GW - 005

WORKPLANS

Chavez, Carl J, EMNRD

From:

Chavez, Carl J, EMNRD

Sent:

Wednesday, February 02, 2011 11:03 AM

Sem To:

'Mark Larson'; VonGonten, Glenn, EMNRD; Griswold, Jim, EMNRD

Cc:

Wrangham, Calvin W.

Subject:

RE: Targa Eunice Gas Plant (GW-005) LNAPL Investigation Plan

Cal and Mark:

The OCD hereby approves your investigation plan dated January 11, 2011 with the following conditions:

- The sampling results will determine the final well design and construction (dual phase extraction system, venting, etc.) required to implement a feasible corrective action(s).
- The OCD is aware of Targa's recent discharge permit renewal (renewal) application for the facility, which expires
 on March 16, 2011. The renewal, if renewed, will likely include conditions for MW-11 (BTEX) and MW-14 (BTEX
 & CI) at the facility, which were discussed during the January 5, 2011 meeting in Santa Fe.

Please be advised that OCD approval of this plan does not relieve Targa Midstream Services, L.P. of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Targa Midstream Services, L.P. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Dept.

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Dr., Santa Fe, New Mexico 87505

Office: (505) 476-3490 Fax: (505) 476-3462

E-mail: CarlJ.Chavez@state.nm.us

Website: http://www.emnrd.state.nm.us/ocd/index.htm (Pollution Prevention Guidance is under "Publications")

From: Mark Larson [mailto:Mark@laenvironmental.com]

Sent: Tuesday, January 11, 2011 7:54 AM

To: VonGonten, Glenn, EMNRD; Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD

Cc: Wrangham, Calvin W.

Subject: Re: Targa Eunice Gas Plant LNAPL Investigation Plan

Dear Glenn,

Per the meeting on Wednesday, January 5, 2010 between the New Mexico Oil Conservation Division (OCD) Environmental Bureau staff (yourself, Jim Griswold and Carl Chavez), Targa Midstream Services, L.P. (Cal Wrangham) and myself with Larson & Associates, Inc., Targa will proceed with the following action items, discussed during the meeting, at the Eunice Gas Plant (GW-005) located in Unit B (NW/4, NE/4), Section 3, Township 22 South, Range 37 East, Eunice, Lea County, New Mexico:

LNAPL Investigation - Excavation Closure

- Close excavation near southeast corner of Eunice Gas Plant, as shown on attached Figure 1, by installing a 20 mill thickness polyethylene liner in slightly crowned bottom of excavation;
- Partially fill excavation with soil from centralized surface waste management area (Cell #1) that has been remediated below the OCD closure standards for benzene (0.2 mg/Kg), BTEX (50 mg/Kg), TPH by method SW-

Chavez, Carl J, EMNRD

From: Mark Larson [Mark@laenvironmental.com]
Sent: Tuesday, January 11, 2011 7:54 AM

To: VonGonten, Glenn, EMNRD; Griswold, Jim, EMNRD; Chavez, Carl J, EMNRD

Cc: Wrangham, Calvin W.

Subject: Re: Targa Eunice Gas Plant LNAPL Investigation Plan

Attachments: Figure 1 - Excavation and Proposed Boring and Well Locations.pdf; Figure 2 - SVE Vent Well

Schematic.pdf; Figure 3 - Typical Monitoring Well Schematic.pdf; Figure 4 - Above Ground Recovery Well Schematic.pdf; Figure 5 - Below Ground Recovery Well Schematic.pdf

Dear Glenn,

Per the meeting on Wednesday, January 5, 2010 between the New Mexico Oil Conservation Division (OCD) Environmental Bureau staff (yourself, Jim Griswold and Carl Chavez), Targa Midstream Services, L.P. (Cal Wrangham) and myself with Larson & Associates, Inc., Targa will proceed with the following action items, discussed during the meeting, at the Eunice Gas Plant (GW-005) located in Unit B (NW/4, NE/4), Section 3, Township 22 South, Range 37 East, Eunice, Lea County, New Mexico:

LNAPL Investigation - Excavation Closure

- Close excavation near southeast corner of Eunice Gas Plant, as shown on attached Figure 1, by installing a 20 mill thickness polyethylene liner in slightly crowned bottom of excavation;
- Partially fill excavation with soil from centralized surface waste management area (Cell #1) that has been remediated below the OCD closure standards for benzene (0.2 mg/Kg), BTEX (50 mg/Kg), TPH by method SW-8015 (500 mg/Kg), TPH by method 418.1 (2,500 mg/Kg) and chloride by method 300 (<5.39 to 283 mg/Kg), and below New Mexico Water Quality Control Commission (WQCC) human health standards in 20 NMAC 3103A by the synthetic precipitation leaching procedure (SPLP) method SW-1312 for volatile and semi-volatile organics and metals, except iron (1.02 mg/L) which was slightly above the WQCC domestic water quality standard of 1.0 mg/L;
- Complete filling excavation to within about 6 inches of surface with clean soil;
- Finish filling excavation to ground surface with crushed caliche.

LNAPL Investigation - Soil Borings and SVE Vent Wells

- Install 4 borings (SB-1 through SB-4) at locations shown on the attached Figure 1 using air rotary or hollowstem auger drilling methods to between approximately 20 and 25 feet below ground surface;
- Collect soil samples each 5 feet (0', 5', 10', 15', 20', etc.) of drilling to termination using split spoon, continuous
 or jam tube samplers, depending on drilling method, for headspace analysis with calibrated organic vapor meter
 (OVM) and laboratory analysis for BTEX (SW-8020B) for soil samples with headspace readings above 100 ppm,
 TPH (SW-8015) and chloride (SW-300);
- Complete borings as soil vapor extraction vent wells as shown in attached Figure 2;
- Survey wells for ground and top of casing elevation and location by New Mexico Licensed professional land surveyor.

LNAPL Investigation - Monitoring Wells and Development

- Install 2 soil borings at locations shown on attached Figure 1 east (MW-27) and south (MW-28) of LNAPL source, between approximately 35 and 40 feet bgs, using hollowstem auger or air rotary drilling methods;
- Collect soil samples as previously described for headspace vapor and laboratory analysis;
- Complete borings as monitoring wells per attached Figure 3;
- Develop wells consistent with industry and OCD accepted procedures; and
- Survey monitoring wells for ground and top of casing elevation and location by New Mexico Licensed professional land surveyor.

LNAPL Investigation - Thickness Measurements and Groundwater Samples

• Measure LNAPL thickness/depth to groundwater and collect groundwater samples for laboratory analysis of BTEX and chloride in the new wells (MW-27 and MW-28) and existing wells (MW-2R, MW-3, MW-4, MW-12, MW-22, MW-23, MW-24, MW-25 and MW-26).

LNAPL Investigation - Recovery Well

- Install soil boring (RW-1) near LNAPL source, shown on attached Figure 1, between approximately 45 and 50 feet bgs using air rotary or hollowstem auger drilling methods;
- Collect soil sample for headspace vapor and laboratory analysis as previously described;
- Complete boring as well for LNAPL recovery and soil vapor extraction as shown in attached Figure 4 (Above Ground) or Figure 5 (Below Ground);
- Survey recovery well for top of casing, ground elevation and location by New Mexico Licensed professional land surveyor;
- Collect depth to groundwater and LNAPL thickness measurements and develop well according to OCD and industry standards;
- Conduct step drawdown pumping test to establish aguifer flow rate; and
- Install single (total fluid) or dual (groundwater and LNAPL) pumps to initiate groundwater depression and LNAPL recovery.

LNAPL Investigation - Notification

Notification will be provided to the OCD Environmental Bureau staff prior to conducting investigations and updates will be provided upon completion of tasks, including excavation closure, soil boring drilling, well installations, groundwater sampling, pumping test and LNAPL system installation and start —up.

Targa will continue LNAPL recovery in MW-22 using the PRC pnuematic pump and MW-3 as necessary should LANPL be present. Targa will submit a report to the OCD upon completion of the above-investigation activities including showing boring/well locations, depth to groundwater, groundwater flow and NAPL thickness maps, geological logs and well construction diagrams, geological cross sections, chemical isopleths maps and photographs. Please do not hesitate to contact Mr. Cal Wrangham with Targa Midstream Services at (432) 688-0542 or myself if you have questions.

Mark J. Larson Sr. Project Manager / President 507 N. Marienfeld St., Ste. 200 Midland, Texas 79701 (432) 687-0901 (office) (432) 687-0456 (fax) (432) 556-8656 (cell) mark@laenvironmental.com



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Figure 1 - Excavation and Proposed Boring And Well Locations

Below Ground (not to scale) **Vented Cap** 1.0 Foot BGS Top of Cement and Bentonite 2" Sch 40 PVC Screw **Threaded Riser** 8.0 Feet BGS ---**Bentonite Chips** 9.0 Feet BGS Top of Sand 9.5 Feet BGS Top of Screen 8/16 Graded Silica Sand 2" Sch 40 PVC Screw Threaded 0.010" Factory **Slotted Screen** 23.0 Feet BGS Water Table 25.0 Feet BGS -**Bottom of Boring** Targa Midstream Services, L.P. **Eunice Gas Plant** NE/4, Sec. 3, T-22-S, R-37-E Lea County, New Mexico N 32° 25' 29.3" W 103° 08' 50.1"

Figure 2 - SVE Vent Well Schematic

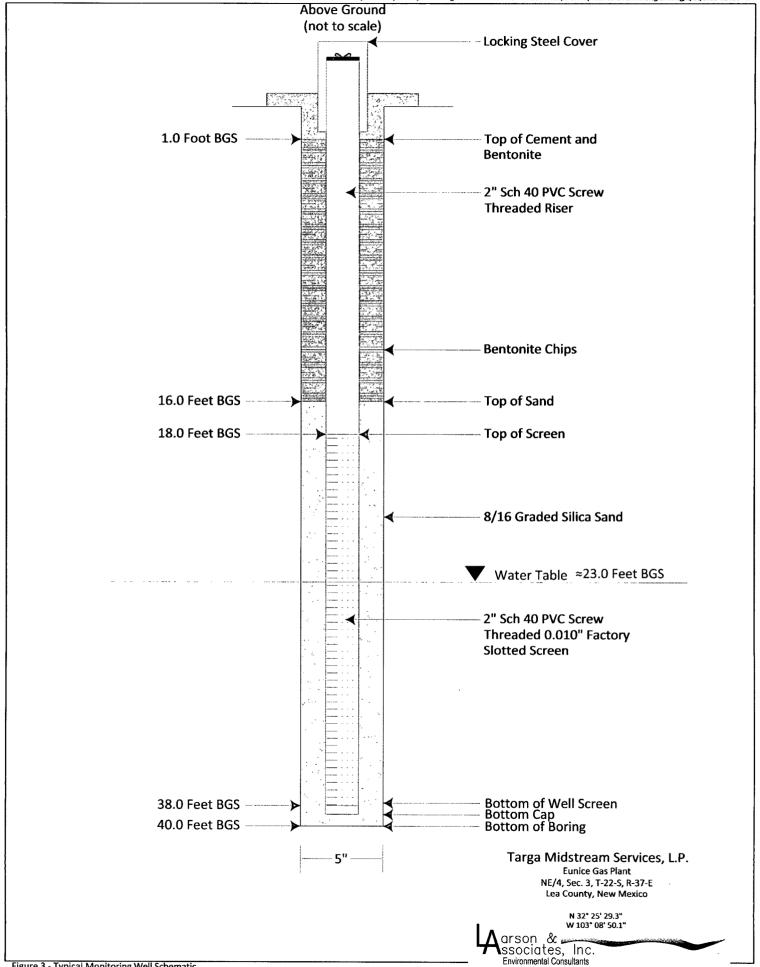


Figure 3 - Typical Monitoring Well Schematic

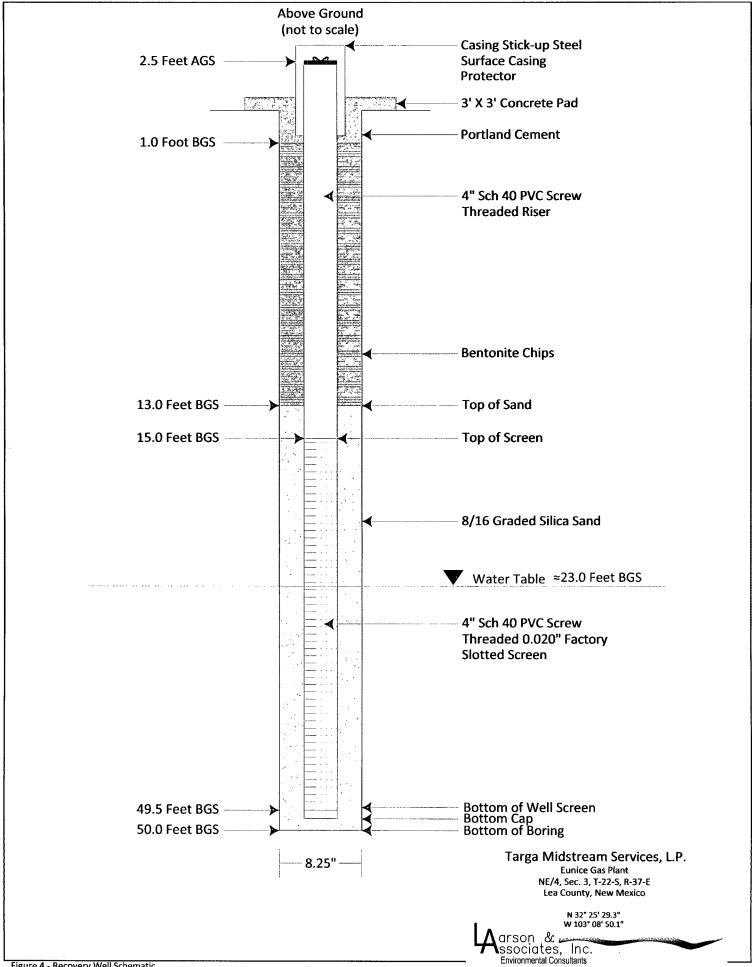


Figure 4 - Recovery Well Schematic

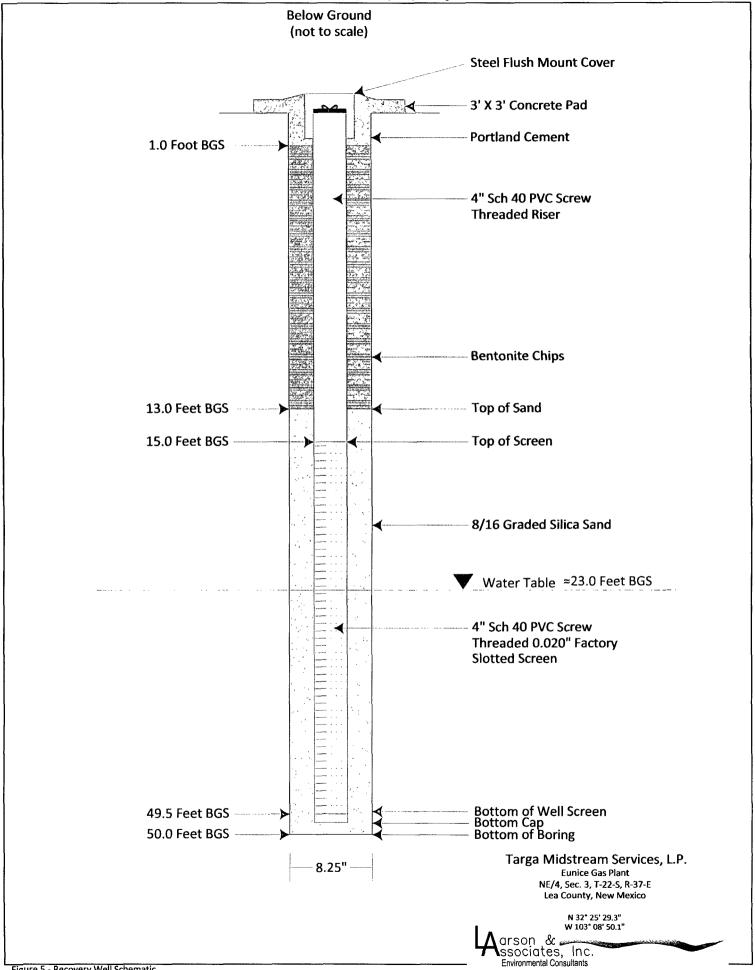


Figure 5 - Recovery Well Schematic



November 9, 2010

VIA EMAIL: CarlJ.Chavez@state.nm.us

Mr. Carl J. Chavez Environmental Bureau New Mexico Oil Conservation Division 1220 S. St. Francis Drive Santa Fe, New Mexico 88505

Re: Work plan for LNAPL Source Delineation

Targa Midstream Services, L.P., Eunice Gas Plant (GW-005)

Lea County, New Mexico

Dear Mr. Chavez:

Larson & Associates, Inc. (LAI), as consultant to Targa Midstream Services, L.P. (Targa), submits this work plan to the New Mexico Oil Conservation Division (OCD) Environmental Bureau for source delineation of light non-aqueous phase liquid (LNAPL) recently reported in soil and groundwater near the southeast corner of the Eunice Gas Plant (Facility). On October 13, 2010, Targa personnel exposed flow lines, fittings and valves at a location about 40 feet west of the condensate tanks and 60 feet north of monitoring well MW-22 and discovered a union on a 2 inch dump line leaking. The leaking union and line are buried about 4 feet below ground surface (bgs) and soil was stained and wet with hydrocarbon consistent with condensate. Targa personnel isolated the line to replace the union. The Facility is located in Unit B (NW/4, NE4), Section 3, Township 22 South, Range 37 East, in Lea County, New Mexico. Figure 1 presents a location and topographic map. Figure 2 presents a Facility drawing. Figure 3 presents an enlarged drawing for the investigation area.

1.0 CHRONOLGY

October 13, 2009	LAI discovered LNAPL in MW-3 during a scheduled groundwater monitoring event at the Facility.
	Trues in the distance of the LANARI to OCD staff in Habba and Conta Es. Nov. Marriago

Targa immediately reported the LNAPL to OCD staff in Hobbs and Santa Fe, New Mexico;

November 11, 2009 LAI performed a bailout test to calculate the actual thickness of LNAPL in MW-3;

November 19, 20009 LAI initiated LNAPL recovery in MW-3 using a pneumatic pump;

February 22, 2010 Conference call with OCD representatives Targa agreed to install two (2) monitoring wells

upgradient (MW-22) and downgradient (MW-23) of MW-3 and initiate LNAPL recovery in MW-3;

March 8 - 9, 2010 LAI supervised installing MW-22 and MW-23 about 125 feet northwest and 225 feet southeast

of well MW-3, respectively;

May 21 – 24, 2010 LAI supervised installing MW-24, MW-25 and MW-26 about 200 feet north, 300 feet northwest

and 300 feet southwest of MW-22, respectively;

July 28, 2010 LAI initiated LNAPL recovery in MW-22 using a pneumatic pump;

August 17, 2010 Targa and LAI personnel conducted field meeting to review and inspect possible sources for the

LNAPL;

October 13, 2010 Targa personnel discovered leaking union on 2 inch dump line west of condensate tanks and

north of MW-22;

October 15, 2010 LAI, on behalf of Targa, notified the OCD in an email of the discovery of the suspected source

and submitted form C-141.

2.0 MONITORING WELLS

On March 9, 2010, LAI supervised installing 2 monitoring wells (MW-22 and MW-23) northwest (up gradient) and southeast (down gradient) of monitoring well MW-3, respectively. Scarborough Drilling Company (SDC) used an air rotary rig and completed the wells according to a work plan that was submitted to the OCD on February 23, 2010. LNAPL was not observed in the downgradient well (MW-23) and dissolved benzene and toluene were detected in groundwater samples at concentrations below the New Mexico Water Quality Control Commission (WQCC) human health standards of 0.01 milligrams per liter (mg/L) and 0.75 mg/L, respectively. LNAPL was observed in well MW-22 and Targa initiated recovery operations on June 2, 2010.

On May 21, 2010, LAI supervised installing 3 monitoring wells (MW-24, MW-25 and MW-26) in the plant area north, northwest and west of MW-22, respectively. The wells were installed by SDC according to a work plan that was submitted to the OCD on April 21, 2010. LNAPL was not observed in the wells but dissolved benzene was reported in MW-24 groundwater samples at concentrations above the WQCC human health standard. Toluene, ethylbenzene and xylene were also detected in MW-24 groundwater samples but were below the WQCC human health standards. Dissolved benzene was reported in MW-25 and MW-26 groundwater samples but below the WQCC human health standard. Table 1 presents a summary of the monitoring well completion details. Table 2 presents a summary of the BTEX analysis. Figure 2 and Figure 3 present the monitoring well locations. Appendix A presents the monitoring well logs.

3.0 LNAPL RECOVERY

On November 19, 2010 and July 28, 2010, LAI initiated LNAPL recovery in MW-3 and MW-22, respectively, using Keck PRS pneumatic pumps. Approximately 236 gallons of condensate and 293 gallons of water were recovered from MW-3 between November 19, 2009 and July 12, 210. No LNAPL is currently present in MW-3. Approximately 2,060 gallons of condensate and no water has been recovered from MW-22 through November 1, 20201. The condensate and water was pumped into 55 gallon drums placed in secondary containment and equipped with automatic level controls. Targa personnel discharge the LNAPL and water into the oil and water separator near the condensate tanks to recover the LNAPL. Table 4 and Table 5 present summaries of LNAPL recovery data for MW-3 and MW-22, respectively, through November 1, 2010. Appendix B presents LNAPL recovery graphs for MW-3 and MW-22.

4.0 PROPOSED INVESTIGATIONS

4.1 Soil Boring Installations

Targa will drill four (4) soil borings (SB-1, SB-2, SB-3 and SB-4) in the source area to assess the vertical and lateral extent of hydrocarbon impact in the vadose soil. The borings will be advanced to about 25 feet below ground surface (bgs) using an air rotary or hollow stem auger rig and soil samples will be collected using jam tube, spilt spoon or continuous samplers. The samples will be collected about every 5 feet for headspace and consideration for laboratory analysis of BTEX, total petroleum hydrocarbons (TPH) and chloride. The analysis will be performed using methods SW-8021B (BTEX), SW-8015 (TPH) and 300 (chloride). BTEX analysis will be performed on all samples exhibiting headspace readings above 100 parts per million (ppm) using the ambient temperature headspace method. The borings will be filled with bentonite after drilling.

4.2 Monitoring Well

Targa will install one monitoring well (MW-27) about 130 to 150 feet east (downgradient) of leak to delineate the LNAPL and dissolved hydrocarbons. The monitoring well will be drilled using air rotary or hollowstem auger methods between about 35 and 40 feet bgs and completed with 2 inch screw threaded schedule 40 PVC casing and screen. Approximately 15 feet of 0.010 inch factory slotted screen will be installed in the borehole and will be positioned with about 5 feet above and 10 feet below the water level observed during drilling. The well screen will be surrounded with graded (16 to 20) silica sand that will extend about 2 feet above the screen. The remainder of the annulus above the sand will be filled to about 1 foot bgs with bentonite. The well will be secured with a locking above ground cover anchored in a concrete pad measuring about 3 X 3 feet. Targa proposes to use existing downgradient wells MW-2, MW-4, MW-13 and MW-23 and upgradient wells MW-24, MW-25 and MW-26 to monitor the release. Figure 2 and Figure 3 present the location for MW-27 and existing monitoring wells.

4.3 Recovery Well

Targa will install a recovery well (RW-1) as close to the leak as possible to assess the vertical extent of hydrocarbons in the vadose zone, assess and recover LNAPL. The recovery well will be constructed in such a manner as to be used for soil vapor extraction, if needed at a later time. The recovery well will be advanced about 15 feet into groundwater or between about 40 and 45 feet bgs using an air rotary or hollowstem auger rig and completed with 4-inch screw threaded schedule 40 PVC casing and screen. Approximately 30 feet of 0.020 inch factory-slotted screen will be placed in the borehole for LNAP recovery and vapor extraction with about 15 feet of screen extending into groundwater and about 15 feet of screen extending above groundwater. The top of the screen will be placed between approximately 10 and 15 feet bgs and surrounded with graded (8 - 16) silica sand that will extend from the bottom of the boring to approximately 2 feet above the screen. Bentonite chips will be placed above the sand to about 1 foot bgs and hydrated with potable water. Depending on location and facility traffic conditions either a steel protective sleeve will be placed over the PVC casing stickup and anchored in a concrete pad measuring about 3 x 3 feet. The well will be locked to prevent tampering and vandalism. Figure 3 presents the proposed location for recovery well RW-1. Figure 4 and Figure 5 present above and below ground well construction diagrams for the proposed recovery well.

4.4 Depth to Groundwater and LNAPL Measurements

Depth to groundwater and LNAPL will be measured in the recovery well (RW-1) and monitoring well (MW-27) using an electronic oil and water interface probe. The interface probe will be thoroughly decontaminated

between samples using a solution of distilled water and laboratory grade detergent and rinsed with distilled water.

4.5 Well Development, Waste Management, Decontamination and Survey

The monitoring well and recovery well will be developed using a rig bailer to remove sediment and water disturbed during drilling. Additional development will be performed with an electric submersible pump, if necessary, to remove additional solids or until the water is sufficiently free of suspended material. Decontamination and development fluids will be captured and disposed in the Facility's OCD permitted Class II disposal well.

All equipment (i.e., jam tube, split spoon, continuous sampler, scoops, trowels, etc.) will be thoroughly washed between samples using a solution of distilled water and laboratory grade detergent and rinsed with distilled water. The drilling rig and equipment (i.e., bit, rods, etc.) will be cleaned between locations using a power washer.

A New Mexico registered professional land surveyor will survey the wells for top of the casing and ground elevation referenced to a USGS datum. Soil samples and drill cuttings will be described and a geological log will be prepared for each soil boring, monitoring, and recovery well according to the unified soil classification system (USCS). Drill cuttings will be placed on plastic adjacent to the wells until disposal is arranged.

4.6 LNAPL Recovery

Targa will continue LNAPL recovery in MW-3 and in MW-22 and initiate LNAPL recovery in RW-1 and MW-27, if present.

5.0 SCHEDULE AND REPORTING

Drilling will be scheduled to occur within 3 weeks of OCD approval of this work plan, assuming rig availability. LAI will provide 48-hours advanced notification to the OCD in Santa Fe and Hobbs, New Mexico.

A report will be submitted to the OCD within 60-days of receiving the final laboratory report. The report will integrate results of LNAPL recovery and include an investigation summary, monitoring well installation procedures, soil and groundwater sample procedures and laboratory results. The report will describe the geology, aquifer characteristics, including LNAPL thickness and recovered volume, groundwater elevation, flow direction, gradient, and include updated geological cross sections and groundwater potentiometric surface map.

Please call Cal Wrangham with Targa at 432.688.0542 or myself at 432.687.0901 with any questions you may have.

Respectfully submitted,

LARSON & ASSOCIATES, INC.

Mark J. Larson

Sr. Project Manager

mark@laenvironmental.com

cc: Larry Johnson – OCD District 1
Geoffrey Leking – OCD District 1
Gary Maricle – Targa
Cal Wrangham - Targa

Tables

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Table 1
Monitoring Well Completion and Gauging Summary
Targa Midstream Services, L.P., Eunice Middle Plant Gas Plant
Lea County, New Mexico

Well Information	mation								Groundwater Data	ır Data		
Well ID	Date Drilled	Drilled Depth	Well Depth	Well Diameter	Surface Elevation	Screen Interval (bgs)	Casing Stickup	TOC Elevation	Date Gauged	Depth to Fluid	Depth to Water	Corrected Water Elevation
MW-22	3/8/2010	32	35.17	2	3,398.94	21.5 - 31	2.85	3,401.79	3/19/2010 6/21/2010	29.13 29.56	35.17 34.64	3,371.15 3,370.96
MW-23	3/9/2010	31	33.84	2	3,389.21	20.5 - 30.5	2.36	3,391.57	3/19/2010 6/21/2010	1 1	22.04 22.69	3,369.53 3,368.88
MW-24	5/21/2010	35	37.54	2	3,400.98	19.5 - 34.5	2.34	3,403.32	5/27/2010 6/21/2010	1 1	32.40 32.43	3,370.92 3,370.89
MW-25	5/21/2010	36	38.14	2	3,403.28	20.5 - 35.5	2.07	3,405.35	5/27/2010 6/21/2010	} !	35.09 35.12	3,370.26 3,370.23
MW-26	5/24/2010	34	36.79	2	3,400.80	18.5 - 33.5	2.38	3,403.18	5/27/2010 6/21/2010	}	33.77	3,369.41 3,369.37

Notes

All values are in feet, unless otherwise noted.

bgs - below ground surface

TOC - top of casing

Elevations are above mean sea level referenced to 1984 Geodetic Datum.

Wells drilled and installed by Scarbrough Drilling, Inc., Lamesa, Texas. Schedule 40 threaded PVC casing and screen set.

¹MW-5 damaged during road repair. TOC height resurveyed.

Table 2
Summary of Groundwater BTEX Analyses
Targa Midstream Services, LP - Eunice Middle Gas Plant
Eunice, Lea County, New Mexico

Well ID	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX
WQCC S	Standard	0.01	0.75	0.75	0.62	
MW-23	03/19/10	0.00447	0.00380	<0.002	<0.003	0.00827
	05/27/10	0.00701	<0.002	<0.002	<0.003	0.00701
	06/22/10	0.00854	<0.002	<0.002	<0.003	0.00854
MW-24	05/27/10	0.0132	0.00224	0.00326	0.0113	0.03
	06/21/10	0.0206	0.00450	0.00244	0.0118	0.0393
MW-25	05/27/10	0.00139	<0.002	<0.002	<0.003	0.00139
	06/22/10	0.00400	<0.002	<0.002	<0.003	0.00400
MW-26	05/27/10	0.00856	<0.002	<0.002	<0.003	0.00856
	06/22/10	0.0214	<0.002	<0.002	0.00562	0.02702
MW-UN-01	11/24/08	0.01730	<0.002	<0.002	<0.003	0.01730
i	03/23/09	0.0147	<0.002	<0.002	<0.003	0.0147
	10/13/09	0.0373	<0.002	<0.002	<0.003	0.0373
	06/22/10	0.00313	<0.002	<0.002	<0.003	0.00313
MW-UN-02	11/24/08	0.00127	<0.002	<0.002	0.00635	0.00762
Į	03/23/09	0.00166	0.00369	<0.002	<0.003	0.00535
l	10/13/09	0.07070	<0.002	<0.002	<0.003	0.07070
	06/22/10	1.88	0.0250	0.0311	0.0262	1.96

Notes:

All results reported in milligrams per liter (mg/L)

Bold indicates the chemical of concern was detected above the MDL.

Blue indicated the chemical exceeds the Water Quality Control Commission (WQCC) standard.

[&]quot;<" Indicates the reported concentration is below the method detection limit (MDL).

[&]quot;--" Indicates the chemical was not analyzed.

Table 3
MW-03 LNAPL Recovery Summary
Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H ₂ O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H₂O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
10/13/2009	26.18	31.33	5.15							LNAPL Discovered
.0/21/2009	26.22	31.28	5.06				2.75			LNAPL Recovery Test
1/11/2009	26.38	31.51	5.13	27.15	2	75				Keck PRS System Installed. Ful operation on 11/13/09
1/19/2009	27.26	29.16	1.90	26.5	2	74	21.1	27.7	1/U	Raised float ~8 inches
1/20/2009	27.57	27.77	0.20	26.6	2	75	18.2	31.6	1/F; 2/U	Well recovery test; 0.20 feet
1/23/2009	27.09	29.92	2.83	27.6	2	75	7.4	0	1/U; 2/E	Lowered Float
12/3/2009	27.76	28.33	0.57	28	2	72	13	40.1	1/U; 2/E	Lowered Float
12/9/2009	28.15	28.21	0.06				11.6	28.9	1/F; 2/U	Shut down system to allow recovery for Bail Down - Recovery testing
2/10/2009	26.82	30.51	3.69							Allowing stabilization
2/11/2009	26.75	31.05	4.30	27	2	68	2.2			Bail Down - Recovery testing
2/14/2009			0.00	27.5					1/F; 2/U	Reset pump, not recovering
2/15/2009			0.00				10.3	0	1/E; 2/U	
2/16/2009		27.92	0.00	27.5	2	72	13.75	3.7	1/E; 2/U	
2/18/2009			0.00	27.5	0.66	60			1/E; 2/U	Reset timer for 90 sec. cycle
2/23/2009	27.95	28.10	0.15	27.5	0.66	50	20		1/E; 2/U	
2/30/2009	27.98	28.05	0.07	27.5	0.66	50	31.82	0	1/E; 2/U	
1/5/2010	28.01	28.10	0.09	27.5	0.66	50	39.5	0	1/E; 2/F	Moved discharge & overflow check valve to Drum 1
1/15/2010	28.09	28.16	0.07	27.5	0.66	50	8.7	0	1/U; 2/F	Shut down system to allow recovery for Bail Down - Recovery testing
1/18/2010	26.87	31.16	4.29	27.5	0.66	50	0	0	1/U; 2/E	LNAPL Recovery Test
1/25/2010	28.13	28.2	0.07	27.5	0.66	50	18.6	0	1/U; 2/E	
2/1/2010	28.16	28.21	0.05	27.5	0.66	50	24.6	1	1/U; 2/E	
2/5/2010	28.14	28.22	0.08	27.5	0.66	50	28.7	1.04	1/U; 2/E	
2/8/2010	27.96	28.01	0.05	27.5	0.66	50	32.4	1.04	1/U; 2/E	
2/12/2010	27.57	27.61	0.04	27.5	0.66	50	38.8	1.04	1/F; 2/E	Moved discharge & overflow check valve to Drum 2
2/15/2010	27.18	27.23	0.05	27.5	0.66	50	8.3	0	1/E;2/U	
2/22/2010	26.84	26.9	0.06	27.5	0.66	50	34.5	0	1/E;2/F	Moved discharge & overflow check valve to Drum 1
2/26/2010	26.98	27.00	0.02	27.5	0.66	50	11.4	0	1/U;2/E	
3/1/2010	27.07	27.09	0.02	27.5	0.66	50	19.2	0	1/U;2/E	
3/5/2010	27.09	27.1	0.01	27.5	0.66	45	26.85	0	1/U;2/E	Lowered inlet pressure
3/8/2010	27.13	27.15	0.02	27.5	0.66	45	31.4	0	1/F;2/E	Moved discharge & overflow check valve to Drum 2
3/12/2010	27.31	27.32	0.01	27.5	0.66	45	3.1	0	1/E;2U	
3/15/2010	27.4	27.41	0.01	27.5	0.66	45	6.4	0	1/E;2U	
3/19/2010	27.38	27.39	0.01	27.5	0.66	45	9.3	0	1/E;2U	
			0.00						1/E;2U	
3/29/2010	27.59	27.62	0.03	27.5	0.66	45	15.9	0	1/E;2U	
4/1/2010	27.61	27.64	0.03	27.5	0.66	50	17.4	0	1/E;2U	
4/6/2010	27.6	27.63	0.03	27.5	0.66	50	18.6	0	1/E;2U	
4/0/2010	27.69	27.73	0.04	27.5	0.66	50	19.8	0	1/E;2U	
		27.81	0.03	27.5	0.66	50	21.1	0	1/E;2U	
4/8/2010	27.78	2,.01		27.5	0.66	50	23.1	0	1/E;2U	
4/8/2010 4/12/2010	27.78	27 92			0.00	30	25.1	1	1/1,20	
	27.78 27.89 27.8	27.92	0.03	27.5	0.66	45	24	0	1/E;2U	Moved discharge & overflow check valve to Drum 1
4/8/2010 4/12/2010 4/19/2010 4/22/2010	27.89	27.83	0.03	27.5						
4/8/2010 4/12/2010 4/19/2010 4/22/2010 5/3/2010	27.89 27.8 27.98	27.83 28.01	0.03	27.5 27.5	0.66	48	0	0	1/U;2/F	
4/8/2010 4/12/2010 4/19/2010 4/22/2010 5/3/2010 5/14/2010	27.89 27.8 27.98 28.06	27.83 28.01 28.09	0.03 0.03 0.03	27.5 27.5 27.5	0.66 0.66	48 45	0 2.9	0 0	1/U;2/F 1/U;2/F	
4/8/2010 4/12/2010 4/19/2010 4/22/2010 5/3/2010	27.89 27.8 27.98	27.83 28.01	0.03	27.5 27.5	0.66	48	0	0	1/U;2/F	

Table 3 MW-03 LNAPL Recovery Summary Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H ₂ O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H ₂ O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
6/4/2010	28.08	28.13	0.05	27.5	0.66	50	8.5	0	1/U;2/E	
6/7/2010	28.2	28.25	0.05	27.5	0.66	50	8.9	0	1/U;2/E	
6/10/2010	28.12	28.19	0.07	27.5	0.66	50	10.3	0	1/U;2/E	
6/11/2010	27.87	27.93	0.06	28.5	0.66	50	10.3	0	1/U;2/E	Lowered float ~12 inches, both drums emptied.
6/14/2010	27.69	27.7	0.01	28.5	0.66	50	0	0	1/E;2/E	Moved discharge & overflow check valve to Drum 1.
6/18/2010	27.67	27.68	0.01	28.5	0.66	50	0	0	1/U;2/E	
6/21/2010	27.7	27.72	0.02	28.5	0.66	45	1.9	0	1/U;2/E	
6/23/2010	27	29.23	2.23	28.5	0.66	45	2.3	0	1/U;2/E	
6/24/2010	26.56	28.6	2.04	28.5	0.66	45	2.9	0	1/U;2/E	Temporarily fixed leak in air lii
6/29/2010	23.78	24.22	0.44	27.5	0.66	50	22.7	0	1/F;2/E	Moved discharge & overflow check valve to Drum 2.
7/2/2010	23.89	23.9	0.01	27.5	0.66	50	3.7	51.6	1/E;2/F	Moved discharge & overflow check valve to Drum 1.
7/6/2010	21.85	21.89	0.04	21.85	0.66	50	0.82	53.9	1/F;2/F	
7/7/2010										Pump down, waiting on check valve replacement. Drums emptied.
7/9/2010	20.66	20.69	0.03	21.85	0.66	50			1/E;2/E	Replaced check valve. Moved discharge & overflow check valve to Drum 1.
7/12/2010	20.28	20.32	0.04	21.85	0.66	50	0.2	54.5	1/F;2/E	Moved discharge & overflow check valve to Drum 2.
7/14/2010	20.58	20.59	0.01	20.85	0.66	50	0	34.1	1/F;2/F	Waiting on Drums to be emptied.
7/16/2010	20.95	20.96	0.01	20.85	0.66	50			1/E;2/E	Drums emptied. Moved discharge & overflow check valve to Drum 1.
7/19/2010	21.65	21.66	0.01	20.85	0.66	50	0	0	1/E;2/E	
7/21/2010	22.02	22.03	0.01	20.85	0.66	50	0	0	1/U;2/E	
7/23/2010	22.34	22.36	0.02	23.5	0.66	50	0	0	1/U;2/E	
7/26/2010	22.87	22.89	0.02	23.5	0.66	50	0	0	1/U;2/E	
7/28/2010	23.17	23.21	0.04	23.5	0.66	50	0	0	1/U;2/E	
7/30/2010 8/2/2010	23.29 23.52	23.31	0.02	23.5	0.66	50 45	0	0	1/U;2/E 1/U;2/E	
8/9/2010	23.98	24	0.01	23.5	0.66	45	0	0	1/U;2/E	
8/11/2010	24.08	24.1	0.02	24.0	0.66	45	0	0	1/U;2/E	Parts on order
8/13/2010	24.32	24.33	0.01	23.9	0.66	45	0	0	1/U;2/E	T dres on order
8/19/2010	24.55	24.57	0.02	23.9	0.66	45	0	0	1/U;2/E	Replaced bladder.
8/20/010	24.65	24.67	0.02	23.9	0.66	45	0	0	1/U;2/E	
8/23/2010	24.85	24.86	0.01	23.9	0.66	45	0	0	1/U;2/E	
8/25/2010	24.92	24.93	0.01	23.9	0.66	45	0	0	1/U;2/E	
8/27/2010	24.99	25.01	0.02	23.9	0.66	45	0	0	1/U;2/E	
8/30/2010	25.13	25.14	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/1/2010	25.16	25.17	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/3/2010	25.3	25.31	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/7/2010				23.9	0.66	45	0	0	1/U;2/E	
9/10/2010				23.9	0.66	45	0	0	1/U;2/E	
9/16/2010	25.53	25.54	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/17/2010	25.56	25.57	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/22/2010	25.29	25.3	0.01	23.9	0.66	45	0	0	1/U;2/E	
9/24/2010	25.16 22.16	25.16 22.16	0.00	23.9	0.66	49	0	17.6 50.2	1/U;2/E 1/F;2/E	Turned off product recovery
10/1/2010										system

Table 3 MW-03 LNAPL Recovery Summary Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H₂O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H₂O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
10/6/2010	21.67	21.67	0.00							System off.
10/8/2010		21.67	0.00							System off.
10/11/2010		21.69	0.00							System off.
10/13/2010		21.7	0.00							System off.
10/18/2010	23.38	23.38	0.00							System off.
10/20/2010		23.55	0.00	-						System off.
10/22/2010		23.5	0.00							System off.
10/25/2010	-	23.45	0.00							System off.
10/27/2010		23.5	0.00					-		System off.
10/29/2010		23.95	0.00							System off.
11/1/2010		24.35	0.00							System off.
			0.00							
					Re	covery Totals	236	293		

Notes

Depths reported in feet.

Inlet Pressure in Pounds per Square Inch (PSI).

Volumes reported in gallons.

55-gallon drum dimensions = 22.5" ID X 32" Internal height. \sim 0.206613 gallons per 0.01 feet gauged

Yellow indicates recovery not used in total calculation.

Quick Calc	Input Feet	Gallons
Gauged Drum Thickness	0.00	0.0

Table 4
MW-22 LNAPL Recovery Summary
Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H ₂ O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H₂O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
3/19/2010	29.13	35.17	6.04							LNAPL Discovered, Well TD = 35.17
6/2/2010	29.37	35.17	5.80	32.3	0.66	50			1/U	Keck PRS System Installed. Full operation on 6/2/10
6/4/2010	29.8	34.64	4.84	32.3	0.66	50	44.4	0	1/F;2/E	Moved discharge & overflow check valve to Drum 2
6/7/2010	29.7	35.17	5.47	29.1	0.66	50	54.8	0	1/F;2/F	
6/10/2010	29.5	35.17	5.67	29.1	0.66	50		-	1/F;2/F	Drums emptied, discharge & overflow check valve on Drum 2
6/11/2010	29.66	35.17	5.51	29.1	0.66	50	20.7	0	1/U;2/E	Moved discharge & overflow check valve to Drum 2
6/14/2010	29.58	35.17	5.59	29.1	0.66	45	41.3	0	1/F;2/F	Drums emptied, discharge & overflow check valve on Drum 2
6/18/2010	29.58	35.17	5.59	29.1	0.66	45	41.5	0	1/E;2/F	Moved discharge & overflow check valve to Drum 1
6/21/2010	29.56	34.64	5.08	29.1	0.66	45	54.8	0	1/U;2/E	Moved discharge & overflow checkvalve to Drum 2
6/23/2010	29.7	34.69	4.99	29.1	0.66	45	36.2	0	1/U;2/E	Moved discharge & overflow checkvalve to Drum 1
6/24/2010	29.69	35.17	5.48	29.1	0.66	45	15.1	0	1/U;2/E	
6/29/2010	29.56	35.17	5.61	29.1	0.66	45	54.8	0	1/F;2/E	Moved discharge & overflow checkvalve to Drum 2
7/2/2010	29.57	35.17	5.60	29.1	0.66	45	8.3	0	1/F;2/U	
7/6/2010	29.63	34.54	4.91	29.1	0.66	45	54.8	0	1/F;2/F	
7/6/2010			4.91				40		1/F;2/F	secondary containment
7/7/2010	29.57	34.56	4.99	29.1	0.66	45			1/E;2/E	Drums emptied. Moved discharge & overflow checkvalve to Drum 1
7/9/2010	29.59	34.27	4.68	29.1	0.66	45	34.1	0	1/F;2/E	Moved discharge & overflow checkvalve to Drum 2
7/12/2010	30.85	33.87	3.02	29.1	0.66	45	54.8	0	1/E;2/F	Moved discharge & overlow checkvalve to Drum 1
7/14/2010	29.42	33.73	4.31	29.1	0.66	45	34	0	1/F;2/F	Waiting on Drums to be emptied.
7/16/2010	29.25	34.06	4.81	29.1	0.66	45		-	1/E;2/E	Drums emptied. Moved discharge & overflow checkvalve to Drum 1
7/19/2010	29.31	33.39	4.08	29.1	0.66	45	64.8	0	1/E;2/E	Secondary containment has 10 gallons. Moved discharge & overflow checkvalve to Drum 1
7/21/2010	29.31	33.31	4.00	29.1	0.66	45	34.7	0	1/U;2/E	Moved discharge & overflow check valve to Drum 2
7/23/2010	29.34	33.04	3.70	29.1	0.66	45	41.7	0	1/F;2/U;3/E	Moved discharge & overflow checkvalve to Drum 3
7/26/2010	29.29	33	3.71	29.1	0.66	45	54.8	0	1/E;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1
7/28/2010	29.28	32.6	3.32	29.1	E&E	45	44.4	0	1/U;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1

Table 4
MW-22 LNAPL Recovery Summary
Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H ₂ O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H₂O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
7/30/2010	29.29	32.56	3.27	29.1	E&E	45	53.5	0	1/F;2/F;3/E	Moved discharge & overflow checkvalve to Drum 3
8/2/2010	29.12	33.09	3.97	29.1	E&E	45	42.6	0	1/E;2/E;3/F	Moved discharge & overflow checkvalve to Drum 1
8/9/2010	29.09	32.98	3.89	29.1	E&E	45	44.4	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2
8/11/2010	29.2	32.33	3.13	29.1	E&E	45	44.4	0	1/E;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1
8/13/2010	29.14	32.18	3.04	29.1	E&E	45	42.3	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2
8/19/2010	28.94	32.88	3.94	29.1	D & D	45	42.3	0	1/E;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1
8/20/2010	29.2	31.93	2.73	29.7	F&F	45	42.3	0	1/F;2/F;3/E	Moved discharge & overflow checkvalve to Drum 3. Reset float.
8/23/2010	29.0	32.83	3.83	29.7	F&F	45	42.3	0	1/E;2/E;3/F	Moved discharge & overflow checkvalve to Drum 1.
8/25/2010	29.18	32.4	3.22	29.7	F&F	45	42.1	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
8/27/2010	29.13	32.36	3.23	29.7	F&F	45	43.38	0	1/E;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1.
8/30/2010	28.93	32.83	3.90	29.7	F&F	45	43.38	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
9/1/2010	29.13	32.42	3.29	29.7	F&F	45	37.6	0	1/E;2/F;3/E	Moved discharge & overflow checkvalve to Drum 1.
9/3/2010	29.09	33.03	3.94	29.7	F&F	45	43.2	0	1/F;2/F;3/E	Moved discharge & overflow checkvalve to Drum 3.
9/7/2010	-	_	<u>-</u>	29.7	F&F	45	42.8	0	1/F;2/F;3/F	Moved discharge & overflow checkvalve to Drum 4.
9/10/2010	_	-	-	29.7	F&F	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 1.
9/16/2010	28.99	33.12	4.13	29.7	F&F	45	53.9	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
9/17/2010	29.12	32.58	3.46	29.7	F&F	45	25.2	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 1.
9/22/2010	28.93	32.72	3.79	29.7	F&F	45	49.58	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
9/24/2010	28.98	32.18	3.20	29.7	F&F	45	39.5	0	1/F;2/F;3/E	Moved discharge & overflow checkvalve to Drum 3.
10/1/2010	28.87	32.38	3.51	29.7	F&F	45	40.5	0	1/F;2/F;3/F	Moved discharge & overflow checkvalve to Drum 4.
10/4/2010	28.94 28.95	31.87 31.77	2.93 2.82	29.7 29.7	F&F	45	6.8	0	1/F;2/F;3/F 1/F;2/F;3/F	

Table 4 MW-22 LNAPL Recovery Summary Targa Midstream Services, L.P., Eunice Plant

Date	Depth LNAPL	Depth H ₂ O	LNAPL Thickness	Filter/Float Depth Set	Cycles/ Minute	Inlet Pressure	LNAPL Recovered	H ₂ O Recovered	Drum/ Used, Full, Empty (#/U,F,E)	Notes
10/8/2010	28.87	32.05	3.18	29.7	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 1.
10/11/2010	28.82	31.95	3.13	29.7	E&E	45	42.4	0	1/F;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
10/13/2010	29.01	31.81	2.80	29.7	E&E	45	42.4	0	1/F;2/F;3/E	Moved discharge & overflow checkvalve to Drum 5.
10/18/2010	28.72	31.92	3.20	29.7	E&E	50	50	0	1/F;2/F;3/F	Waiting on Drums to be emptied.
10/20/2010	28.9	32.1	3.20	29.7	E&E	45	-		1/F;2/F;3/F	Waiting on Drums to be emptied.
10/22/2010	28.91	31.8	2.89	29.9	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 4.
10/25/2010	28.79	31.8	3.01	29.7	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 2.
10/27/2010	29.00	31.8	2.80	29.7	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 5.
10/29/2010	29.00	31.75	2.75	29.7	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 4.
11/1/2010	28.90	31.89	2.99	29.7	E&E	45	42.4	0	1/E;2/E;3/E	Moved discharge & overflow checkvalve to Drum 3.
			0.00							
			0.00		Re	covery Totals	2,060	0		

Notes

Depths reported in feet.

Inlet Pressure in Pounds per Square Inch (PSI).

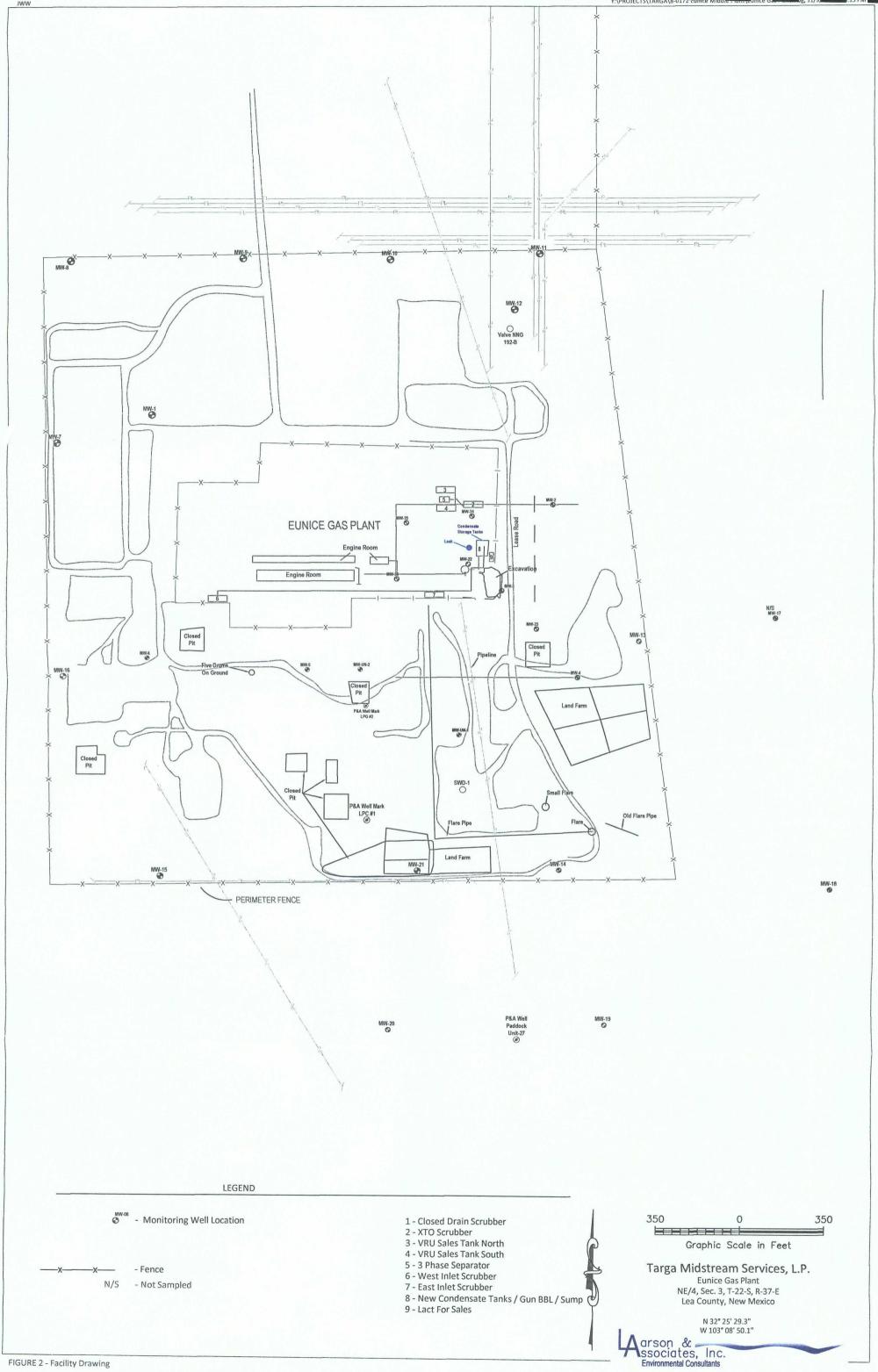
Volumes reported in gallons.

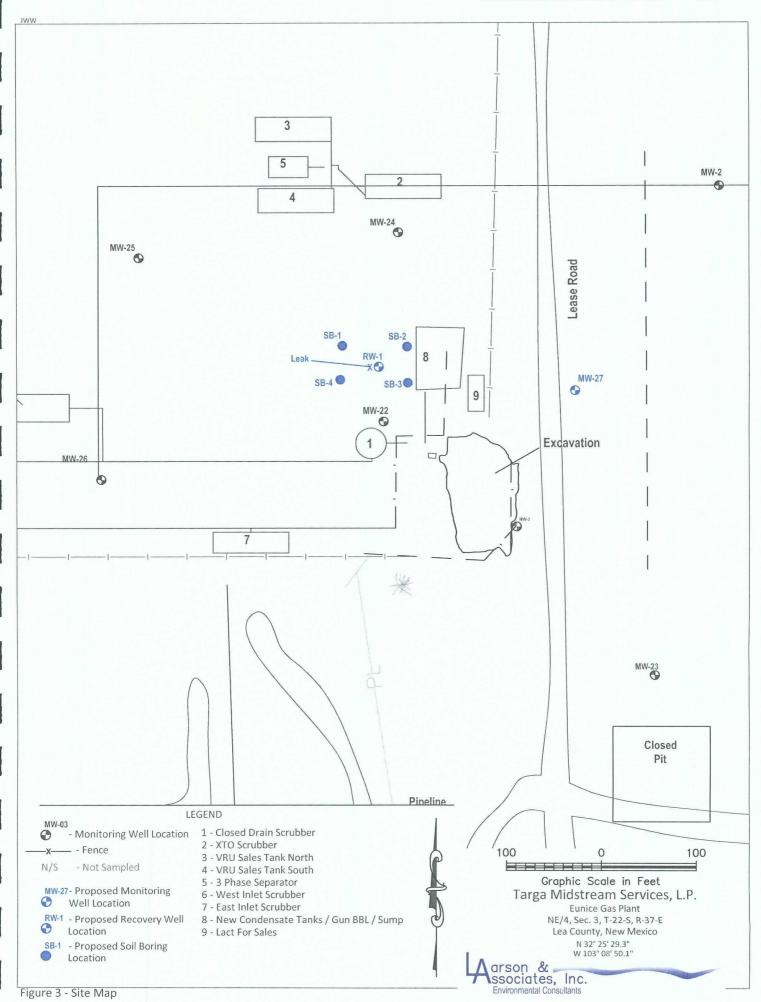
55-gallon drum dimensions = 22.5" ID X 32" Internal height. ~0.206613 gallons per 0.01 feet gauged

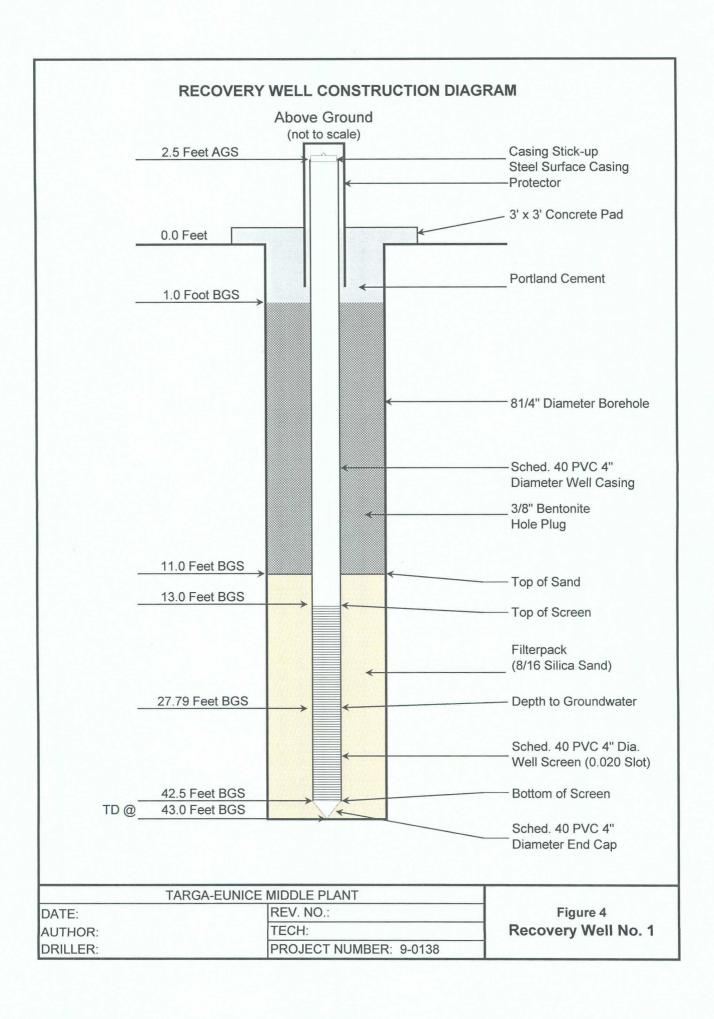
Yellow indicates recovery not used in total calculation.

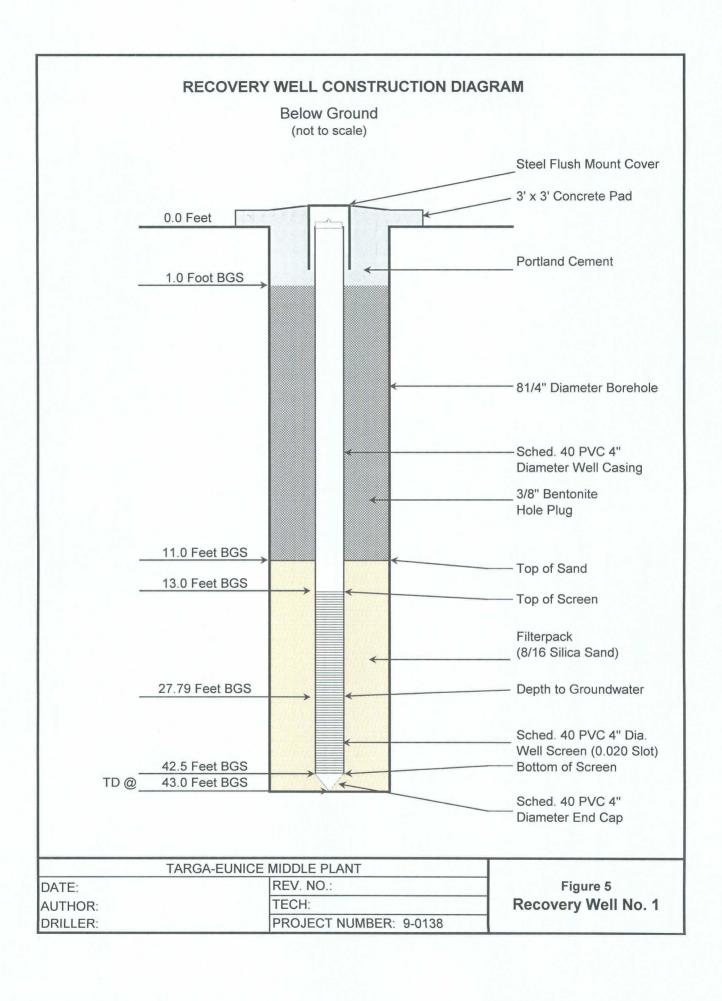
Quick Calc	Input Feet	Gallons
Gauged Drum Thickness	0.00	0.0

Figures





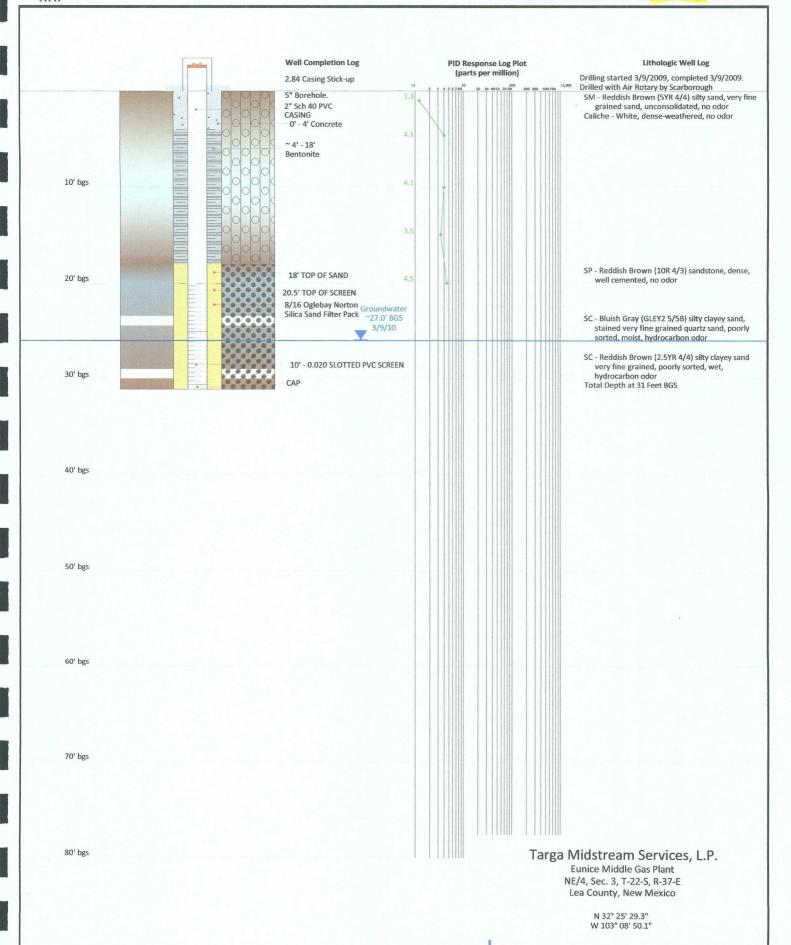




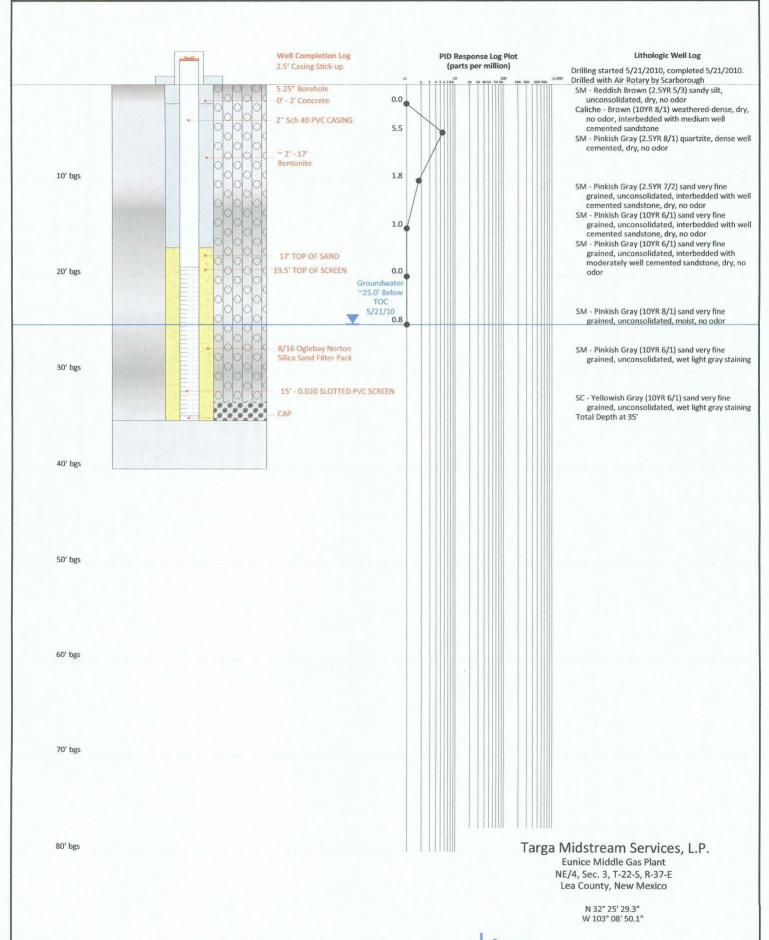
Appendix A

Monitoring Well Completion Records

arson & ssociates, Inc. Environmental Consultants



Agrson & ssociates, Inc. Environmental Consultants

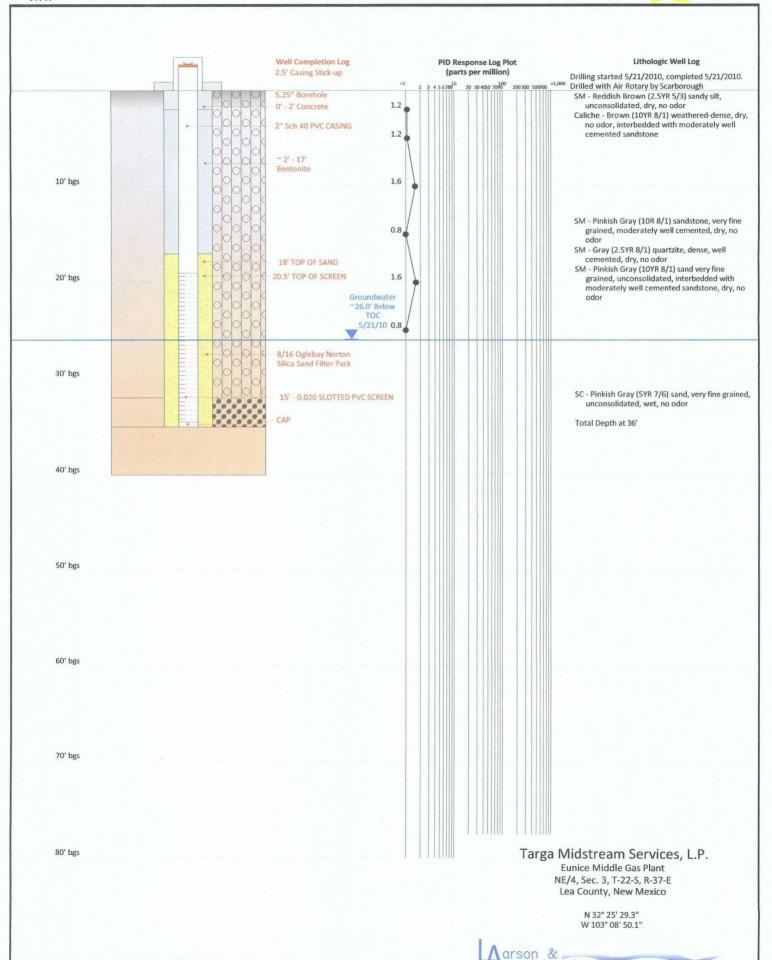


MW-24 Boring & Completion Log

Aarson & ssociates, Inc.
Environmental Consultants

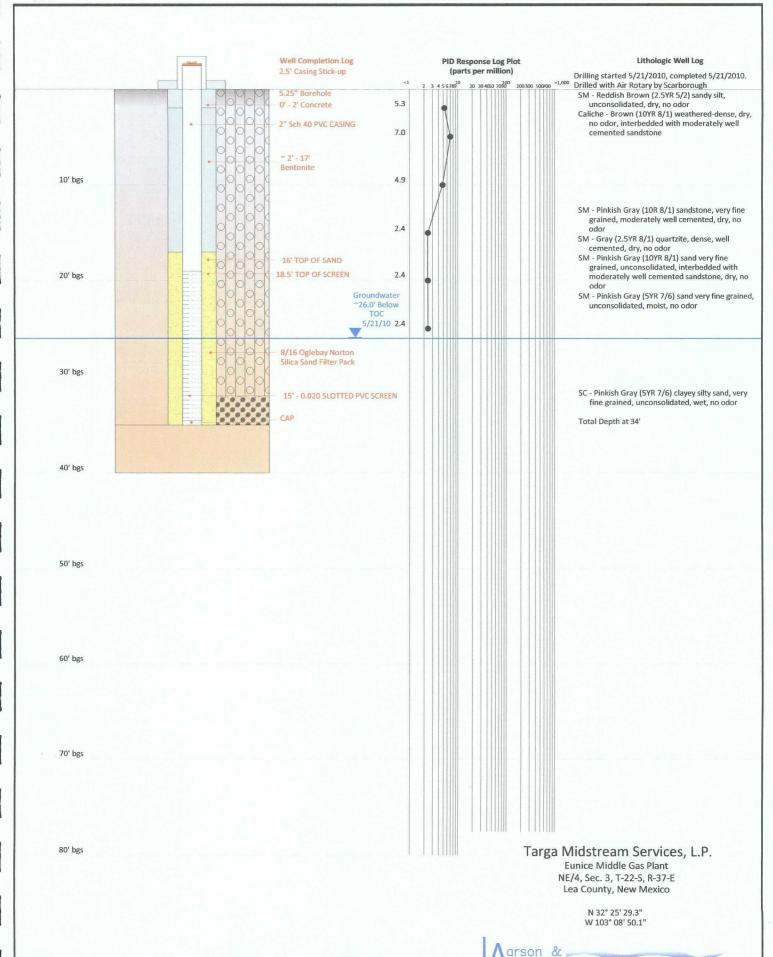
ssociates, Inc.

Environmental Consultants



ssociates, Inc.

Environmental Consultants



Appendix B

LNAPL Recovery Graphs MW-3 and MW-22

Monitor Well LNAPL Recovery Summary Targa Midstream Services, L.P. Eunice Gas Plant

