



Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- SB01 TEMPORARY WELL LOCATION (PLUGGED)
- S01 TEMPORARY SUMP
- MONITORING WELL LOCATION (PERMANENT WELL)
- 3.3 BENZENE CONCENTRATION (mg/l)
- SCREENING LEVEL = 0.005 mg/l
- SPH SEPARATE PHASE HYDROCARBON
- ISOCENTOUR OF BENZENE CONCENTRATION (mg/l)



QUADRANGLE LOCATION



PROJ. NO.: Western Refining DATE: 06/30/13 FILE: WestRef-bb41

FIGURE 10 BENZENE CONCENTRATION MAP MARCH 2015



8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- SB01 TEMPORARY WELL LOCATION (PLUGGED)
- S01 TEMPORARY SUMP
- MONITORING WELL LOCATION (PERMANENT WELL)
- 0.019 1,1-DICHLOROETHANE CONCENTRATION (mg/l)
- SCREENING LEVEL = 0.025 mg/l
- SPH SEPARATE PHASE HYDROCARBON
- ISOCONTOUR OF 1,1-DICHLOROETHANE CONCENTRATION (mg/l)



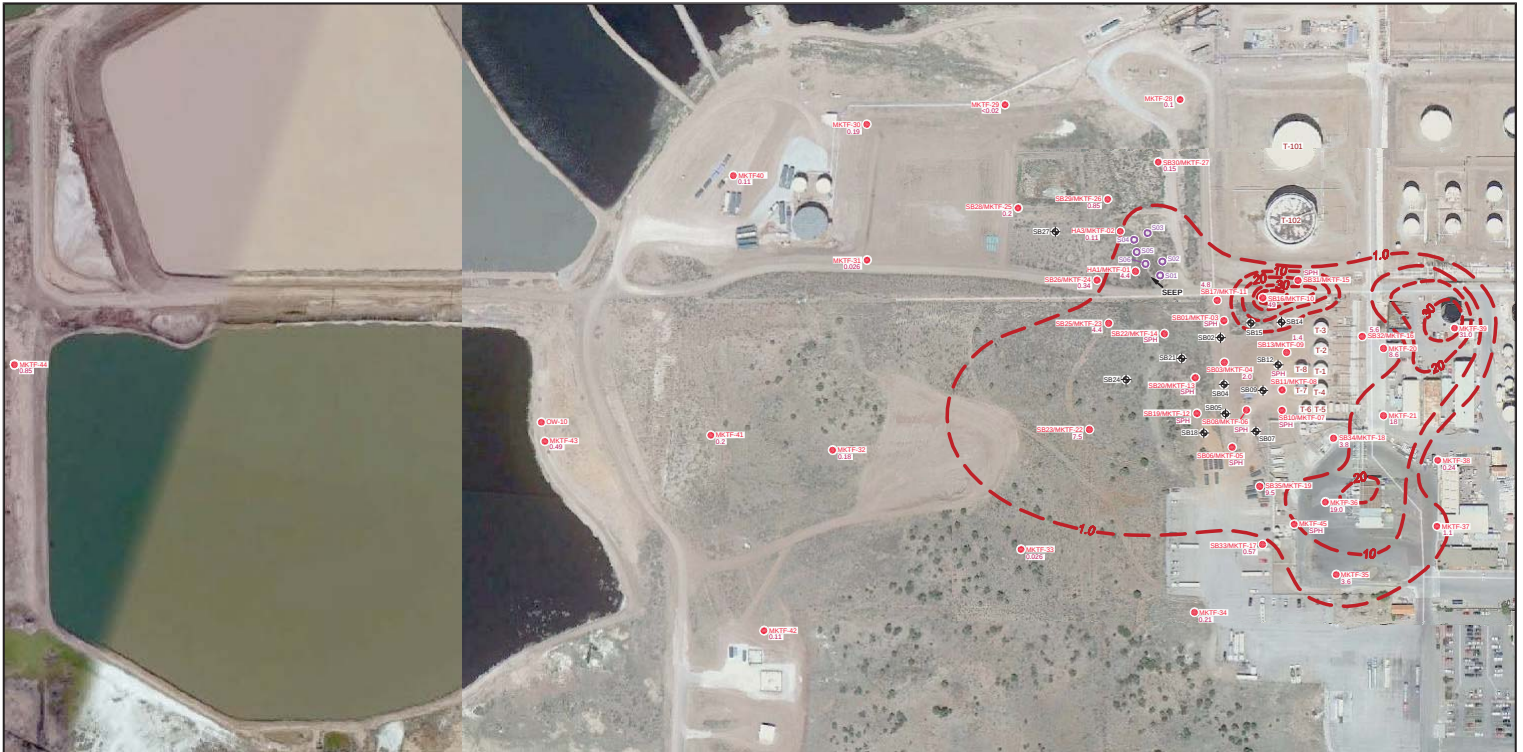
QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining DATE: 06/30/13 FILE: WestRef-b840

FIGURE 11 1,1-DICHLOROETHANE CONCENTRATION MAP MARCH 2015

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8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- SB01 TEMPORARY WELL LOCATION (PLUGGED)
- S01 TEMPORARY SLUMP
- MONITORING WELL LOCATION (PERMANENT WELL)
- 0.026 DISSOLVED IRON CONCENTRATION (mg/l)
- SCREENING LEVEL = 1.0 mg/l
- SPH SEPARATE PHASE HYDROCARBON
- ISOCONTOUR OF DISSOLVED IRON CONCENTRATION (mg/l)



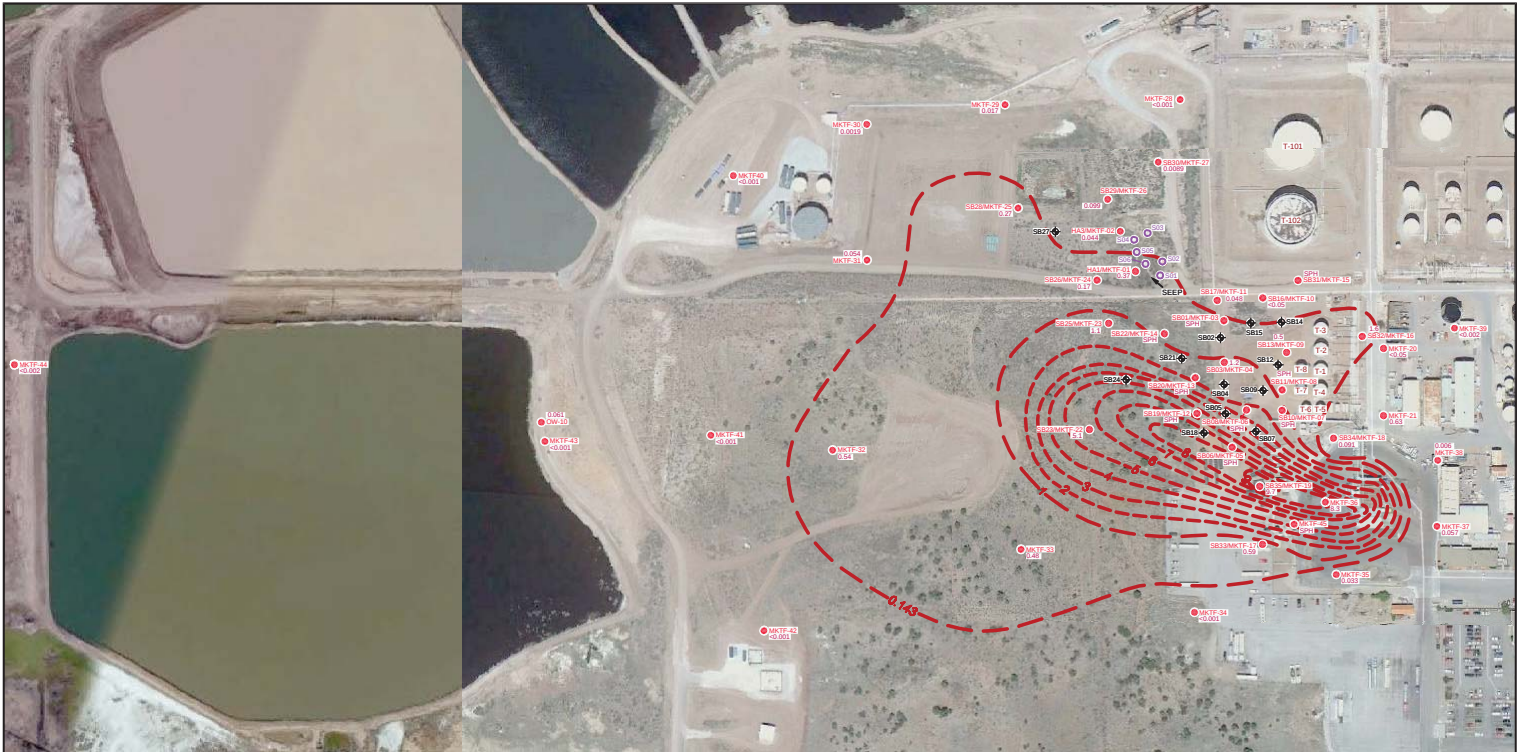
QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining DATE: 06/30/13 FILE: WestRef-b839

FIGURE 12
DISSOLVED IRON
CONCENTRATION MAP
MARCH 2015

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Suite 300
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

0 220 SCALE IN FEET	LEGEND SB01 TEMPORARY WELL LOCATION (PLUGGED) S01 TEMPORARY SUMP MONITORING WELL LOCATION (PERMANENT WELL) 1.1 MTBE CONCENTRATION (mg/l) SCREENING LEVEL = 0.143 mg/l SPH SEPARATE PHASE HYDROCARBON ISOCONTOUR OF MTBE CONCENTRATION (mg/l)	Western Refining GALLUP REFINERY PROJ. NO.: Western Refining DATE: 06/30/13 FILE: WestRef-b842 FIGURE 13 MTBE CONCENTRATION MAP MARCH 2015 DiSorbo Environmental Consulting Firm 8501 N. MoPac Expy. Suite 300 Austin, Texas 78759
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Aerial Map Source: Google Map, 01/05/2014.

LEGEND

- SB01 TEMPORARY WELL LOCATION (PLUGGED)
- S01 TEMPORARY SLUMP
- MONITORING WELL LOCATION (PERMANENT WELL)
- 0.3 NAPHTHALENE CONCENTRATION (mg/l)
- SCREENING LEVEL = 0.00165 mg/l
- SPH SEPARATE PHASE HYDROCARBON
- ISOCONTOUR OF NAPHTHALENE CONCENTRATION (mg/l)



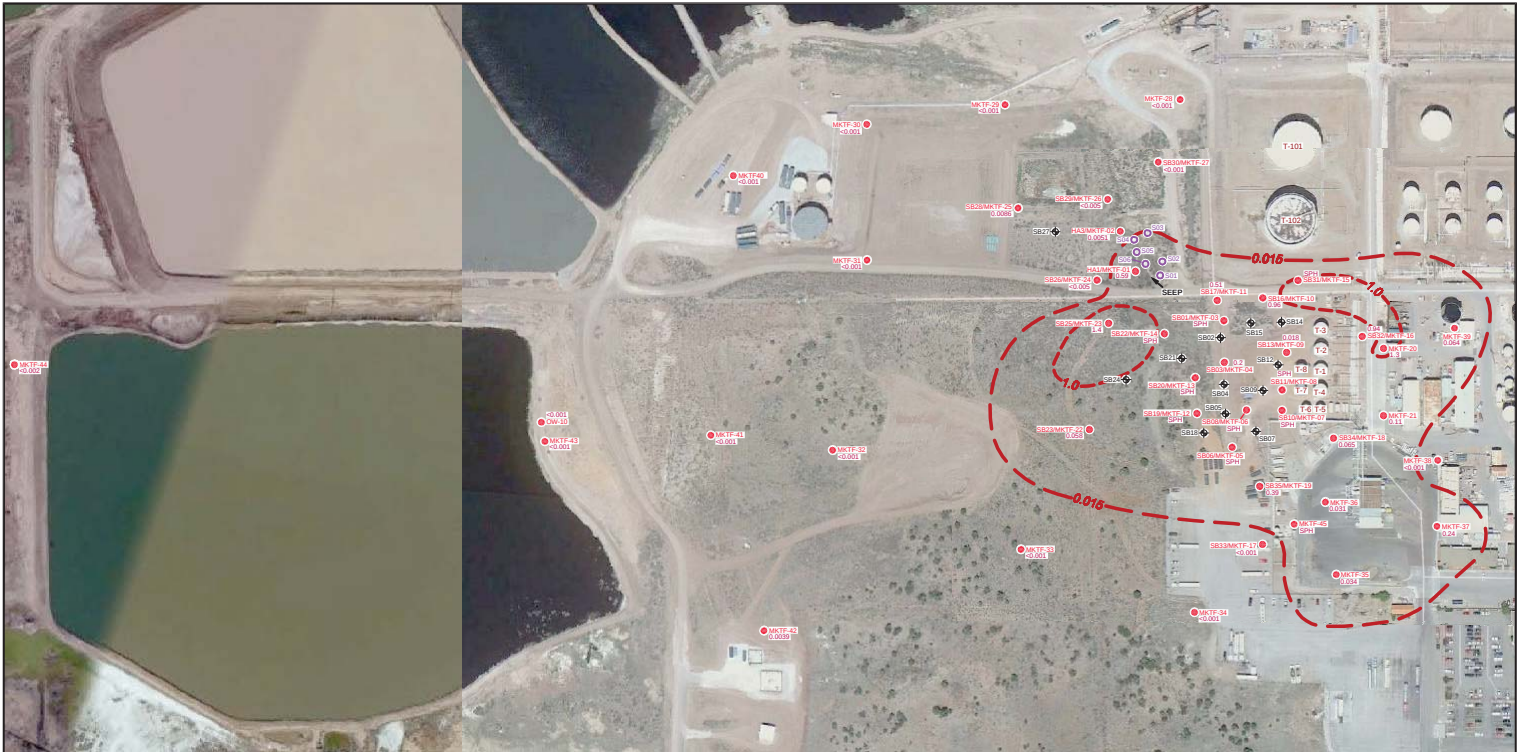
QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining/DATE/06/30/13/FILE/WestRef-b838

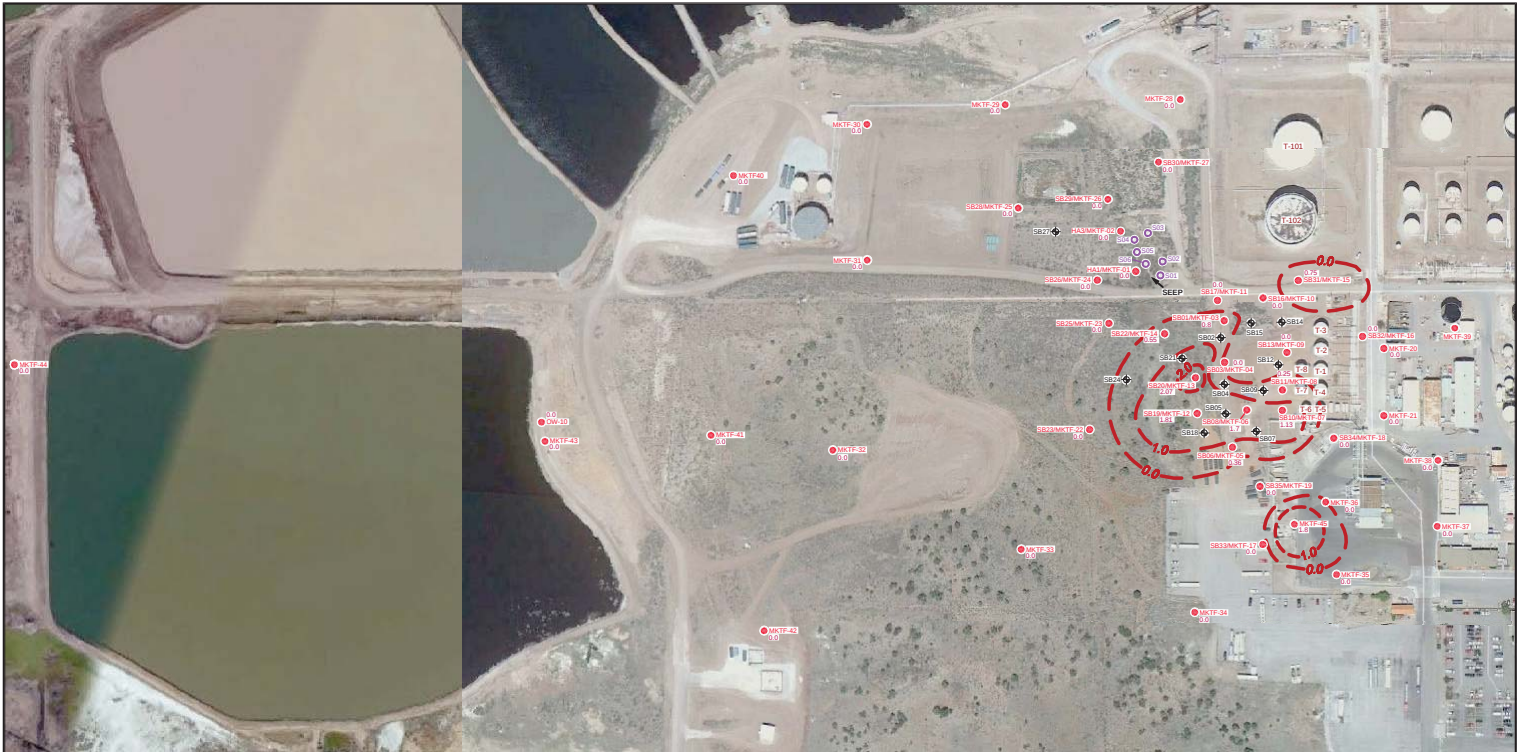
FIGURE 14.
NAPHTHALENE
CONCENTRATION MAP
MARCH 2015

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8501 N. MoPac Expy.
Suite 300
Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

  SCALE IN FEET	LEGEND SB01  TEMPORARY WELL LOCATION (PLUGGED) S01  TEMPORARY SUMP  MONITORING WELL LOCATION (PERMANENT WELL) 1.4  1,2,4-TRIMETHYLBENZENE CONCENTRATION (mg/l) SCREENING LEVEL = 0.015 mg/l SPH  SEPARATE PHASE HYDROCARBON  ISOCOUNTOUR OF 1,2,4-TRIMETHYLBENZENE CONCENTRATION (mg/l)	 NEW MEXICO QUADRANGLE LOCATION
Western Refining GALLUP REFINERY PROJ. NO.: Western Refining DATE: 06/30/13 FILE: WestRef-bB43 FIGURE 15 1,2,4-TRIMETHYLBENZENE CONCENTRATION MAP MARCH 2015		DiSorbo Environmental Consulting Firm 8501 N. MoPac Expy. Suite 300 Austin, Texas 78759



Aerial Map Source: Google Map, 01/05/2014.

0 220
SCALE IN FEET

LEGEND

SB01 TEMPORARY WELL LOCATION (PLUGGED)

S01 TEMPORARY SUMP

MONITORING WELL LOCATION (PERMANENT WELL)

1.81 SEPARATE PHASE HYDROCARBON THICKNESS (FT)

CONTOUR OF SEPARATE PHASE HYDROCARBON THICKNESS (FT)

NEW MEXICO

QUADRANGLE LOCATION

Western Refining
GALLUP REFINERY

PROJ. NO.: Western Refining DATE 06/30/13 FILE WestRef-bB44

FIGURE 16
SEPARATE PHASE
HYDROCARBON THICKNESS MAP
MARCH 2015

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Environmental Consulting Firm

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Suite 300
Austin, Texas 78759

Appendix A
Boring / Well Completion Logs

LOG OF BORING

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: N/A
Drilling Rig: N/A
Drilling Method: Hand Auger
Sampling Method: Auger Head
Comments: N 35°29.353' W 108°25.785'

Total Depth: 9' bgl
Ground Water: Saturated @ 4.75' bgl
Elev., TOC (ft. msl): 212.86
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): 212.30
Site Coordinates:
N 3058.77 **W** 1182.85
Boring No.: HA2
Start Date: 7/11/2013 08:40
Finish Date: 7/11/2013 09:40

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					15.4 86 °F		100	Silty Clay (CL) Low plasticity, soft, damp, brown/reddish brown, no odor, damp	2
4				4.75'	15.6 86 °F		100	Silty Clay (CL) Similar to above, moist to saturated at 4.75' bgl, gravelly, no odor	4
6					15.3 86 °F		100	Silty Clay (CL) Similar to above with saturated sand seams, strong hydrocarbon odor, no phase-separated hydrocarbon	6
8									8
10					1250 86 °F			Total Depth = 9' BGL	10
12								Set temporary 1" Well Screened: 5-9' bgl Filter Pack: 2-9' bgl Bentonite: 0-2' bgl Stickup: 0.5'	12
14									14
16									16

LOG OF BORING

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: N/A
Drilling Rig: N/A
Drilling Method: Hand Auger
Sampling Method: Auger Head
Comments: N 35°29.360' W 108°25.789'

Total Depth: 10.75' bgl
Ground Water: Saturated @ 9' bgl
Elev., TOC (ft. msl): 210.84
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): 210.24
Site Coordinates:
N 3098.06 **W** 1177.09

Boring No.: HA3
Start Date: 7/11/2013 12:45
Finish Date: 7/11/2013 13:45

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					24.6 98 °F		100	Silty Clay (CL) Low plasticity, firm, damp, brown-reddish brown, no odor	2
4					20.1 98 °F		100	Silty Clay (CL) Similar to above, odor at 6' bgl with black discolorations	4
6					400 98 °F		100		6
8					933 98 °F		100	Sandy Clay (CL) Low plasticity, soft, moist to saturated at 9' bgl, hydrocarbon odor, no phase-separated hydrocarbon	8
10					800 98 °F		100	Sandy Clay/Clayey Sand (SC/CL) Fine grain, compact, saturated, dark brown, hydrocarbon odor, no phase-separated hydrocarbon	10
12								Total Depth = 10.75' BGL	12
14								Set temporary 1" Well Screened: 5.75-10.75' bgl Filter Pack: 2-10.75' bgl Bentonite: 0-2' bgl Stickup: 0.75'	14
16									16

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: N/A
Drilling Rig: N/A
Drilling Method: Hand Auger
Sampling Method: Auger Head
Comments: N 35°29.363' W 108°25.787'

Total Depth: 7' bgl
Ground Water: Saturated @ 4' bgl
Elev., TOC (ft. msl): 211.26
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): 208.25
Site Coordinates:
N 3119.63 **W** 1190.00

Boring No.: HA4
Start Date: 7/11/2013 14:00
Finish Date: 7/11/2013 15:00

Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0							100	Ground Surface	0
							100	Silt (ML) Low plasticity, soft, dry, light brown, no odor	
2							100	Sandy Gravelly Clay (CL) Low plasticity, firm, damp, brown, no odor	2
4				4'	8.2 384 90 °F 394 90 °F		100	Sandy Gravelly Clay (CL) Similar to above, black, hydrocarbon odor, moist	4
6							100	Sandy Gravelly Clay (CL) Similar to above, saturated, oily, hydrocarbon odor, black to dark brown to brown	6
8								Total Depth = 7' BGL	8
10									10
12									12
14									14
16									16

Set temporary 1" Well
 Screened: 2-7' bgl
 Filter Pack: 1-7' bgl
 Bentonite: 0-1' bgl
 Stickup: 3.25'

LOG OF BORING

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: N/A
Drilling Rig: N/A
Drilling Method: Hand Auger
Sampling Method: Auger Head
Comments:

Total Depth: 8' bgl
Ground Water: Saturated @ 5.5' bgl
Elev., TOC (ft. msl): --
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): --
Site Coordinates:
 N E

Boring No.: HA5

Start Date: 7/11/2013 15:10

Finish Date: 7/11/2013 16:15

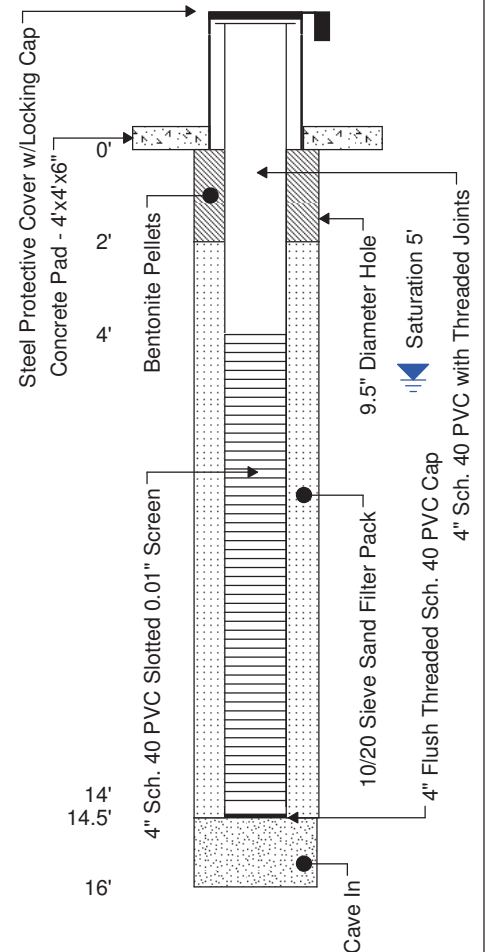
Depth (ft.)	Sampling						Recovery (%)	Sample Description	Depth (ft.)
	Sample Depth	Time	Sample Type/ Container/No.	Saturation	Organic Vapor (ppm)	USCS Class			
0								Ground Surface	0
2					8.5		100	Silt (ML) Low plasticity, very dense, dry to damp, brown, no odor	2
4					80 °F		100	Sandy Clay/Clayey Sand (CL) Low plasticity, fine grain, compact, brown, no odor	4
6				5.5'	19.4		100	Clayey Sand (SC) Similar to above, saturated at 5.5' bgl, becomes black, oily, hydrocarbon odor	6
8					112 °F			Total Depth = 8' BGL	8
10					80 °F				10
12									12
14									14
16									16

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.346' W 108°25.782'; Boring ID - HA1

Total Depth: 16' bgl
Ground Water: Saturated @ 5' bgl
Elev., TOC (ft. msl): 6920.67
Elev., PAD (ft. msl): 6918.28
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,864.41 **E** 2,545,561.73

Well No.: MKTF-01
Start Date: 11/14/2013
Finish Date: 11/14/2013

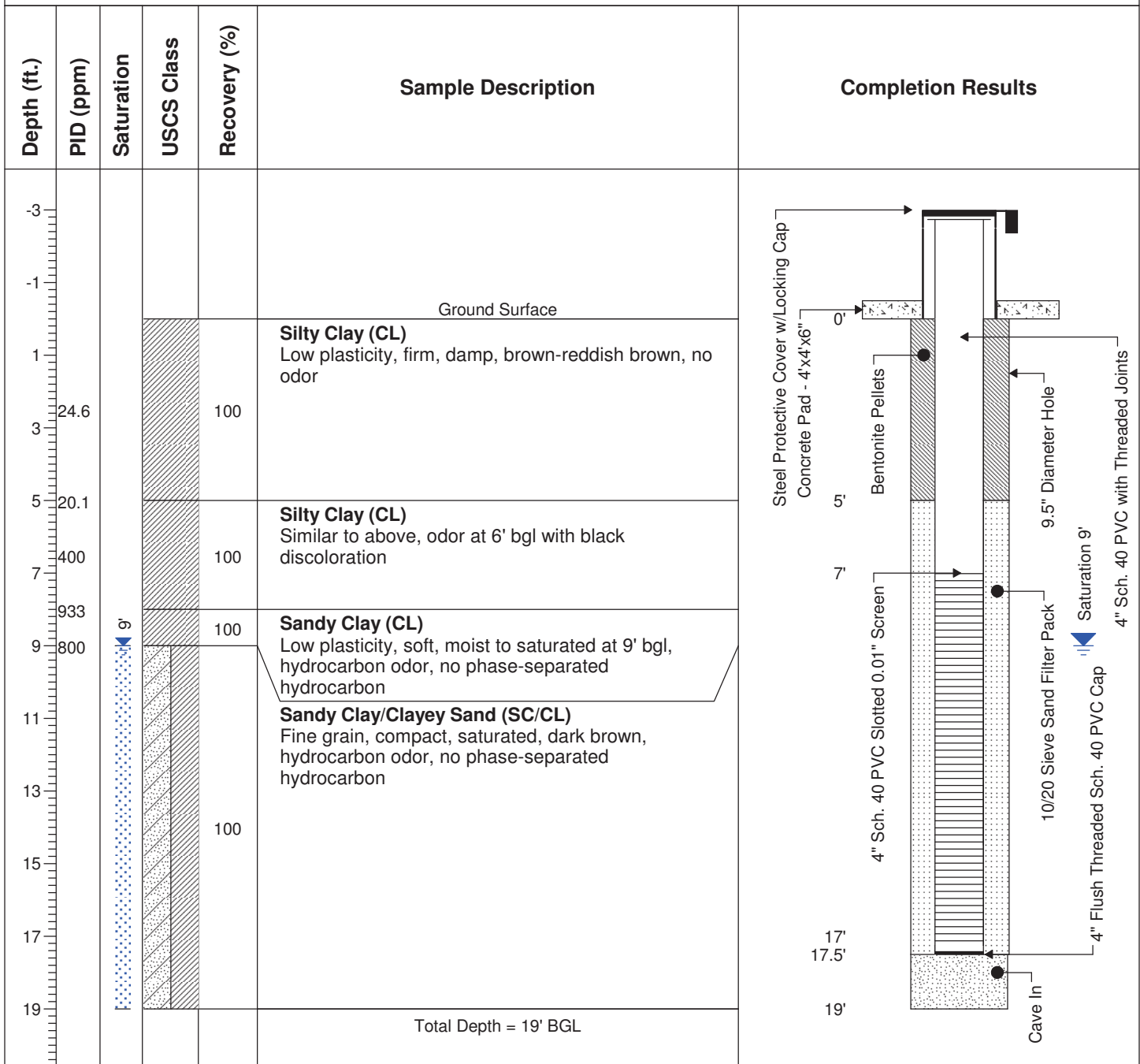
Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1						
1					Ground Surface	
3				100	Silty Clay (CL) Low plasticity, soft, damp, reddish brown to brown, no odor	
5		5'				
7				100	Silty Clay/Clayey Silt (CL/ML) Low plasticity, very soft, moist to saturated, brown grading to black, gravelly, bio odor, no phase-separated hydrocarbon	
9						
11						
13						
15						
17					Total Depth = 16' BGL	
19						



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.360' W 108°25.789'; Boring ID HA3

Total Depth: 19' bgl
Ground Water: Saturated @ 9' bgl
Elev., TOC (ft. msl): 6917.45
Elev., PAD (ft. msl): 6915.00
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,946.93 **E** 2,545,530.46

Well No.: MKTF-02
Start Date: 11/14/2013
Finish Date: 11/14/2013



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.328' W108°25.743'; Boring ID - SB01

Total Depth: 19' bgl
Ground Water: Saturated @ 8' bgl
Elev., TOC (ft. msl): 6931.31
Elev., PAD (ft. msl): 6931.73
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,746.53 **E** 2,545,756.87

Well No.: MKTF-03
Start Date: 11/7/2013
Finish Date: 11/7/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1	164			60	Fill (Silt/Sand) Fine grain, loose, dry to damp, brown, no odor	
3	423			40	Silty Clay (CL) Low plasticity, firm, damp, brown/reddish brown, no odor	
5	330			70	Silty Clay (CL) Similar to above, no odor	
7	75			90	Silty Clay (CL) Similar to above, sandy at base from 7.75-8.0' bgl, no odor	
9	326			90	Silty Clay (CL) Fine grain sand seams throughout, saturated, phase-separated hydrocarbon, hydrocarbon odor, clear phase-separated hydrocarbon poured out of split spoon	
11	312			90	Silty Clay (CL) Similar to above with sand seams, saturated with phase-separated hydrocarbon, hydrocarbon odor, dark brown	
13	368			80	Gravelly Sand (SW) Fine to medium to coarse grain, loose, saturated with phase-separated hydrocarbon, black, hydrocarbon odor	
15	700			60	Gravelly Sand (SW) Similar to above	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.328' W108°25.743'; Boring ID - SB01

Total Depth: 19' bgl
Ground Water: Saturated @ 8' bgl
Elev., TOC (ft. msl): 6931.31
Elev., PAD (ft. msl): 6931.73
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,746.53 **E** 2,545,756.87

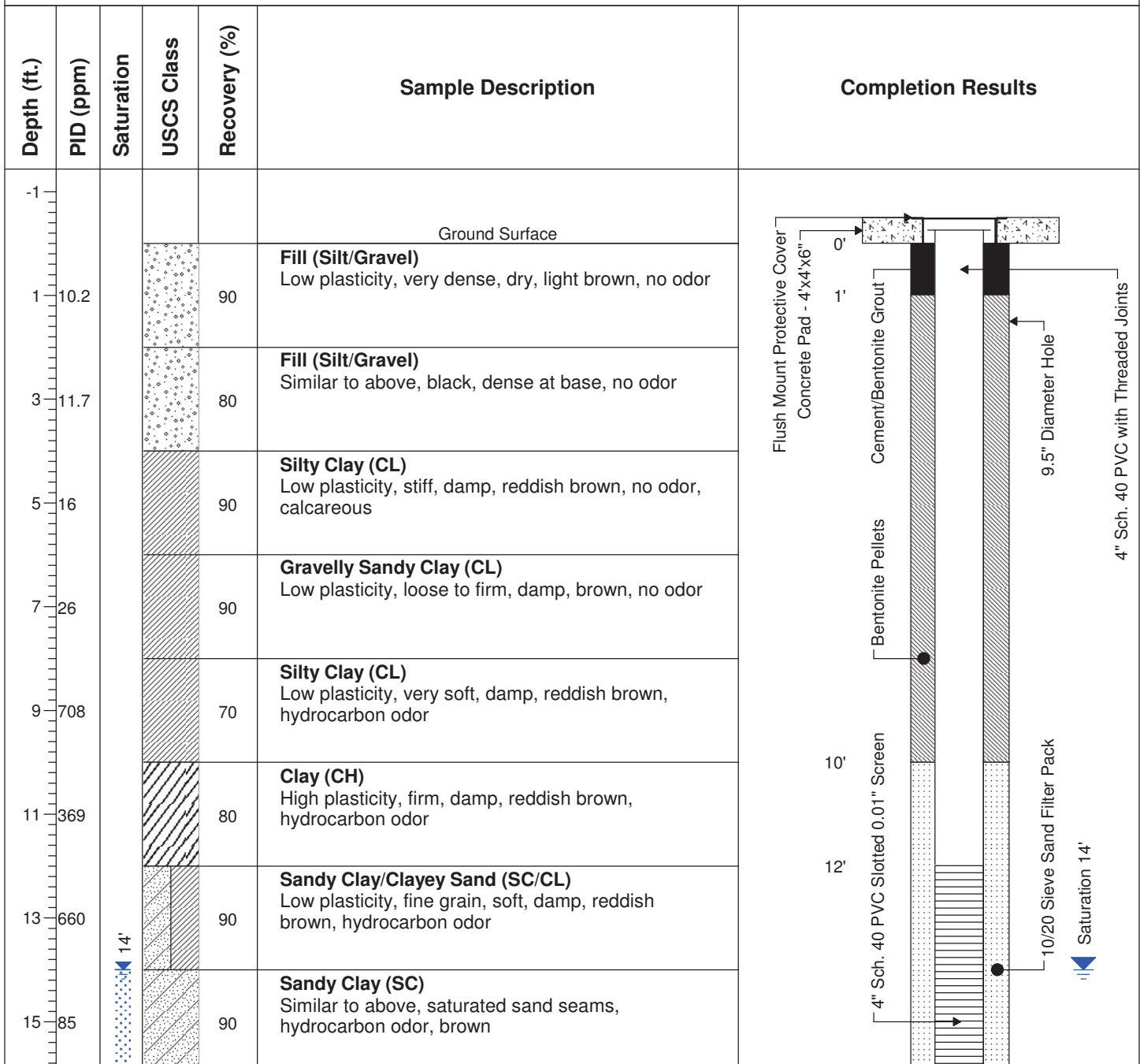
Well No.: MKTF-03
Start Date: 11/7/2013
Finish Date: 11/7/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17				10	Silty Sand/Silty Clay (SM/CL) Low plasticity, firm, moist, brown, faint odor, no phase-separated hydrocarbon	4" Sch. 40 PVC Slotted 0.01" Screen 18' 18.5' 19' 10/20 Sieve Sand Filter Pack Cave In 4" Flush Threaded Sch. 40 PVC Cap
19	225			80	Silty Clay (CL) Poor recovery Clay (CH) High plasticity, very dense, damp, light reddish brown, faint odor	
21					Total Depth = 19' BGL	
23						
25						
27						
29						
31						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.310' W 108°25.742'; Boring ID SB03

Total Depth: 24' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6933.57
Elev., PAD (ft. msl): 6933.90
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,649.46 **E** 2,545,752.83

Well No.: MKTF-04
Start Date: 11/12/2013
Finish Date: 11/12/2013



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.310' W 108°25.742'; Boring ID SB03

Total Depth: 24' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6933.57
Elev., PAD (ft. msl): 6933.90
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,649.46 **E** 2,545,752.83

Well No.: MKTF-04
Start Date: 11/12/2013
Finish Date: 11/12/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17	64			70	Sandy Clay (SC) Similar to above, moist to saturated, hydrocarbon odor, brown	22' 22.5' 24' 4" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack 4" Flush Threaded Sch. 40 PVC Cap Cave In
19	33			90	Sandy Clay (SC) Low plasticity, fine grain, soft, moist to saturated, light reddish brown, hydrocarbon odor, gravelly at base Silty Clay (CL) Low plasticity, stiff, damp, light reddish brown grading to yellowish/greenish gray, becomes more silty at base	
21						
23						
25					Total Depth = 24' BGL	
27						
29						
31						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.282' W 108°25.739'; Boring ID - SB06

Total Depth: 15' bgl
Ground Water: Saturated @ 10' bgl
Elev., TOC (ft. msl): 6942.22
Elev., PAD (ft. msl): 6939.49
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,472.30 **E** 2,545,769.95

Well No.: MKTF-05
Start Date: 11/12/2013
Finish Date: 11/12/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3					Ground Surface	
1	52.6			60	Fill (Silty Clay/Gravel) Low plasticity, firm, damp, brown, faint odor	
3	180			100	Silty Clay (CL) Low plasticity, firm, damp, reddish brown, odor, calcareous	
5	224			90	Sandy Clay/Clayey Sand (CL/SC) Low plasticity, fine grain, damp, dark brown, hydrocarbon odor, sand seams present	
7	1202			90	Sandy Clay/Clayey Sand (CL) Similar to above	
9	1228			90	Sandy Silty Clay (CL) Low plasticity, soft, damp, dark brown, hydrocarbon odor	
11	1525			90	Sandy Clay (CL) Similar to above, with moist to saturated sand seams, hydrocarbon odor	
13	377			90	Clayey Sand (SC) Fine grain, loose to compact, saturated, hydrocarbon odor, dark brown	
15					Sandy Clay (CL) Low plasticity, soft to firm, moist, dark brown, hydrocarbon odor	
17					Total Depth = 15' BGL	
19						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.295' W 108°25.732'; Boring ID - SB08

Total Depth: 21' bgl
Ground Water: Saturated @ 17.5' bgl
Elev., TOC (ft. msl): 6946.81
Elev., PAD (ft. msl): 6944.24
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,556.28 **E** 2,545,811.85

Well No.: MKTF-06
Start Date: 11/11/2013
Finish Date: 11/11/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3					Ground Surface	
1	15.9			70	Fill (Silt/Silty Clay) Low plasticity, stiff, dry, light brown, no odor	
3	228			60	Fill (Silty Clay/Gravel) Similar to above, dry, no odor	
5	177			60	Fill (Silty Clay) Similar to above, damp, no odor	
7	264			40	Fill (Silty Clay) Low plasticity, soft, damp, brown, gravel and wood debris	
9				--	No recovery	
11	90			10	Fill (Silty Clay/Gravel) Similar to above	
13	660			100	Sandy Silty Clay (CL) Low plasticity, soft, damp to moist at base, brown, hydrocarbon odor	
15						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.295' W 108°25.732'; Boring ID - SB08

Total Depth: 21' bgl
Ground Water: Saturated @ 17.5' bgl
Elev., TOC (ft. msl): 6946.81
Elev., PAD (ft. msl): 6944.24
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,556.28 **E** 2,545,811.85

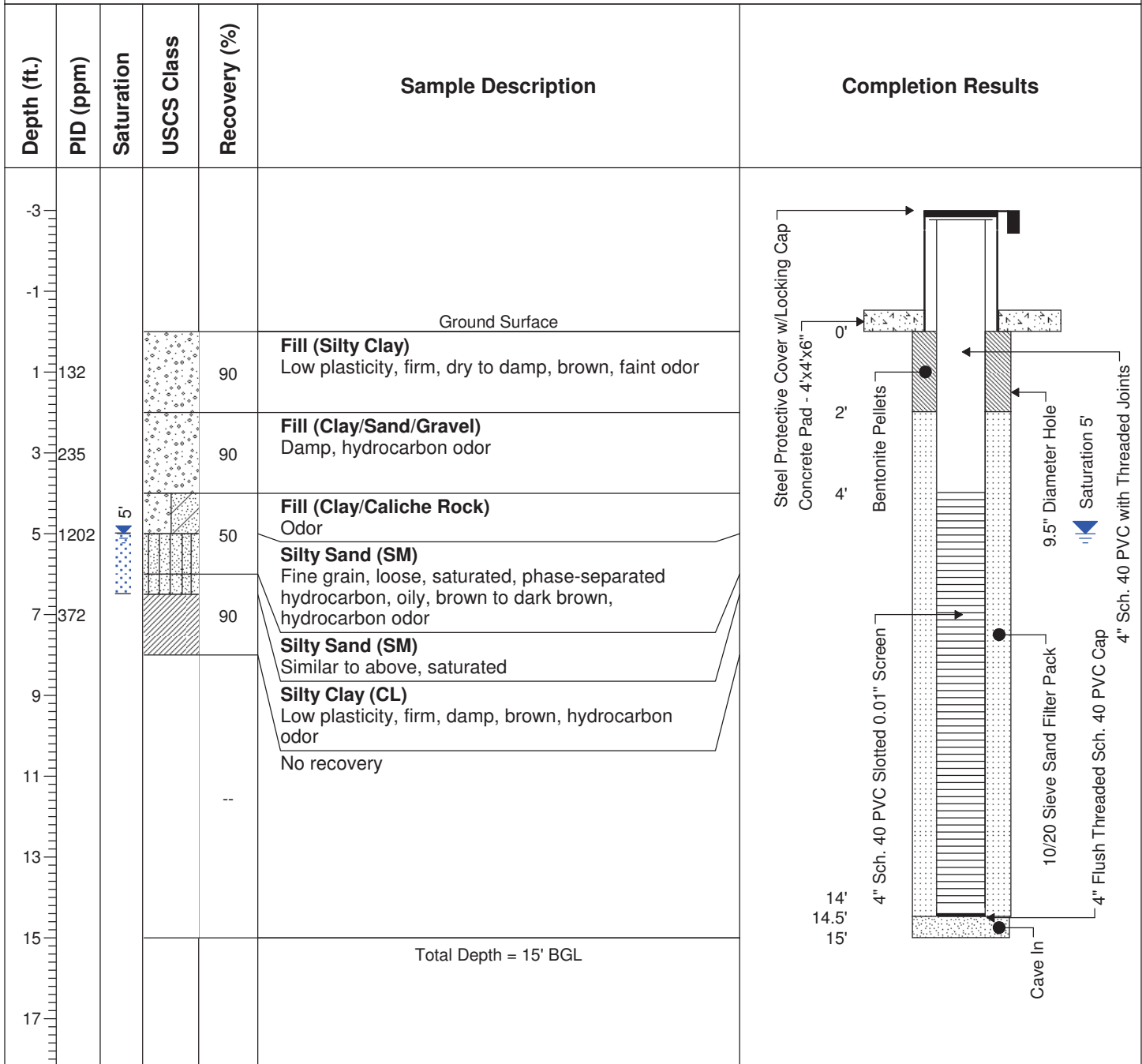
Well No.: MKTF-06
Start Date: 11/11/2013
Finish Date: 11/11/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
1115		17.5'		100	Sandy Silty Clay (CL) Similar to above, moist, oily, hydrocarbon odor	10/20 Sieve Sand Filter Pack 4" Sch. 40 PVC Slotted 0.01" Screen 20.5' 21' Cave In 4" Flush Threaded Sch. 40 PVC Cap Saturation 17.5'
17				100	Gravelly Sandy Clay (CL) Low plasticity, firm, moist, oily, 1" gravel, strong hydrocarbon odor	
19				100	Clayey Gravel Sand (SC) Fine to medium grain, loose, saturated, phase-separated hydrocarbon present, black, hydrocarbon odor	
21				100	Sandy Clay (CL) Low plasticity, firm, moist, black hydrocarbon odor	
Total Depth = 21' BGL						
23						
25						
27						
29						
31						
33						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.295' W 108°25.710'; Boring ID - SB10

Total Depth: 15' bgl
Ground Water: Saturated @ 5' bgl
Elev., TOC (ft. msl): 6947.18
Elev., PAD (ft. msl): 6944.40
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,555.11 **E** 2,545,885.42

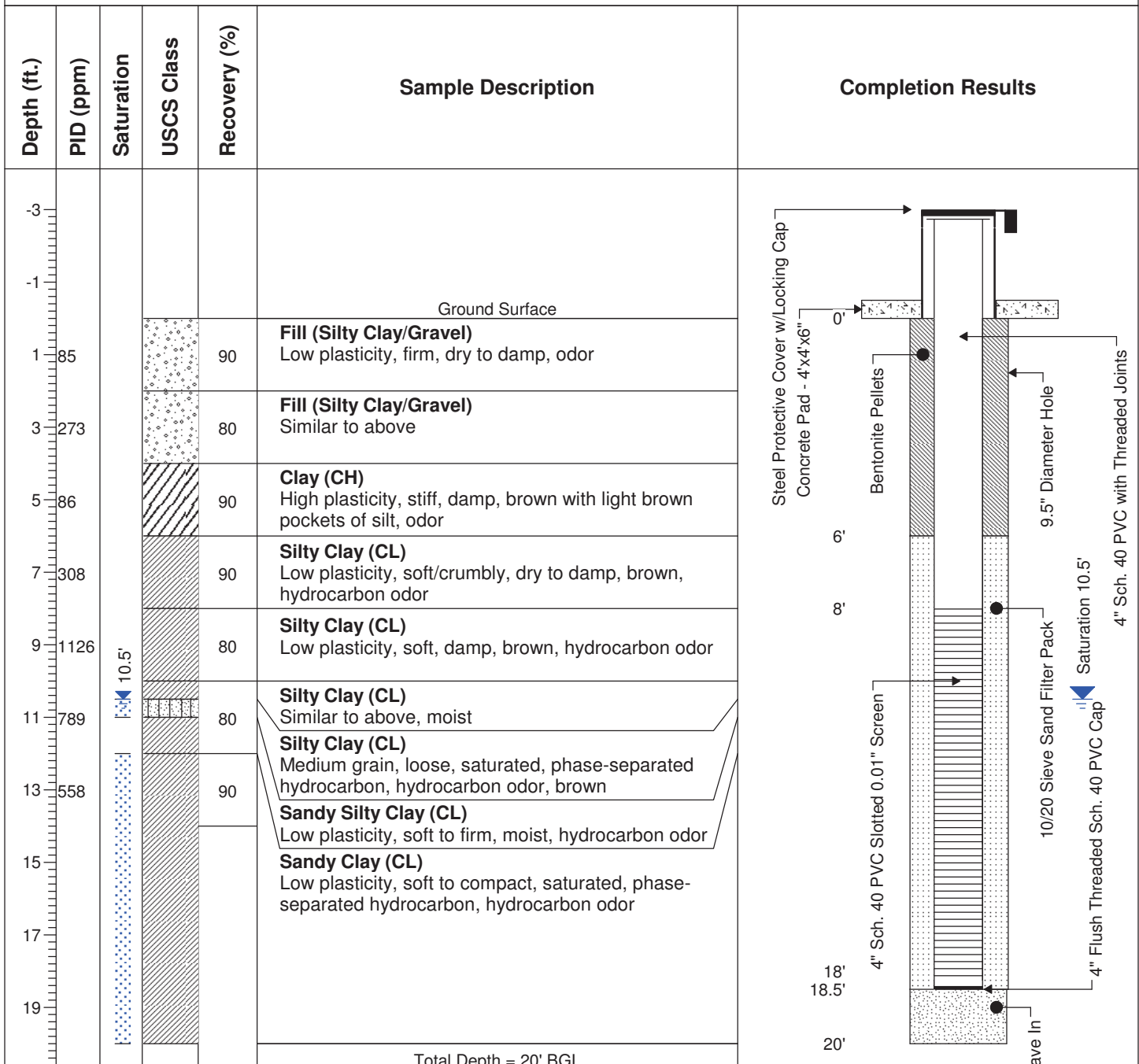
Well No.: MKTF-07
Start Date: 11/11/2013
Finish Date: 11/11/2013



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.302' W 108°25.716'; Boring ID - SB11

Total Depth: 20' bgl
Ground Water: Saturated @ 10.5' bgl
Elev., TOC (ft. msl): 6947.09
Elev., PAD (ft. msl): 6944.02
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,598.94 **E** 2,545,885.02

Well No.: MKTF-08
Start Date: 11/11/2013
Finish Date: 11/11/2013



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.316' W 108°25.715'; Boring ID - SB13

Total Depth: 22' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6946.50
Elev., PAD (ft. msl): 6943.57
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,681.33 **E** 2,545,895.93

Well No.: MKTF-09
Start Date: 11/11/2013
Finish Date: 11/11/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1						
1	21.9			90	Fill (Silty Clay) Low plasticity, stiff, dry to damp, no odor, brown	Steel Protective Cover w/Locking Cap Concrete Pad - 4'x4'x6" Bentonite Pellets 9.5" Diameter Hole 4" Sch. 40 PVC with Threaded Joints 10/20 Sieve Sand Filter Pack Saturation 12'
3	32.7			90	Fill (Silty Clay) Similar to above, gravel	
5	36.1			90	Silty Clay (CL) Low plasticity, soft, damp, brown, faint odor	
7	37			90	Silty Clay (CL) Similar to above	
9	533			90	Silty Clay (CL) Similar to above	
11	314			90	Sandy Clay (CL) Similar to above, increase in sand and moisture	
13	651			90	Sandy Clay (CL) Similar to above, moist, hydrocarbon odor, dark brown	
15	587			90	Sandy Clay/Clayey Sand (CL/SC) Fine to medium grain, compact, moist to saturated, hydrocarbon odor	
					Sandy Clay/Clayey Sand (CL/SC) Similar to above, saturated, sheen observed on split spoon, black, hydrocarbon odor	

WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.316' W 108°25.715'; Boring ID - SB13

Total Depth: 22' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6946.50
Elev., PAD (ft. msl): 6943.57
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,681.33 **E** 2,545,895.93

Well No.: MKTF-09
Start Date: 11/11/2013
Finish Date: 11/11/2013

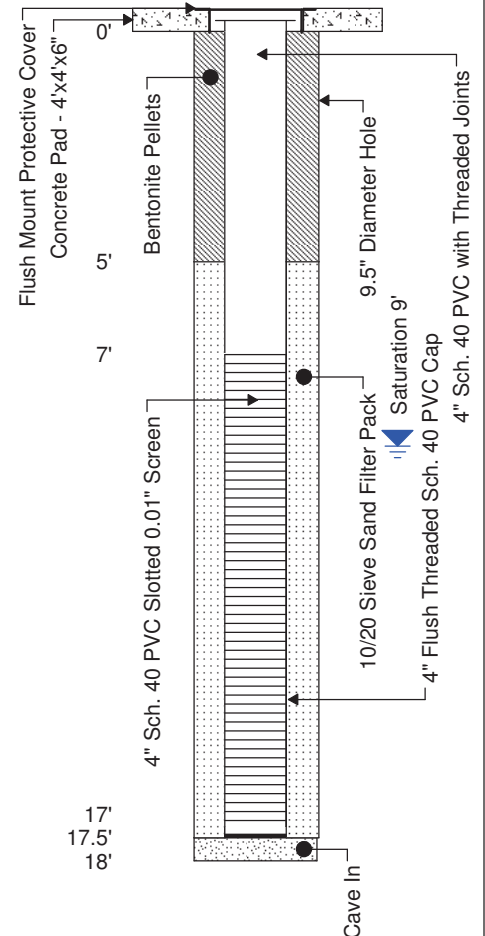
Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17				90	Sandy Clay/Clayey Sand (CL/SC) Fine to medium grain, compact, saturated, sheen observed on split spoon, black, hydrocarbon odor	10/20 Sieve Sand Filter Pack 4" Sch. 40 PVC Slotted 0.01" Screen Cave In 4" Flush Threaded Sch. 40 PVC Cap
19					Total Depth = 22' BGL	
21						
23						
25						
27						
29						
31						
33						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.336' W 108°25.724'; Boring ID SB16

Total Depth: 18' bgl
Ground Water: Saturated @ 9' bgl
Elev., TOC (ft. msl): 6937.16
Elev., PAD (ft. msl): 6937.51
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,807.47 **E** 2,545,853.54

Well No.: MKTF-10
Start Date: 10/31/2013
Finish Date: 10/31/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1	90			90	Fill (Silt/Gravel) Low plasticity, loose, dry, light brown	
3	14			90	Fill (Silty Clay/Gravel) Similar to above	
5	431			90	Silty Clay (CL) Low plasticity, stiff, dry, reddish brown, odor, calcareous	
7	448			60	Sand (SP) Fine grain, loose, dry, reddish brown, odor	
9	654	9'		60	Sand (SP) Similar to above, saturated at 9' bgl, phase-separated hydrocarbon, hydrocarbon odor	
11	1559			90	Clayey Sand (SC) Fine grain, soft, saturated, phase-separated hydrocarbon, brown to black, hydrocarbon odor	
13	713			90	Clayey Sand/Sandy Clay (SC/CL) Low plasticity, firm to stiff, moist to saturated, hydrocarbon odor, dark brown	
15				90		
17						
17.5'						
18'					Total Depth = 18' BGL	



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.336' W 108°25.739'; Boring ID - SB17

Total Depth: 19' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6931.34
Elev., PAD (ft. msl): 6931.61
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,806.93 **E** 2,545,754.77

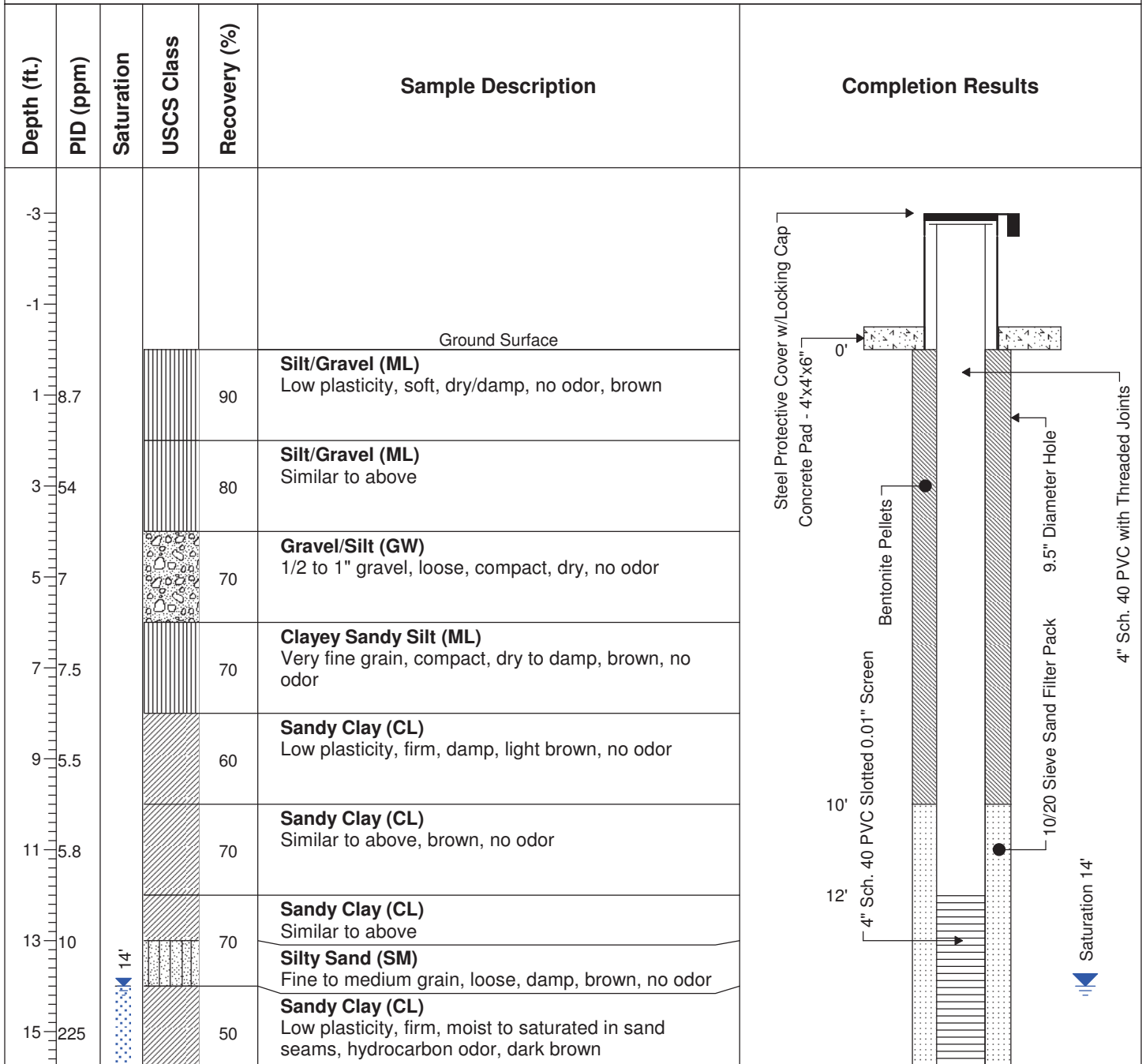
Well No.: MKTF-11
Start Date: 10/31/2013
Finish Date: 10/31/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1	14			60	Fill (Silty Clay/Gravel) Low plasticity, stiff, dry, light brown	
3	36			70	Fill (Silty Clay) Similar to above	
5	80			90	Silty Clay (CL) Low plasticity, firm, damp, brown, calcareous	
7	125			80	Silty Clay (CL) Similar to above	
9	1259			80	Silty Clay (CL) Low plasticity, firm, damp, oily, hydrocarbon odor, dark brown	
11	860			70	Silty Clay (CL) Similar to above, moist, hydrocarbon odor, oily, phase-separated hydrocarbon	
13	1716			60	Sandy Clay (CL) Low plasticity, soft, moist to saturated, hydrocarbon odor, dark brown	
15	1050			70	Silty Sand (SM) Medium grain, loose, saturated, hydrocarbon odor, dark brown to black	
17				70	Sandy/Silty Clay (CL) Low plasticity, firm, saturated, dark brown to black, hydrocarbon odor	
19					Total Depth = 19' BGL	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.294' W 108°25.754'; Boring ID - SB19

Total Depth: 23' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6942.11
Elev., PAD (ft. msl): 6939.70
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,542.07 **E** 2,545,688.29

Well No.: MKTF-12
Start Date: 11/7/2013
Finish Date: 11/7/2013



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.294' W 108°25.754'; Boring ID - SB19

Total Depth: 23' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6942.11
Elev., PAD (ft. msl): 6939.70
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,542.07 **E** 2,545,688.29

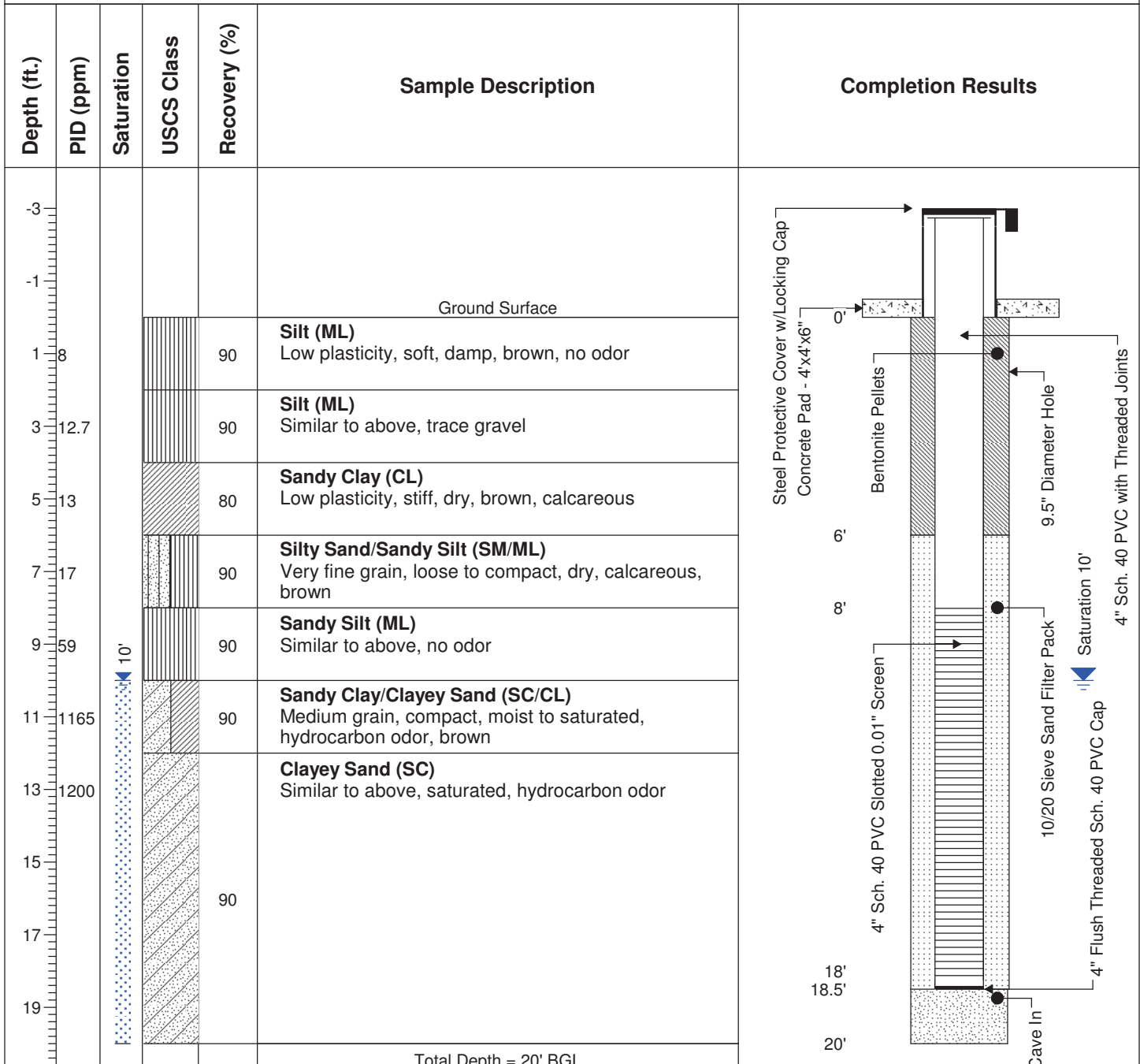
Well No.: MKTF-12
Start Date: 11/7/2013
Finish Date: 11/7/2013

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17	319			70	Sandy Clay (CL) Similar to above, moist, hydrocarbon odor	10/20 Sieve Sand Filter Pack 4" Sch. 40 PVC Slotted 0.01" Screen 4" Flush Threaded Sch. 40 PVC Cap Cave In
19	400			--	Sandy Clay (CL) Similar to above, moist, hydrocarbon odor	
21	532			--	Sandy Clay/Clayey Sand (CL) Very fine grain, compact, moist to saturated, sheen observed in split spoon, hydrocarbon odor	
23					Total Depth = 23' BGL	
25						
27						
29						
31						
33						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.307' W 108°25.755'; Boring ID - SB20

Total Depth: 20' bgl
Ground Water: Saturated @ 10' bgl
Elev., TOC (ft. msl): 6935.18
Elev., PAD (ft. msl): 6933.67
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,625.25 **E** 2,545,697.39

Well No.: MKTF-13
Start Date: 11/12/2013
Finish Date: 11/12/2013





Total Depth: 15' bgl
Ground Water: Saturated @ 6' bgl
Elev., TOC (ft. msl): 6928.02
Elev., PAD (ft. msl): 6925.65
Elev., GL (ft. msl): --
Site Coordinates:
N 1.633.719.43 **E** 2.545.625.96

Well No.: MKTF-14
Start Date: 11/12/2013
Finish Date: 11/12/2013

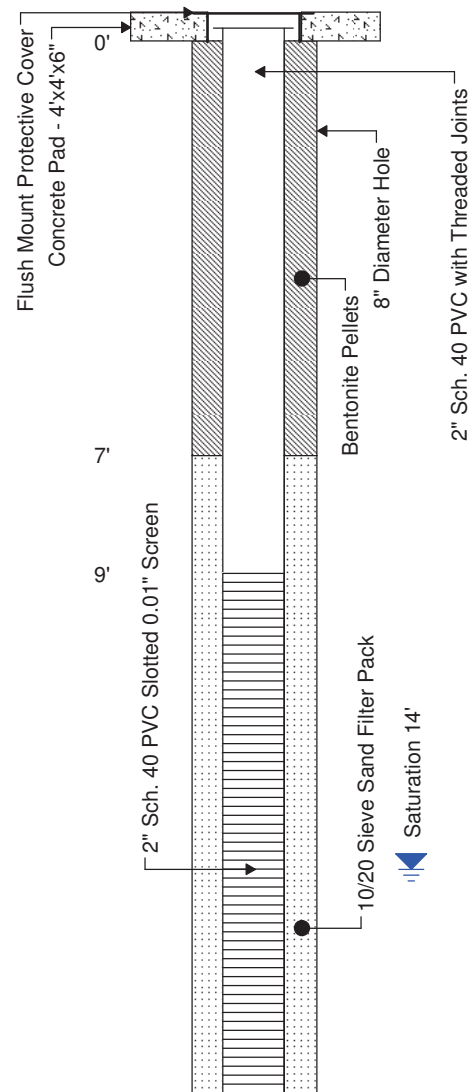
RPS
1250 S. Capital of Texas Hwy., Bldg. 3, Suite 200
Austin, Texas 78746

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Five-Foot Core Barrel
Comments: N 35°29.343' W 108°25.708'; Boring ID - SB31

Total Depth: 22' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6943.48
Elev., PAD (ft. msl): 6943.74
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,845.57 **E** 2,545,934.58

Well No.: MKTF-15
Start Date: 10/29/2013 09:30
Finish Date: 10/29/2013 12:15

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1	6.7			0	Fill (Clay and Gravel) No recovery	
3	14.6			90	Fill (Clay and Gravel) Reddish brown	
5				90	Fill (Clay and Gravel) Similar to above, no odor	
7	823			90	Fill (Silty Clay) Reddish brown, hydrocarbon odor	
9	1004			90	Silty Sandy Clay (CL) Low plasticity, firm to soft, damp, reddish brown, hydrocarbon odor	
11	293			70	Silty Sand (SM) Fine grain, compact, damp, light reddish brown, no odor	
13	221			80	Sand (SP) Similar to above, odor, moist to very moist	
15				80	Sand (SP) Fine to medium grain, loose, saturated, brown, hydrocarbon odor, phase-separated hydrocarbon present	
17				60	Sandy Silt (ML) Low plasticity, very soft, damp to moist, brown, hydrocarbon odor	



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Five-Foot Core Barrel
Comments: N 35°29.343' W 108°25.708'; Boring ID - SB31

Total Depth: 22' bgl
Ground Water: Saturated @ 14' bgl
Elev., TOC (ft. msl): 6943.48
Elev., PAD (ft. msl): 6943.74
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,845.57 **E** 2,545,934.58

Well No.: MKTF-15
Start Date: 10/29/2013 09:30
Finish Date: 10/29/2013 12:15

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
19				90	Sandy Silt/Silty Sand (ML/SM) Fine grain, loose to compact, moist to saturated, hydrocarbon odor, dark brown to black	19' 19.33' 22' 2" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack Bentonite Pellets 2" Flush Threaded Sch. 40 PVC Cap
					Sandy Silt/Silty Sand (ML/SM) Similar to above, saturated in silty sand lenses, hydrocarbon odor	
21				90	Silty Clay (CL) Low plasticity, firm, damp, brown, faint odor	
					Silty Clay (CL) Similar to above, odor	
23					Total Depth = 22' BGL	
25						
27						
29						
31						
33						
35						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.323' W 108°25.680'; Boring ID - SB32

Total Depth: 16' bgl
Ground Water: Saturated @ 9' bgl
Elev., TOC (ft. msl): 6950.58
Elev., PAD (ft. msl): 6951.00
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,718.14 **E** 2,546,068.55

Well No.: MKTF-16
Start Date: 11/7/2013 08:40
Finish Date: 11/7/2013 11:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	Flush Mount Protective Cover Concrete Pad - 4'x4'x6" Bentonite Pellets 2" Flush Threaded Sch. 40 PVC Cap 10/20 Sieve Sand Filter Pack 8" Diameter Hole Saturation 9' 2" Slot 0.01" Screen 2" Sch. 40 PVC with Threaded Joints Bentonite Pellets 14.33'
1				0	Fill (Clay/Gravel) No recovery	
3	469			10	Fill (Clay/Gravel) Similar to above	
5				0	Fill (Clay/Gravel) Similar to above	
7				0	Fill (Clay/Gravel) Similar to above	
9	1445	9'		90	Fill (Clay/Gravel) Saturated at 9' bgl, black discoloration, hydrocarbon odor	
11	1255			90	Gravelly Sand (SW) High plasticity, firm, damp, dark brown, hydrocarbon odor	
13	1412			40	Clayey Sand (SC) Similar to above, hydrocarbon odor	
15	439			80	Clayey Sand (SC) Moderate plasticity, firm, damp, brown, hydrocarbon odor	
17					Total Depth = 16' BGL	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.248' W 108°25.724'; Boring ID - SB33

Total Depth: 25' bgl
Ground Water: Saturated @ 20' bgl
Elev., TOC (ft. msl): 6945.76
Elev., PAD (ft. msl): 6945.79
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,268.93 **E** 2,545,850.73

Well No.: MKTF-17
Start Date: 11/14/2013 13:00
Finish Date: 11/14/2013 15:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1				10	Fill (Asphalt/Base/Clay) Low plasticity, soft, damp, brown	
3	150			10	Fill (Clay) Similar to above	
5	157			90	Fill (Sand/Gravel/Clay) Moist to very moist, reddish brown, no odor	
7	92.1			20	Fill (Sand/Gravel/Clay) Similar to above, saturated, odor	
9	65.9			90	Clay (CH) High plasticity, firm, damp, faint odor, brown	
11	17			60	Clay (CH) Similar to above	
13	55			70	Clay (CH) High plasticity, soft, damp, dark brown and black, odor	
15	17.5			60	Clay (CH) Similar to above, faint odor	
17	11.3			10	Clay (CH) Similar to above, trace fine grain sand	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.248' W 108°25.724'; Boring ID - SB33

Total Depth: 25' bgl
Ground Water: Saturated @ 20' bgl
Elev., TOC (ft. msl): 6945.76
Elev., PAD (ft. msl): 6945.79
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,268.93 **E** 2,545,850.73

Well No.: MKTF-17
Start Date: 11/14/2013 13:00
Finish Date: 11/14/2013 15:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17.2		20'		10	Clay (CH) High plasticity, soft, damp, brown	24' 24.33' 25' 10/20 Sieve Sand Filter Pack 2" Sch. 40 PVC Slotted 0.01" Screen Saturation 20' 2" Flush Threaded Sch. 40 PVC Cap
20				70	Sandy Clay (CH) Moderate plasticity, soft, very moist to saturated in sand seams	
22				80	Silty Clayey Gravel (GM) Compact to loose, medium grain sand to 1/4" gravel - angular, saturated, brown	
24				90	Clay (CH) Moderate plasticity, firm to stiff, damp, greenish gray	
Total Depth = 25' BGL						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.288' W 108°25.692'; Boring ID - SB34

Total Depth: 27' bgl
Ground Water: Saturated @ 23' bgl
Elev., TOC (ft. msl): 6950.65
Elev., PAD (ft. msl): 6950.97
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,497.53 **E** 2,546,006.29

Well No.: MKTF-18
Start Date: 11/15/2013 10:00
Finish Date: 11/15/2013 15:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-1					Ground Surface	
1				--	Fill (Gravel and Silty Clay)	
3	1009			20	Fill (Gravel and Silty Clay) Similar to above, strong hydrocarbon odor, damp	
5	693			60	Fill (Gravel and Silty Clay) Similar to above	
7	1108			70	Fill (Silty Clay) Low plasticity, firm, damp, brown, gravel present, strong hydrocarbon odor	
9	901			90	Fill (Clay/Sand/Gravel) Similar to above, saturated, odor, sheen observed	
11	803			60	Clay (CH) High plasticity, stiff, damp, brown, hydrocarbon odor	
13	254			70	Clay (CH) Similar to above, very fine grain, sand in partings	
15	200			30	Clay (CH) Similar to above	
17				--	No recovery	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.288' W 108°25.692'; Boring ID - SB34

Total Depth: 27' bgl
Ground Water: Saturated @ 23' bgl
Elev., TOC (ft. msl): 6950.65
Elev., PAD (ft. msl): 6950.97
Elev., GL (ft. msl): --
Site Coordinates:
N 1,633,497.53 **E** 2,546,006.29

Well No.: MKTF-18
Start Date: 11/15/2013 10:00
Finish Date: 11/15/2013 15:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
112				30	Clay (CH) High plasticity, firm, damp, brown, faint odor	2" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack Saturation 23' 2" Flush Threaded Sch. 40 PVC Cap 27' 27.5'
20				20	Clay (CH) Similar to above	
55						
22						
323				80	Clay (CH) Similar to above	
24					Sandy Clay/Clayey Sand (SC/CL) Fine grain, compact, very moist to saturated, brown, hydrocarbon present	
26				90	Clayey Sand (SC) Similar to above, saturated	
					Sandy Clay (CL) Low plasticity, firm, damp, hydrocarbon odor, greenish gray	
28					Total Depth = 27' BGL	
30						
32						
34						
36						

WELL INSTALLATION

Well No.: MKTF-19

Start Date: 11/5/2013 08:50

Finish Date: 11/5/2013 11:20

Client: Western Refining Southwest, Inc.

Site: Gallup Refinery - Seep West of Tank 102

Job No.: UEC01809

Geologist: Tracy Payne

Driller: Enviro-Drill, Inc.

Drilling Rig: CME 75

Drilling Method: Hollow Stem Augers

Sampling Method: Five-Foot Core Barrel

Comments: N 35°29.268' W 108°25.726'; Boring ID - SB35

Total Depth: 20' bgl

Ground Water: Saturated @ 16' bgl

Elev., TOC (ft. msl): --

Elev., PAD (ft. msl): --

Elev., GL (ft. msl): --

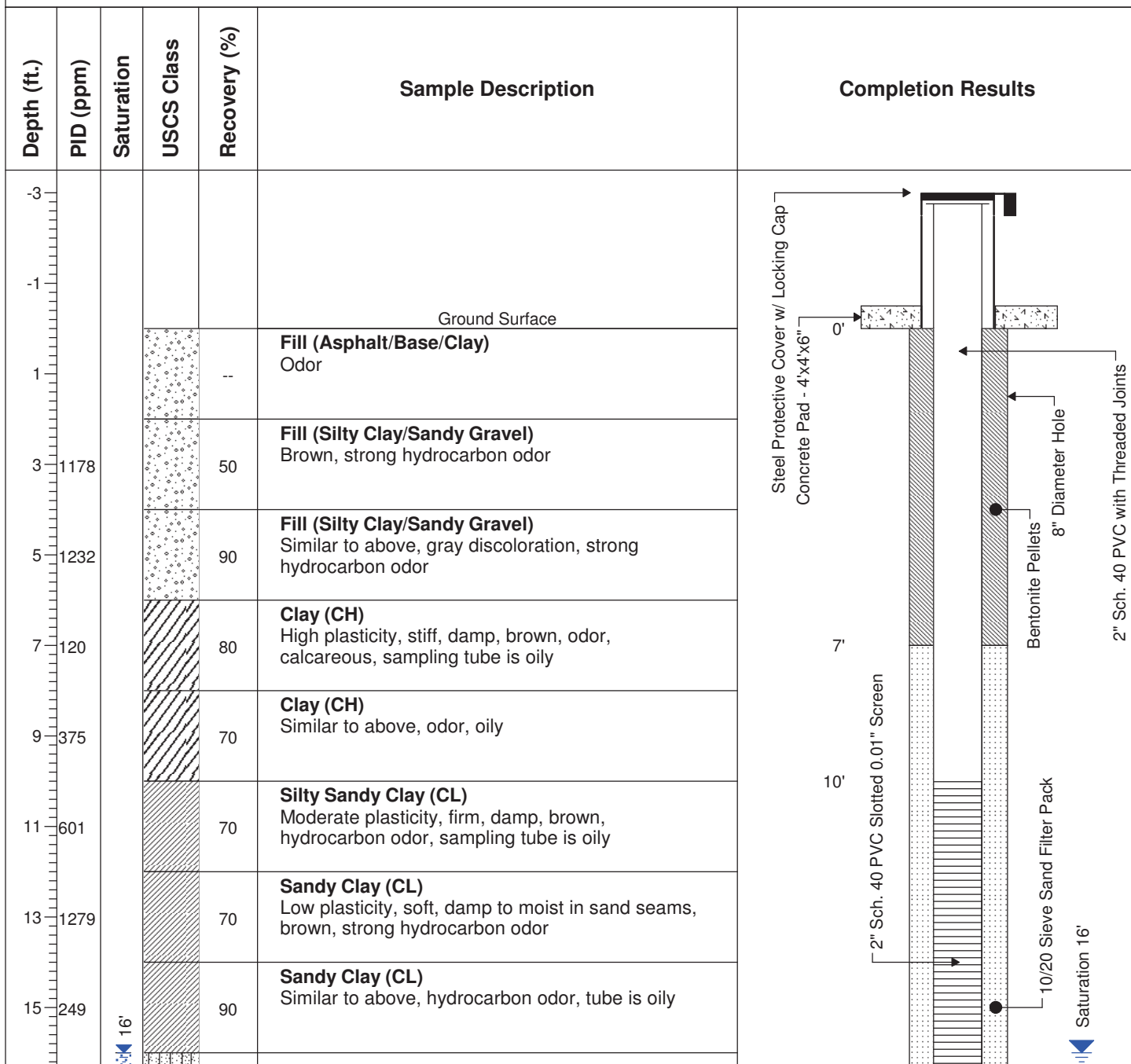
Site Coordinates:

N

W

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
18				90	Silty Sand (SM) Fine grain, loose, saturated, oily/phase-separated hydrocarbon, hydrocarbon odor, clay at base	2" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack 20' 20.33' 20.5' 2" Flush Threaded Sch. 40 PVC Cap
20				90	Silty Sand (SM) Similar to above	
20					Total Depth = 20' BGL	
22						
24						
26						
28						
30						
32						
34						

WELL INSTALLATION



WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Five-Foot Core Barrel
Comments: N 35°29.268' W 108°25.726'; Boring ID - SB35

Total Depth: 20' bgl
Ground Water: Saturated @ 16' bgl
Elev., TOC (ft. msl): 6944.67
Elev., PAD (ft. msl): 6944.89
Elev., GL (ft. msl): 6944.34
Site Coordinates:
N 1633381.19 **E** 2545842.82

Well No.: MKTF-19
Start Date: 11/5/2013 08:50
Finish Date: 11/5/2013 11:20

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
18				90	Silty Sand (SM) Fine grain, loose, saturated, oily/phase-separated hydrocarbon, hydrocarbon odor, clay at base	20' 20.33' 20.5' 2" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch. 40 PVC Cap
20				90	Silty Sand (SM) Similar to above	
20					Total Depth = 20' BGL	
22						
24						
26						
28						
30						
32						
34						

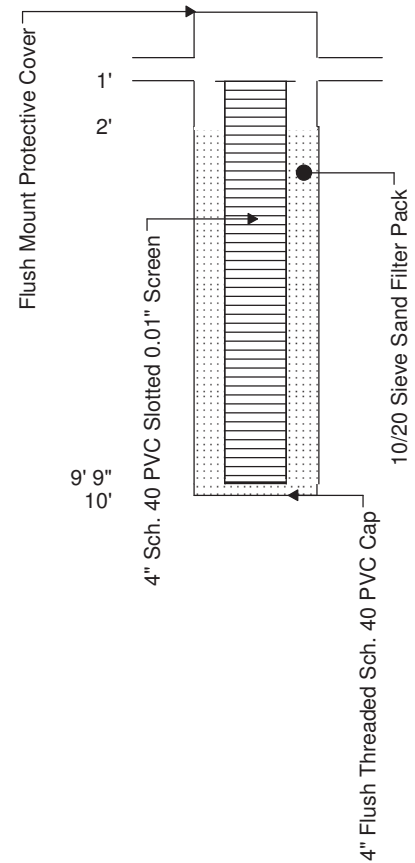
WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Not Applicable
Driller: Western Refining Southwest, Inc.
Drilling Rig: Not Applicable
Drilling Method: Not Applicable
Sampling Method: Not Applicable
Comments: N 35°29.319' W 108°25.674'; Boring ID: Sump-N

Total Depth: 10' bgl
Ground Water: 7.86' ft. BTOC
Elev., TOC (ft. msl): 6951.78
Elev., PAD (ft. msl): 6951.89
Elev., GL (ft. msl): 6951.17
Site Coordinates:
N 1633698.28 **E** 2546111.23

Well No.: MKTF-20
Start Date: 2/10/2014
Finish Date: 2/10/2014

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1						
1					Ground Surface	
3					Fill Material	
5						
7						
9						
11					Total Depth = 10' BGL	
13						
15						
17						
19						



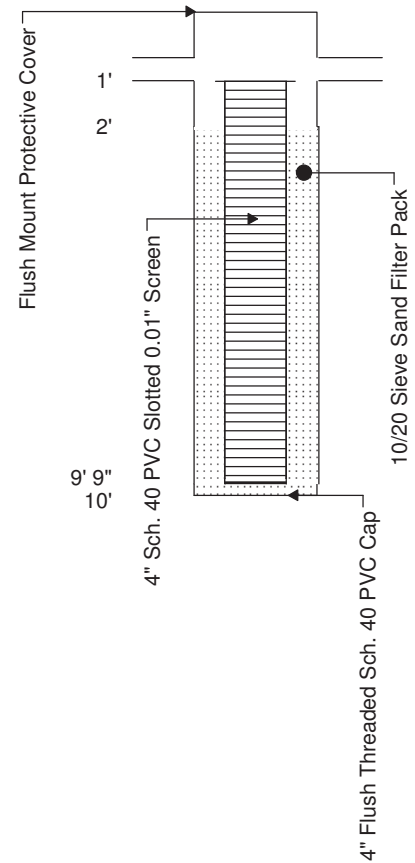
WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Not Applicable
Driller: Western Refining Southwest, Inc.
Drilling Rig: Not Applicable
Drilling Method: Not Applicable
Sampling Method: Not Applicable
Comments: N 35°29.295' W 108°25.675'; Boring ID: Sump-S

Total Depth: 10' bgl
Ground Water: 7.60' ft. BTOC
Elev., TOC (ft. msl): 6952.57
Elev., PAD (ft. msl): 6952.68
Elev., GL (ft. msl): 6952.00
Site Coordinates:
N 1633570.30 **E** 2546110.00

Well No.: MKTF-21
Start Date: 2/10/2014
Finish Date: 2/10/2014

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1						
1					Ground Surface	
3					Fill Material	
5						
7						
9						
11					Total Depth = 10' BGL	
13						
15						
17						
19						



WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.288' W 108°25.802'; Boring ID - SB23

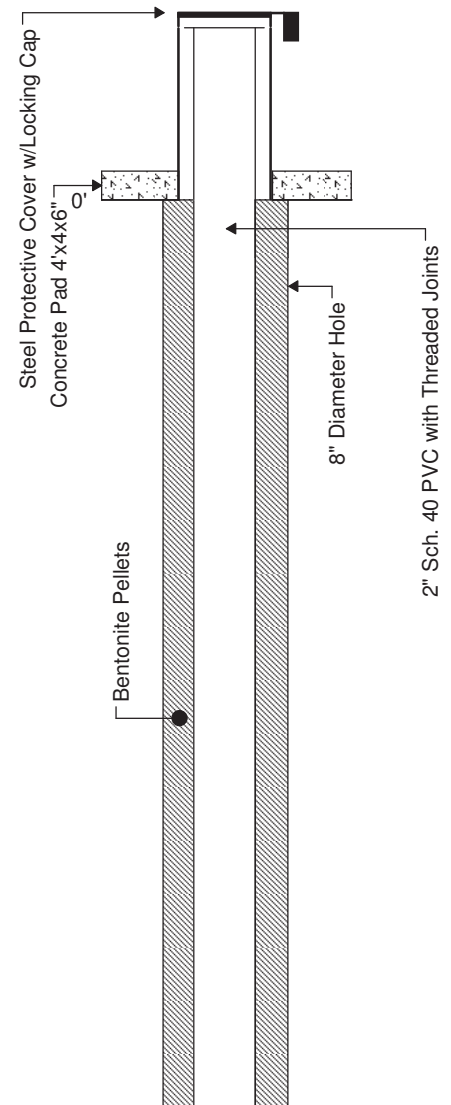
Total Depth: 32' bgl
Ground Water: Saturated @ 26' bgl
Elev., TOC (ft. msl): 6942.31
Elev., PAD (ft. msl): 6939.76
Elev., GL (ft. msl): 6938.57
Site Coordinates:
N 1633501.64 **E** 2545478.20

Well No.: MKTF-22

Start Date: 11/8/2013 12:15

Finish Date: 11/8/2013 15:30

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1						
					Ground Surface	
1	3.4			10	Clayey Silt (ML) Low plasticity, very fine grain, compact to loose, damp, tan, no odor	
3	8.9			20	Clayey Silt (ML) Similar to above	
5	7.0			20	Clayey Silt (ML) Similar to above	
7	7.9			50	Clayey Silt (ML) Similar to above, light brown, no odor	
9	6.4			40	Clayey Silt (ML) Low plasticity, stiff, damp, light brown, no odor	
11	13.7			50	Clayey Silt (ML) Similar to above	
13	12.7			10	Clayey Silt (ML) Similar to above, very stiff	
15	10.1			70	Clayey Silt (ML) Very fine grain, stiff, damp, brown, no odor, becomes sandy at base	



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.288' W 108°25.802'; Boring ID - SB23

Total Depth: 32' bgl
Ground Water: Saturated @ 26' bgl
Elev., TOC (ft. msl): 6942.31
Elev., PAD (ft. msl): 6939.76
Elev., GL (ft. msl): 6938.57
Site Coordinates:
N 1633501.64 **E** 2545478.20

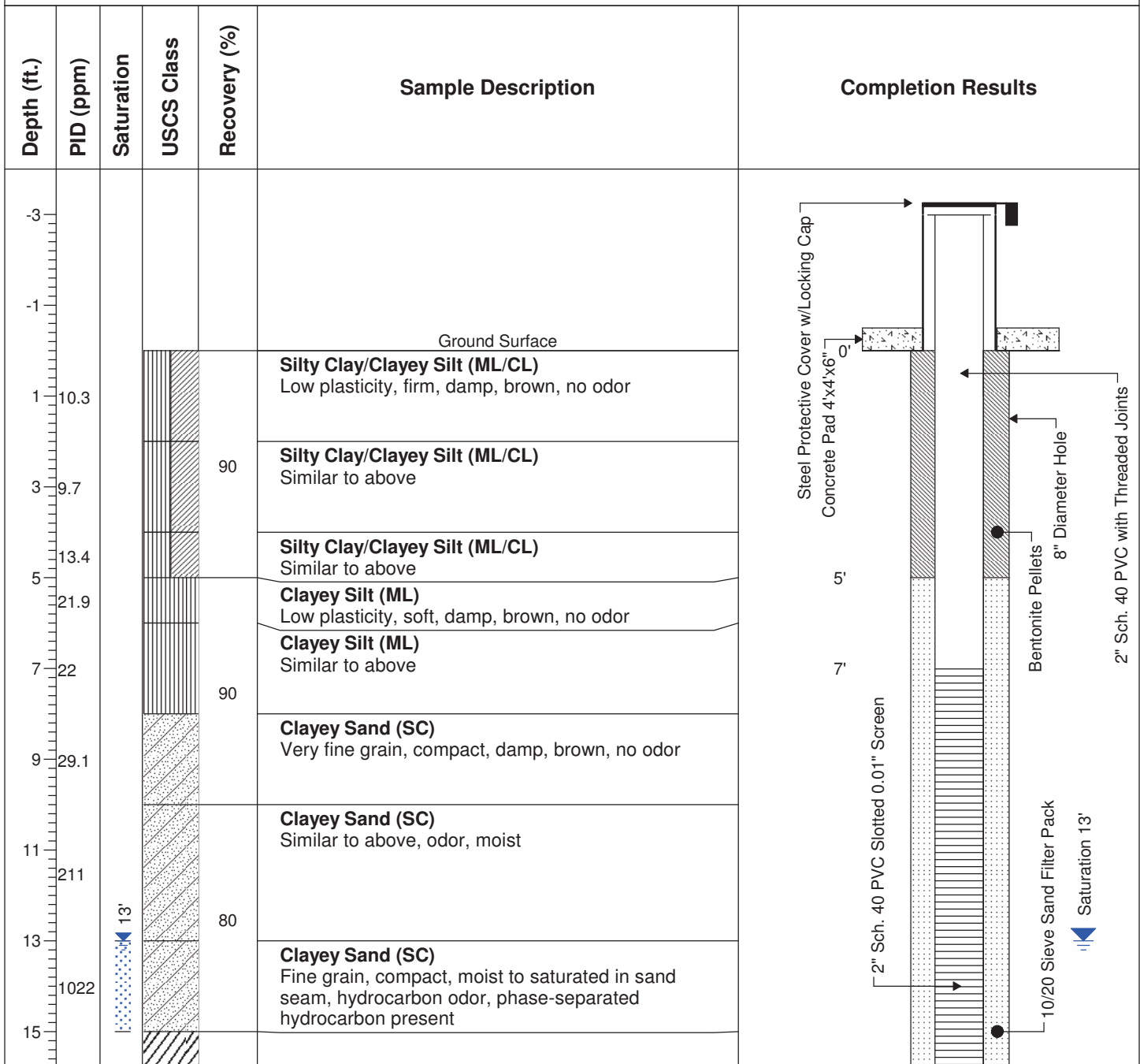
Well No.: MKTF-22
Start Date: 11/8/2013 12:15
Finish Date: 11/8/2013 15:30

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17	13.2			10	Silty Clay/Clayey Silt (CL) Similar to above, increase in clay, damper, no odor	20' 22' 2" Sch. 40 PVC Slotted 0.01" Screen Bentonite Pellets 10/20 Sieve Sand Filter Pack Saturation 26' 2" Flush Threaded Sch. 40 PVC Cap Cave In 32' 32.33' 32.5'
19	17.2			90	Silty Clay (CL) Low plasticity, firm, damp, brown, no odor	
21	14.1			90	Sandy Clay (CL) Low plasticity, soft, damp, brown, no odor	
23	43.1			90	Sandy Clay (CL) Similar to above, damp, faint odor	
25	73.1			90	Sandy Clay (CL) Similar to above, very moist in sand seams, hydrocarbon odor	
27				90	Silty Sand (SM) Fine to medium grain, loose, saturated, brownish gray, hydrocarbon odor	
29				90	Clayey Silt (ML) Very fine grain, soft, moist, dark brown, hydrocarbon odor	
31				90	Sand (SP) Fine to medium grain, loose, saturated, brown, odor	
33					Silty Clay (CL) Low to moderate plasticity, firm, damp, brown and light olive/gray, no odor at base	
					Silty Clay (CL) Low plasticity, firm, damp, greenish gray, no odor	
Total Depth = 32' BGL						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Five-Foot Core Barrel
Comments: N 35°29.327' W 108°25.795'; Boring ID - SB25

Total Depth: 20' bgl
Ground Water: Saturated @ 13' bgl
Elev., TOC (ft. msl): 6929.98
Elev., PAD (ft. msl): 6927.23
Elev., GL (ft. msl): 6925.79
Site Coordinates:
N 1633750.93 **E** 2545503.70

Well No.: MKTF-23
Start Date: 11/4/2013 14:00
Finish Date: 11/4/2013 16:00



WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Five-Foot Core Barrel
Comments: N 35°29.327' W 108°25.795'; Boring ID - SB25

Total Depth: 20' bgl
Ground Water: Saturated @ 13' bgl
Elev., TOC (ft. msl): 6929.98
Elev., PAD (ft. msl): 6927.23
Elev., GL (ft. msl): 6925.79
Site Coordinates:
N 1633750.93 **E** 2545503.70

Well No.: MKTF-23
Start Date: 11/4/2013 14:00
Finish Date: 11/4/2013 16:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17	32.6			90	Clay (CH) High plasticity, stiff, damp, brown, no odor	
19	28.9				Sandy Clay (CL) Moderate plasticity, firm, damp, brown and gray, no odor	
21	22.7				Total Depth = 20' BGL	
23						
25						
27						
29						
31						
33						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.342' W 108°25.800'; Boring ID - SB26

Total Depth: 30' bgl
Ground Water: Saturated @ 20' bgl
Elev., TOC (ft. msl): 6928.72
Elev., PAD (ft. msl): 6926.07
Elev., GL (ft. msl): 6924.62
Site Coordinates:
N 1633853.19 **E** 2545468.48

Well No.: MKTF-24
Start Date: 10/29/2013 13:15
Finish Date: 10/29/2013 16:15

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						Steel Protective Cover w/Locking Cap Concrete Pad 4'x4'x6" 8" Diameter Hole 2" Sch. 40 PVC with Threaded Joints Bentonite Pellets
-1					Ground Surface	
1	14.1			90	Silt/Silty Sand (ML/SM) Very fine to fine grain, loose, dry, brown	
3	11.2			10	Silty Sand (SM) Fine grain, compact/very dense, damp, brown	
5	12.5			90	Silty Sandy Clay (CL) Low plasticity, very dense, damp, brown	
7	11.8			90	Silty Sandy Clay (CL) Similar to above	
9	14.8			60	Silty Sandy Clay (CL) Similar to above	
11	12.5			90	Silty Sandy Clay (CL) Similar to above	
13	12.8			90	Silty Sandy Clay (CL) Similar to above	
15	13.4			90	Clay (CH) High plasticity, firm, damp, brown, trace silt, no odor	

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.342' W 108°25.800'; Boring ID - SB26

Total Depth: 30' bgl
Ground Water: Saturated @ 20' bgl
Elev., TOC (ft. msl): 6928.72
Elev., PAD (ft. msl): 6926.07
Elev., GL (ft. msl): 6924.62
Site Coordinates:
N 1633853.19 **E** 2545468.48

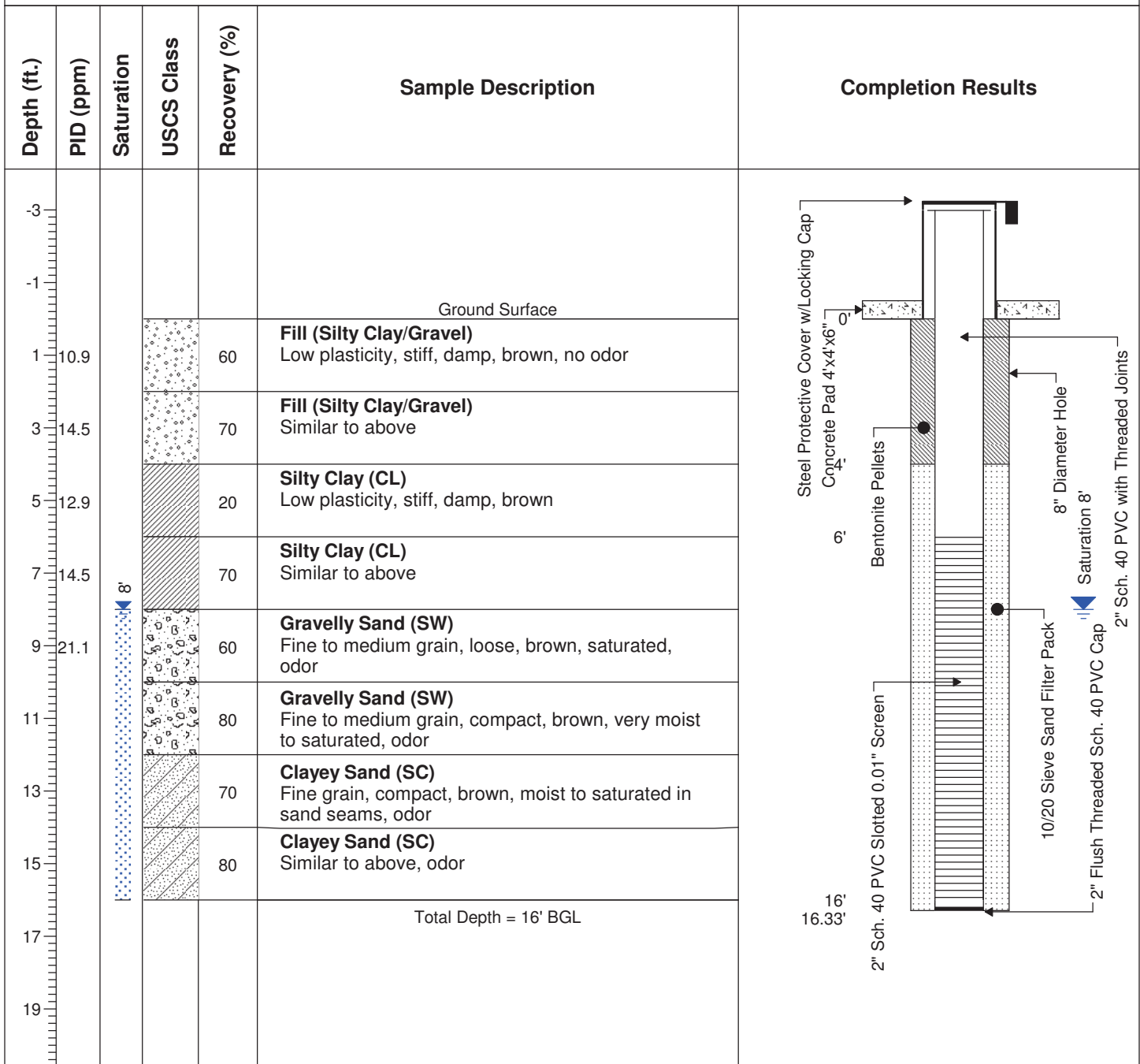
Well No.: MKTF-24
Start Date: 10/29/2013 13:15
Finish Date: 10/29/2013 16:15

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
17	16.8			70	Silty Sandy Clay (CL) Low plasticity, firm, damp, brown, no odor	16' 18' 20' Saturation 2" Sch. 40 PVC Slotted 0.01" Screen 10/20 Sieve Sand Filter Pack 2" Flush Threaded Sch. 40 PVC Cap Cave In
19	33.7			90	Sandy Clay (CL) Low plasticity, soft, damp, brown, no odor	
21	40.8			90	Sandy Clay/Clayey Sand (CL/SC) Fine grain, compact to soft, moist to saturated, brown, no odor	
23				90	Sandy Clay/Clayey Sand (CL/SC) Similar to above, moist to saturated, no odor	
25				90	Sandy Clay/Clayey Sand (CL/SC) Similar to above, moist to saturated, no odor	
27				90	Sandy Clay/Clayey Sand (CL/SC) Similar to above, moist to saturated, greenish gray sand at base	
29				90	Silt/Siltstone (ML) Low plasticity, very dense, dry, crumbly, brown/reddish brown, no odor	
31					Total Depth = 30' BGL	
33						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.372' W 108°25.840'; Boring ID - SB28

Total Depth: 16' bgl
Ground Water: Saturated @ 8' bgl
Elev., TOC (ft. msl): 6916.19
Elev., PAD (ft. msl): 6913.35
Elev., GL (ft. msl): 6911.79
Site Coordinates:
N 1634015.86 **E** 2545275.68

Well No.: MKTF-25
Start Date: 10/30/2013 14:45
Finish Date: 10/30/2013 16:30

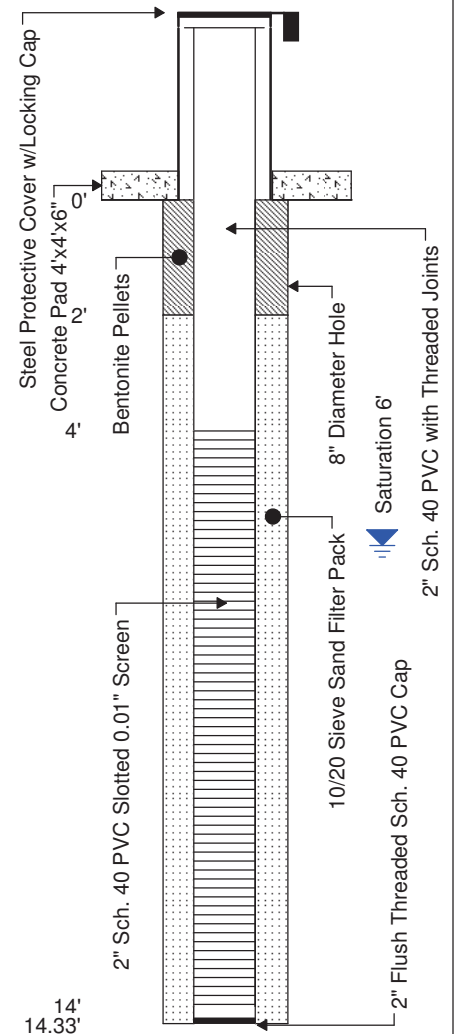


Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.373' W 108°25.796'; Boring ID - SB29

Total Depth: 14' bgl
Ground Water: Saturated @ 6' bgl
Elev., TOC (ft. msl): 6915.31
Elev., PAD (ft. msl): 6912.55
Elev., GL (ft. msl): 6911.35
Site Coordinates:
N 1634033.63 **E** 2545492.39

Well No.: MKTF-26
Start Date: 10/30/2013 10:40
Finish Date: 10/30/2013 12:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1					Ground Surface	
1	17.5			80	Silty Clay (CL) Low plasticity, soft, damp, brown, no odor, trace small gravel	
3	9.4			60	Silty Clay (CL) Similar to above	
5	4.8			60	Silty Clay (CL) Similar to above	
7	34.8			90	Sandy Clay/Clayey Sand (SC/CL) Very fine grain, compact/soft, brown, moist, faint odor, saturated at base	
9				70	Sandy Clay (SC) Low plasticity, stiff, damp, brown, no odor	
11				60	Silt/Siltstone (ML) Low plasticity, very dense, dry, reddish brown, very fine grain sand in fissures, no odor	
13				60	Silt/Siltstone (ML) Similar to above	
15					Total Depth = 14' BGL	

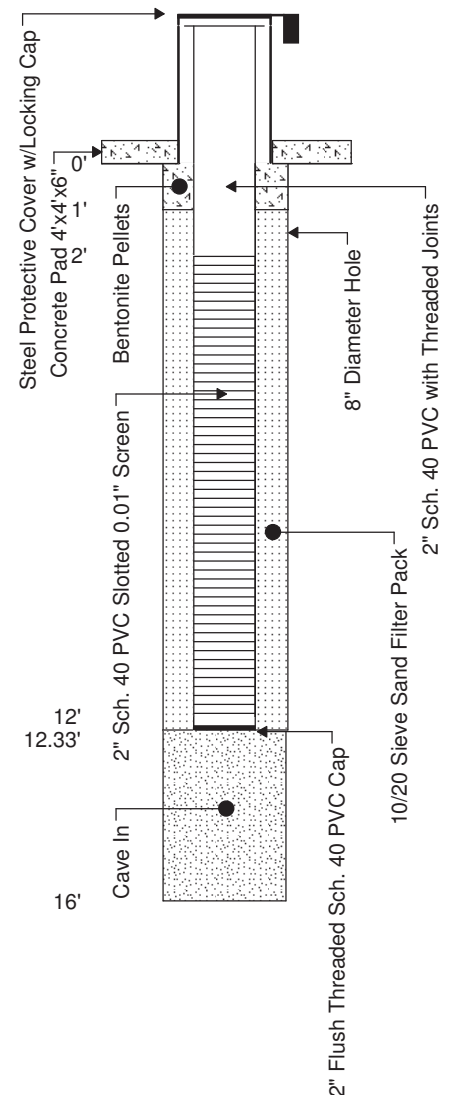


Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01809
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: Split Spoon
Comments: N 35°29.387' W 108°25.771'; Boring ID - SB30

Total Depth: 16' bgl
Ground Water: Not Encountered
Elev., TOC (ft. msl): 6917.90
Elev., PAD (ft. msl): 6915.36
Elev., GL (ft. msl): 6914.18
Site Coordinates:
N 1634115.56 **E** 2545620.98

Well No.: MKTF-27
Start Date: 10/30/2013 09:00
Finish Date: 10/30/2013 10:20

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1					Ground Surface	
1	3.3			90	Silty Clay (CL) Low plasticity, firm, damp, brown, occasional gravel	
3	4.1			80	Silty Clay (CL) Similar to above	
5	2.4			90	Silty Clay (CL) Similar to above	
7	4.1			90	Silty Clay (CL) Low to moderate plasticity, firm to soft, damp, brown, no odor, calcareous organics present	
9	3.3			80	Silt/Siltstone (ML) Low plasticity, very dense, dry, reddish brown with greenish gray very fine grain sand in fissures, no odor	
11	3.7			80	Silt/Siltstone (ML) Similar to above	
13	4.5			80	Silt/Siltstone (ML) Similar to above	
15	3.9			80	Silt/Siltstone (ML) Similar to above	
17					Total Depth = 16' BGL	
19						



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.412' W 108°25.763', Air Temp: 48°F

Total Depth: 30' bgl
Ground Water: Not Encountered
Elev., TOC (ft. msl): 6921.52
Elev., PAD (ft. msl): 6918.67
Elev., GL (ft. msl): 6917.51
Site Coordinates:
N 1634263.44 **E** 2545650.04

Well No.: MKTF-28
Start Date: 4/2/2014 11:30
Finish Date: 4/2/2014 14:25

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
-3						
-1					Ground Surface	
1	2.6			90	Fill (Silty Clay) Low plasticity, soft, damp, brown, no odor, sandy at base, moist	
3	5.0					
5	3.6					
7	7.6			60	Silty Clay (CL) Similar to above, damp to moist at 7.5' bgl	
9	8.2					
11	8.1			60	Silty Clay (CL) Low plasticity, stiff, damp to dry, crumbly, brown, no odor	
13	7.5					
15	9.1					
17	5.5			60	Silty Clay (CL) Similar to above	
19	7.8					
21	3.5			60	Silty Clay (CL) Similar to above	

WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.412' W 108°25.763', Air Temp: 48 °F

Total Depth: 30' bgl
Ground Water: Not Encountered
Elev., TOC (ft. msl): 6921.52
Elev., PAD (ft. msl): 6918.67
Elev., GL (ft. msl): 6917.51
Site Coordinates:
N 1634263.44 **E** 2545650.04

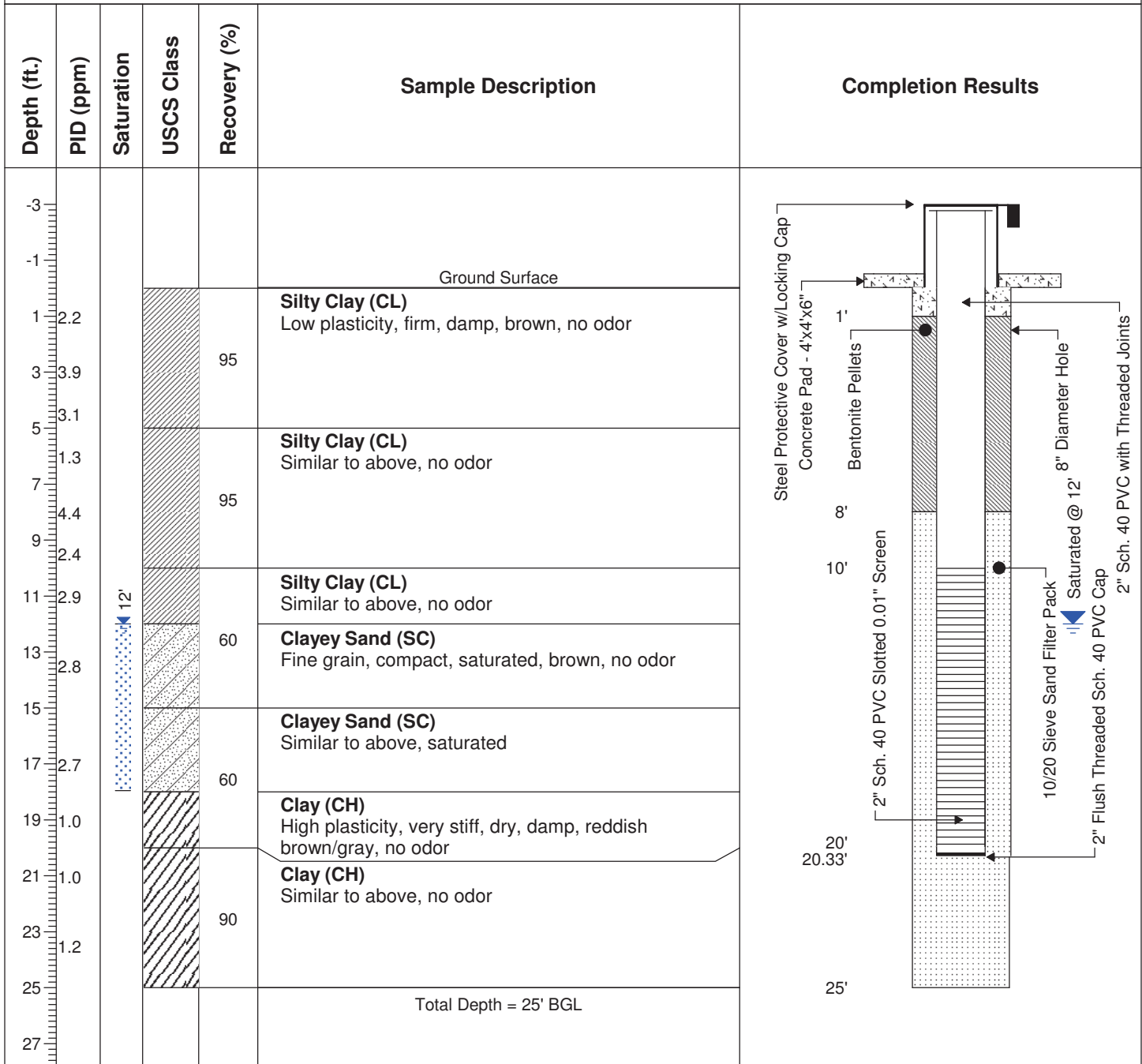
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Start Date: 4/2/2014 11:30
Finish Date: 4/2/2014 14:25

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
24	4.3				Clay (CH) High plasticity, very stiff, reddish brown and gray, no odor, crumbly	
26	4.1			60	Clay (CH) Similar to above	
28	3.3					
30					Total Depth = 30' BGL	
32						
34						
36						
38						
40						
42						
44						
46						
48						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.406' W 108°25.846', Air Temp: 41 °F

Total Depth: 25' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6901.62
Elev., PAD (ft. msl): 6898.83
Elev., GL (ft. msl): 6897.67
Site Coordinates:
N 1634249.76 **E** 2545258.34

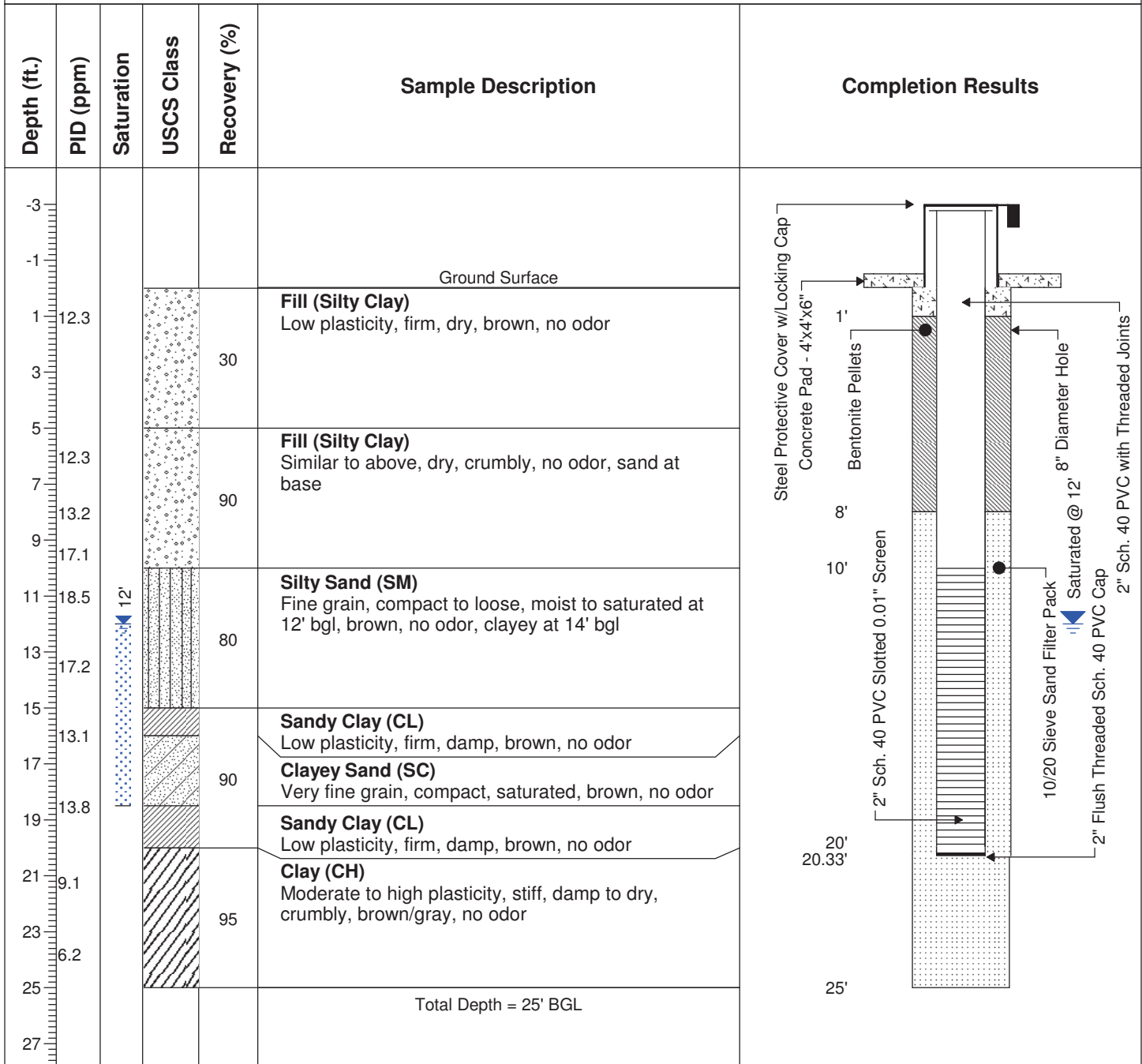
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Start Date: 4/2/2014 08:30
Finish Date: 4/2/2014 11:15



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.405' W 108°25.910', Air Temp: 58 °F

Total Depth: 25' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6900.80
Elev., PAD (ft. msl): 6898.10
Elev., GL (ft. msl): 6896.68
Site Coordinates:
N 1634225.67 **E** 2544937.91

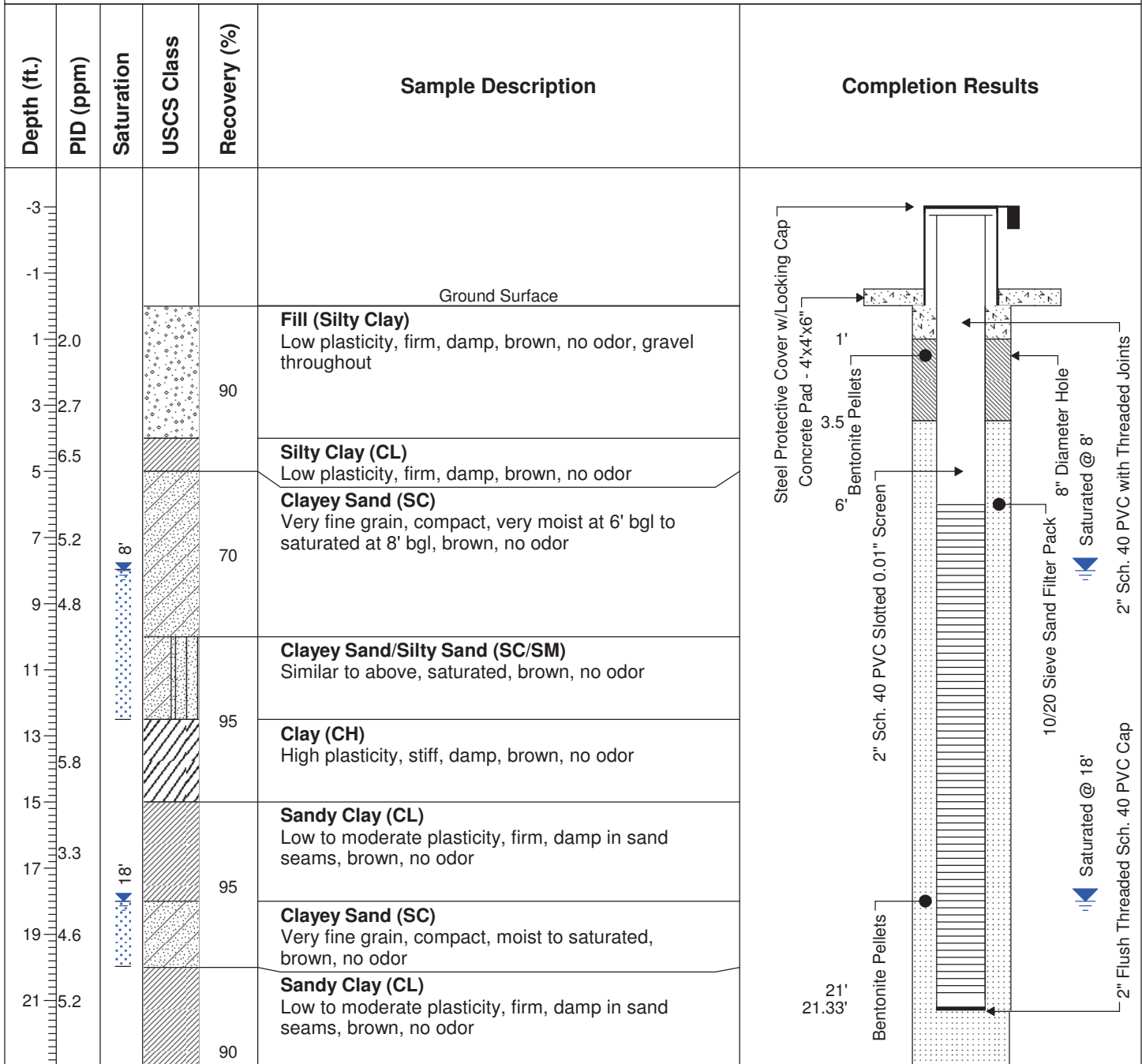
Well No.: MKTF-30
Start Date: 4/1/2014 13:00
Finish Date: 4/1/2014 15:00



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.350' W 108°25.909', Air Temp: 48°F; Boring ID - SB20

Total Depth: 30' bgl
Ground Water: Saturated @ 8' bgl
Elev., TOC (ft. msl): 6906.87
Elev., PAD (ft. msl): 6904.26
Elev., GL (ft. msl): 6903.11
Site Coordinates:
N 1633898.83 **E** 2544938.99

Well No.: MKTF-31
Start Date: 4/1/2014 08:20
Finish Date: 4/1/2014 12:00



WELL INSTALLATION

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.350' W 108°25.909', Air Temp: 48°F; Boring ID - SB20

Total Depth: 30' bgl
Ground Water: Saturated @ 8' bgl
Elev., TOC (ft. msl): 6906.87
Elev., PAD (ft. msl): 6904.26
Elev., GL (ft. msl): 6903.11
Site Coordinates:
N 1633898.83 **E** 2544938.99

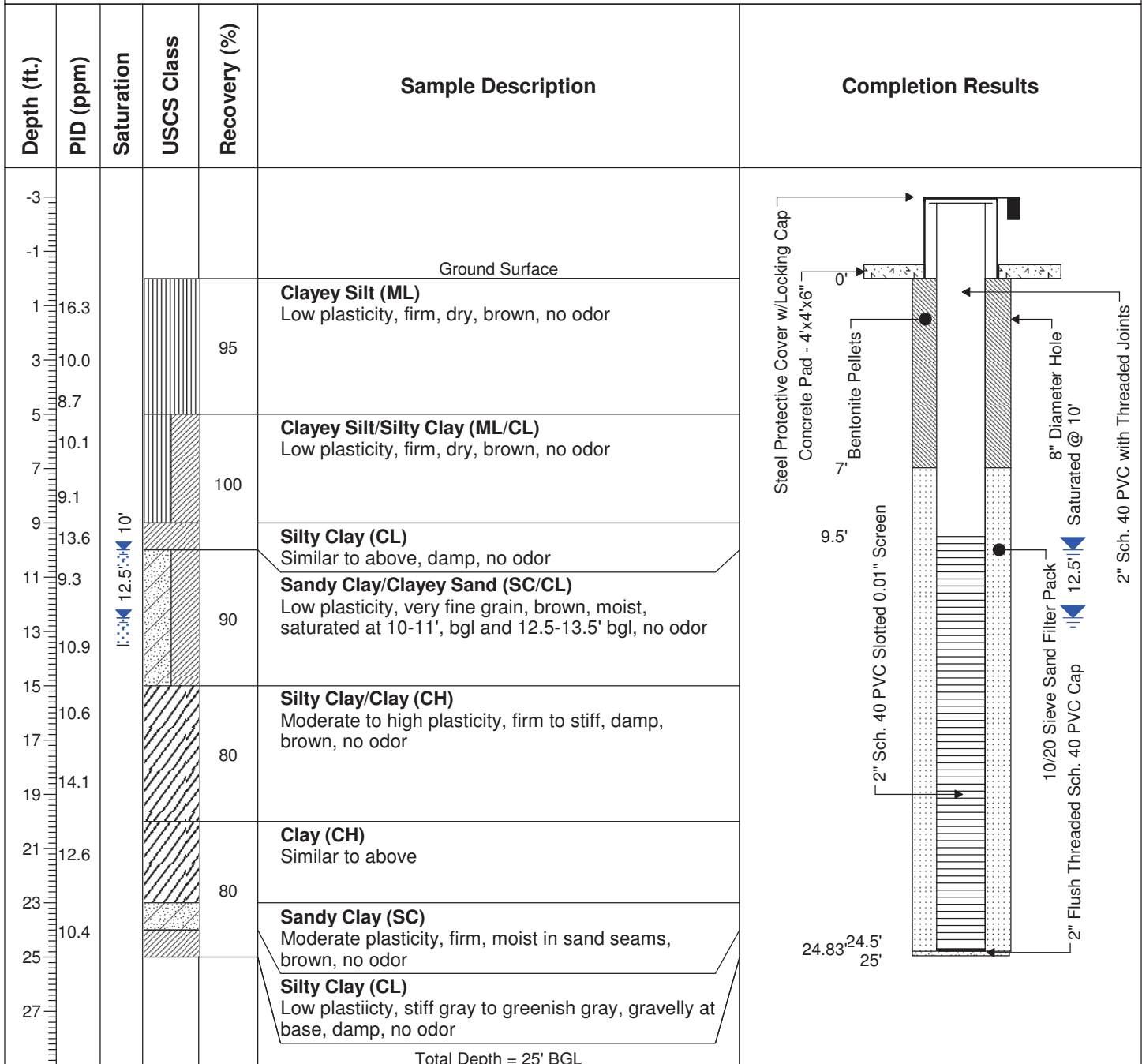
Well No.: MKTF-31
Start Date: 4/1/2014 08:20
Finish Date: 4/1/2014 12:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
24	7.2					
26	2.5			90	Clay (CH) Moderate plasticity, firm, dry to damp, crumbly, reddish brown, no odor	
28	2.3					
30					Total Depth = 30' BGL	30' 10/20 Sieve Sand Filter Pack
32						
34						
36						
38						
40						
42						
44						
46						
48						

Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.275' W 108°25.928', Air Temp: 58 °F

Total Depth: 25' bgl
Ground Water: Saturated @ 10' bgl
Elev., TOC (ft. msl): 6911.11
Elev., PAD (ft. msl): 6908.44
Elev., GL (ft. msl): 6907.16
Site Coordinates:
N 1633443.56 **E** 2544840.32

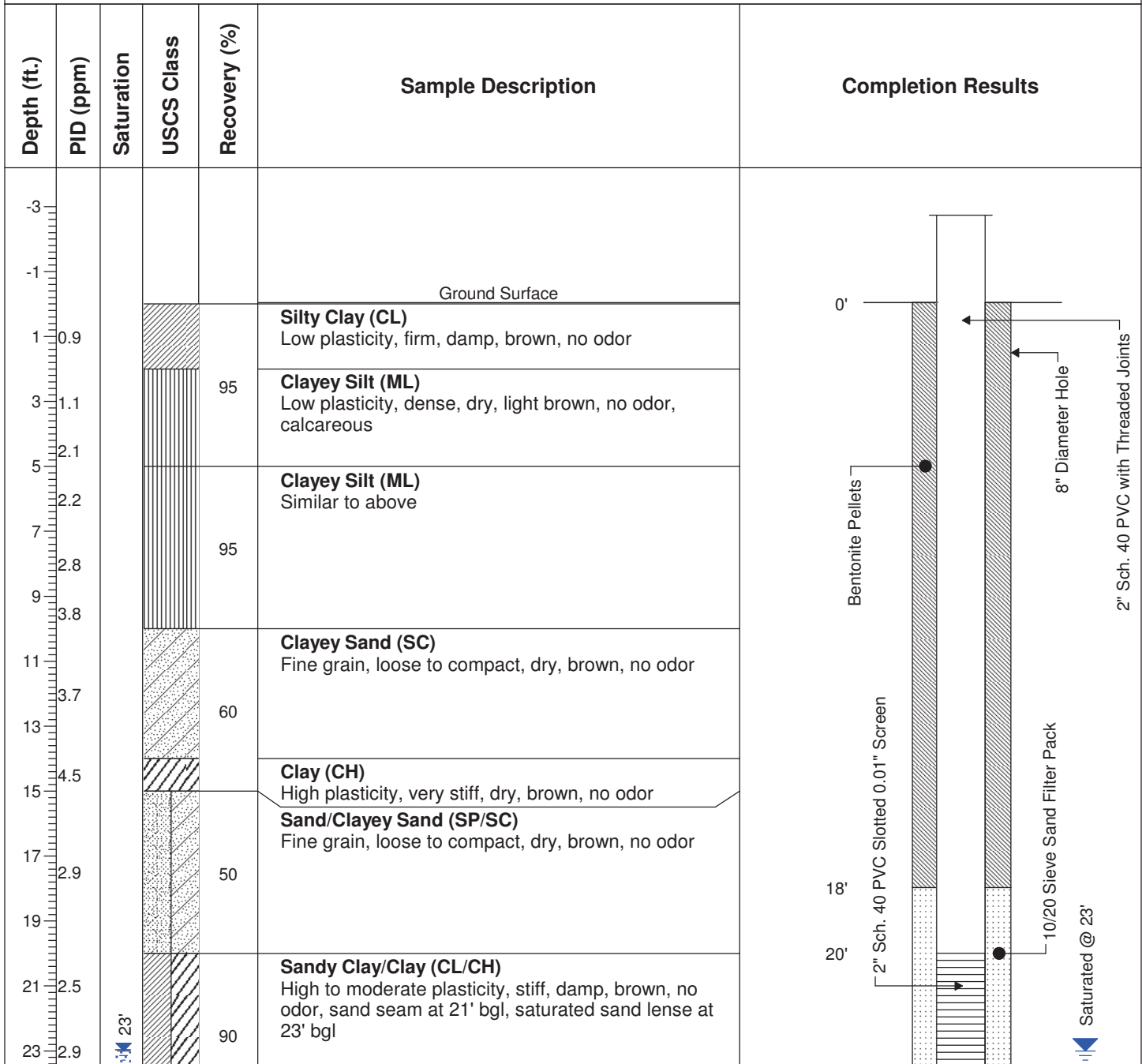
Well No.: MKTF-32
Start Date: 3/31/2014 14:40
Finish Date: 3/31/2014 16:30



Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.246' W 108°25.830', Air Temp: 30 °F

Total Depth: 35' bgl
Ground Water: Saturated @ 23' bgl
Elev., TOC (ft. msl): 6939.75
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): 6936.59
Site Coordinates:
N 1633261.99 **E** 2545318.27

Well No.: MKTF-33
Start Date: 4/3/2014 08:40
Finish Date: 4/3/2014 12:00

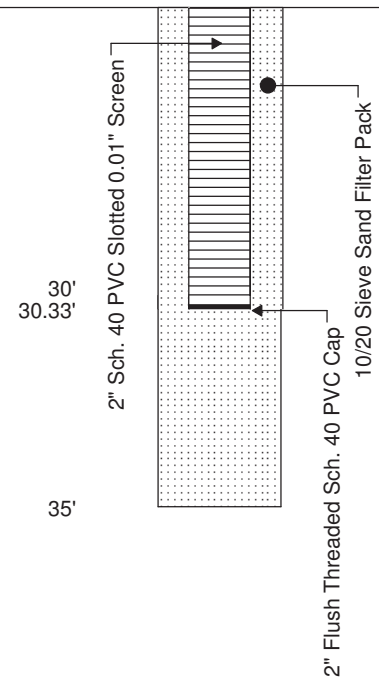


Client: Western Refining Southwest, Inc.
Site: Gallup Refinery - Seep West of Tank 102
Job No.: UEC01867
Geologist: Tracy Payne
Driller: Enviro-Drill, Inc.
Drilling Rig: CME 75
Drilling Method: Hollow Stem Augers
Sampling Method: 5-Foot Split Spoon
Comments: N 35°29.246' W 108°25.830', Air Temp: 30 °F

Total Depth: 35' bgl
Ground Water: Saturated @ 23' bgl
Elev., TOC (ft. msl): 6939.75
Elev., PAD (ft. msl): --
Elev., GL (ft. msl): 6936.59
Site Coordinates:
N 1633261.99 **E** 2545318.27

Well No.: MKTF-33
Start Date: 4/3/2014 08:40
Finish Date: 4/3/2014 12:00

Depth (ft.)	PID (ppm)	Saturation	USCS Class	Recovery (%)	Sample Description	Completion Results
25	3.4					
27	1.6			90	Clayey Sand/Sandy Clay (SC/CL) Moderate plasticity, firm, moist to saturated throughout interval, brown, interbedded sand/clay, no odor	
29	2.5					
31				95	Clay (CH) High plasticity, very stiff, brown, damp, no odor	
33						
35					Total Depth = 35' BGL	
37						
39						
41						
43						
45						
47						
49						





Total Depth: 25' bgl
Ground Water: Saturated @ 12' bgl
Elev., TOC (ft. msl): 6945.35
Elev., PAD (ft. msl): 6942.42
Elev., GL (ft. msl): 6943.52
Site Coordinates:
N 1633118.42 **E** 2545681.30

Well No.: MKTF-34
Start Date: 3/31/2014 11:00
Finish Date: 3/31/2014 13:45

RPS
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Austin, Texas 78746

Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 18'
Ground Water : 10'
Start Date : 11/19/2014
Finish Date : 11/19/2014

MKTF-35

(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6951.65
Elev., PAD (ft. msl) : 6951.90
Elev., GL (ft. msl) : 6951.25
Site Coordinates :
N : 1633204.45
E : 2546011.60

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results MKTF-35
							DESCRIPTION	
-2	4.5							Flush Mount Completion 2'x2'x6"
-1								
0					100		ASPHALT/BASE,	
1				CL	100		SILTY CLAY, low, very stiff, damp, brown,	
2								Bentonite Pellets
3	46.6			CL	20		SILTY CLAY, SIMILAR TO ABOVE (STA), odor, gravel present,	2" Sch 40 PVC Casing Threaded Joints
4								
5	95			CL/SP	90		SILTY CLAY/SAND/GRAVEL, low, damp, reddish brown, odor, very coarse grain sand, 1/4" to 1" gravel, odor,	
6								
7	64			CL	80		SILTY CLAY, low, firm, damp, reddish brown, odor, occasional gravel,	
8								
9	78			CL/SP	90		SILTY CLAY/SAND/GRAVEL, SIMILAR TO 4-6', damp to moist, odor,	
10		▼						
11	1790			CL/SP	90		SILTY CLAY/SAND/GRAVEL, SIMILAR TO ABOVE (STA), saturated, hydrocarbon (hc) odor,	10/20 Sieve Sand Filter Pack
12				CL	90		SILTY CLAY, low, stiff, damp, reddish brown, light grey clay @ base, hc odor,	2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints
13	2400			CL/SC	90		SILTY CLAY/SANDY CLAY, low, firm to stiff, damp, grey, hc odor, sand/silt varies across interval,	
14								
15	745			CL	50		SANDY GRAVELLY CLAY, STA, damp, grey, brown @ base, hc odor,	
16								
17	37			CL	90		CLAY, mod, very stiff, damp, brown and grey, faint odor.	2" Flush Threaded Sch 40 PVC Cap
18								
19								

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Austin, Texas 78759
512-693-4190

Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 16'
Ground Water : 10'
Start Date : 11/19/2014
Finish Date : 11/19/2014

MKTF-36

(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6950.12
Elev., PAD (ft. msl) : 6950.67
Elev., GL (ft. msl) : 6949.87
Site Coordinates :
N : 1633349.47
E : 2545982.58

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results MKTF-36
							DESCRIPTION	
-2								
-1								
0					100		ASPHALT/BASE,	Flush Mount Completion 2'x2'x6"
1	812			CL	90		SANDY CLAY, low, stiff, dry, tan, no odor, gravel throughout,	Bentonite Pellets
2								
3	276			CL	60		SILTY CLAY, low, very stiff, dry, brown, hydrocarbon (hc) odor,	2" Sch 40 PVC Casing Threaded Joints
4								
5	1700			CL	60		SILTY CLAY, SIMILAR TO ABOVE (STA), trace sand/gravel, hc odor,	
6								
7	2411			CL/SP	90		SILTY CLAY/SAND/GRAVEL, low, firm, damp, tan, very coarse sand, 1/4" to 1" gravel, hc odor, moist to very moist in seams,	
8								
9	2278			CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, moist, fluid in top of sampling spoon, strong hc odor, trace phase separated hydrocarbon (psh),	
10		▼						10/20 Sieve Sand Filter Pack
11	1879			CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, saturated, psh,	2" Sch 40 PVC Slotted 0.01" Screen w/Threaded Joints
12				CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, saturated, psh,	
13	405			CL	90		SILTY CLAY, low, stiff, damp, brown, hc odor,	
14								
15	450			CL	90		SILTY CLAY, STA, damp, hc odor.	2" Flush Threaded Sch 40 PVC Cap
16								

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Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 24'
Ground Water : 8'
Start Date : 11/18/2014
Finish Date : 11/18/2014

MKTF-37

(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6958.87
Elev., PAD (ft. msl) : 6959.07
Elev., GL (ft. msl) : 6958.62
Site Coordinates :
N : 1633291.89
E : 2546216.67

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results MKTF-37
							DESCRIPTION	
-2								
-1								
0								
1	69				40		ASPHALT/GRAVEL BASE, CLAY, very stiff, brown, damp, faint odor,	
2								
3	367		CL		50		SILTY CLAY, low, very stiff, brown, damp, odor, gravel present,	
4								
5	355		CL/SP		60		SILTY CLAY/SAND/GRAVELLY, low to firm, damp, brown with sand/gravel, odor,	
6								
7	1790		CL/SP		80		SILTY CLAY/SAND/GRAVELLY, SIMILAR TO ABOVE (STA), odor,	
8								
9	2140		CL		90		SILTY CLAY, low, soft, moist to very moist, brown, strong odor,	
10			SW/GW		90		SANDY GRAVEL/GRAVELLY SAND, coarse to very coarse grain, compact, very moist, odor, tan,	
11	404		CL/SP		90		SILTY CLAY/SAND/GRAVEL, low to firm, damp, brown with coarse sand & gravel, odor,	
12								
13	454		CL		20		SANDY CLAY, low, soft, damp, odor, light grey, gravel @ base,	
14								
15	660		CL		50		SANDY CLAY, low, very stiff, damp, odor, light grey,	
16								
17	340		CL		30		SANDY CLAY, STA,	
18								
19	344		CL		30		SANDY CLAY, STA,	
20								
21	421		CL		60		SANDY CLAY, STA,	
22			SH		60		SHALE, CLAYEY, light purple, damp, very stiff, odor,	
23	375		SH		30		SHALE, STA,	
24								
25								

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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 20.25'
Ground Water : 8'
Start Date : 11/20/2014
Finish Date : 11/20/2014

MKTF-38

(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6954.89
Elev., PAD (ft. msl) : 6955.17
Elev., GL (ft. msl) : 6954.54
Site Coordinates :
N : 1633451.01
E : 2546222.09

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results MKTF-38
							DESCRIPTION	
-2							ASPHALT/BASE,	
-1					100			
0								
1	217			CL/SP	90		SILTY CLAY/SAND/GRAVEL, low, firm, damp, brown, coarse grain sand, 1/4" to 1" gravel, odor,	
2								
3	70			CL/SP	90		SILTY CLAY/SAND/GRAVEL, SIMILAR TO ABOVE (STA), odor,	
4								
5	42			CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, odor,	
6								
7	20			CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, odor,	
8		▼						
9	9			CL/SP	90		SILTY CLAY/SAND/GRAVEL, STA, decrease in clay content, very moist to saturated, odor,	
10								
11	7			GW	90		SANDY GRAVEL, compact, brown, saturated, faint odor, very coarse grain sand, 1/4" to 1.5" gravel,	
12				CL	90			
13				GW	90		SANDY CLAY, low, firm to soft, moist, brown,	
14	8			GW	10		SANDY GRAVEL, STA (10-11), saturated,	
15							SANDY GRAVEL, STA, saturated,	
16	6			GW	10		SANDY GRAVEL, STA, saturated,	
17								
18	4			CL	50		SANDY CLAY, low, firm, damp to moist, greyish brown, faint odor,	
19								
20	5			CL	60		SANDY CLAY, STA,	
21								

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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 16'
Ground Water : 12'
Start Date : 11/14/2014
Finish Date : 11/14/2014

MKTF-39

(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6953.75
Elev., PAD (ft. msl) : 6953.97
Elev., GL (ft. msl) : 6953.12
Site Coordinates :
N : 1633729.23
E : 2546265.99

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	DESCRIPTION	Completion Results MKTF-39
-2									
-1									
0									
1	2.1			ML	100			GRAVEL/CLAYEY SILT, FILL, brown, damp, faint odor,	
2								GRAVEL/SILTY CLAY, FILL, mod, stiff, damp, brown, no odor,	
3	29.4			CL	100			SANDY SILTY CLAY, FILL, low, soft, damp, brown, pea sized gravel, no odor, damp,	
4									
5	6.5			CL	90			SILTY GRAVELLY SAND, FILL, loose, medium sand to 1.5" gravel, brown, no odor, damp,	
6									
7	4.5			SW	90			SANDY CLAY/CLAYEY SAND, coarse, compact, damp to moist, brown, hydrocarbon (hc) odor, gravelly,	
8									
9	400			CL/SC	90			SANDY CLAY/CLAYEY SAND, SIMILAR TO ABOVE (STA), moist/oily, hc odor, gravelly,	
10									
11	569			CL	90			SANDY GRAVEL, loose, brown, saturated, hc odor, very coarse sand to 3/4" gravel,	
12		▼		GP	90			SILTY CLAY, low, very stiff, dry to damp, grey, faint odor @ base,	
13	51			CL	90			SILTY CLAY, STA.	
14									
15	18			CL	90				
16									

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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 22'
Ground Water : 10'
Start Date : 11/13/2014
Finish Date : 11/13/2014

MKTF-40

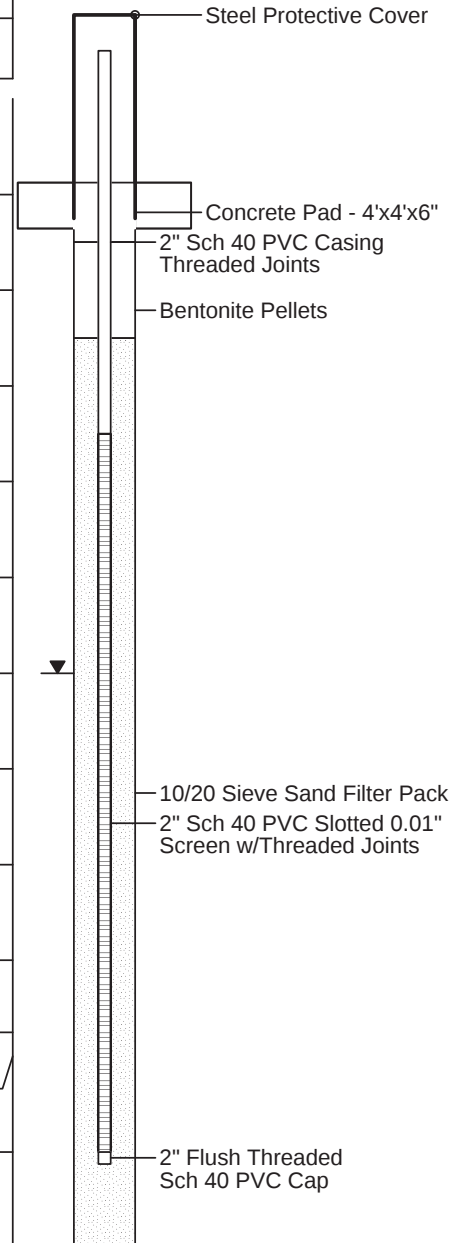
(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6894.33
Elev., PAD (ft. msl) : 6891.35
Elev., GL (ft. msl) : 6890.48
Site Coordinates :
N : 1634085.50
E : 2544637.81

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation
DESCRIPTION							
-2							
-1							
0							
1	0.8			CL	100		CLAY, mod, stiff, damp, brown, no odor, gravel,
2							
3	0.1			CL	90		CLAY, SIMILAR TO ABOVE (STA), gravel,
4							
5	0.7			CL	80		CLAY, STA,
6							
7	1.8			CL	90		SANDY CLAY, low, firm to soft, damp, brown, no odor, moist 7-8' ,
8							
9	2.0			CL	70		SANDY CLAY, STA, damp to moist,
10							
11	0.6			CL/SC	90		SANDY CLAY/CLAYEY SAND, STA, moist to saturated in clayey sand seams, no odor,
12							
13	1.5			CL	20		SANDY SILTY CLAY, low, stiff, damp, brown, no odor, moist to saturated in sand seams,
14							
15	2.2			CL/SC	80		SANDY CLAY/CLAYEY SAND, low, firm to soft, moist to saturated in clayey sand seams,
16							
17	2.2			CL/SC	80		SANDY CLAY/CLAYEY SAND, STA, moist to saturated,
18				CL	90		SILTY CLAY, low, very stiff, damp, reddish brown and grey, no odor,
19	2.5			CL	80		SILTY CLAY, STA,
20							
21	2.6			CL	50		SILTY CLAY, STA,
22							
23							

Completion Results

MKTF-40



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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 37.25'
Ground Water : 34'
Start Date : 11/13/2014
Finish Date : 11/14/2014

MKTF-41

(Sheet 1 of 2)

Elev., TOC (ft.msl) : 6893.64
Elev., PAD (ft. msl) : 6891.11
Elev., GL (ft. msl) : 6889.80
Site Coordinates :
N : 1633499.80
E : 2544567.57

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	Completion Results
							DESCRIPTION	
-2								MKTF-41 Steel Protective Cover Concrete Pad - 4'x4'x6" 2" Sch 40 PVC Casing Threaded Joints Grout Bentonite Pellets
-1								
0								
1	2.6			CL	80		SANDY SILTY CLAY, low, stiff, dry, brown, no odor, fine grained sand, occasional gravel,	
2								
3	2.3			CL	70		SANDY SILTY CLAY, SIMILAR TO ABOVE (STA), no odor,	
4								
5	1.2			CL	40		SANDY SILTY CLAY, STA, no odor,	
6								
7	2.4			CL/ML	50		SILTY CLAY/CLAYEY SILT, low, firm, dry, brown, no odor,	
8								
9	3.9			CL	60		SANDY CLAY, low, very stiff, dry, brown, no odor,	
10								
11	4.8			CL	30		SANDY CLAY, STA, damp,	
12								
13	3.5			CL	40		SANDY CLAY, STA,	
14								
15	1.2			CL	10		SANDY CLAY, STA,	
16								
17	3.9			CL	50		SILTY CLAY, low, very stiff, dry/damp, light reddish brown with grey @ base, no odor,	
18								
19	4.0			CL			SILTY CLAY, STA, reddish brown and light grey,	

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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 37.25'
Ground Water : 34'
Start Date : 11/13/2014
Finish Date : 11/14/2014

MKTF-41

(Sheet 2 of 2)

Elev., TOC (ft.msl) : 6893.64
Elev., PAD (ft. msl) : 6891.11
Elev., GL (ft. msl) : 6889.80
Site Coordinates :
N : 1633499.80
E : 2544567.57

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	Saturation ▼ Saturation	DESCRIPTION	Completion Results MKTF-41
19	4.0			CL	80				
20								SILTY CLAY, STA, light reddish brown,	
21	3.9			CL	50				
22								SILTY CLAY, STA, light reddish brown and trace grey,	
23	3.6			CL	40				
24								SILTY CLAY, STA, light reddish brown,	
25	3.3			CL	50				
26								SILTY CLAY, STA,	
27	2.1			CL	10				
28								SILTY CLAY, STA,	
29	2.8			CL	20				
30								SILTY CLAY, STA, moist @ top of sample,	
31	2.6			CL	40				
32								SILTY CLAY, STA, calcareous,	
33	3.1			CL	50				
34		▼						SILTY CLAY, STA, gravelly, moist to saturated, no odor, shale @ base,	
35	2.9			CL	50				
36								SHALE, dark grey, dense to very dense,	
37	-			SH	10				
38									
39									
40									

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Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 30.25'
Ground Water :
Start Date : 11/12/2014
Finish Date : 11/12/2014

MKTF-42

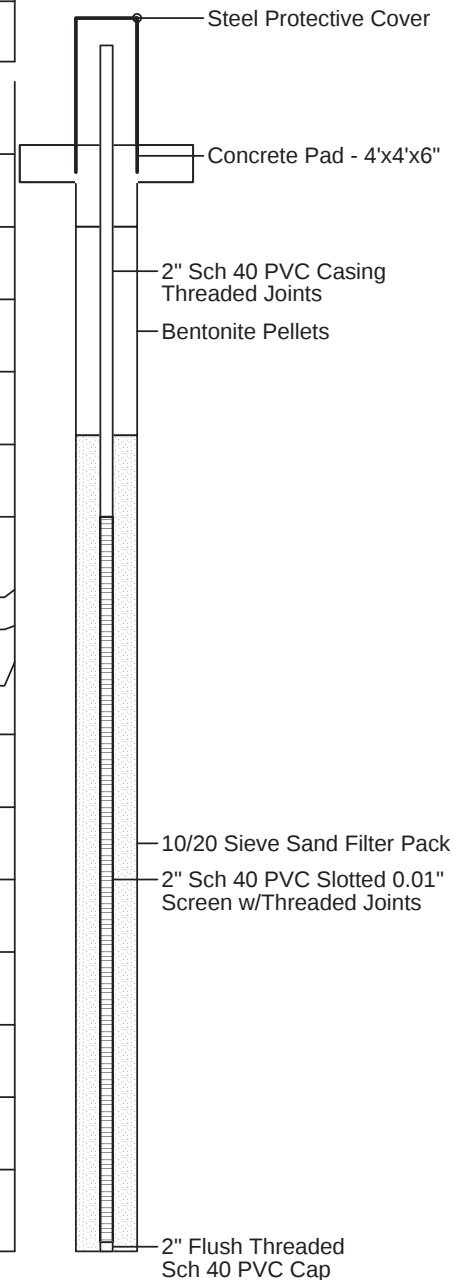
(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6892.95
Elev., PAD (ft. msl) : 6890.42
Elev., GL (ft. msl) : 6888.75
Site Coordinates :
N : 1633078.09
E : 2544678.55

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
							Water Level Depth to water - 18.79 fbtoc 11-18-14 (not known to be static)
-2							
-1							
0							
1	1.7			CL	100		SILTY CLAY, low, firm, dry, light brown, no odor,
2							
3	2.8			CL	90		SILTY CLAY, low, very stiff, dry, light brown, calcareous, no odor, crumbly,
4							
5	3.8			CL	60		SILTY CLAY, SIMILAR TO ABOVE (STA),
6							
7	2.4			CL	60		SILTY CLAY, STA,
8							
9	4.1			CL	30		SILTY CLAY, STA,
10							
11	2.8			CL	50		SANDY CLAY, low, stiff, dry, light reddish brown with medium grained sand and interbedded sandstone less than 1/2" thick,
12							
13	3.9			CL	80		SANDY CLAY, STA,
14				CL	80		SILTY CLAY, low, very stiff, damp/dry, light reddish brown, no odor, calcareous,
15	2.5			CL	60		SILTY CLAY, STA, increase in moisture,
16							
17	2.3			CL	50		SILTY CLAY, STA, trace sand, standstone seam @ 17.5', very dense,
18							
19	2.4			CL	80		SILTY CLAY, STA, odor, extremely calcareous (50%),
20							
21	1.5			CL	80		SILTY CLAY, STA, calcareous,
22							
23	2.5			CL	10		SILTY CLAY, low, stiff, damp, reddish brown, no odor,
24							
25	1.4			CL	60		SILTY CLAY, STA,
26							
27	1.5			CL	60		SILTY CLAY, STA, trace grey,
28							
29	1.2			CL	50		SILTY CLAY, STA, grey and reddish brown.
30							
31							

Completion Results

MKTF-42



1010 Travis Street
Houston, Texas 77002
713-955-1230

DiSorbo Consulting, LLC

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 28'
Ground Water :
Start Date : 11/11/2014
Finish Date : 11/11/2014

MKTF-43

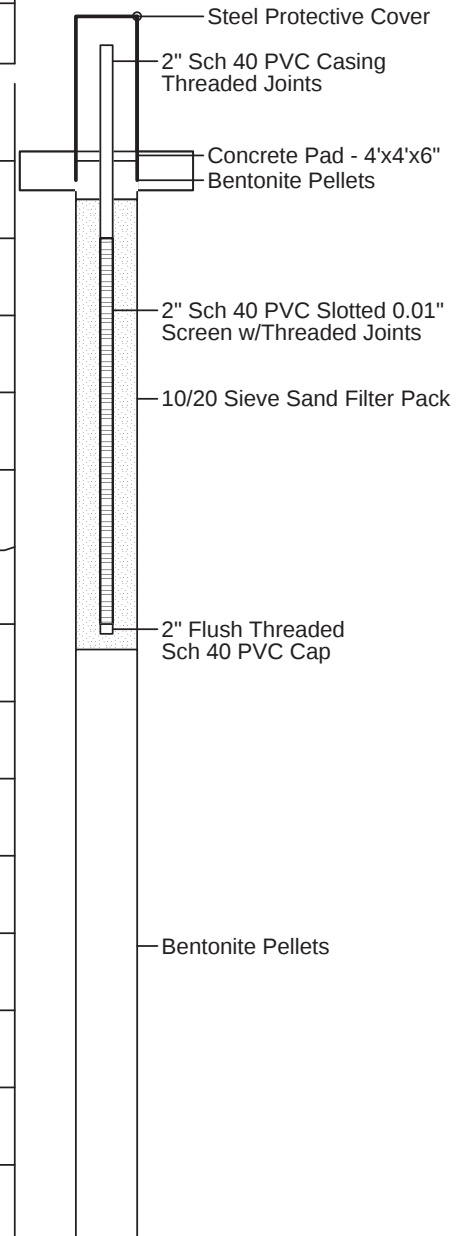
(Sheet 1 of 1)

Elev., TOC (ft.msl) : 6876.90
Elev., PAD (ft. msl) : 6874.12
Elev., GL (ft. msl) : 6873.22
Site Coordinates :
N : 1633490.97
E : 2544190.23

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Sample	DESCRIPTION
							Water Level Depth to water - 6.95 ftboc 11-18-14 (not known to be static)
-2							
-1							
0							
1	3.6			CH	100		CLAY, high, stiff, damp, brown, no odor,
2							
3	4.6			CH	50		CLAY, SIMILAR TO ABOVE (STA), moist in seams,
4							
5	4.2			CH	90		CLAY, STA, moist in seams,
6							
7	4.6			CH	90		CLAY, STA, reddish brown,
8							
9	4.0			CL	90		SILTY CLAY, low, soft, damp, reddish brown, crumbly, no odor, trace grey clay @ 9.5',
10							
11	3.3			CL	80		SILTY CLAY, STA, stiff,
12							
13	3.8			CL	60		SILTY CLAY, STA, very stiff,
14							
15	3.8			CL	80		SILTY CLAY, STA, very stiff, calcareous,
16							
17	2.9			CL	80		SILTY CLAY, STA,
18							
19	3.1			CL	50		SILTY CLAY, STA,
20							
21	3.1			CL	60		SILTY CLAY, STA,
22							
23	3.2			CL	10		SILTY CLAY, STA,
24							
25	3.3			CL	30		SILTY CLAY, STA, sandstone seam 24.50',
26							
27	3.2			CL	30		SILTY CLAY, STA.
28							
29							

Completion Results

MKTF-43



Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 50'
Ground Water :
Start Date : 11/11/2014
Finish Date : 11/12/2014

MKTF-44

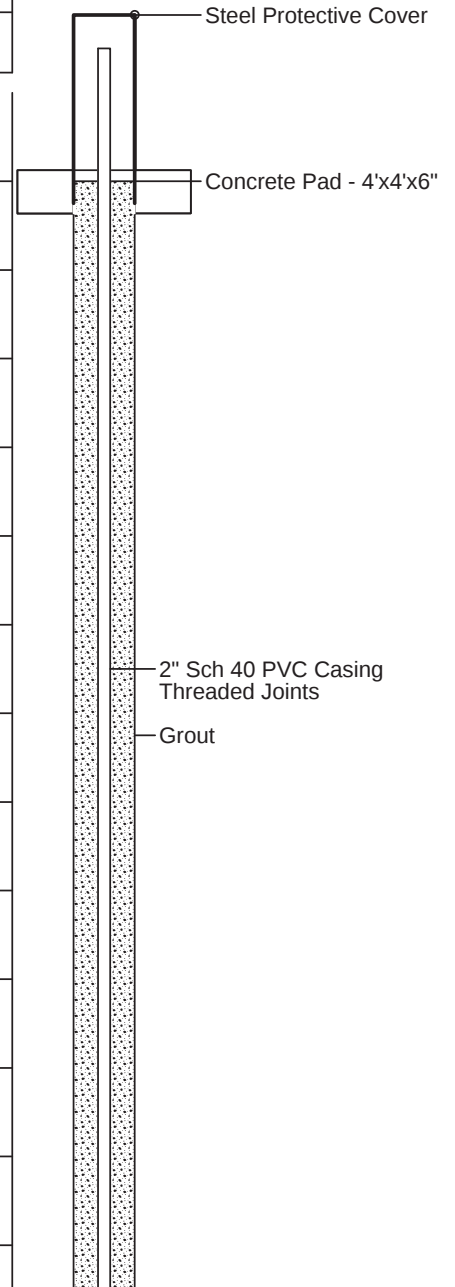
(Sheet 1 of 2)

Elev., TOC (ft.msl) : 6869.95
Elev., PAD (ft. msl) : 6867.41
Elev., GL (ft. msl) : 6866.06
Site Coordinates :
N : 1633681.48
E : 2542981.45

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Water Level Depth to water - 48.80 fbtoc 11-17-14 (not known to be static)
						DESCRIPTION
-2						
-1						
0						
1	6.3			CH	100	CLAY, high, very stiff, damp, brown, no odor,
2						
3	8.3			CH	80	CLAY, SIMILAR TO ABOVE (STA),
4						
5	8.2			CH	70	CLAY, STA,
6						
7	8.6			CH	90	CLAY, STA,
8						
9	8.2			CH	80	CLAY, STA,
10						
11	7.9			CH	90	CLAY, STA, trace silt,
12						
13	7.8			CH	90	CLAY, high, very stiff, damp, brown, no odor,
14						
15	6.5			CH	10	CLAY, STA,
16						
17	7.1			CH	80	CLAY, STA,
18						
19	7.6			CL	70	SANDY SILTY CLAY, low, stiff, damp, light brown, no odor, gravel @ base, soft/crumbly 19-19.5' with lesser amount of clay,
20						
21	5.5			CL	80	SILTY CLAY, STA with sand seams/sandstone fro 20.5-22, dry, crumbly,
22						
23	6.4			CL	80	SANDY SILTY CLAY, low, stiff, dry to damp, light brown, no odor,
24						
25	4.8			CL		GRAVELLY CLAY, STA, with gravel,

Completion Results

MKTF-44



1010 Travis Street
Houston, Texas 77002
713-955-1230

DiSorbo Consulting, LLC

8501 N. MoPac Expy, Suite 300
Austin, Texas 78759
512-693-4190

Western Refining SW, Inc.
Gallup Refinery - Hydrocarbon Seep
Job No. WEST14003

Geologist : Tracy Payne
Driller : C. Ortiz
Drilling Rig : CME 75
Drilling Method : Hollow Stem Auger 7.5"
Sampling Method : Split Spoon 2" Dia, 2' Long
Comments :
Total Depth : 50'
Ground Water :
Start Date : 11/11/2014
Finish Date : 11/12/2014

MKTF-44

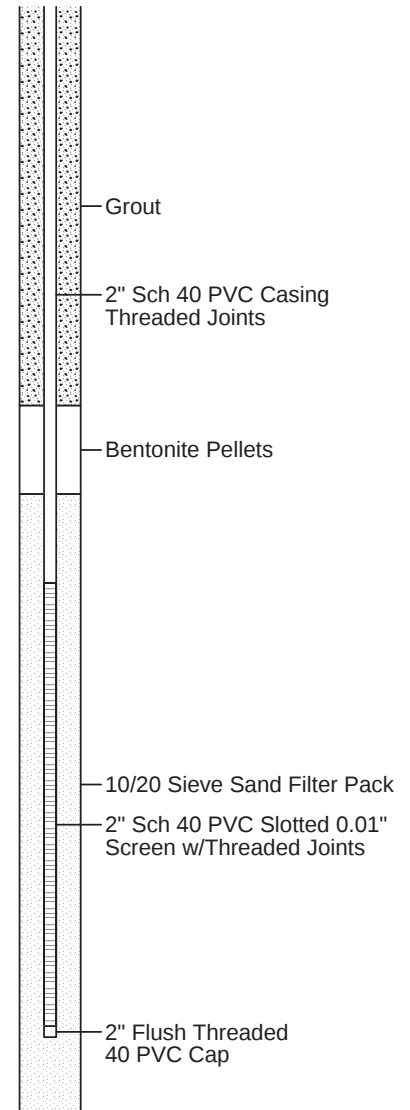
(Sheet 2 of 2)

Elev., TOC (ft.msl) : 6869.95
Elev., PAD (ft. msl) : 6867.41
Elev., GL (ft. msl) : 6866.06
Site Coordinates :
N : 1633681.48
E : 2542981.45

Depth (ft.)	PID (ppm)	Saturation	Lithology	USCS	Recovery (%)	Water Level Depth to water - 48.80 fbtoc 11-17-14 (not known to be static)
						DESCRIPTION
25	4.8			CL	70	
26						
27	3.8			CL	50	GRAVELLY CLAY, STA, very stiff,
28						
29	4.8			CL	50	SILTY CLAY, low, very stiff, damp/dry, reddish brown, no odor, calcareous,
30						
31	4.6			CL	90	SILTY CLAY, low, firm/crumbly, damp to dry, reddish brown, no odor, calcareous,
32						
33	4.3			CL	80	SILTY CLAY, STA, stiff to very stiff,
34						
35	3.6			CL	80	SILTY CLAY, STA,
36						
37	1.9			CL	10	SILTY CLAY, STA,
38						
39	4.4			CL	20	SILTY CLAY, STA,
40						
41	3.8			CL	80	SILTY CLAY, STA,
42						
43	3.8			CL	20	SILTY CLAY, low, very stiff, crumbly, damp to dry, reddish brown, no odor,
44						
45	3.9			CL	60	SILTY CLAY, STA,
46						
47	3.8			CL	40	SILTY CLAY, STA,
48						
49	3.7			CL	20	SILTY CLAY, STA,
50						
51						
52						

Completion Results

MKTF-44



Appendix B
Photos of Sewer Line Excavation

Photos of Sewer Pipeline Repair near Bundle Cleaning Pad



Photo of replaced sewer line near south end of excavation looking to the west.



View from south end of excavation looking to the north.



Photo of south end of excavation looking to the east. South wall is concrete sewer junction box.



View of excavation looking to north with Bundle Cleaning Pad in background.



View of north end of excavation with new sewer line terminating into concrete sewer junction box on west side of Bundle Cleaning Pad.

Appendix C

Well Survey Data



DePauli Engineering
& Surveying, LLC.

Civil Engineers and Land Surveyors

Phone: 505-863-5440 • Fax: 505-863-1919 • www.depauliengineering.com

307 South 4th Street • Gallup, NM 87301

PO BOX 876 • Gallup, NM 87305

February 11, 2014

Mr. Ed Riege, Environmental Manager
Western Refining-Gallup Refinery
Route 3 Box 7
Gallup, NM 87301

Re: Western Refining Monitoring Wells

Dear Mr. Riege:

DePauli Engineering & Surveying, LLC completed the field survey of the 18 monitoring wells at Western Refining-Gallup Refinery on January 21, 2014. The wells were surveyed for the following parameter: ground level elevation, ground level elevation inside steel sleeve, center top steel lid elevation, well casing rim elevation and corresponding measuring point description associated with each elevation. Survey conducted enlisted NM Surveyor in Training and a Technician (under my direct supervision), from DePauli Engineering Surveying, LLC and one Gallup Refinery representative to assist with the location of the wells.

The instruments used to complete the survey consisted of a Leica VIVA GS10 GPS (global positing system) and System 1200 GPS. The method used to survey the wells was Real-time Kinematic GPS Surveying (RTK). RTK surveying requires that two or more receivers are operated simultaneously. The aspect of the procedure involves a radio transmitting a signal from the base station. The base station's coordinates are utilized to make the appropriate corrections to the error involved with the GPS signals. The rover receives the corrections thence giving the rover observation corrected values. The horizontal and vertical positions are determined by differential GPS involving the base line surveyed from local base station to survey position. The base line measurements are surveyed for one minute (60 observations). This is verified by surveying known local control points and bench marks.

The horizontal and vertical positions of the top of the PVC casing (unless otherwise noted) and the vertical positions for the lid, ground elevation inside the steel casing, and the surrounding ground elevation is shown on the attached sheet labeled "Western Refining Monitoring Wells January 21, 2014." The horizontal position is NAD 83 datum and the vertical positions are NGVD 1929. Elevations were taken using the concrete pad surrounding each well and locations

noted on the report. Ground elevation was taken using the concrete pad surrounding each well and locations shown on the report.

The requested field survey was complete on January 21, 2014 in accordance with sections 500.1 through 500.12 of the Regulations and Rules of the Board of Registration for Professional Engineers and Surveyors Minimum Standards for Surveying in New Mexico; which horizontal positions were measured to the nearest 0.1-ft and vertical elevations were measured to an accuracy of 0.01-ft.

If you have any questions concerning this survey please do not hesitate to contact our office.

Sincerely,

A handwritten signature in cursive script that reads "Marc DePauli". The signature is written in dark ink and is positioned below the word "Sincerely,".

Marc DePauli, PE/PS

Western Refining Monitoring Wells January 21, 2014

Well #	Northing	Easting	Elevation	Description
MKTf-10	1,633,807.47	2,545,853.54	6937.16	North edge PVC casing
			6937.51	Center steel lid
			6936.63	North side ground elev. inside steel sleeve
			6937.51	Average corner elevation of concrete collar
MKTf-15	1,633,845.57	2,545,934.58	6943.48	North edge PVC casing
			6943.73	Center steel lid
			6943.19	North side ground elev. inside steel sleeve
			6943.74	**Average elevation of concrete collar
			** Concrete collar is in general circular shape	
MKTf-16	1,633,718.14	2,546,068.55	6950.58	North edge PVC casing
			6950.97	Center steel lid
			6950.58	North side ground elev. inside steel sleeve
			6951.00	Average corner elevation of concrete collar
MKTf-11	1,633,806.93	2,545,754.77	6931.34	South edge PVC casing
			6931.61	Center steel lid
			6930.86	North side ground elev. inside steel sleeve
			6931.61	Average corner elevation of concrete collar
MKTf-03	1,633,746.53	2,545,756.87	6931.31	North edge PVC casing
			6931.69	Center steel lid
			6930.85	North side ground elev. inside steel sleeve
			6931.73	Average corner elevation of concrete collar
MKTf-04	1,633,649.46	2,545,752.83	6933.57	North edge PVC casing
			6933.91	Center steel lid
			6933.24	North side ground elev. inside steel sleeve
			6933.90	Average corner elevation of concrete collar
MKTf-05	1,633,472.30	2,545,769.95	6942.22	North edge PVC casing
			6942.80	Center steel lid
			6941.95	South side ground elev. inside steel sleeve
			6939.49	Average corner elevation of concrete collar
MKTf-09	1,633,681.33	2,545,895.93	6946.50	North edge PVC casing
			6947.21	Center steel lid
			6945.90	South side ground elev. inside steel sleeve
			6943.57	Average corner elevation of concrete collar

Well #	Northing	Easting	Elevation	Description
MKTF-08	1,633,598.94	2,545,885.02	6947.09	North edge PVC casing
			6947.48	Center steel lid
			6942.67	South side ground elev. inside steel sleeve
			6944.02	Average corner elevation of concrete collar
MKTF-07	1,633,555.11	2,545,885.42	6947.18	North edge PVC casing
			6947.84	Center steel lid
			6947.06	South side ground elev. inside steel sleeve
			6944.40	Average corner elevation of concrete collar
MKTF-06	1,633,556.28	2,545,811.85	6946.81	North edge PVC casing
			6947.29	Center steel lid
			6946.63	South side ground elev. inside steel sleeve
			6944.24	Average corner elevation of concrete collar
MKTF-18	1,633,497.53	2,546,006.29	6950.65	**North edge PVC casing
			6950.96	Center steel lid
			6950.17	North side ground elev. inside steel sleeve
			6950.97	Average corner elevation of concrete collar ** Mark was existing on PVC casing
MKTF-12	1,633,542.07	2,545,688.29	6942.11	North edge PVC casing
			6942.84	Center steel lid
			6941.88	South side ground elev. inside steel sleeve
			6939.70	Average corner elevation of concrete collar
MKTF-13	1,633,625.25	2,545,697.39	6935.18	**North edge PVC casing
			6936.89	Center steel lid
			6934.83	South side ground elev. inside steel sleeve
			6933.67	Average corner elevation of concrete collar ** PVC casing not typical
MKTF-14	1,633,719.43	2,545,625.96	6928.02	North edge PVC casing
			6928.75	Center steel lid
			6927.80	South side ground elev. inside steel sleeve
			6925.65	Average corner elevation of concrete collar
MKTF-01	1,633,864.41	2,545,561.73	6920.67	**North edge PVC casing
			6921.68	Center steel lid
			6920.67	South side ground elev. inside steel sleeve
			6918.28	**Average corner elevation of concrete collar ** Inside ground elev. is flush with PVC casing

Well #	Northing	Easting	Elevation	Description
MKTf-02	1,633,946.93	2,545,530.46	6917.45	** North edge PVC casing
			6918.31	Center steel lid
			6917.18	South side ground elev. inside steel sleeve
			6915.00	Average corner elevation of concrete collar
				** PVC casing not typical
MKTf-17	1,633,268.93	2,545,850.73	6945.76	North edge PVC casing
			6946.00	Center steel lid
			6945.64	North side ground elev. inside steel sleeve
			6945.79	** Average corner elevation of concrete collar
				** Concrete collar is in general circular shape

Marc DePauli

Marc DePauli PS13606

2-11-2014

Date





DePauli Engineering
& Surveying, LLC.

Civil Engineers and Land Surveyors

Phone: 505-863-5440 • Fax: 505-863-1919 • www.depauliengineering.com

307 South 4th Street • Gallup, NM 87301

PO BOX 876 • Gallup, NM 87305

May 12, 2014

Mr. Ed Riege, Environmental Manager
Western Refining-Gallup Refinery
Route 3 Box 7
Gallup, NM 87301

Re: Western Refining Monitoring Wells

Dear Mr. Riege:

DePauli Engineering & Surveying, LLC completed the field survey of the 16 monitoring wells at Western Refining-Gallup Refinery on April 30, 2014. The wells were surveyed for the following parameter: ground level elevation, ground level elevation inside steel sleeve, center top steel lid elevation, well casing rim elevation and corresponding measuring point description associated with each elevation. The survey was conducted by an enlisted NM Surveyor in Training and a Technician (under my direct supervision), from DePauli Engineering & Surveying, LLC and one Gallup Refinery representative to assist with the location of the wells.

The instruments used to complete the survey consisted of a Leica VIVA GS10 GPS (global positing system) and System 1200 GPS. The method used to survey the wells was Real-time Kinematic GPS Surveying (RTK). RTK surveying requires that two or more receivers are operated simultaneously. The aspect of the procedure involves a radio transmitting a signal from the base station. The base station's coordinates are utilized to make the appropriate corrections to the error involved with the GPS signals. The rover receives the corrections thence giving the rover observation corrected values. The horizontal and vertical positions are determined by differential GPS involving the base line surveyed from local base station to survey position. The base line measurements are surveyed for one minute (60 observations). This is verified by surveying known local control points and bench marks.

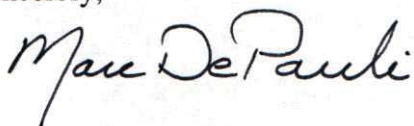
The horizontal positions of the top of the PVC casing or top of the lid (unless otherwise noted) and the vertical positions for the PVC casing, lid, ground elevation inside the steel casing, and the surrounding ground elevation is shown on the attached sheet labeled "Coordinate and Elevation Summary, Western Refining Monitoring Wells" The horizontal position is NAD 83

datum and the vertical positions are NGVD 1929. Elevations were taken using the concrete pad surrounding each well and locations noted on the report. Ground elevation was taken using the concrete pad surrounding each well and locations shown on the report.

The requested field survey was completed on April 30, 2014 in accordance with sections 500.1 through 500.12 of the Regulations and Rules of the Board of Registration for Professional Engineers and Surveyors Minimum Standards for Surveying in New Mexico; which horizontal positions were measured to the nearest 0.1-ft and vertical elevations were measured to an accuracy of 0.01-ft.

If you have any questions concerning this survey please do not hesitate to contact our office.

Sincerely,

A handwritten signature in cursive script that reads "Marc DePauli".

Marc DePauli, PE/PS



Coordinate and Elevation Summary, Western Refining Monitoring Wells

Well #	Northing	Easting	Elevation	Description
MKTF-21	1633570.30	2546110.00	6952.57	North edge PVC casing.
			6952.77	Center Steel Lid
			6952.00	North side ground elevation inside steel sleeve
			6952.68	Average elevation of concrete collar.
MKTF-20	1633698.28	2546111.23	6951.78	North edge PVC casing.
			6952.05	Center Steel Lid
			6951.17	North side ground elevation inside steel sleeve
			6951.89	Average elevation of concrete collar.
MKTF-24	1633853.19	2545468.48	6928.72	North edge PVC casing.
			6929.21	Center Steel Lid
			6924.62	North side ground elevation inside steel sleeve
			6926.07	Average elevation of concrete collar.
MKTF-23	1633750.93	2545503.70	6929.98	North edge PVC casing.
			6930.55	Center Steel Lid
			6925.79	North side ground elevation inside steel sleeve
			6927.23	Average elevation of concrete collar.
MKTF-22	1633501.64	2545478.20	6942.31	**North edge PVC casing.
			6942.94	Center Steel Lid
			6938.57	North side ground elevation inside steel sleeve
			6939.76	Average elevation of concrete collar.
				** PVC casing not typical.
MKTF-31	1633898.83	2544938.99	6906.87	North edge PVC casing.
			6907.58	Center Steel Lid
			6903.11	North side ground elevation inside steel sleeve
			6904.26	Average elevation of concrete collar.
MKTF-25	1634015.86	2545275.68	6916.19	North edge PVC casing.
			6916.66	Center Steel Lid
			6911.79	North side ground elevation inside steel sleeve
			6913.35	Average elevation of concrete collar.
MKTF-30	1634225.67	2544937.91	6900.80	North edge PVC casing.
			6901.34	Center Steel Lid
			6896.68	North side ground elevation inside steel sleeve
			6898.10	Average elevation of concrete collar.

Coordinate and Elevation Summary, Western Refining Monitoring Wells

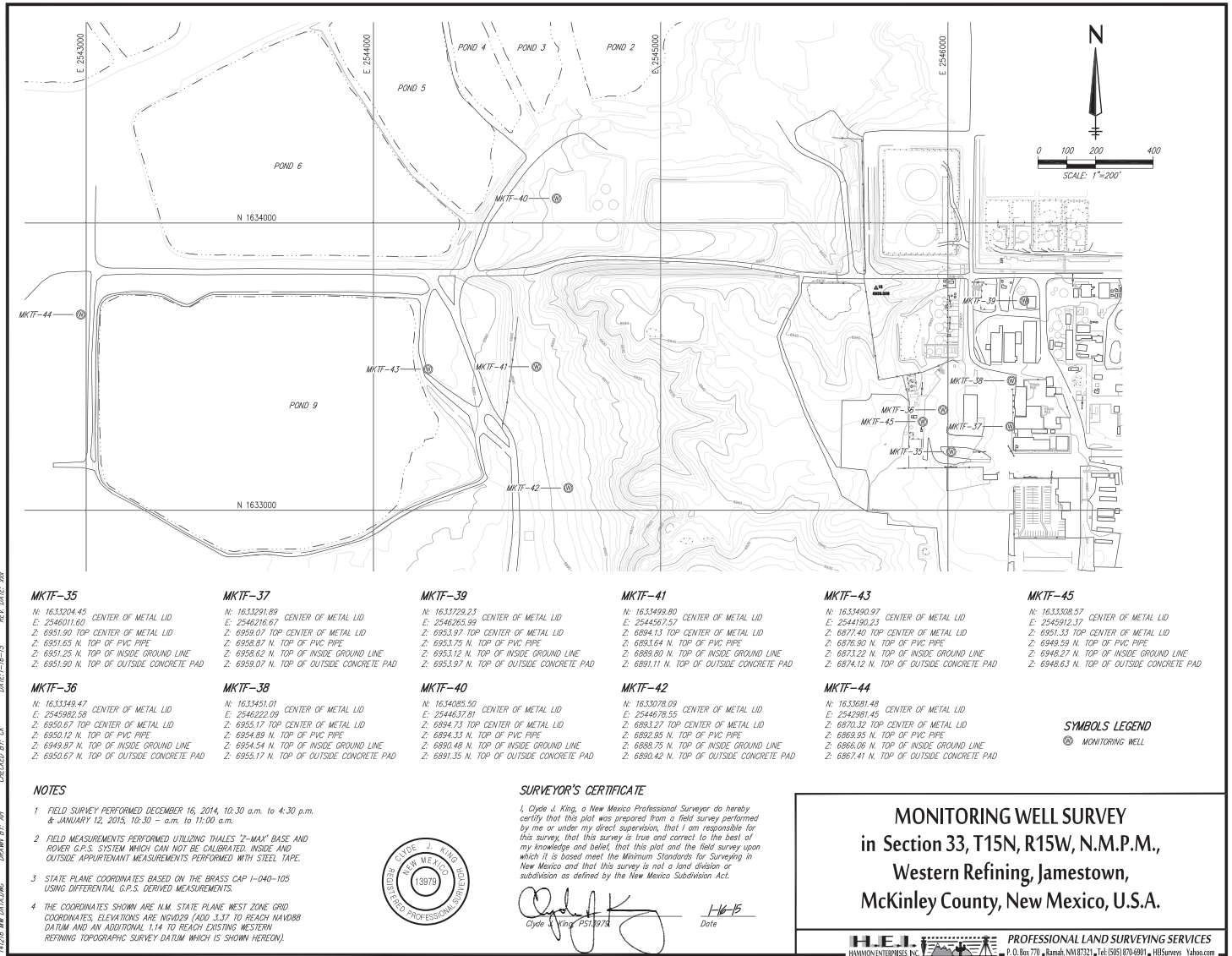
Well #	Northing	Easting	Elevation	Description
MKTF-29	1634249.76	2545258.34	6901.62	North edge PVC casing.
			6901.98	Center Steel Lid
			6897.67	North side ground elevation inside steel sleeve
			6898.83	Average elevation of concrete collar.
MKTF-28	1634263.44	2545650.04	6921.52	North edge PVC casing.
			6922.11	Center Steel Lid
			6917.51	North side ground elevation inside steel sleeve
			6918.67	Average elevation of concrete collar.
MKTF-27	1634115.56	2545620.98	6917.90	North edge PVC casing. (ex. mark)
			6918.49	Center Steel Lid
			6914.18	North side ground elevation inside steel sleeve
			6915.36	Average elevation of concrete collar.
MKTF-26	1634033.63	2545492.39	6915.31	North edge PVC casing.
			6915.86	Center Steel Lid
			6911.35	North side ground elevation inside steel sleeve
			6912.55	Average elevation of concrete collar.
MKTF-19	1633381.19	2545842.82	6944.67	North edge PVC casing.
			6945.00	Center Steel Lid
			6944.34	North side ground elevation inside steel sleeve
			6944.89	Average elevation of concrete collar.
MKTF-34	1633118.42	2545681.30	6945.35	North edge PVC casing.
			6945.71	Center Steel Lid
			6943.52	North side ground elevation inside steel sleeve
			6942.42	Average elevation of concrete collar.
MKTF-32	1633443.56	2544840.32	6911.11	North edge PVC casing.
			6911.68	Center Steel Lid
			6907.16	North side ground elevation inside steel sleeve
			6908.44	Average elevation of concrete collar.
MKTF-33	1633261.99	2545318.27	6939.75	North edge PVC casing.
			N/A	Center Steel Lid
			N/A	North side ground elevation inside steel sleeve
			6936.59	Elevation of surrounding ground.

Monitoring well has no concrete collar and steel casing.



Marc DePauli
 Marc DePauli PS13606

5-12-2014
 Date



Appendix D

Analytical Reports
