												Lab: Pace National, Mt. Juliet, TN
10-6-20	1620	MW-62R	17.52	6.61	23.6	2200	1.3	-298.8	8.1	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-93
Event: 2H20
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: TR (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	
10/6/20	1420	11.86	11.90	0.00	20.23	15.9	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Gauge	Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-43
Event: 2H20
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: RSM (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	
10.6.20	1445	NP	15.85	0.00	19.67	16.5	Yes	Yes	Yes	Yes		Weather: Sunny 90'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	
10.6.20	1450	15.91	0.5	6.90	27.4	3330	3.2	-371.5	12.8	Clear / Colorless	*Low-flow groundwater sample:*
↓	1452	15.95	1.0	6.85	27.1	3270	2.6	-377.1	10.3	↓	(A) peristaltic pump w/ ded tubing
	1455	15.99	1.5	6.83	27.0	3240	2.2	-379.6	9.2		B) ded bladder pump
	1457	16.02	2.0	6.80	27.0	3200	2.0	-380.2	9.0		C) non-ded bladder pump; or
	1500	16.04	2.5	6.78	26.8	3180	1.8	-380.8	8.6		*Standard groundwater sample:*
	1502	16.05	3.0	6.76	26.8	3150	1.7	-381.4	8.1		D) bailer due to limited column; or
	1505	16.05	3.5	6.76	26.9	3130	1.7	-382.2	7.5		E) recovery well cycling sample
↓	1507	16.06	4.0	6.75	26.8	3120	1.6	-382.7	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
10.6.20	1510	MW-43	16.06	6.75	26.8	3120	1.6	-382.7	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137
Event: 2H20
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: RJM (169)

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	
10-6-20	1405	13.41	14.97	1.56	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	
10-6-20			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	Not Sampled due to LNAPL				≥ 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
10-6-20		MW-137								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

[New well installed pre -2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-137A
Event: 2H20
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: RJM

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	
10.6.20	1425	13.49	14.67	1.13	14.88	NS	yes	yes	yes	yes		Weather: Sunny 90's
						Intake at	base of well	(if not	dry)	if	no LNAPL)	

Screen: 5.5 - 15.5 ft-bgs

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	
10.6.20			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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138
Event: 2H20
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: RJM (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	
10.6.20	1330	14.81	17.88	3.07	24.81	19.8	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	
10.6.20			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
												Lab: Pace National, Mt. Juliet, TN
10.6.20		MW-138								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

[New Well installed pre-2H20]

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-138A
Event: 2H20
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: RJM

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	
10-6-20	1345	14.59	NM	0.44	15.03	NS	Yes	Yes	Yes	Yes		Weather: Sunny 80's
						Intake at base of well (if not dry)						

Well Purging Record

* LNAPL present to base of well

Screen: 5.5-15.5 ft-bgs

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	
10-6-20			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 Σ				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
10-6-20		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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-23
Event: 2H20
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: TAB/OJD (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	
10/6/20	1230	NP	18.31	0.00	23.10	17.9	yes	yes	yes	yes		Weather: Clear/ 80s
10/6/20	1640	NP	18.31	0.00	23.10							

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	
10/6/20	1645	18.39	0.5	6.92	24.1	2380	1.7	-312.3	13.5	Yellow tint/Clear	*Low-flow groundwater sample:*
	1648	18.43	1.0	6.92	23.8	2360	1.5	-310.7	11.6	odor	(A) peristaltic pump w/ ded tubing
	1650	18.46	1.5	6.92	23.7	2370	1.3	-316.4	10.8		B) ded bladder pump
	1653	18.49	2.0	6.92	23.5	2350	1.2	-319.3	9.7		C) non-ded bladder pump; or
	1655	18.53	2.5	6.93	23.4	2340	1.2	-323.1	9.1		*Standard groundwater sample:*
	1658	18.55	3.0	6.93	23.3	2340	1.2	-327.2	8.3		D) bailer due to limited column; or
	1700	18.58	3.5	6.93	23.2	2330	1.1	-331.5	7.8		E) recovery well cycling sample
	1703	18.61	4.0	6.93	23.2	2320	1.1	-334.4	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
10/6/20	1705	MW-23	18.61	6.93	23.2	2320	1.1	-334.4	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

Monitoring Well Purging and Sampling Record

+ Dup = TEL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-4
Event: 2H20
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 (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					Comments
							Cap	Casing	Well Secured	Label	Other	
10/6/20	930	NP	14.80	0.00	27.27	22.2	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	
10/6/20	935	15.04	0.5	6.54	24.7	3150	1.5	-299.0	0.7	Clear	*Low-flow groundwater sample:*
	937	15.04	1.0	6.52	24.5	3160	1.2	-300.5	0.7		(A) peristaltic pump w/ ded tubing
	940	15.04	1.5	6.50	24.2	3170	1.1	-301.9	0.6		B) ded bladder pump
	943	15.04	2.0	6.47	24.2	3190	0.9	-306.3	0.6		C) non-ded bladder pump; or
	945	15.04	2.5	6.47	24.1	3200	0.9	-307.6	0.5		*Standard groundwater sample:*
	947	15.04	3.0	6.47	24.1	3200	0.8	-308.2	0.4		D) bailer due to limited column; or
	950	15.04	3.5	6.48	24.2	3210	0.8	-307.9	0.4		E) recovery well cycling sample
	953	15.04	4.0	6.48	24.2	3210	0.8	-308.1	0.5		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
10/6/20	955	TEL-4	15.04	6.48	24.2	3210	0.8	-308.1	0.5	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
	1100	DUP-TEL-01	15.04	6.48	24.2	3210	0.8	-308.1	0.5	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-3
Event: 2420
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 (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	
10/6/20	820	NP	15.90	0.00	27.19	22.2	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	
10/6/20	825	16.10	0.5	6.57	23.9	2430	4.1	-347.9	2.2	Clear/Odor	Low-flow groundwater sample:
	827	16.12	1.0	6.56	23.8	2400	3.9	-347.7	1.9		(A) peristaltic pump w/ ded tubing
	830	16.12	1.5	6.54	23.7	2310	3.8	-350.9	1.5		B) ded bladder pump
	833	16.12	2.0	6.53	23.6	2300	3.6	-351.0	1.4		C) non-ded bladder pump; or
	835	16.12	2.5	6.53	23.5	2250	3.2	-355.5	1.3		Standard groundwater sample:
	837	16.12	3.0	6.52	23.5	2260	3.1	-355.7	1.3		D) bailer due to limited column; or
	840	16.12	3.5	6.52	23.5	2250	3.1	-355.9	1.0		E) recovery well cycling sample
↓	843	16.12	4.0	6.52	23.4	2250	3.0	-356.8	0.5	↓ ↓	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
10/6/20	845	TEL-3	16.12	6.52	23.4	2250	3.0	-356.8	0.5	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									

Monitoring Well Purging and Sampling Record

+ EB-TEL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-2
Event: 2H20
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 (174)

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	
10/6/20	900	16.81	17.25	0.38	27.20	22.1	YES	YES	YES	YES		Weather: Clear 60s
		(16.87)										

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
		TEL-2								Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓	910	EB-TEL-01	NA	→						same	same	
		(collected over decanned gauging probe)										

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

Monitoring Well Purging and Sampling Record

+ Trip Blank - TEL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: TEL-1
Event: 2H20
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 (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	
10/6/20	7410	16.14	16.80	0.66	27.00	22.9	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	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
		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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-39
Event: 2H20
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: RJM (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	
10.6.20	945	NP	16.84	0.00	25.44	20.4	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	
10.6.20	950	16.93	0.5	7.26	25.7	2640	3.1	-269.1	10.8	Clear / Colorless	*Low-flow groundwater sample:*
	952	16.95	1.0	7.25	25.5	2670	2.8	-284.5	9.2		(A) peristaltic pump w/ ded tubing
	955	16.96	1.5	7.28	25.5	2690	2.3	-287.3	8.6		B) ded bladder pump
	957	16.96	2.0	7.28	25.4	2710	2.0	-290.1	7.9		C) non-ded bladder pump; or
	1000	16.96	2.5	7.27	25.2	2720	1.8	-292.6	7.5		*Standard groundwater sample:*
	1002	16.96	3.0	7.26	25.2	2710	1.7	-295.3	7.0		D) bailer due to limited column; or
	1005	16.96	3.5	7.26	25.1	2720	1.7	-297.8	6.7		E) recovery well cycling sample
	1007	16.96	4.0	7.26	25.2	2730	1.6	-299.1	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
10.6.20	1010	MW-39	16.96	7.26	25.2	2730	1.6	-299.1	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-98
Event: 2H20
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	
10/6/20	1040	NP	13.54	0.00	25.60	21.5	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	
10/6/20	1045	13.59	0.5	6.75	27.7	2940	2.0	-360.7	3.9	clear / odor	*Low-flow groundwater sample:*
	1047	13.59	1.0	6.65	26.5	2850	1.2	-365.1	2.2		(A) peristaltic pump w/ ded tubing
	1050	13.59	1.5	6.63	26.1	2750	1.1	-366.8	1.3		B) ded bladder pump
	1053	13.60	2.0	6.62	25.9	2710	1.0	-370.9	1.2		C) non-ded bladder pump; or
	1055	13.60	2.5	6.62	25.7	2680	0.9	-375.3	1.2		*Standard groundwater sample:*
	1057	13.61	3.0	6.61	25.7	2670	0.8	-378.2	1.0		D) bailer due to limited column; or
	1100	13.61	3.5	6.61	25.7	2660	0.8	-378.7	0.6		E) recovery well cycling sample
	1103	13.61	4.0	6.62	25.6	2650	0.8	-380.0	0.5		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
10/6/20	1105	MW-98	13.61	6.62	25.6	2650	0.8	-380.0	0.5	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-10
Event: 2H20
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

(178)

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:

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	
10/6/20	750	NP	16.76	0.00	22.49	17.5	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			Gauge Only					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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-40
Event: 2H20
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	
10/6/20	1200	NP	15.40	0.00	24.75	21.8	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	
			0.5								*Low-flow groundwater sample:*
			1.0								(A) peristaltic pump w/ ded tubing
			1.5								B) ded bladder pump
			2.0			Gauge Only					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								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-41
Event: 2H20
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: RJM (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	
10.6.20	930	NP	14.74	0.00	21.56	18.6	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								B) ded bladder pump
			2.0								C) non-ded bladder pump; or
			2.5			Gauge	Only				*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-9
Event: 2420
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

(181)

Well Inspection Information The former RW-9 is permanently covered by heavy steel box, ~50' East of former RW-9, per Navajo. Initials: RJM

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	
10-6-20	935	NP	16.75	0.00	21.83	16.8	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								C) non-ded bladder pump; or
			2.5				Gauge Only				*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-42
Event: 2H20
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	
10/6/20	1150	NP	17.04	0.00	24.32	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	
			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				Gauge	Only			*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-29
Event: 2H20
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: TAB (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	
10/6/20	1220	NP	22.19	0.00	24.22	19.2	yes	yes	yes	yes		Weather: Clear 86°
10/7/20	900	NP	22.22	0.00	24.22	↳ lowered intake to 23.5						

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	
10/7/20	905	22.24	0.5	7.16	22.6	3050	2.7	-255.8	3.8	clear	*Low-flow groundwater sample:*
	907	22.24	1.0	7.21	22.6	3060	2.0	-271.8	3.7		(A) peristaltic pump w/ ded tubing
	910	22.24	1.5	7.23	22.6	3060	1.7	-280.6	3.2		B) ded bladder pump
	913	22.24	2.0	7.25	22.7	3060	1.4	-298.5	2.9		C) non-ded bladder pump; or
	915	22.24	2.5	7.25	22.7	3060	1.2	-303.5	2.4		*Standard groundwater sample:*
	917	22.24	3.0	7.25	22.8	3070	1.2	-306.9	2.5		D) bailer due to limited column; or
	920	22.24	3.5	7.23	22.8	3070	1.2	-308.1	2.3		E) recovery well cycling sample
	923	22.24	4.0	7.23	22.9	3070	1.2	-309.9	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
10/7/20	925	MW-29	22.24	7.23	22.9	3070	1.2	-309.9	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#16B
Event: 2H20
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: RSM (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	
10.6.20	925	NM	Dry	NA	17.70	14.7	Yes	Yes	Yes	Yes	*Cracked Pad	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

Gauge Only

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

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

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-30
Event: 2H20
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: TAB

(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	
10/6/20	1130	NP	17.71	0.00	23.50	NS	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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-56
Event: 2H20
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: TAB (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	
10/6/20	1140	NP	18.51	0.00	26.50	21.4	Yes	yes	yes	yes		Weather: cl/cal 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				Gauge Only				*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

Located under yellow barricade

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-49
Event: 2H20
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: RJM (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	
10.6.20	1235	NP	14.15	0.00	33.07	27.8	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	
10.6.20	1240	14.32	0.5	6.62	26.3	2920	3.3	-366.4	16.1	Clear / Colorless	*Low-flow groundwater sample:*
↓	1242	14.38	1.0	6.60	26.1	2910	3.0	-367.6	13.3	↓	(A) peristaltic pump w/ ded tubing
	1245	14.40	1.5	6.58	26.0	2910	2.8	-367.9	9.9		B) ded bladder pump
	1247	14.40	2.0	6.58	26.0	2900	2.7	-368.2	9.1		C) non-ded bladder pump; or
	1250	14.40	2.5	6.57	25.9	2890	2.6	-369.4	8.7		*Standard groundwater sample:*
	1252	14.40	3.0	6.56	25.9	2880	2.6	-369.9	8.4		D) bailer due to limited column; or
	1255	14.40	3.5	6.56	25.8	2870	2.5	-370.5	7.6		E) recovery well cycling sample
↓	1257	14.40	4.0	6.55	25.7	2870	2.5	-371.2	7.5	↓	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
10.6.20	1300	MW-49	14.40	6.55	25.7	2870	2.5	-371.2	7.5	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									

May get covered with gravel

Monitoring Well Purging and Sampling Record

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-106
Event: 2Q20
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: RJM

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	
10.6.20	1035	NP	11.81	0.00	22.80	17.5	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	
10.6.20	1040	11.90	0.5	6.63	25.9	3320	3.9	-375.2	19.2	clear / colorless	*Low-flow groundwater sample:*
↓	1042	11.94	1.0	6.59	26.0	3300	3.8	-383.9	17.4	↓	(A) peristaltic pump w/ ded tubing
	1045	11.97	1.5	6.57	25.9	3300	3.0	-386.4	12.6		B) ded bladder pump
	1047	11.99	2.0	6.56	25.8	3290	2.5	-388.8	9.2		C) non-ded bladder pump; or
	1050	12.00	2.5	6.54	25.8	3280	2.1	-390.3	8.6		*Standard groundwater sample:*
	1052	12.01	3.0	6.54	25.7	3310	2.0	-391.4	8.5		D) bailer due to limited column; or
	1055	12.01	3.5	6.53	25.6	3320	1.9	-391.8	8.2		E) recovery well cycling sample
↓	1057	12.02	4.0	6.53	25.6	3320	1.9	-392.9	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
												Lab: Pace National, Mt. Juliet, TN
10.6.20	1200	MW-106	12.02	6.53	25.6	3320	1.9	-392.9	7.3	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-45
Event: 2H20
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: TAB (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	
10/6/20	1545	NP	13.20	0.00	15.05	12.3 *	yes	yes	yes	yes		Weather: Clear 80°

Well Purging Record

* Sample intake lowered due to DTW

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	
10/6/20	1550	13.24	0.5	7.57	25.8	2730	1.2	-220.4	7.7	Clear	*Low-flow groundwater sample:*
	1553	13.24	1.0	7.56	25.1	2740	1.1	-222.0	6.8		(A) peristaltic pump w/ ded tubing
	1555	13.24	1.5	7.55	25.0	2730	1.1	-222.7	6.5		B) ded bladder pump
	1557	13.24	2.0	7.52	24.5	2720	1.0	-224.2	5.2		C) non-ded bladder pump; or
	1600	13.24	2.5	7.51	24.4	2720	1.0	-225.3	4.8		*Standard groundwater sample:*
	1603	13.24	3.0	7.50	24.3	2710	0.9	-225.7	4.0		D) bailer due to limited column; or
	1605	13.24	3.5	7.49	24.2	2710	0.9	-226.1	3.2		E) recovery well cycling sample
	1607	13.24	4.0	7.48	24.2	2720	0.9	-226.3	3.0		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
10/6/20	1610	MW-45	13.24	7.48	24.2	2720	0.9	-226.3	3.0	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

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: 2H20
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: CJH (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					Comments
							Cap	Casing	Well Secured	Label	Other	
10.6.20	1030	NP	14.51	0.00	29.60	24.6	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	
10.6.20	1035	14.56	0.5	6.76	23.5	4180	1.7	-134.1	15.8	Colorless; clear;	*Low-flow groundwater sample:*
↓	1037	14.56	1.0	6.74	23.1	4190	1.7	-141.3	14.0	sl. odor	(A) peristaltic pump w/ ded tubing
	1040	14.56	1.5	6.72	22.9	4180	1.7	-147.3	12.1	↓	B) ded bladder pump
	1042	14.56	2.0	6.71	22.7	4180	1.7	-151.4	11.4		C) non-ded bladder pump; or
	1045	14.56	2.5	6.71	22.6	4190	1.6	-153.1	10.6		*Standard groundwater sample:*
	1047	14.56	3.0	6.70	22.6	4190	1.6	-152.6	9.7		D) bailer due to limited column; or
	1050	14.56	3.5	6.70	22.5	4190	1.6	-151.2	9.4		E) recovery well cycling sample
↓	1052	14.56	4.0	6.70	22.5	4190	1.6	-150.0	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
10.6.20	1055	mw-139	14.56	6.70	22.5	4190	1.6	-150.0	9.0	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-50
Event: 2H20
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: CJH

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	
10.6.20	1100	NP	15.41	0.00	28.22	24.1	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	
10.6.20	1105	15.42	0.5	6.96	26.0	8320	1.4	-38.5	11.9	Colorless; Clear	*Low-flow groundwater sample:*
↓	1107	15.42	1.0	6.86	25.3	8700	1.5	-21.3	10.1	↓	(A) peristaltic pump w/ ded tubing
	1110	15.42	1.5	6.84	25.2	8750	1.5	-15.2	9.8		B) ded bladder pump
	1112	15.42	2.0	6.83	25.2	8780	1.5	-11.2	9.4		C) non-ded bladder pump; or
	1115	15.42	2.5	6.83	25.1	8790	1.5	-9.0	9.1		*Standard groundwater sample:*
	1117	15.42	3.0	6.82	25.1	8800	1.6	-7.7	8.0		D) bailer due to limited column; or
	1120	15.42	3.5	6.82	25.0	8810	1.6	-6.4	7.8		E) recovery well cycling sample
↓	1122	15.42	4.0	6.81	25.0	8820	1.6	-6.1	7.0	↓	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
10.6.20	1125	MW-50	15.42	6.81	25.0	8820	1.6	-6.1	7.0	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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-97
Event: 2H20
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: CJH (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	
10.6.20	1140	NM	NM	NM	21.20	5' aff	NA	NA	NA	NA		Weather: Clear, 80's
						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	
			0.5								*Low-flow groundwater sample:*
			1.0		Extensively searched for, but:						(A) peristaltic pump w/ ded tubing
			1.5		Due to heavy construction in area;						B) ded bladder pump
			2.0		Well was unable to be located.						C) non-ded bladder pump; or
			2.5		Area has been graded with						*Standard groundwater sample:*
			3.0		excess soil and pea gravel.						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-97				Not sampled				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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-92
Event: 2H20
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: CJH (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	
10.6.20	1150	14.68	17.69	3.01	22.60	17.6	Yes	Yes	Yes	Yes		Weather: Clear, 80's

Well Purging Record

*LNAPL thickness Confirmed

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	; LNAPL	≥ 0.03.			(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-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

Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-1
Event: 2H20
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 In "doghouse"; gauge/sample through 1-in guide-pipe

Initials: CJH (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	
10.6.20	1200	17.61	18.21	0.60	35.39	30.4	Yes	Yes	Yes	Yes		Weather: Clear, 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			Gauge	Only				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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-91
Event: 2H20
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

(195)

Initials: CJH

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	
10.6.20	1210	14.87	14.91	0.04	25.35	17.9	Yes	Yes	Yes	Yes		Weather: Clear; 80's
				*								

* LNAPL Confirmed

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; LNAPL ≥ 0.03.					(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-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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-90
Event: 2H20
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: CJH (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	
10.6.20	1220	NP	14.47	0.00	22.80	21.5	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	
10.6.20	1225	14.56	0.5	6.95	25.8	4210	1.4	-319.5	12.1	Colorless; clear;	*Low-flow groundwater sample:*
↓	1227	14.61	1.0	6.90	24.9	3870	1.2	-336.7	10.7	Odor ↓	(A) peristaltic pump w/ ded tubing
	1230	14.65	1.5	6.78	24.1	3670	1.4	-349.6	9.5		B) ded bladder pump
	1232	14.69	2.0	6.72	23.9	3610	1.4	-356.1	9.0		C) non-ded bladder pump; or
	1235	14.73	2.5	6.69	23.8	3580	1.5	-360.1	8.6		*Standard groundwater sample:*
	1237	14.76	3.0	6.67	23.7	3560	1.6	-364.4	8.1		D) bailer due to limited column; or
	1240	14.78	3.5	6.66	23.7	3550	1.6	-367.1	7.5		E) recovery well cycling sample
↓	1242	14.80	4.0	6.65	23.6	3540	1.6	-370.2	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
10.6.20	1245	MW-90	14.80	6.65	23.6	3540	1.6	-370.2	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-96
Event: 2H20
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: CJH (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	
10.6.20	1425	NP	15.03	0.00	25.57	21.2	Yes	Issue	NO	Yes		Weather: Clear, 80's
									Lock			

Well Purging Record

* well was struck prior to 2H17 event. Hinge is broken and well not secure.

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	
10.6.20	1430	15.05	0.5	6.76	26.7	2150	1.6	-363.1	9.4	Colorless; Clear;	*Low-flow groundwater sample:*
	1432	15.06	1.0	6.72	25.8	2150	1.6	-368.2	9.0	sl. odor	(A) peristaltic pump w/ ded tubing
	1435	15.06	1.5	6.70	25.4	2160	1.7	-369.2	8.4		B) ded bladder pump
	1437	15.06	2.0	6.69	25.3	2160	1.6	-369.4	8.1		C) non-ded bladder pump; or
	1440	15.06	2.5	6.69	25.2	2170	1.5	-368.1	7.7		*Standard groundwater sample:*
	1442	15.06	3.0	6.68	25.2	2170	1.5	-367.4	7.2		D) bailer due to limited column; or
	1445	15.06	3.5	6.68	25.1	2180	1.4	-366.0	6.9		E) recovery well cycling sample
	1447	15.06	4.0	6.67	25.1	2180	1.4	-365.1	6.5		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
10.6.20	1450	MW-96	15.06	6.67	25.1	2180	1.4	-365.1	6.5	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

Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-94
Event: 2H20
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: CJH (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	
10.6.20	1505	16.94	22.45	5.51	23.45	16.0	Yes	Yes	Yes	Yes		Weather: Clear, 90's
				*								

Well Purging Record * Thickness Confirmed

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; LNAPL	>	0.03'			(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
		MW-94				Not	Sampled			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									

Bagged tube

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-8
Event: 2Q20
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 In "doghouse"; gauge/sample through 1-in. guide-pipe.

Initials: CJH (199)

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	
10.6.20	1515	18.17	21.72	3.55	37.22	35.2	Yes	Yes	Yes	Yes		Weather: Clear, 90'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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-67
Event: 2H20
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: CJH (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	
10.6.20	1525	14.42	16.28	1.86	27.30	19.9	Yes	Yes	Yes	Yes		Weather: Clear, 90'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		Not	Sampled; LNAPL ≥ 0.03'.					(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-67				Not	Sampled			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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-95
Event: 2H20
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: CJH (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	
10.6.20	1535	NP	17.13	0.00	25.37	20.4	Yes	Yes	Yes	Yes		Weather: Clear, 90'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				Gauge Only				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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-7
Event: 2H20
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 In "doghouse"; gauge/sample through 1-in guide-pipe.

Initials: CJH (202)

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	
10.6.20	1550	18.79	20.95	2.16	37.00	32.0	Yes	Yes	Yes	Yes		Weather: Clear, 90'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

Gauge Only

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-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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-34A
Event: 2H20
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: CJH (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	
10.6.20	1605	15.01	19.26	4.25	19.26	10.8	Yes	Yes	No Lock	Yes		Weather: Clear, 90's

Well Purging Record

* LNAPL Confirmed

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	
10.6.20			0.5					≥			*Low-flow groundwater sample:*
			1.0		Not	Sampled; LNAPL 0.03!					(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
		NCL-34A				Not	Sampled			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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-33
Event: 2H20
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: CJH (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	
10.6.20	1620	NP	14.04	0.00	19.60	17.7	Yes	Yes	Yes	Yes		Weather: Clear, 90's
10.7.20	1005	NP	14.04	0.00	19.60							

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	
10.7.20	1010	14.24	0.5	6.48	22.6	4690	2.1	-89.3	45.8	sl. cloudy;	*Low-flow groundwater sample:*
↓	1012	14.30	1.0	6.45	22.6	4750	1.9	-87.1	32.1 ↓	orange particles	(A) peristaltic pump w/ ded tubing
	1015	14.35	1.5	6.45	22.7	4760	1.8	-82.3	23.0	Colorless; clear;	B) ded bladder pump
	1017	14.39	2.0	6.45	22.7	4760	1.7	-79.3	16.0	orange particles	C) non-ded bladder pump; or
	1020	14.43	2.5	6.45	22.7	4760	1.7	-75.1	12.7		*Standard groundwater sample:*
	1022	14.45	3.0	6.44	22.8	4770	1.6	-72.6	10.2	↓	D) bailer due to limited column; or
	1025	14.47	3.5	6.44	22.8	4770	1.6	-70.2	9.6		E) recovery well cycling sample
↓	1027	14.49	4.0	6.44	22.8	4770	1.6	-68.4	9.1		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
10.7.20	1030	NCL-33	14.49	6.44	22.8	4770	1.6	-68.4	9.1	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-44
Event: 2H20
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: CJH (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	
10.6.20	1630	NP	13.81	0.00	21.34	16.3	Yes	Yes	Yes	Yes		Weather: Clear, 60's
10.7.20	925	NP	13.82	0.00								

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	
10.7.20	930	13.84	0.5	6.66	21.1	3040	1.9	-167.1	9.1	Colorless; Clear	*Low-flow groundwater sample:*
	932	13.84	1.0	6.64	21.0	3050	1.9	-177.3	8.6		(A) peristaltic pump w/ ded tubing
	935	13.84	1.5	6.63	21.0	3040	1.8	-183.8	8.0		B) ded bladder pump
	937	13.84	2.0	6.63	20.9	3040	1.8	-189.5	7.4		C) non-ded bladder pump; or
	940	13.84	2.5	6.63	20.9	3040	1.7	-197.6	7.0		*Standard groundwater sample:*
	942	13.84	3.0	6.62	20.8	3050	1.7	-201.4	6.5		D) bailer due to limited column; or
	945	13.84	3.5	6.62	20.8	3050	1.7	-204.6	5.9		E) recovery well cycling sample
	947	13.84	4.0	6.61	20.8	3050	1.7	-207.1	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
10.7.20	950	NCL-44	13.84	6.61	20.8	3050	1.7	-207.1	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

Monitoring Well Purging and Sampling Record

+EB-NCL-01

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-32
Event: 2H20
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: CJH (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	
10.6.20	1635	NP	13.96	0.00	20.04	18.1	Yes	Yes	Yes	Yes		Weather: Clear, 100's
10.7.20	840	NP	13.97	0.00	20.04							

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	
10.7.20	845	14.07	0.5	7.29	20.7	3130	2.0	11.2	19.6	Colorless; clear	*Low-flow groundwater sample:*
↓	847	14.08	1.0	6.98	20.6	3140	1.7	18.3	17.1	↓	(A) peristaltic pump w/ ded tubing
	850	14.08	1.5	6.87	20.5	3140	1.7	22.7	15.4		B) ded bladder pump
	852	14.09	2.0	6.83	20.5	3140	1.7	26.2	13.7		C) non-ded bladder pump; or
	855	14.09	2.5	6.81	20.4	3140	1.6	28.1	12.0		*Standard groundwater sample:*
	857	14.09	3.0	6.80	20.4	3150	1.6	29.6	11.2		D) bailer due to limited column; or
	900	14.09	3.5	6.79	20.5	3150	1.6	30.4	10.4		E) recovery well cycling sample
↓	902	14.09	4.0	6.78	20.5	3150	1.6	31.3	9.6	↓	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
10.7.20	905	NCL-32	14.09	6.78	20.5	3150	1.6	31.3	9.6	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	915	EB-NCL-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

*Access on foot

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-108
Event: 2H20
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: CJH (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	
10.6.20	1345	NP	17.89	0.00	27.74	22.5	Yes	Yes	Yes	Yes		Weather: Clear, 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	
10.6.20	1350	17.98	0.5	6.92	28.0	1729	1.5	-374.5	21.7	Yellow Color;	*Low-flow groundwater sample:*
↓	1352	18.07	1.0	6.85	27.5	1680	1.3	-382.1	18.0	Clear; odor	(A) peristaltic pump w/ ded tubing
	1355	18.14	1.5	6.83	27.2	1657	1.4	-384.9	15.6	↓	B) ded bladder pump
	1357	18.19	2.0	6.83	27.0	1649	1.5	-385.1	13.2		C) non-ded bladder pump; or
	1400	18.24	2.5	6.82	26.9	1643	1.5	-386.7	12.1		*Standard groundwater sample:*
	1402	18.29	3.0	6.81	26.8	1639	1.4	-387.9	10.4		D) bailer due to limited column; or
	1405	18.33	3.5	6.80	26.7	1636	1.4	-388.4	9.8		E) recovery well cycling sample
↓	1407	18.37	4.0	6.80	26.7	1632	1.4	-389.6	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
10.6.20	1410	MW-108	18.37	6.80	26.7	1632	1.4	-389.6	9.0	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

SW of NCL field

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-31
Event: 2H20
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: CJH (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	
10.6.20	1300	NP	14.44	0.00	20.16	17.4	*	Yes	Yes	Yes		Weather: Clear, 80's
							Issue					

* Cannot close lid and fit cap; 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	
10.6.20	1305	14.60	0.5	7.37	27.4	3060	1.2	-306.1	8.0	Colorless; Clear	*Low-flow groundwater sample:*
↓	1307	14.61	1.0	7.26	26.7	2940	1.2	-309.9	7.4	↓	(A) peristaltic pump w/ ded tubing
	1310	14.61	1.5	7.17	26.5	2880	1.3	-304.4	7.1		B) ded bladder pump
	1312	14.62	2.0	7.14	26.3	2800	1.2	-299.2	6.5		C) non-ded bladder pump; or
	1315	14.62	2.5	7.11	26.2	2760	1.2	-294.6	6.2		*Standard groundwater sample:*
	1317	14.62	3.0	7.09	26.1	2740	1.2	-291.5	6.0		D) bailer due to limited column; or
	1320	14.62	3.5	7.07	26.0	2720	1.2	-288.6	5.6		E) recovery well cycling sample
↓	1322	14.62	4.0	7.05	26.0	2710	1.2	-286.1	5.4	↓	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
10.6.20	1325	NCL-31	14.62	7.05	26.0	2710	1.2	-286.1	5.4	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									

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

Navajo Refinery Company
Artesia Refinery
Artesia, New Mexico

Well: MW-19
Event: 2H20
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: CJH

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	
10.6.20	1340	NP	14.80	0.00	22.08	NS	Yes	Yes	Issue *	Yes		Weather: Clear, 80's

* Needs 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				Gauge Only				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								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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-55
Event:
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: BRH / TAB (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	
10-6-20	1755	NP	16.64	0.00	26.85	21.7	yes	yes	yes	yes		Weather: Clear
10-7-20	800	NP	16.66	0.00	26.85							

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	
10-7-20	805	16.70	0.5	6.95	20.5	2990	3.3	15.6	4.5	Clear	*Low-flow groundwater sample:*
	807	16.70	1.0	6.81	20.6	2980	2.8	22.2	3.2		(A) peristaltic pump w/ ded tubing
	810	16.70	1.5	6.73	20.7	2940	2.6	29.3	2.5		B) ded bladder pump
	813	16.70	2.0	6.68	20.8	2940	2.4	33.4	2.1		C) non-ded bladder pump; or
	815	16.70	2.5	6.63	20.8	2930	2.2	36.2	1.9		*Standard groundwater sample:*
	817	16.70	3.0	6.62	20.8	2910	2.1	37.2	1.7		D) bailer due to limited column; or
	820	16.70	3.5	6.60	20.9	2900	2.0	38.3	1.5		E) recovery well cycling sample
↓	823	16.70	4.0	6.59	20.9	2900	2.0	38.8	1.2	↓	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
10-7-20	825	MW-55	16.70	6.59	20.9	2900	2.0	38.8	1.2	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: RW-#17A
Event: 2H20
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: CJH (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	
10.6.20	1650	Dry	Dry	NA	16.01	14.0	Yes	Yes	Yes	Yes		Weather: Clear, 90'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			Gauge Only					*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-18
Event: 2H20
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: CJH (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	
10.6.20	1645	NP	15.85	0.00	22.20	20.2	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				Gauge	Only			*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

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54A
Event: 2H20
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: CJH (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	
10.6.20	905	NP	16.50	0.00	31.30	23.6	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	
10.6.20	910	16.51	0.5	6.63	21.5	2530	2.1	53.1	8.7	Colorless; Clear	*Low-flow groundwater sample:*
↓	912	16.51	1.0	6.57	21.5	2550	2.1	51.4	8.2	↓	(A) peristaltic pump w/ ded tubing
	915	16.51	1.5	6.54	21.6	2560	2.1	50.1	7.9		B) ded bladder pump
	917	16.51	2.0	6.53	21.7	2560	2.1	43.2	7.5		C) non-ded bladder pump; or
	920	16.51	2.5	6.52	21.7	2570	2.0	39.6	7.1		*Standard groundwater sample:*
	922	16.51	3.0	6.51	21.7	2580	2.0	36.4	6.7		D) bailer due to limited column; or
	925	16.51	3.5	6.50	21.8	2590	1.9	34.2	6.6		E) recovery well cycling sample
↓	927	16.51	4.0	6.50	21.7	2590	1.9	32.9	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
												Lab: Pace National, Mt. Juliet, TN
10.6.20	930	MW-54A	16.51	6.50	21.7	2590	1.9	32.9	6.2	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									

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-54B
Event: 2H20
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

214

Initials: CJH

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	
10.6.20	940	NP	16.52	0.00	46.80	41.8	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			Gauge	Only				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

Monitoring Well Purging and Sampling Record

+ DUP-NCL-01
+ Trip Blank-NCL-01 ✓

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: NCL-49
Event: 2H20
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: CJH (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	
10.6.20	945	NP	19.62	0.00	32.18	27.2	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	
10.6.20	950	19.64	0.5	7.00	22.2	3530	2.5	68.9	8.1	Colorless; clear	*Low-flow groundwater sample:*
↓	952	19.64	1.0	6.93	22.0	3560	2.7	72.5	7.7	↓	(A) peristaltic pump w/ ded tubing
	955	19.64	1.5	6.90	21.9	3560	2.7	74.5	7.2		B) ded bladder pump
	957	19.64	2.0	6.89	21.9	3560	2.7	76.2	6.8		C) non-ded bladder pump; or
	1000	19.64	2.5	6.88	21.8	3560	2.6	78.1	6.6		*Standard groundwater sample:*
	1002	19.64	3.0	6.88	21.8	3570	2.6	79.9	6.4		D) bailer due to limited column; or
	1005	19.64	3.5	6.87	21.9	3570	2.6	80.6	5.6		E) recovery well cycling sample
↓	1007	19.64	4.0	6.87	21.9	3570	2.6	81.7	5.2	↓	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
10.6.20	1010	NCL-49	19.64	6.87	21.9	3570	2.6	81.7	5.2	Per COC	Per COC	Lab: Pace National, Mt. Juliet, TN
↓												
↓	1100	DUP-NCL-01	19.64	6.87	21.9	3570	2.6	81.7	5.2	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

(Replacement well for MW-53, that was destroyed by construction activities)

-SCH to remove all ref. to MW-53, after 2H20

Monitoring Well Purging and Sampling Record

Navajo Refining Company
Artesia Refinery
Artesia, New Mexico

Well: MW-53R
Event: 2H20
Area of Concern: NCL

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

* Located ~15.0' North of 70mi marker off HWY 285 northbound.

Hydrologic Monitoring
for TRC
Houston, Texas

Initials: CJH

(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	
10.6.20	825	NP	14.56	0.00	24.05	19.1	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	
10.6.20	830	14.77	0.5	6.84	21.2	2240	3.2	61.1	16.1	Clear; colorless	*Low-flow groundwater sample:*
↓	832	14.85	1.0	6.85	21.4	2260	3.0	64.0	15.0	↓	(A) peristaltic pump w/ ded tubing
↓	835	14.90	1.5	6.85	21.5	2250	2.8	65.7	12.2	↓	B) ded bladder pump
↓	837	14.95	2.0	6.86	21.6	2240	2.7	67.4	9.9	↓	C) non-ded bladder pump; or
↓	840	14.99	2.5	6.86	21.6	2220	2.8	68.4	9.4	↓	*Standard groundwater sample:*
↓	842	15.03	3.0	6.87	21.6	2210	2.8	69.1	8.9	↓	D) bailer due to limited column; or
↓	845	15.07	3.5	6.87	21.7	2200	2.9	70.6	8.5	↓	E) recovery well cycling sample
↓	847	15.11	4.0	6.88	21.7	2190	2.9	71.4	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 Lab: Pace National, Mt. Juliet, TN
10.6.20	850	MW-53R	15.11	6.88	21.7	2190	2.9	71.4	8.0	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									

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
10/6/20	6:40	4.01 / 7.00	1,000	100 %	10.0	242.1	NA	SCH
10-6-20	6:45	4.01/7.00	1,000	100%	10.0	238.7	NA	BRH
10-6-20	6:47	4.01/7.00	1,000	100%	10.0	248.2	NA	TAB
10/6/20	652	4.01 / 7.00	1,000	100 %	10.0	244.1	NA	GDS
10-6-20	655	4.01 / 7.00	1,000	100 %	10.0	212.9	NA	RSM
10-6-20	657	4.01/7.00	1,000	100%	10.0	221.6	NA	OJD
10/6/20	700	4.01/7.00	1,000	100%	10.0	243.7	NA	BJ
10-6-20	702	4.01 / 7.00	1,000	100%	10.0	239.8	NA	MDB
10.6.20	705	4.01/7.00	1,000	100%	10.0	231.0	NA	CJH
10-6-20	708	4.01/7.00	1,000	100%	10.0	239.8	NA	SCD
10/7/20	6:40	4.01/7.00	1,000	100%	10.0	240.9	NA	SCH
10-7-20	642	4.01 / 7.00	1,000	100%	10.0	248.2	NA	MDB
10-7-20	645	4.01/7.00	1,000	100%	10.0	252.2	NA	TAB
10-7-20	648	4.01/7.00	1,000	100%	10.0	239.2	NA	BRH
10-7-20	650	4.01/7.00	1,000	100%	10.0	218.6	NA	OJD
10-7-20	652	4.01 / 7.00	1,000	100%	10.0	213.7	NA	RSM
10-7-20	655	4.01/7.00	1,000	100%	10.0	236.5	NA	SCD
10.7.20	657	4.01/7.00	1,000	100%	10.0	226.4	NA	CJH
10/7/20	701	4.01/7.00	1,000	100%	10.0	237.1	NA	GDS
10/7/20	705	4.01/7.00	1,000	100 %	10.0	252.3	NA	BJ

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: New Wells - Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-Artesia New Wells

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # (Navajo - Artesia)

P.O. # 150726

Collected by (signature):

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

Immediately Packed on Ice N___ Y_X_

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
MW-145	Grab	GW		10/6/20	1130	2	x											-01
MW-146	Grab	GW			1100	2	x											-02
MW-147	Grab	GW			1020	2	x											-03
MW-148	Grab	GW			940	2	x											-04
Dup-01	Grab	GW			1000	2	x											-05
EB-01	Grab	GW			1135	2	x											-06
	Grab	GW																
	Grab	GW																
	Grab	GW																

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

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# L1271213

Tabl J030

Acctnum: TRCATX

Template: T140422

Prelogin:

TSR:

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater

Remarks: Samples returned via FedEx

pH _____ Temp _____

Flow _____ Other _____

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

Relinquished by: (Signature) Scott Ude Date: 10/7/20 Time: 1400

Received by: (Signature) Olivia Tuey 10/8/20 Time: 930

1.1-.2=.9 WW A3

9159 8784 5580

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@trcsolutions.com

Project Description: TEL Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-TEL

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # TEL (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

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

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
TEL-4	Grab	GW		10/6/20	955	9	x	x	x	x	x	x	x					-01
TEL-3	Grab	GW		10/6/20	845	9	x	x	x	x	x	x	x					02
~~TEL-2~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					~~03~~
~~TEL-1~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					.
MW-49	Grab	GW		10/6/20	1300	10	x	x	x		x	x	x	x	x		SU	03
DUP-TEL-01	Grab	GW		10/6/20	1100	11	x	x	x	x	x	x	x			x		04
EB-TEL-01	Grab	GW		10/6/20	910	9	x	x	x	x	x	x	x					05
Trip Blank-TEL-01	Grab	GW		10/6/20	—	1	x											06

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

9.18/19

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# 171283

Table # 1191

Acctnum: TRCATX

Template: T115528

Prelogin: P799955

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 X FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: X Y __N
Preservation Correct/Checked: X 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	10/7/20	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2=9 °C Bottles Received: 46	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tuck	Date: 10/8/20 Time: 900	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@trcsolutions.com
Project Description: NCL Fall 2020	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000
Lab Project # TRCATX-NCL	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # NCL (Navajo - Artesia)
P.O. # 150726	
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	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 1 of 2

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# L1271284
Table #1192
Acctnum: TRCATX
Template: T140423
Prelogin: P799954
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB - 8011	Remarks	Sample # (lab only)
MW-45	Grab	GW		10/6/20	1610	8	x	x			x	x	x	x	x			-01
~~NCL-34A~~ LNAPL	Grab	GW				7	x	x		x	x	x	x					-02
NCL-33	Grab	GW		10/7/20	1030	7	x	x		x	x	x	x					-03
NCL-44	Grab	GW		10/7/20	950	7	x	x		x	x	x	x					-04
NCL-32	Grab	GW		10/7/20	905	7	x	x		x	x	x	x					-05
MW-108	Grab	GW		10/6/20	1410	10	x	x		x	x	x	x			x	54	-06
NCL-31	Grab	GW		10/6/20	1325	7	x	x		x	x	x	x					-07
MW-55	Grab	GW		10/7/20	825	10	x	x	x		x	x	x	x	x			-08
MW-54A	Grab	GW		10/6/20	930	7	x	x		x	x	x	x					-09
NCL-49	Grab	GW		10/6/20	1010	7	x	x		x	x	x	x					-10

* 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

	Date:	Time:		
Relinquished by : (Signature) Scott Ude	10/7/20	1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2=.9 °C Bottles Received: 91
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tuck	Date: 10/8/20 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

Pres Chk

Report to: Julie Speer

Email To: jspeer@trcsolutions.com

Project Description: NCL Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-NCL

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # NCL (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

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 2

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# L211284

Table #

Acctnum: TRCATX

Template: T140423

Prelogin: P799954

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
DUP-NCL-01	Grab	GW		10/6/20	1100	7	x	x		x	x	x	x					-11
EB-NCL-01	Grab	GW		10/7/20	915	7	x	x		x	x	x	x					-12
TRIP BLANK-NCL-01	Grab	GW		10/6/20	—	1	x											-13
MW-53R	Grab	GW		10/6/20	850	7	X	X		X	X	X	X					-14

* 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	10/7/20	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1, 2.9 °C Bottles Received: 9 1
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tuce	Date: 10/8/20 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Hailey Melson

Pace Analytical®
National Center for Testing & Innovation

Login #: L1271284	Client: TRCATX	Date: 10/08/2020	Evaluated by: Olivia S.

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	x	Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Couri
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

Did not receive SVOC vials for MW-108

Client informed by:		Call		Email		Voice Mail		Date: 10/9/20	Time: 18:07
TSR Initials: CM	Client Contact:								

Login Instructions:

SV8011 not needed on MW-108.

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: TMD Fall 2020	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000
	Lab Project # TRCATX-TMD
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # TMD (Navajo - Artesia)
	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	*Rush?* (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed
	Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
NP-1	Grab	GW		10/6/20	1415	2	x											
MW-21	Grab	GW		10/6/20	1545	9	x	x	x	x	x	x	x					-01
MW-46R	Grab	GW		10/7/20	940	7	x	x		x	x	x	x					-02
TRIP BLANK-TMD-01	Grab	GW		10/6/20	—	1	x											

Chain of Custody Page 1 of 1 p-19/19

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# L1271297

H133

Acctnum: TRCATX
Template: T115542
Prelogin: P799956
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) Scott Ude	Date: 10/7/20	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes ✓No HCl / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1 1.2 -1.3 °C Bottles Received: 16	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tuen	Date: 10/8/20 Time: 900	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@trcsolutions.com

Project Description: EP Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-EP

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # EP (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

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	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	VOC - 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
~~MW-85~~ LNAPL	~~Grab~~	~~GW~~				~~9~~	x	x	x	x	x	x	x					-01
MW-86	Grab	GW		10/6/20	1635	10	x	x	x		x	x	x	x	x			-02
MW-120	Grab	GW			900	9	x	x	x	x	x	x	x					-03
MW-121	Grab	GW			940	9	x	x	x	x	x	x	x					-04
MW-84	Grab	GW			1550	9	x	x	x	x	x	x	x					-05
MW-122	Grab	GW			1115	9	x	x	x	x	x	x	x					-06
MW-79	Grab	GW			1030	9	x	x	x	x	x	x	x					-07
MW-74	Grab	GW			1435	9	x	x	x	x	x	x	x					-08
MW-2A	Grab	GW			1155	9	x	x	x	x	x	x	x					-09
OCD-6	Grab	GW			1250	9	x	x	x	x	x	x	x					-10

* 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: 10/7/20 — Time: 1400

Relinquished by : (Signature) — Date: — Time:

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Received by: (Signature)

Received for lab by: (Signature) Olivia Tirres — Date: 10/8/20 — Time: 900

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.1-2.9 — Bottles Received: 326

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 1 of 5

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# L127298

Table #

Acctnum: TRCATX
Template: T140422
Prelogin: P799953
TSR: 526
PB:

Shipped Via:

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

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@trcsolutions.com
Project Description: EP Fall 2020	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000
Lab Project # TRCATX-EP	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # EP (Navajo - Artesia)
P.O. # 150726	Quote #
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y _x_	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Date Results Needed	Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 5

p. 12/19

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 # L271298

Acctnum: TRCATX

Template: T140422

Prelogin: P799953

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	VOC - 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
OCD-7AR	Grab	GW		10/6/20	1330	9	x	x	x	x	x	x	x					-10
MW-76	Grab	GW		10/6/20	1720	9	x	x	x	x	x	x	x					-11
MW-75	Grab	GW		10/6/20	1625	9	x	x	x	x	x	x	x					-12
MW-83	Grab	GW		10/7/20	845	9	x	x	x	x	x	x	x					-13
MW-3	Grab	GW		10/7/20	930	9	x	x	x	x	x	x	x					-14
MW-88	Grab	GW		10/6/20	1255	7	x	x	x	x								-15
MW-22A	Grab	GW		10/6/20	1340	9	x	x	x	x	x	x	x					-16
MW-10	Grab	GW		10/6/20	1445	9	x	x	x	x	x	x	x					-17
MW-123	Grab	GW		10/6/20	1530	9	x	x	x	x	x	x	x					-18
MW-4A	Grab	GW		10/6/20	1200	9	x	x	x	x	x	x	x					-19

* 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	10/7/20	1400		2
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-.2=.9 A3C Bottles Received: 326
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tucci	Date: 10/8/20 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	Pres Chk
Report to: Julie Speer	Email To: jspeer@trcsolutions.com	
Project Description: EP Fall 2020	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000	Lab Project # TRCATX-EP
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # EP (Navajo - Artesia)	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Chain of Custody Page 3 of 5

p. 13/19

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 # 1271298

Acctnum: TRCATX

Template: T140422

Prelogin: P799953

TSR: 526

PB:

Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	VOC - 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-5A	Grab	GW		10/6/20	1050	9	x	x	x	x	x	x	x					-20
MW-7A	Grab	GW		10/6/20	940	9	x	x	x	x	x	x	x					-21
OCD-8A	Grab	GW		10/6/20	840	10	x	x	x		x	x	x	x	x			-22
OCD-1R	Grab	GW		10/7/20	1000	9	x	x	x	x	x	x	x					-23
OCD-2A	Grab	GW		10/7/20	830	7	x	x	x	x								-24
OCD-3	Grab	GW		10/6/20	1640	7	x	x	x	x								-25
OCD-4	Grab	GW		10/6/20	1600	7	x	x	x	x								-26
MW-11A	Grab	GW		10/7/20	915	3					x	x	x					-27
OCD-5	Grab	GW		10/6/20	1520	9	x	x	x	x	x	x	x					-28
MW-87	Grab	GW		10/6/20	1150	7	x	x	x	x								-29

* 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: 10/7/20	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2.9 °C Bottles Received: 326
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tuell	Date: 10/8/20 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

Pres Chk

Report to: Julie Speer

Email To: jspeer@trcsolutions.com

Project Description: EP Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-EP

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # EP (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y x

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

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	VOC - 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
MW-18A	Grab	GW		10/6/20	1230	8	x	x			x	x	x	x	x			-30
MW-70	Grab	GW		10/6/20	1320	7	x	x	x	x								-31
MW-124	Grab	GW		10/6/20	1405	9	x	x	x	x	x	x	x					-32
DUP-EP-01	Grab	GW		10/6/20	900	9	x	x	x	x	x	x	x					-33
DUP-EP-02	Grab	GW		10/6/20	1100	9	x	x	x	x	x	x	x					-34
DUP-EP-03	Grab	GW		10/7/20	900	9	x	x	x	x	x	x	x					-35
EB-EP-01	Grab	GW		10/6/20	1450	9	x	x	x	x	x	x	x					-36
EB-EP-02	Grab	GW		10/6/20	1420	9	x	x	x	x	x	x	x					-37
EB-EP-03	Grab	GW		10/6/20	1110	9	x	x	x	x	x	x	x					-38
EB-EP-04	Grab	GW		10/6/20	1045	9	x	x	x	x	x	x	x					-39

Chain of Custody Page 4 of 5

p 14/19

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 # U271298

Acctnum: TRCATX

Template: T140422

Prelogin: P799953

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	If preservation required by Login: Date/Time
Scott Ude	10/7/20	1400		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2=.9 °C Bottles Received: 326	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Tirey	Date: 10/8/20 Time: 900	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@trcsolutions.com
Project Description: EP Fall 2020	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000
	Lab Project # TRCATX-EP
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # EP (Navajo - Artesia)
	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed
	Quote #

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	VOC - 40mlAmb-HCl-Blk	Remarks	Sample # (lab only)
Trip Blank-EP-01	Grab	GW		10/6/20	—	1										X		-40
Trip Blank-EP-02	Grab	GW		10/6/20	—	1										X		-41
Trip Blank-EP-03	Grab	GW		10/7/20	—	1										X		

Chain of Custody Page 5 of 5

p-15/19

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 # U277298

Acctnum: TRCATX

Template: T140422

Prelogin: P799953

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) Scott Ude	Date: 10/7/20	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes / No (HCL / MeoH TBR)
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.3 °C Bottles Received: 326
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Olivia Cruz	Date: 10/8/20 Time: 900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Hailey Melson

Pace Analytical®
National Center for Testing & Innovation

Login #: L1271298	Client: TRCATX	Date: 10/08/2020	Evaluated by: Olivia S.

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time		Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Couri
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
x	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

Received 1 Blue top vial broken for MW-87

Client informed by:	Call	Email	Voice Mail	Date: 10/09/20	Time: 18:08
TSR Initials: CM	Client Contact:				

Login Instructions:

Run from intact vials.

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: REST Fall 2020
City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:
Client Project #: 330538.0000.0000
Lab Project #: TRCATX-REST

Collected by (print): Scott Ude/HMI Team
Site/Facility ID #: REST (Navajo - Artesia)
P.O. #: 150726

Collected by (signature): Scott Ude
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day
Date Results Needed

Quote #

Chain of Custody Page 1 of 10

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

P. 1/19

L# L1271301
J031

Acctnum: TRCATX
Template: T140424
Prelogin: P799490
TSR: 526
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3 <2	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4 <2	Total Long List Metals 250mlHDPE-HNO3 <2	Cyanide - 250mlHDPEAmb-NaOH >12	Remarks	Sample # (lab only)
~~MW-48 LNAPL~~	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x				
MW-130	Grab	GW		10/7/20	855	9	x	x	x	x	x	x	x				-01
~~KWB-4 LNAPL~~	~~Grab~~	~~GW~~				7	x	x		x	x	x	x				
MW-52	Grab	GW		10/7/20	940	10	x	x	x		x	x	x	x	x		-02
MW-109	Grab	GW		10/7/20	900	9	x	x	x	x	x	x	x				-03
MW-110	Grab	GW		10/7/20	1000	9	x	x	x	x	x	x	x				-04
• MW-113	Grab	GW		10/7/20	900	9	x	x	x	x	x	x	x				~~-05~~
• KWB-8	Grab	GW		10/6/20	1250	8	x	x			x	x	x	x	x		~~-06~~
~~MW-133 LNAPL~~	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x				
MW-134	Grab	GW		10/6/20	1630	9	x	x	x	x	x	x	x				~~-09~~ -05

#6

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
COC Seal Present/Intact: ___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

Samples returned via:
___ UPS ✓ FedEx ___ Courier ___

Tracking # attached

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	Temp:	Bottles Received:	If preservation required by Login: Date/Time
Scott Ude	10/7/20	1400			1.1-2.9		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)				
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20	Time: 0900	Hold:	Condition: NCF / OK

Chain of Custody Page 2 of 10

Pace Analytical®

p. 2/19

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

Pres Chk

Report to: Julie Speer

Email To: jspeer@trccompanies.com

Project Description: REST Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-REST

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # REST (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

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

Immediately Packed on Ice N ___ Y x

L# L1271301

Table #

Acctnum: TRCATX
Template: T140424
Prelogin: P799490
TSR: 526
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
RA-4798	Grab	GW		10/6/20	1315	5	x				x	x	x					~~-06~~
RA-4196	Grab	GW		10/6/20	1330	5	x				x	x	x					~~-09~~
KWB-7	Grab	GW		10/6/20	1200	8	x	x			x	x	x	x	x			~~-10~~
MW-135	Grab	GW		10/7/20	1030	9	x	x	x	x	x	x	x					~~-11~~
KWB-11A	Grab	GW		10/6/20	1025	10	x	x	x		x	x	x	x	x			~~-12~~
KWB-11B	Grab	GW		10/6/20	1110	10	x	x	x		x	x	x	x	x			~~-13~~
MW-115	Grab	GW		10/7/20	915	9	x	x	x	x	x	x	x				-06	~~-14~~
MW-114	Grab	GW		10/7/20	1000	9	x	x	x	x	x	x	x				-07	~~-15~~
MW-117	Grab	GW		10/6/20	1420	9	x	x	x	x	x	x	x				-08	~~-16~~
MW-118	Grab	GW		10/6/20	1335	9	x	x	x	x	x	x	x				-09	~~-17~~

* 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	10/7/20	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.3 °C 1.1-2=.9 Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 10/8/20 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: REST Fall 2020	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000	Lab Project # TRCATX-REST
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # REST (Navajo - Artesia)	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
MW-119	Grab	GW		10/6/20	920	9	x	x	x	x	x	x	x					~~-10~~
MW-136	Grab	GW		10/6/20	1220	10	x	x	x		x	x	x	x	x			~~-11~~
MW-126A	Grab	GW		10/6/20	1010	9	x	x	x	x	x	x	x					~~-12~~
MW-126B	Grab	GW		10/6/20	1050	9	x	x	x	x	x	x	x					~~-13~~
~~MW-127~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					~~-14~~
KWB-1A	Grab	GW		10/6/20	1325	8	x	x			x	x	x	x	x		-14	~~-15~~
~~KWB-10R~~ LNAPL	~~Grab~~	~~GW~~				7	x	x		x	x	x	x					
~~MW-131~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
~~KWB-5~~ LNAPL	~~Grab~~	~~GW~~				7	x	x		x	x	x	x					
~~MW-111~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					

KB

Chain of Custody Page 3 of 10 — p. 3/19

Pace Analytical®

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

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

	Date:	Time:		
Relinquished by : (Signature) Scott Ude	10/7/20	1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2.9 °C Bottles Received If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000	Lab Project # TRCATX-REST
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # REST (Navajo - Artesia)	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	EDB 8011	Remarks	Sample # (lab only)
~~KWB-6~~ LNAPL	~~Grab~~	~~GW~~				10	x	x		x	x	x	x			x		
~~MW-112~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
~~MW-132~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
MW-57	Grab	GW		10/6/20	1130	9	x	x	x	x	x	x	x				-15	-23
KWB-12A	Grab	GW		10/6/20	930	10	x	x	x		x	x	x	x	x		-16	~~-24~~
KWB-12B	Grab	GW		10/6/20	1015	10	x	x	x		x	x	x	x	x		-17	-25
~~KWB-2R~~ LNAPL	~~Grab~~	~~GW~~				7	x	x		x	x	x	x					
~~MW-58~~ LNAPL	~~Grab~~	~~GW~~				8	x	x			x	x	x	x	x			
MW-104	Grab	GW		10/6/20	1210	9	x	x	x	x	x	x	x				-18	~~-26~~
MW-64	Grab	GW		10/6/20	1305	9	x	x	x	x	x	x	x				-19	~~-27~~

KB

Chain of Custody Page 4 of 10

Pace Analytical

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

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 X 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: 10/7/20	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-1.2-1.9 Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-REST

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # REST (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 5 of 10

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
~~MW-65~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
MW-102	Grab	GW		10/6/20	1410	9	x	x	x	x	x	x	x				-20	~~-28~~
~~MW-99~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
MW-66	Grab	GW		10/7/20	925	10	x	x	x		x	x	x	x	x		-21	~~-29~~
MW-28	Grab	GW		↓	1110	10	x	x	x		x	x	x	x	x		-22	~~-30~~
MW-60	Grab	GW		↓	1025	10	x	x	x		x	x	x	x	x		-23	~~-31~~
~~MW-128~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					
MW-125	Grab	GW		10/7/20	1050	9	x	x	x	x	x	x	x				-24	~~-32~~
MW-116	Grab	GW		10/7/20	1025	9	x	x	x	x	x	x	x				-25	~~-33~~
MW-101	Grab	GW		10/6/20	900	9	x	x	x	x	x	x	x				-26	~~-34~~

10

* 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	10/7/20	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2.9 °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-REST

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # REST (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 5 of 10

Pace Analytical

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

Lab # L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
MW-105	Grab	GW		10/6/20	1515	9	X	X	X	X	X	X	X				SU-27	~~35~~
MW-61	Grab	GW		10/6/20	1335	11	X	X	X	X	X	X	X			X	-28	~~36~~
MW-62	Grab	GW		10/6/20	1535	11	X	X	X	X	X	X	X				-29	~~37~~
~~MW-137~~ LNAPL	~~Grab~~	~~GW~~				12	X	X	X		X	X	X	X	X	X		
~~MW-138~~ LNAPL	~~Grab~~	~~GW~~				12	X	X	X		X	X	X	X	X	X		
MW-23	Grab	GW		10/6/20	1705	9	X	X	X	X	X	X	X				-30	~~38~~
MW-39	Grab	GW		10/6/20	1010	9	X	X	X	X	X	X	X				-31	~~39~~
MW-98	Grab	GW		10/6/20	1105	9	X	X	X	X	X	X	X				-32	~~40~~
MW-29	Grab	GW		10/7/20	925	9	X	X	X	X	X	X	X				~~33~~	~~41~~
MW-106	Grab	GW		10/6/20	1200	9	X	X	X	X	X	X	X				-33	~~34~~ ~~42~~

10

* 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 X 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	10/7/20	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2.9 Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-REST

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # REST (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

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 10

p. 7/19

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# L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
MW-50	Grab	GW		10/6/20	1125	7	x	x		x	x	x	x				-34	~~-43~~
~~MW-97~~ Lost due to construction	~~Grab~~	~~GW~~				11	x	x	x	x	x	x	x			x	unable to locate; construction, graded w/ extra soil/gravel	
~~MW-92~~ LNAPL	Grab	GW				9	x	x	x	x	x	x	x					
~~MW-91~~ LNAPL	Grab	GW				9	x	x	x	x	x	x	x					
MW-90	Grab	GW		10/6/20	1245	9	x	x	x	x	x	x	x				-35	~~-44~~
MW-96	Grab	GW		10/6/20	1450	9	x	x	x	x	x	x	x				-36	~~-45~~
~~MW-94~~ LNAPL	~~Grab~~	~~GW~~				9	x	x	x	x	x	x	x					~~-46~~ KO
~~MW-87~~ LNAPL	~~Grab~~	~~GW~~				10	x	x	x		x	x	x	x	x			
DUP-REST-01	Grab	GW		10/7/20	800	9	x	x	x	x	x	x	x					~~-46~~
DUP-REST-02	Grab	GW		10/6/20	1100	9	x	x	x	x	x	x	x				-37	~~-47~~

* 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	10/7/20	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.5 °C Bottles Received: 1.1-2=.9	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020

City/State Collected: Artesia, NM

Phone: 512-684-3170
Fax:

Client Project # 330538.0000.0000

Lab Project # TRCATX-REST

Collected by (print): Scott Ude/HMI Team

Site/Facility ID # REST (Navajo - Artesia)

P.O. # 150726

Collected by (signature): Scott Ude

Immediately Packed on Ice N ___ Y X

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 10

Pace Analytical

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140424

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions, TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH		Remarks	Sample # (lab only)
DUP-REST-03	Grab	GW		10/6/20	1200	9	x	x	x	x	x	x	x				-38	-48
DUP-REST-04	Grab	GW		10/7/20	800	10	x	x	x		x	x	x	x	x		-39	-49
DUP-REST-05	Grab	GW		10/6/20	1200	10	x	x	x		x	x	x	x	x		-40	-50
EB-REST-01	Grab	GW		10/7/20	920	9	x	x	x	x	x	x	x					-51
EB-REST-02	Grab	GW		10/6/20	1220	9	x	x	x	x	x	x	x				-41	-52
EB-REST-03	Grab	GW		10/6/20	1650	9	x	x	x	x	x	x	x				-42	-53
EB-REST-04	Grab	GW		10/7/20	1045	10	x	x	x		x	x	x	x	x		-43	-54
EB-REST-05	Grab	GW		10/6/20	1035	10	x	x	x		x	x	x	x	x		-44	-55
TRIP BLANK-REST-01	Grab	GW		10/6/20	—	1	x											-45
TRIP BLANK-REST-02	Grab	GW		10/6/20	—	1	x											-46

* 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: __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	10/7/20	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.1-2.9 °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 10/8/20 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: REST Fall 2020	City/State Collected: Artesia, NM
Phone: 512-684-3170 Fax:	Client Project #: 330538.0000.0000
Lab Project #: TRCATX-REST	
Collected by (print): Scott Ude/HMI Team	Site/Facility ID #: REST (Navajo - Artesia)
P.O. #: 150726	Quote #:
Collected by (signature): Scott Ude	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Immediately Packed on Ice N ___ Y x	Date Results Needed

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 9 of 10

p. 9/19

Pace Analytical®

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140422

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
TRIP BLANK-REST-03	Grab	GW		10/7/20	—	1	x											-47
TRIP BLANK-REST-04	Grab	GW		10/6/20	—	1	x											-48

* 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: 10/7/20	Time: 1400	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: DOLG [illegible] 1.1-.2=.9	Bottles Received: [illegible]
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [illegible signature]	Date: 10/8/20	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: REST Fall 2020	City/State Collected: Artesia, NM	
Phone: 512-684-3170 Fax:	Client Project # 330538.0000.0000	Lab Project # TRCATX-REST
Collected by (print): Scott Ude/HMI Team	Site/Facility ID # REST (Navajo - Artesia)	P.O. # 150726
Collected by (signature): Scott Ude Immediately Packed on Ice N ___ Y X	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day Date Results Needed	Quote #

Analysis / Container / Preservative

Chain of Custody Page 10 of 10 P. 10/19

Pace Analytical

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

L# L1271301

Table #

Acctnum: TRCATX

Template: T140422

Prelogin: P799490

TSR: 526

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC - 40mlAmb HCl	DRO - 40mlAmb-HCl-BT	GRO - 40mlAmb HCl	Total Short List Metals 250mlHDPE-HNO3	Cations (from "total metals" bottle)	Anions. TDS - 250mlHDPE-NoPres	NO2NO3 - 250mlHDPE-H2SO4	Total Long List Metals 250mlHDPE-HNO3	Cyanide - 250mlHDPEAmb-NaOH	SVOCs - 8270	Remarks	Sample # (lab only)
MW-43	Grab	GW		10/6/20	1510	10	x	x	x		x	x	x	x	x			-48
MW-62R	Grab	GW		10/6/20	1620	9	x	x	x	x	x	x	x					-50
~~MW-137A~~ LNAPL	~~Grab~~	~~GW~~				12	x	x	x		x	x	x	x	x	x		
~~MW-138A~~ LNAPL	~~Grab~~	~~GW~~				12	x	x	x		x	x	x	x	x	x		
MW-139	Grab	GW		10/6/20	1055	9	x	x	x	x	x	x	x					-51
~~RW-2~~ LNAPL	~~Grab~~	~~GW~~														X		
	Grab	GW																
	Grab	GW																
	Grab	GW																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater

Remarks: Samples returned via FedEx

pH ____ Temp ____

Flow ____ Other ____

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

Relinquished by: (Signature) Scott Ude Date: 10/7/20 Time: 1400

Received by: (Signature) 10/8/20 0900

1.1-.2=.9 WS

L127(301

(9159 8784 5733 1.5
- 5810 1.3
- 5939 1.2
- 5744 1.8
- 5940 4.1
- 8206 1.4
- 5825 0.9
- 5803 1.1
- 5814 .4
- 5880 1.2
- 5799 1.3
- 9863 3.0
2.4

(9486 2502 9749

5906 4.5
5722 1.6
5891 0.7 C
~~995~~ 7986 0.9 C
9874 1.0 C

TRCATX
for 10/8

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 160770

CONDITIONS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 160770
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
scwells	Accepted for Record Retention Purposes-Only	11/22/2022