GW - ___40____

DEPT. OF TRANSPORTATION (DOT) WELL ABANDONMENT

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, May 3, 2017 9:31 AM
To: Robinson, Kelly (Kelly.Robinson@wnr.com)
Cc: Griswold, Jim, EMNRD; Schmaltz, Randy (Randy.Schmaltz@wnr.com); 'Allen.Hains@wnr.com'; Moore, Audrey J., NMDOT
Subject: Former Giant Bloomfield Refinery (GW-40) Monitoring Well Abandonment Work Plan for SHS- 1 through 5 in or near ROW Hwy 64 and Intersection of CR 5500 DOT Road Expansion Project

Ms. Robinson:

The New Mexico Oil Conservation Division (OCD) is in receipt of the above subject work plan by letter dated May 1, 2017.

OCD approves the plug and abandonment in accordance with New Mexico Office of State Engineer Guidelines with the following conditions:

1) SHS-1 through 4 shall be sampled for Gen. Chem. and TPH (GRO & $DRO_{Extended}$) in advance of plug and abandonment, since the last sample event occurred in 2009 with some residual organics present: TDS, Cl and SO4 were increasing in concentration.
2) SHS-3 (4-inch MW) was indicated as damaged, but is not within the ROW of the DOT Project. If TPH, TDS, Cl, and SO4 from No. 1 above exhibit elevated groundwater levels above historical environmental analytical laboratory data results and/or WQCC water quality standards, and if groundwater at SHS-3 is able to be sampled, it shall remain in place for future monitoring purposes.

Please contact me if you have questions.

Thank you.

Mr. Carl J. Chavez, CHMM (#13099)
New Mexico Oil Conservation Division
Energy Minerals and Natural Resources Department
1220 South St Francis Drive
Santa Fe, New Mexico 87505
Ph. (505) 476-3490
E-mail: CarlJ.Chavez@state.nm.us
"Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?" (To see how, go to: http://www.emnrd.state.nm.us/OCD **and see "Publications")**

Western Refining

WNR LISTED NYSE

May 1, 2017

Carl Chavez
Environmental Bureau
New Mexico Energy, Minerals & Natural Resources Dept.
1220 South St. Francis Drive
Santa Fe, NM 87505

UPS Tracking #: 1Z 981 839 01 4067 1154

RE: Monitoring Well Abandonment Work Plan
Former Giant Bloomfield Refinery
OCD Discharge Permit GW-40

Dear Mr. Chavez,

Western Refining Southwest, Inc. ("Western) proposes this Monitoring Well Abandonment Work Plan for monitoring wells located in the New Mexico Department of Transportation (NMDOT) Highway 64 Right-of Way (ROW). This work plan is for the abandonment of five monitoring wells (SHS-1 through SHS-5) located south of the former Giant Bloomfield Refinery. See the attached Figures.

Purpose

NMDOT has requested that Western abandon of monitoring wells SHS-1, SHS-2, SHS-4 and SHS-5 due to highway construction scheduled to start in August 2017. See the attached NMDOT correspondence.

In addition, Western proposes to abandon monitoring well SHS-3 because it is unusable due to damage by tree roots. This well also located in the Highway 64 ROW but does not appear to conflict with NMDOT construction at this time.

Background Information

The monitoring wells were installed in 1989 and 1990 as part of the remediation investigation of the former Giant Bloomfield Refinery. See the Well Information attachment for recent well gauging information and boring logs. Western compiled available monitoring well chemical analyses for each of the wells. See the attached Chemical Analyses Summary. In recent years, the New Mexico Office of the State Engineer (NMOSE) has requested information about the monitoring. It is not clear if these wells are registered with the NMOSE. The NMOSE pertinent regulation and reporting forms are attached.

On February 10, Allen Hains of Western met with you to discuss abandoning the wells before highway construction commences. If replacement wells are necessary after the highway construction is completed, NMDOT has a process to allow access for monitoring well installation.

Scope of Work

Western proposes to abandon the five will in accordance with NMOSE regulations. The scope of work will be as follows:

1. Western will contract a licensed NM well driller;

2. The well driller will develop and submit a Well Plugging Plan in accordance to the NMOSE regulations;
3. Upon NMOSE approval, the well driller will abandon the wells;
4. Submit a Plugging Record to NMOSE; and
5. Western will submit a well plugging summary report to NMOCD.

Schedule

The NMDOT has scheduled to commence field construction activities in the area of the SHS wells as early as July 2017. Western would like to initiate the abandonment activities pending NMOCD's approval as soon as possible to ensure such activities do not impact the NMDOT construction efforts.

If you have any questions or would like to discuss this topic in more detail, please feel free to contact me at (505) 632-4166 or Kelly.robinson@wnr.com at your convenience.

Sincerely,

Kelly Robinson

Kelly R. Robinson
Environmental Supervisor
Western Refining Southwest, Inc.

cc: R. Schmaltz (WNR)
A. Hains (WNR)

FIGURES

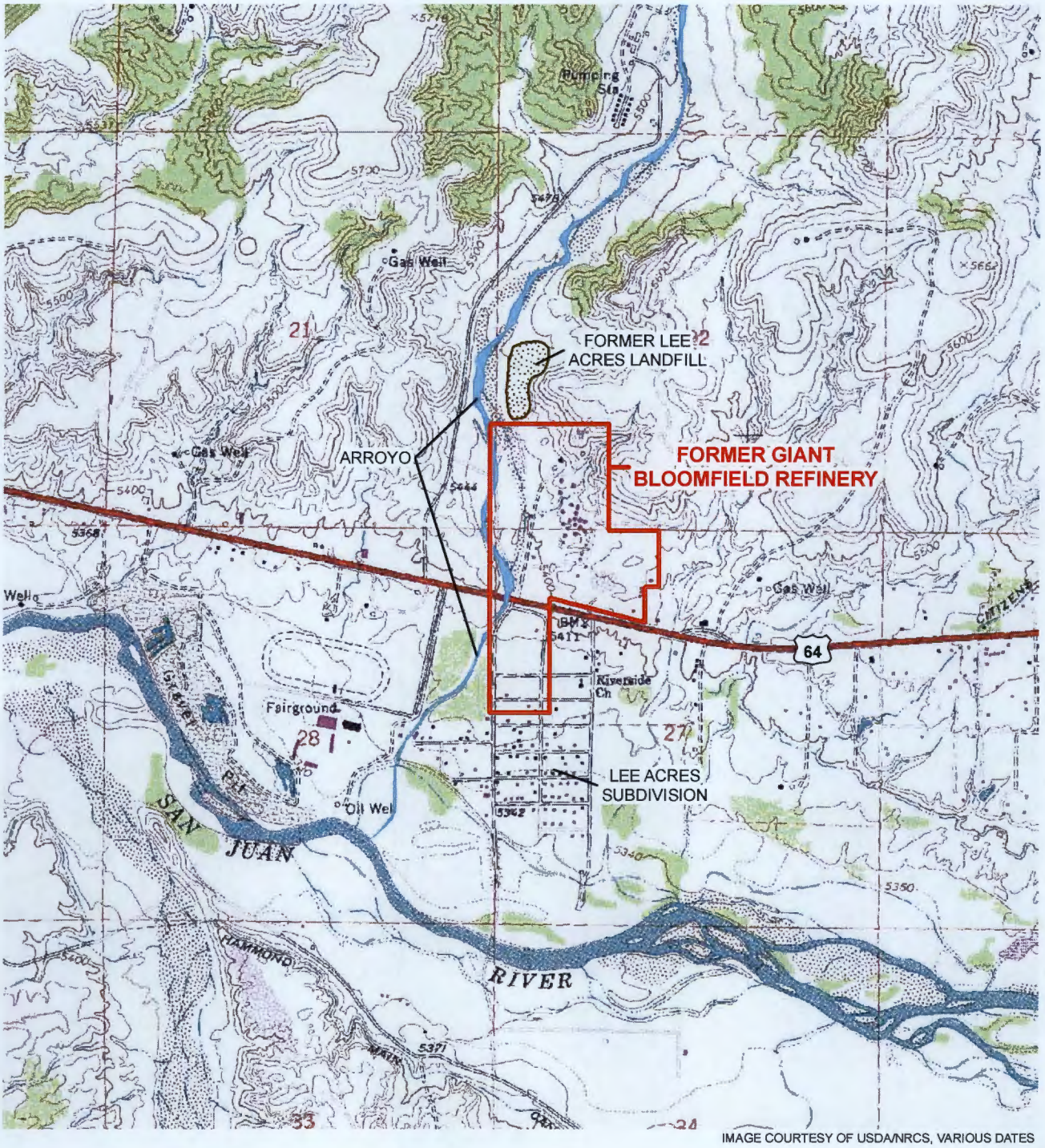


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

0 2,000 4,000

Feet

N

LEGEND

- SITE LOCATION
- ARROYO
- FORMER LEE ACRES LANDFILL

FIGURE 1
SITE LOCATION MAP
FORMER GIANT BLOOMFIELD REFINERY
SWSW SEC 22 & WNW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

P:\Western Refining\GIS\MXD\WR1009 GIANT\WR1009_GIANT_FIG01_SL.mxd

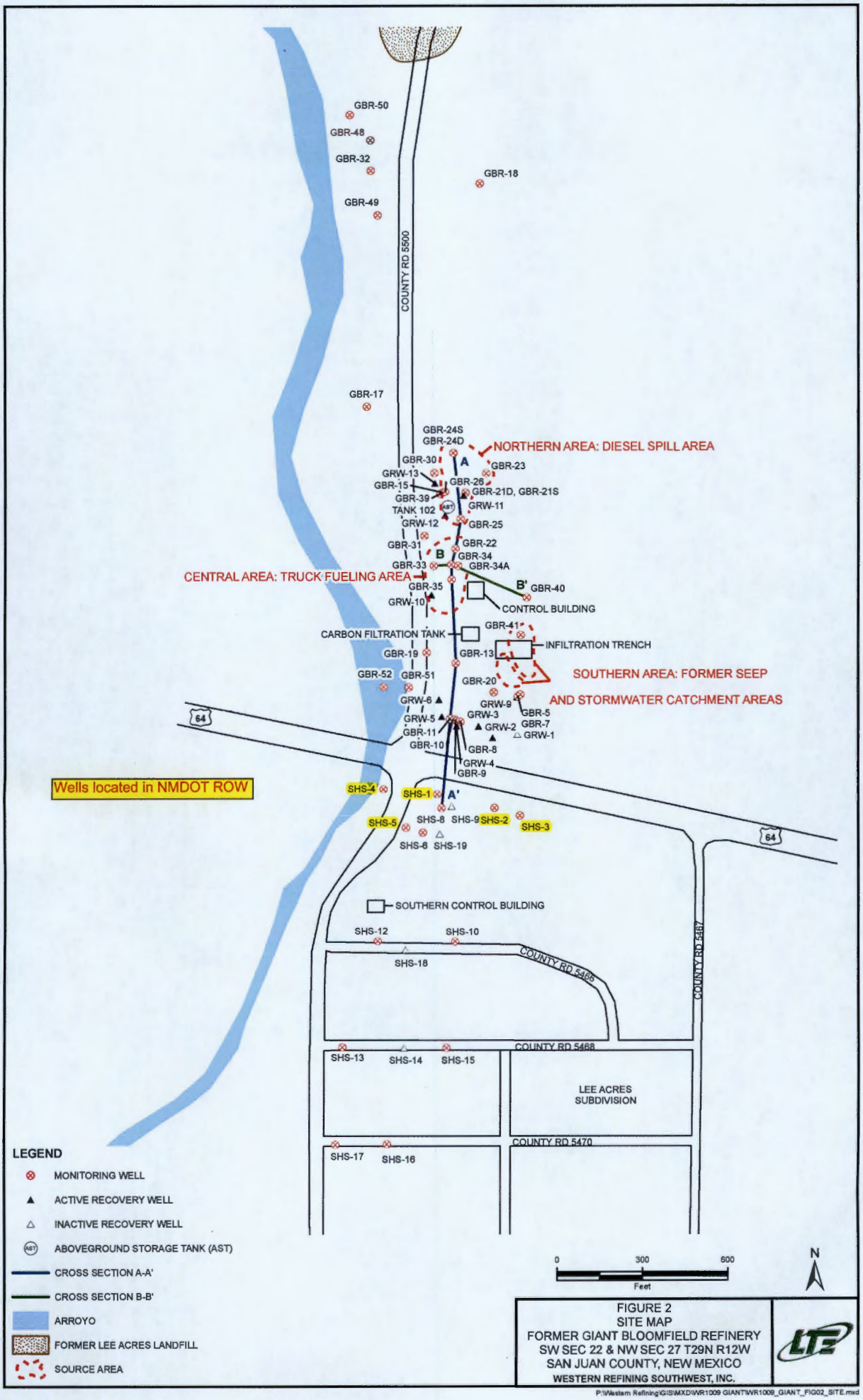


FIGURE 2
SITE MAP
FORMER GIANT BLOOMFIELD REFINERY
SW SEC 22 & NW SEC 27 T29N R12W
SAN JUAN COUNTY, NEW MEXICO
WESTERN REFINING SOUTHWEST, INC.

P:\Western Refining\GIS\MXD\WR1009 GIANT\WR1009_GIANT_FIG02_SITE.mxd

NM DOT
Correspondence

Hains, Allen

From: Robinson, Kelly
Sent: Thursday, February 09, 2017 1:00 PM
To: Hains, Allen
Cc: Schmaltz, Randy
Subject: FW:
Attachments: ROW Map Excerpt.pdf

Here is the map of the land ownership you requested.

Please let me know if you need anything else!

Kelly R. Robinson I Environmental Supervisor
Western Refining I 111 County Road 4990 I Bloomfield, NM87413
(o) 505-632-4166 I (c) 505-801-5616 I (e) kelly.robinson@wnr.com

From: Moore, Audrey J., NMDOT [mailto:Audrey.Moore@state.nm.us]
Sent: Thursday, January 05, 2017 1:54 PM
To: Robinson, Kelly <Kelly.Robinson@wnr.com>
Subject:

Audrey Moore, Manager
NMDOT - Environmental Geology Section
PO Box 1149, Room 201
1120 Cerrillos Road
Santa Fe, NM 87504-1149
Ofc: 505-827-1715
Cell: 505-490-1850
Audrey.moore@state.nm.us

LEGEND (PROPOSED)

TO-XX	TURNOUT	SW-XX	SIDEWALK
DS-XX	DRAINAGE STRUCTURE	BWF-XX	4-STRAND BARBED WIRE FENCE
CG-XX	CURB & GUTTER	CLF-XX	CHAIN LINK FENCE
MCG-XX	MEDIAN CURB & GUTTER		
CMP-XX	CONCRETE MEDIAN PAVEMENT		
MB-XX	METAL BARRIER		
TDS-XX	TURNOUT DRAINAGE STRUCTURES		
RD-XX	CONCRETE RUNDOWN		
SD-XX	STORM DRAIN PIPE		
CWB-XX	CONCRETE WALL BARRIER		

SCALE: 1" = 50'

BOUNDARY SURVEY PLAT FOR JACK NIGHTINGALE 2/25/2009 BK:1489, PG:464

US HIGHWAY 64

CONSTRUCTION ℄ (SURVEY ℄)

S77°57'17"E 8,989.21'

S77°57'11"E 11,510.34'

COUNTY ROAD 5500

BLOCK 8

BLOCK 7

BLOCK 6

BLOCK 9

SUBURBAN HEIGHTS SUBDIVISION PLAT FILE NO. 168453 1/6/1958

N78°05'59"W 9,432.52'

S77°53'34"E 2,312.66' (BASIS OF BEARING)

TIE DETAIL

Check for monitoring well.

Legend:

- CONTROL POINT
- T-RAIL (used to establish ℄ unless otherwise indicated) MONUMENT FOUND AS NOTED
- CALCULATED POINT
- SLOPE LIMITS
- FENCE LINE
- DENOTES EXISTING RIGHT-OF-WAY SECURED BY N.M.P.# F.A.S. 201-D(1) & N.M.P.# F.A.S. 201-E(1), N.M.P. # FAS 201 & N.M.P. #F-033-2(6)
- DENOTES EXISTING RIGHT-OF-WAY SECURED BY WARRANTY DEED, TO SAN JUAN COUNTY RECORDED IN SAN JUAN COUNTY ON 3/11/1987 BOOK:1065 PAGE:356.
- DENOTES EXISTING RIGHT-OF-WAY SECURED BY SPECIAL WARRANTY DEED TO SAN JUAN COUNTY RECORDED IN SAN JUAN COUNTY ON 9/13/2004 BOOK:1395, PAGE:208.
- COUNTY ROAD 5500 SECURED BY PLAT ENTITLED "SUBURBAN HEIGHTS SUBDIVISION" FILED ON JANUARY 6, 1958 AS DOCUMENT NO. 168453.
- DENOTES EXISTING CONSTRUCTION AGREEMENTS SECURED BY N.M.P. #F-033-2(6).
- DENOTES EXISTING RIGHT-OF-WAY SECURED BY N.M.P.# F.A.S. 201-D(1) & N.M.P.# F.A.S. 201-E(1) & N.M.P. #F-033-2(7)
- BUILDING

Notes:

1. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
2. BEARINGS ARE NEW MEXICO STATE PLANE GRID WEST ZONE (NAD83).
3. BASIS OF BEARING: S.77°53'34"E. FROM MONUMENT 3326-4 TO MONUMENT 3326-5 DERIVED FROM NMSH&TD CONTROL MAP ENTITLED "US 64 FARMINGTON" PCN 3326, CONTROL MAP NMP# NH-TPO-TPA-064-3(7)53.
4. BASIS OF STATE PLANE COORDINATES DERIVED FROM GPS OBSERVATIONS AND CALCULATIONS BASED ON TIES TO H.A.R.N. STATIONS "FARMPORT" AND "265+54.90 MI, COR CO/NM".
5. DATE OF FIELD SURVEY: SEPTEMBER 2015 THROUGH DECEMBER 2015.
6. ALL STATIONS SHOWN FOR EXISTING MONUMENTS ARE TO SURVEY CENTERLINE UNLESS OTHERWISE NOTED. ALL STATIONS SHOWN FOR NEW RIGHT-OF-WAY FEATURES ARE TO CONSTRUCTION CENTERLINE UNLESS OTHERWISE NOTED.
7. RIGHT OF WAY DIMENSIONS ARE FROM THE SURVEY CENTERLINE.
8. BASIS OF STATIONING FOR SURVEY CENTERLINE DERIVED FROM EXISTING MARKED HIGHWAY T-RAIL "STA. 124+55.15" PER NMP# F-033-2(6)
9. BASIS OF STATIONING FOR CONSTRUCTION CENTERLINE DERIVED FROM CONSTRUCTION PLANS ENTITLED "SAN JUAN COUNTY, GN - F100110".
10. ALL PROPOSED CONSTRUCTION FEATURES ARE BASED ON 60% COMPLETE DESIGN PLANS.

Surveyor's Certificate:

I CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR AND THAT THESE RIGHT-OF-WAY MAPS ARE AN INTERIM PRODUCT OF PROJECT DESIGN DEVELOPMENT AND WERE PREPARED BY ME OR UNDER MY DIRECTION AND ARE BASED ON ACTUAL FIELD SURVEYS PERFORMED UNDER MY DIRECTION IN SEPTEMBER 2015 THROUGH DECEMBER 2015. CONFORMANCE WITH THE STATE OF NEW MEXICO'S MINIMUM STANDARDS FOR RIGHT-OF-WAY SURVEYING WILL OCCUR FOLLOWING ACTUAL ACQUISITION OF RIGHT-OF-WAY REQUIRED BY PROJECT NUMBER F100112.

BENJAMIN M. ARAGON, N.M.P.S. NO. 15268
4900 LANG AVENUE, N.E.
ALBUQUERQUE, NEW MEXICO 87109

10-13-16
DATE

NEW MEXICO 15268 BENJAMIN M. ARAGON REGISTERED PROFESSIONAL SURVEYOR 10-13-16

FOR OWNERS NAMES AND AREAS FOR PARCEL NUMBERS SHOWN SEE SHEET 1B AND 1C OF 8

FINAL MAP 10-20-2016
DATE

PCN F100112

NO.	DESCRIPTION	DATE	BY
8			
7			
6			
5			
4			
3			
2			
1			

REVISIONS (OR CHANGE NOTICES)

RIGHT-OF-WAY MAPS PREPARED BY:

WILSON & COMPANY
4900 LANG AVENUE, N.E.
ALBUQUERQUE, NEW MEXICO 87109
PHONE: 505-348-4000
FAX: 505-348-4055

Sections 27 & 28, Township 29 North, Range 12 West, N.M.P.M.

NEW MEXICO DEPARTMENT OF TRANSPORTATION
RIGHT-OF-WAY MAP
NEW MEXICO PROJECT NO.
F100112
U.S. HIGHWAY 64
SAN JUAN COUNTY, NEW MEXICO

SCALE 1"=50'

Hains, Allen

From: Robinson, Kelly
Sent: Thursday, February 09, 2017 12:59 PM
To: Hains, Allen
Subject: FW: Giant Bloomfield Refinery SHS monitoring wells 1,2,4, & 5
Attachments: Monitoring wells CN F100112.pdf

This is the map with the well locations. Please note that the SHS designation on the map are incorrect. Use the GBR map to correctly label the wells for conversation reference.

Kelly R. Robinson I Environmental Supervisor
Western Refining I 111 County Road 4990 I Bloomfield, NM87413
(o) 505-632-4166 I (c) 505-801-5616 I (e) kelly.robinson@wnr.com

From: Moore, Audrey J., NMDOT [mailto:Audrey.Moore@state.nm.us]
Sent: Tuesday, January 24, 2017 8:01 AM
To: Robinson, Kelly <Kelly.Robinson@wnr.com>
Subject: Giant Bloomfield Refinery SHS monitoring wells 1,2,4, & 5

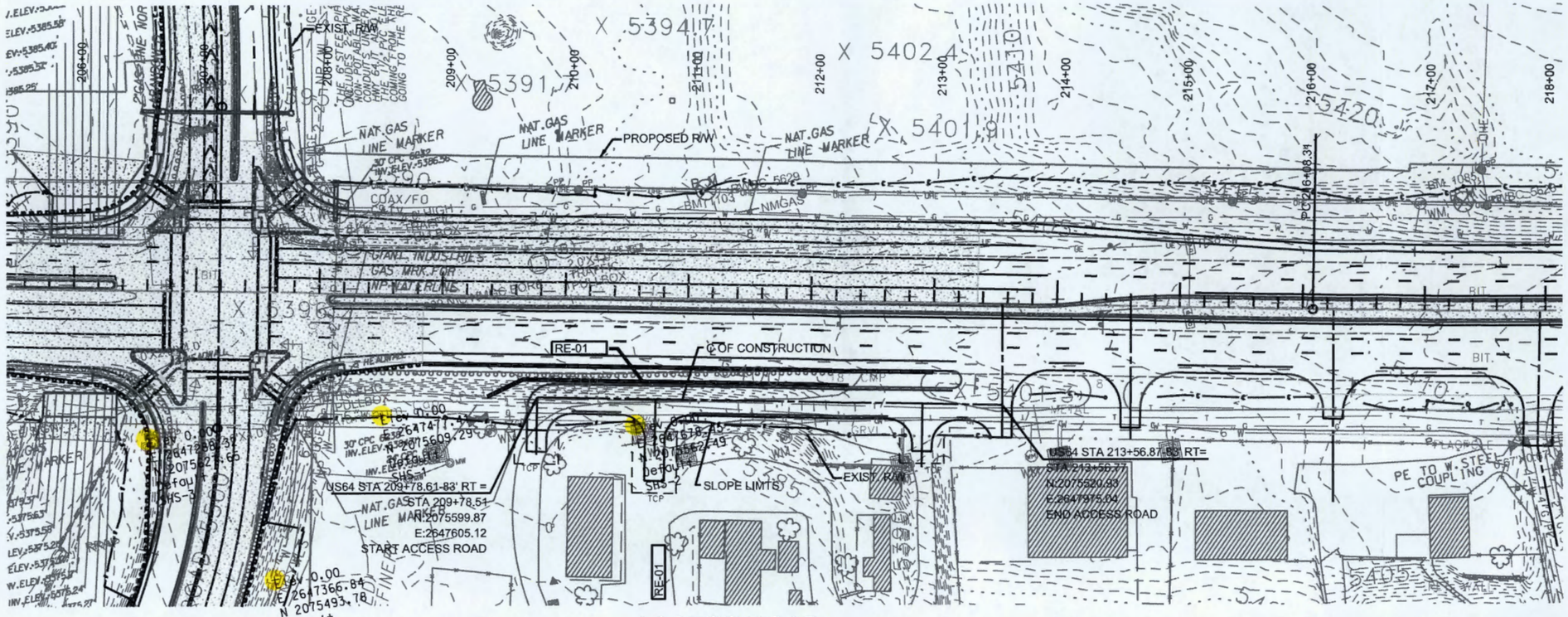
Good Morning Kelly,

I apologize for the delay in sending this to you. I received the attached figure yesterday.

Our design firm returned the figure in which they mapped the 4 groundwater monitoring wells that are located within the existing NMDOT and/or planned right of way. I believe SHS-3 is also among them but since I didn't ask for those coordinates... Note that our consultant incorrectly identified the wells but their locations reflect the coordinates you relayed earlier this month.

Are you having any luck with NMEMNR/your petition to plug the wells? Is there anything I can do to help?

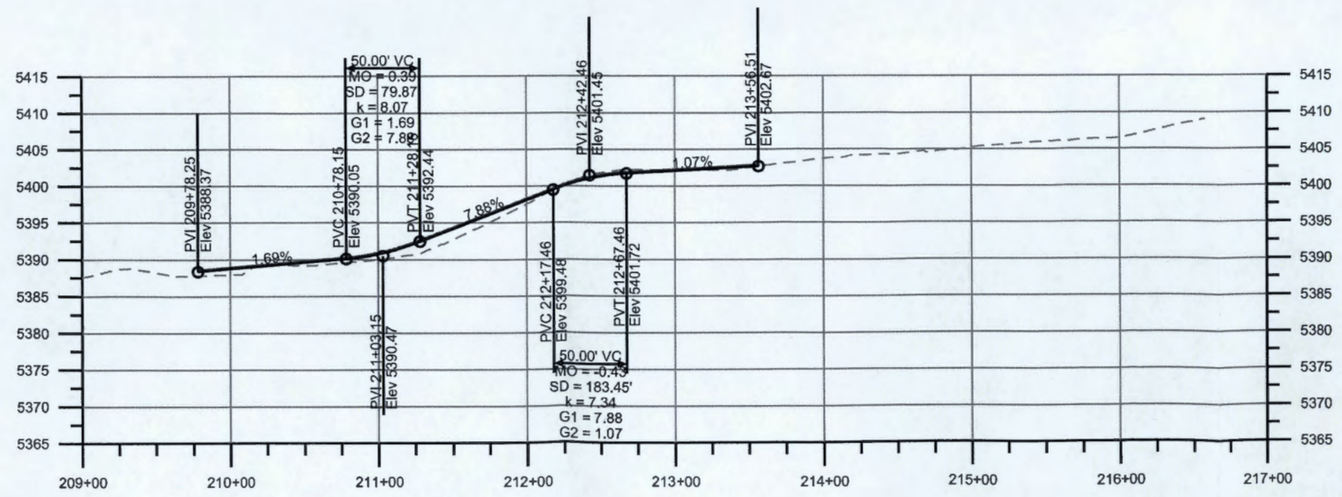
Audrey Moore, Manager
NMDOT - Environmental Geology Section
PO Box 1149, Room 201
1120 Cerrillos Road
Santa Fe, NM 87504-1149
Ofc: 505-827-1715
Cell: 505-490-1850
Audrey.moore@state.nm.us



ACCESS ROAD

WILSON & COMPANY

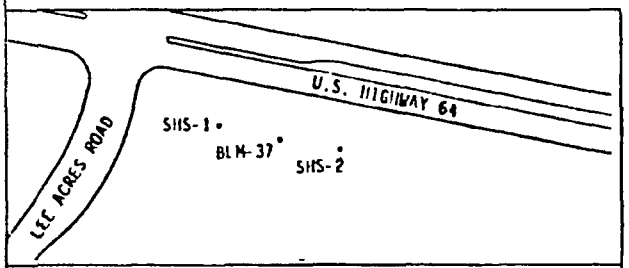
SCALE: H: 1"=100'
V: 1"=20'



Well Information

SHS Well Data March 2, 2017					
Well	SHS - 1	SHS - 2	SHS - 3	SHS - 4	SHS - 5
Total Depth (feet)	50.40	44.56	NA	52.16	47.85
Well Diameter (in)	4	4	4	2	4

BOREHOLE LOG (SOIL)



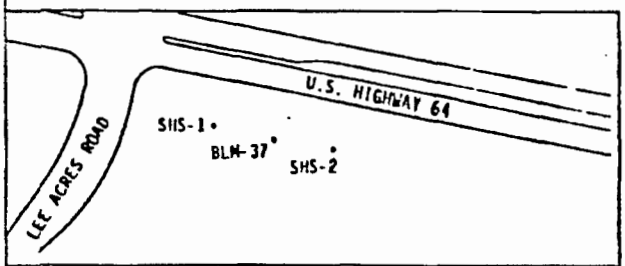
SE 1/4 SW 1/4 NW 1/4 NW 1/4 S 27 T29N R12W

SITE ID: Lee Acres Community LOCATION ID: SHS-1
SITE COORDINATES (ft.): Coordinates are local to GBR
N 9896-34 E 11406.67
GROUND ELEVATION (ft. MSL): Approximately 5381
STATE: New Mexico COUNTY: San Juan
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Western Tech
DATE STARTED: 7/31/89 DATE COMPLETED: 8/1/89
FIELD REP.: M. Nee
COMMENTS:

LOCATION DESCRIPTION: South of Giant's Bloomfield refinery on NMSR 64 right of way, 100 ft west of BLM-37

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
0			2	1	0	3			SW	0-28' Sand Mod Brn, 10 YR 4/4, v fine to fine grained, well sorted, unconsol., slightly moist at approx. 13'. Minor pebble gravel at 11'-13'.
			5	2	3	8			CL	Silty clayey sand stringer, moderate brown, 10 YR 4/4, at approx. 15'-15.5'.
5									GP	Minor small pebble gravel 22-28'.
			3	3	8	13				28'-30' Clay, moderate olive brn, 5 Y 4/4, minor fine to coarse sand.
10									SW	30'-30.5' Sand as above (0'-28'), no gravel.
			3	4	13	18			CL	6" clay to 31' grading to v fine sand at 33' olive gray, 5 Y 3/2.
15									SC	33'-36' Silty Sandy Clay, moderate olive brn, 5 Y 4/4, approx. 33% clay, 33% sand, 33% silt.
			0	5	18	23				36'-37' as above only stained, olive gray, 5Y 3/2. Fine to coarse sand interval 37' to 37-1/2' then to silty clay olive gray, 5 Y 3/2.
20										
				6	23	28				
			3						CL	37'-1/2-39' Silty clay, olive gray 5 Y 3/2.
25									SM	39'-40' Silty sand, olive gray, 5 Y 3/2 unconsol., MW sorted.
				7	28	33				
			5						CL	40'-41.5' Clay, mottled, mod yllsh brn, 10 YR 5/4 - olive gray. 5 YR 3/2.
30										
			0	8	33	38			SW	41.5'-42.5' Sand. mod. olive brn 5 Y 4/4, f-m sand, unconsol., MW sorted.
35									SC	42.5'-43.5' Sandy clay, mod brn, 5 YR 4/4.
				9	38	43			SW	43'-50' Sand, mod yllsh brn, 10 YR 5/4, fine to med sand. unconsol. MW sorted, saturated
			2							
40									NA	50'-51.5' mudstone/claystone, dusky yellow 5 Y 6/4 to light olive brn, 5 Y 5/6 mod well consolidated, carbonaceous shale present, weathered, shale present.
			0	10	43	48				
45									NA	51.5'-52' Sandstone, dusky yellow, 5 Y 6/4 to light olive brn, 5 Y 5/6, fine to med grained, well consolidated, well sorted.
				11	48	52				
			3							
50										

BOREHOLE LOG (SOIL)



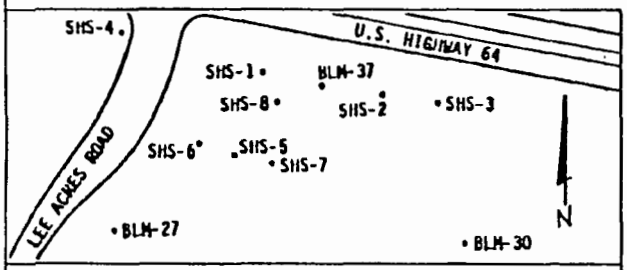
SE 1/4 SW 1/4 NW 1/4 NW 1/4 S27 T29N R12W

SITE ID: Lee Acres Community LOCATION ID: SHS-2
SITE COORDINATES (ft.): Coordinates are local to GBR
N 9854.92 E 11609.55
GROUND ELEVATION (ft. MSL): Approx. 5382
STATE: New Mexico COUNTY: San Juan
DRILLING METHOD: Hollow Stem Auger
DRILLING CONTR.: Western Technology
DATE STARTED: 8/2/89 DATE COMPLETED: 8/2/89
FIELD REP.: M. Nee
COMMENTS:

LOCATION DESCRIPTION: South of Giants Bloomfield Refinery on NMSR 64 right of way, 100 ft east of BLM-37

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
0				1	0	3.5				0-1' Soil, Silty sand w/organics, mod. yllsh, brn 10 YR 5/4, 40% silt, 60% f sand, unconsolidated, mod well sorted, sub angular to sub rounded.
			3.5	2	3.5	3.5				
			2							1'-26' Gravelly Sand, Dark yellowish orange, 10 YR 6/6, 90% v fine - fine pred. quartz, unconsol., well sorted, sub ang to sub rounded, 10% gravel is fine to coarse pebble gravel, rounded.
5										
				3	8.5	13.5				26'-30' Sandy gravel, Dark yllsh orange, 10 YR 6/6, unconsol., rounded, pebble gravel to cobbles.
10										
			3	4	13.5	18.5				30'-33.5' Clayey Silty Sand, mod yllsh brn, 10 YR 5/4. Clay to fine sand, unconsol. poorly sorted.
15										
										33.5'-36' Sand, mod yllsh brn, 10 YR 5/4, fine to mod sand, unconsol. sub ang to sub rounded, mod well.
			3	5	18.5	23.5				
20										36'-37' Clayey Silt, dark yllsh brn, 10 YR 4/4, unconsol. MW sorted.
			0	6	23.5	28.5				37'-39.5' Gravelly Sand, dark yllsh brn, 10 YR 4/2, to olive black, 5 Y 2/1, at 38.5'.
25										
										80% Fine sand, 20% small cobbles, ps, unconsol. sand is sub ang to sub rounded, cobbles are rounded.
			0	7	28.5	33.5				
30										39.5'-40.5' Sandstone, olive black 5 Y 2/1, MW consolidated, stained, appears to be Nacimento.
			2.5	8	33.5	38.5				40.5'-40.8' Claystone, olive gray, 5 Y 4/1, mod well consolidated.
35										
										40.8'-41.1' Sandstone, dark yllsh orange, 10 YR 6/6, med sand, MW sorted, unconsolidated.
			5	9	38.5	43.5				
40										41.1'-41.3' Claystone, olive gray, 5 Y 4/1. mod well consolidated.
										41.8'-42' Sandstone, grayish orange, 10 YR 7/4, med sand, mod consol., subang, calcium cement, moist.
			5	10	43.5	48.5				
45										
			5	11	48.5	53.5				
50										

BOREHOLE LOG (SOIL)



___1/4 ___1/4 ___1/4 ___1/4 S___ T___ R___

SITE ID: OFFSITE GIANT LOCATION ID: SHS-3
SITE COORDINATES (ft.):
N E
GROUND ELEVATION (ft. MSL):
STATE: NEW MEXICO COUNTY: SAN JUAN
DRILLING METHOD: HOLLOW STEM AUGER
DRILLING CONTR.: WESTERN TECHNOLOGIES INC.
DATE STARTED: 11/29/89 DATE COMPLETED: 11/30/89
FIELD REP.: LINLEY
COMMENTS:

LOCATION DESCRIPTION:

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
0									SW	0-6' SAND: Yelsh orange (10 YR 6/6) fn to med fn grained, uncons, mod poorly sorted, sbang to sbrndd, fill.
5									SM	6-8' CLAYEY SAND: Dark yelsh brn (10 YR 4/2) v fn to fn grained, uncons, mod poorly sorted, sbang to sbrndd.
10									SW	8-35' SAND: Dark yelsh orange (10 YR 6/6) fn to med grained, uncons, mod sorted, sbang to sbrndd. At 25' BGL cobbles (intbd w/depth). Clay fraction <10%, Grv fraction ≈15% to 25%.
15										
20										
25										
30										
35									SW	35-38' SAND: (Hily wthd Sst), mod redsh brn (10 R 4/6) to dk yelsh orange (10 YR 6/6), fn to med sand, mod sorting, semiconsol, fri sbang to sbrndd. (v dns) Clay fraction incr w/depth to ≈20%.
40									Pt	38-38.5' COAL: Blk (N1), flaky to leaf like layering, fri, consol.
									GM	38.5-39.5' GRAVELLY SANDY CLAY: Gnsh gry (5 GY 6/1) to dk yelsh orange (10 YR 6/6) v fn to med grained, poorly sorted, semiconsol, sbang to sbrndd. Grv fraction ≈10-15% & up to 1/8" diam. Sand fraction ≈20-25%.
45										
50									GM	39.5-44' GRAVELLY SAND: Dk yel orange (10 YR 6/6) med to crs grained, uncons, poorly sorted, sbang to sbrndd, wet.

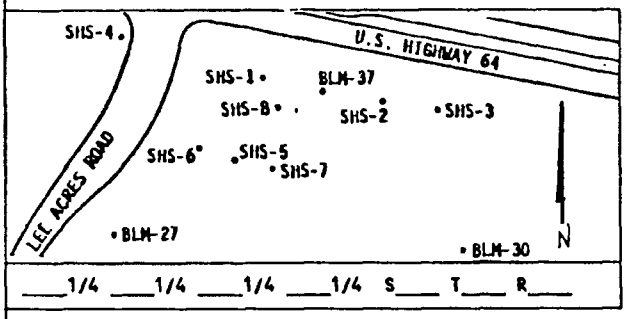
BOREHOLE LOG (SOIL)

(Continued)

LOCATION ID: SHS-3

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
50									ML	44-54' CLAY (SHALE): Lt olv gry (5 Y 6/1) v fn grained, consol, intbd med crs sand horizons (dk yelsh orange (10 YR 6/6) mod sorting, sbang to sbrndd, wet upper 4" of sample & becoming dry w/depth.
55										
60										
65										
70										
75										
80										
85										
90										
95										
100										
105										
110										
115										

BOREHOLE LOG (SOIL)



___1/4 ___1/4 ___1/4 ___1/4 S___ T___ R___

SITE ID: OFFSITE GIANT LOCATION ID: SHS-4
SITE COORDINATES (ft.):
N E
GROUND ELEVATION (ft. MSL):
STATE: NEW MEXICO COUNTY: SAN JUAN
DRILLING METHOD: HOLLOW STEM AUGER
DRILLING CONTR.: WESTERN TECHNOLOGIES INC.
DATE STARTED: 11/27/89 DATE COMPLETED: 11/28/89
FIELD REP.: LINLEY
COMMENTS:

LOCATION DESCRIPTION:

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
0									SW	0-27' SAND: Grysh orange (10 YR 7/4): v fn to med fn grained, sbang to sbrndd, uncons, mod sorted, moist at ≈15' BGL. 20-21' BGL Grv horizon, well rndd, ≈0.5" diam. Overall grain size incr w/depth to med-med crs sand. Grv fraction incr in Lith at ≈25' BGL.
5										
10										
15										
20										
25									GM	27-32' GRAVELLY CLAYEY SAND: Grysh orange (10 YR 7/4) v fn to crs grained, poorly sorted, sbang to sbrndd, semi to uncons, moist. Grv content ≈10-15%, clay fraction ≈25-30%.
30									GC	32-37' GRAVELLY SANDY CLAY: As above w/color change to grysh orange (10 YR 7/4) to mod yelsh brn (10 YR 5/4). Grv fraction decr w/depth to ≈5%, clay fraction ≈50% incr w/depth to ≈75%, Grv fraction 0% at 37' BGL.
35									SC	37-44' SANDY CLAY: Grysh orange (10 YR 7/4) v fn to med fn grained, poorly sorted, semiconsol, sbang to sbrndd, moist. Sand fraction ≈20-25% & decr w/depth to 15-20% & bcm fn grained.
40									SM	44-45' CLAYEY SAND: Grysh orange (10 YR 7/4) to mod yelsh brn (10 YR 5/4). V fn to med fn grained, uncons, sbang to sbrndd, poorly sorted, moist.
45									SC	45-50' SANDY CLAY: Grysh orange (10 YR 7/4) to mod yelsh brn (10 YR 5/4) v fn to med grained, poorly sorted, sbang to sbrndd, semiconsol, moist. Sand fraction ≈20% incr w/depth to ≈30-35% at 48' BGL, then decr to ≈15% & bcm fn grained. Grv horizon at 47-49' BGL.
50										

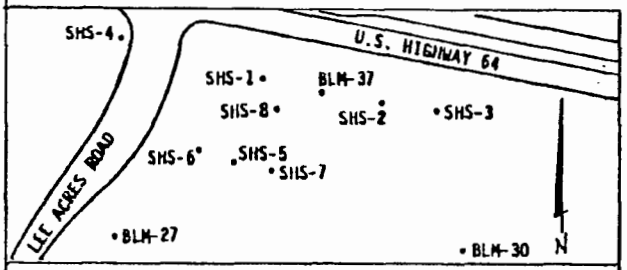
BOREHOLE LOG (SOIL)

(Continued)

LOCATION ID: SHS-4

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
50									ML	50-60' SHALE: Lt olv (10 Y 5/4) to dk gnsh yel (10 Y 6/6) v fn grained, consol, well sorted, sbrndd to rndd.
55										
60										
65										
70										
75										
80										
85										
90										
95										
100										
105										
110										
115										

BOREHOLE LOG (SOIL)



___1/4 ___1/4 ___1/4 ___1/4 S___ T___ R___

SITE ID: OFFSITE GIANT LOCATION ID: SHS-5
SITE COORDINATES (ft.):
N E
GROUND ELEVATION (ft. MSL):
STATE: NEW MEXICO COUNTY: SAN JUAN
DRILLING METHOD: HOLLOW STEM AUGER
DRILLING CONTR.: WESTERN TECHNOLOGIES INC.
DATE STARTED: 1/7/90 DATE COMPLETED: 1/8/90
FIELD REP.: LINLEY
COMMENTS:

LOCATION DESCRIPTION:

DEPTH	LITH.	REC	SAM	RUN #	RUN FROM	RUN TO	SAMPLE I.D.	SAMPLE TYPE	USCS	VISUAL CLASSIFICATION
0		100%	1	1	0	3'			SW	0-31' SAND: Grysh orange (10 YR 7/4), v fn to med fn sand, poorly sorted, uncons, sbang to sbrndd, abd rootlets. Cobbles at 10' BGL -up to 4" diam, sbrndd =1' thick at 13-14' BGL -at =18' BGL 6" thick lens of clayey silt -intbd Grv through depth up to 1" diam sbang to sbrndd.
		0%	2	2	3	8'				
5										
		4%	3	3	8	14'				
10										
		40%	4	4	14	18'				
15										
		0%	5	5	18	23'				
20										
		75%	6	6	23	27'				
25										
		100%	7	7	27	33'				
30										
									SC	31-32' CLAYEY SILT: Mod yelsh brn (10 YR 5/4) v fn to fn med sorting uncons to semiconsol, sbang to sbrndd.
		100%	8	8	33	38'			SM	32-38' SILTY SAND: Grysh orange (10 YR 7/4), fn to med fn grained semi to uncons sbang to sbrndd, mod poorly sorted incr grain size w/depth to med sand.
35										
		30%	9	9	38	42'			SP	38-42' SAND: Pale yelsh orange (10 YR 8/6) fn to med crs, poorly sorted, uncons sbang to sbrndd, v moist.
40										
		20%	10	10	42	47'			SC	42-43' CLAYEY SILT: Pale yelsh brn (10 YR 6/2) v fn to fn, mod sorted, semiconsol, sbang to sbrndd, sat.
45										
		20%	11	11	47	52'			SW	43-58' SAND: Pale yelsh brn (10 YR 6/2) fn to med crs sand, poorly sorted, uncons, sbang to sbrndd, sat.
50										
		10%	12	12	52	57'				

Chemical Analyses Summary

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-1

Analyte	NMWQCC Standard	Unit	9/6/89	12/12/89	6/19/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
Volatiles										
benzene	10	µg/L	< 10.0	< 50.0	< 2.0	ND	ND	ND	ND	< 1.0
toluene	750	µg/L	< 30.0	< 50.0	<2.0	ND	ND	ND	ND	< 1.0
ethylbenzene	750	µg/L	**140.0**	< 50.0	**57.0**	**ND**	**0.7**	**0.7**	ND	< 1.0
methyl tert-butyl ether (MTBE)	NE	µg/L	NT	NT	NT	NT	NT	NT	ND	< 1.0
1,2,4-trimethylbenzene	620	µg/L	NT	NT	NT	NT	NT	NT	NT	< 1.0
1,3,5-trimethylbenzene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	< 1.0
1,2-dichloroethane (EDC)	10	µg/L	< 10.0	**7.1**	**7.1**	ND	ND	ND	NT	< 1.0
1,2-dibromoethane (EDB)	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
bromodichloromethane	NE	µg/L	< 10.0	< 0.5	< 1.0	ND	ND	ND	NT	< 1.0
bromoform	NE	µg/L	< 200.0	< 0.5	< 5.0	ND	ND	ND	NT	< 1.0
bromomethane	NE	µg/L	< 100.0	< 5.9	<12.0	ND	ND	ND	NT	< 1.0
carbon tetrachloride	10	µg/L	< 20.0	< 0.6	< 1.2	ND	ND	ND	NT	< 1.0
chlorobenzene	NE	µg/L	< 10.0	< 50.0	**4.4**	ND	ND	ND	NT	< 1.0
chloroethane	NE	µg/L	< 50.0	< 2.6	< 5.2	ND	ND	ND	NT	< 2.0
chloroform	100	µg/L	< 10.0	**5.7**	< 1.0	ND	ND	ND	NT	< 1.0
chloromethane	NE	µg/L	< 50.0	< 1.5	< 3.0	ND	ND	ND	NT	< 1.0
cis-1,2-DCE	NE	µg/L	NT	NT	**39.0**	NT	NT	NT	NT	< 1.0
cis-1,3-dichloropropene	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
1,2-dibromo-3-chloropropane	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	< 2.0
dibromochloromethane	NE	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichlorobenzene	NE	µg/L	< 20.0	< 100.0	< 4.0	ND	**1.3**	**1.2**	NT	< 1.0
1,3-dichlorobenzene	NE	µg/L	< 40.0	< 100.0	< 4.0	ND	ND	ND	NT	< 1.0
1,4-dichlorobenzene	NE	µg/L	< 20.0	< 75.0	< 3.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethane	25	µg/L	< 10.0	**0.72**	< 5.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethene	5	µg/L	< 10.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichloropropane	NE	µg/L	< 10.0	< 0.5	< 1.0	ND	ND	ND	NT	< 1.0
methylene chloride	100	µg/L	< 40.0	< 2.0	<4.0	ND	ND	ND	NT	< 3.0
1,1,2,2-tetrachloroethane	10	µg/L	< 20.0	< 0.75	< 1.5	ND	ND	ND	NT	< 2.0
tetrachloroethene (PCE)	20	µg/L	< 10.0	< 0.5	**1.2**	ND	ND	ND	NT	< 1.0
trans-1,2-DCE	NE	µg/L	NT	**21.0**	< 2.0	ND	ND	ND	NT	< 1.0
trans-1,3-dichloropropene	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
1,1,1-trichloroethane	60	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,1,2-trichloroethane	10	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
trichloroethene (TCE)	100	µg/L	**22.2**	**6.2**	**2.9**	ND	ND	ND	NT	< 1.0
trichlorofluoromethane	NE	µg/L	< 10.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
vinyl chloride	1	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
xylenes, total	620	µg/L	**280.0**	**330.0**	**24.0**	ND	ND	ND	ND	< 1.5
Anions										
chloride	250	mg/L	NT	NT	NT	**94.2**	**97**	**91**	**94.2**	**69**
sulfate	600	mg/L	NT	NT	NT	**69.5**	**33**	**11**	**69.5**	**85**
Cations										
calcium	NE	mg/L	NT	NT	NT	**82.3**	**84**	**75**	**82.3**	NT
magnesium	NE	mg/L	NT	NT	NT	**17.9**	**21**	**17**	**17.9**	NT
potassium	NE	mg/L	NT	NT	NT	**2.29**	**7.1**	**1.8**	**2.29**	NT
sodium	NE	mg/L	NT	NT	NT	**383**	**440**	**410**	**383**	NT
Hardness										
hardness (as CaCO3)	NE	mg/L	NT	NT	NT	**251**	**300**	ND	NT	NT
Alkalinity										
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	NT	NT	NT	**1,010**	**1,000**	**1,000**	NT	**970**
carbonate	NE	mg/L CaCO4	NT	NT	NT	**1,010**	**5.3**	**2.2**	NT	< 4.0
bicarbonate	NE	mg/L CaCO5	NT	NT	NT	**1,010**	**1,000**	**1,000**	NT	**970**

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-1

Analyte	NMWQCC Standard	Unit	9/6/89	12/12/89	6/19/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
Specific Conductance										
specific conductance	NE	µmhos/cm	NT	NT	NT	1,950	2,000	1,900	NT	2,100
pH										
pH	6-9	pH units	NT	NT	NT	7.3	7.4	7.09	NT	7.33
Total Dissolved Solids										
total dissolved solids	1,000	mg/L	NT	NT	NT	1,170	1,200	1,200	NT	1,200

Notes:
RED HIGHLIGHT - indicates concentration exceeds the NMWQCC standard
µg/L - micrograms per liter
µmhos/cm -micromhos per centimeter
mg/L - milligrams per liter
ND - non detect
NE - not established
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
USEPA - United States Environmental Protection Agency

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-2

Analyte	NMWQCC Standard	Unit	9/6/89	12/12/89	6/20/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
Volatiles										
benzene	10	µg/L	< 10.0	10.0	5.4	ND	ND	ND	ND	< 1.0
toluene	750	µg/L	< 30.0	2.2	19.0	ND	ND	ND	ND	< 1.0
ethylbenzene	750	µg/L	120.0	120.0	78.0	ND	0.4	ND	ND	< 1.0
methyl tert-butyl ether (MTBE)	NE	µg/L	NT	NT	NT	NT	NT	NT	ND	< 1.0
1,2,4-trimethylbenzene	620	µg/L	NT	NT	NT	NT	NT	NT	NT	< 1.0
1,3,5-trimethylbenzene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	< 1.0
1,2-dichloroethane (EDC)	10	µg/L	68.0	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
1,2-dibromoethane (EDB)	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
bromodichloromethane	NE	µg/L	< 10.0	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
bromoform	NE	µg/L	< 200.0	< 1.0	< 5.0	ND	ND	ND	NT	< 1.0
bromomethane	NE	µg/L	< 100.0	< 1.2	< 12.0	ND	ND	ND	NT	< 1.0
carbon tetrachloride	10	µg/L	< 20.0	< 1.0	< 1.2	ND	ND	ND	NT	< 1.0
chlorobenzene	NE	µg/L	< 10.0	< 2.0	230.0	ND	ND	ND	NT	< 1.0
chloroethane	NE	µg/L	< 50.0	< 1.0	< 5.2	ND	ND	ND	NT	< 2.0
chloroform	100	µg/L	< 10.0	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
chloromethane	NE	µg/L	< 50.0	< 1.0	< 3.0	ND	ND	ND	NT	< 1.0
cis-1,2-DCE	NE	µg/L	NT	NT	< 2.0	NT	NT	NT	NT	< 1.0
cis-1,3-dichloropropene	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
1,2-dibromo-3-chloropropane	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	< 2.0
dibromochloromethane	NE	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichlorobenzene	NE	µg/L	< 20.0	< 4.0	< 4.0	ND	1.3	ND	NT	< 1.0
1,3-dichlorobenzene	NE	µg/L	< 40.0	< 4.0	< 4.0	ND	ND	ND	NT	< 1.0
1,4-dichlorobenzene	NE	µg/L	< 20.0	< 3.0	< 3.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethane	25	µg/L	< 10.0	< 1.0	< 5.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethene	5	µg/L	< 10.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichloropropane	NE	µg/L	< 10.0	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
methylene chloride	100	µg/L	< 40.0	< 1.0	< 4.0	ND	ND	ND	NT	< 3.0
1,1,2,2-tetrachloroethane	10	µg/L	< 20.	< 1.0	< 1.5	ND	ND	ND	NT	< 2.0
tetrachloroethene (PCE)	20	µg/L	13.0	1.7	2.1	ND	ND	ND	NT	< 1.0
trans-1,2-DCE	NE	µg/L	NT	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
trans-1,3-dichloropropene	NE	µg/L	NT	NT	NT	ND	ND	ND	NT	< 1.0
1,1,1-trichloroethane	60	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,1,2-trichloroethane	10	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
trichloroethene (TCE)	100	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
trichlorofluoromethane	NE	µg/L	< 10.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
vinyl chloride	1	µg/L	< 20.0	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
xylenes, total	620	µg/L	48.0	37.0	730.0	ND	ND	ND	ND	< 1.5
Anions										
chloride	250	mg/L	NT	NT	NT	100	170	160	NT	190
sulfate	600	mg/L	NT	NT	NT	2,200	220	2,300	NT	2,100
Cations										
calcium	NE	mg/L	NT	NT	NT	465	520	510	NT	NT
magnesium	NE	mg/L	NT	NT	NT	118	110	96	NT	NT
potassium	NE	mg/L	NT	NT	NT	7.93	9.4	9.2	NT	NT
sodium	NE	mg/L	NT	NT	NT	505	540	480	NT	NT
Hardness										
hardness (as CaCO3)	NE	mg/L	NT	NT	NT	1,480	1,600	NT	NT	NT
Alkalinity										
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	NT	NT	NT	389	250	210	NT	230
carbonate	NE	mg/L CaCO4	NT	NT	NT	ND	ND	ND	NT	< 4.0

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-2

Analyte	NMWQCC Standard	Unit	9/6/89	12/12/89	6/20/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
bicarbonate	NE	mg/L CaCO5	NT	NT	NT	389	250	210	NT	230
Specific Conductance										
specific conductance	NE	µmhos/cm	NT	NT	NT	4,760	4,800	4,500	NT	4,000
pH										
pH	6-9	pH units	NT	NT	NT	6.9	6.4	6.26	NT	6.36
Total Dissolved Solids										
total dissolved solids	1,000	mg/L	NT	NT	NT	4,090	3,800	1,200	NT	3,700

Notes:

RED HIGHLIGHT - indicates concentration exceeds the NMWQCC standard
µg/L - micrograms per liter
µmhos/cm -micromhos per centimeter
mg/L - milligrams per liter
ND - non detect
NE - not established
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
USEPA - United States Environmental Protection Agency

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-3

Analyte	NMWQCC Standard	Unit	6/20/90	1/23/91	4/5/91	7/3/91	10/2/91	1/9/92	4/10/92	7/7/92	10/8/92	1/1/93	4/1/93	7/1/93	10/1/93	1/1/94	1/1/95	7/1/95	12/1/95	1/1/97	8/1/97	1/1/98	7/1/98	1/1/99	7/1/99	1/1/00	1/1/01	1/1/02	1/1/03
Volatiles																													
benzene	10	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
toluene	750	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ethylbenzene	750	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methyl tert-butyl ether (MTBE)	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	620	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,3,5-trimethylbenzene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichloroethane (EDC)	10	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dibromoethane (EDB)	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromomethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	10	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	100	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloromethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	NE	µg/L	< 1.0	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dibromo-3-chloropropane	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
dibromochloromethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	25	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	5	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylene chloride	100	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tetrachloroethene (PCE)	20	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	NE	µg/L	< 1.0	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	60	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	10	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trichloroethene (TCE)	100	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trichlorofluoromethane	NE	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
vinyl chloride	1	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes, total	620	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anions																													
chloride	250	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	379	NT	386	NT	365	NT	NT	NT	320	NT	337	NT	303	NT	317	262	271	263
sulfate	600	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	2,080	NT	2,060	NT	2,070	NT	NT	NT	2144	NT	1,860	NT	2,160	NT	2,068	2,168	1,790	2,330

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-3

Analyte	NMWQCC Standard	Unit	6/20/90	1/23/91	4/5/91	7/3/91	10/2/91	1/9/92	4/10/92	7/7/92	10/8/92	1/1/93	4/1/93	7/1/93	10/1/93	1/1/94	1/1/95	7/1/95	12/1/95	1/1/97	8/1/97	1/1/98	7/1/98	1/1/99	7/1/99	1/1/00	1/1/01	1/1/02	1/1/03
Cations																												
calcium	NE	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	579	NT	616	NT	546	NT	NT	NT	586	NT	663	NT	560	NT	665	580	545	632
magnesium	NE	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	103	NT	83	NT	133	NT	NT	NT	76.1	NT	87	NT	78.5	NT	76.6	85.1	83.9	89.9
potassium	NE	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	7	NT	7.4	NT	8.4	NT	NT	NT	8.6	NT	7.8	NT	8.8	NT	8.1	7.6	7.5	11
sodium	NE	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	425	NT	500	NT	435	NT	NT	NT	465	NT	386	NT	460	NT	345	464	423	448
Hardness																												
hardness (as CaCO3)	NE	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	1,870	NT	1,880	NT	1,910	NT	NT	NT	1,774	NT	1,940	NT	1,720	NT	1,970	1,800	1,710	1,950
Alkalinity																												
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	NT	NT	NT	NT	NT	NT	NT	NT	NT	201	NT	210	NT	204	NT	NT	NT	208	NT	207	NT	223	NT	197	231	202	230
carbonate	NE	mg/L CaCO4	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	NT	ND	NT	ND	NT	NT	NT	ND	NT	ND	NT	ND	NT	ND	ND	ND	ND
bicarbonate	NE	mg/L CaCO5	NT	NT	NT	NT	NT	NT	NT	NT	NT	245	NT	257	NT	249	NT	NT	NT	254	NT	252	NT	272	NT	240	281	246	281
Specific Conductance																												
specific conductance	NE	µmhos/cm	NT	NT	NT	NT	NT	NT	NT	NT	NT	4,520	NT	4,470	NT	4,560	NT	NT	NT	4,310	NT	6,500	NT	4,480	NT	4,870	4,640	4,570	4,630
pH																												
pH	6-9	pH units	NT	NT	NT	NT	NT	NT	NT	NT	NT	7.2	NT	6.9	NT	6.9	NT	NT	NT	6.5	NT	6.6	NT	6.6	NT	6.8	6.7	6.5	6.4
Total Dissolved Solids																												
total dissolved solids	1,000	mg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	3,690	NT	3,780	NT	3,680	NT	NT	NT	3,725	NT	4,660	NT	3,970	NT	4,040	4,390	3,940	3,930

Notes:
RED HIGHLIGHT - indicates concentration exceeds the NMWQCC standard
µg/L - micrograms per liter
µmhos/cm -micromhos per centimeter
mg/L - milligrams per liter
ND - non detect
NE - not established
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
USEPA - United States Environmental Protection Agency

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-4

Analyte	NMWQCC Standard	Unit	6/19/90	7/7/92	10/1/92	1/1/94	7/1/94	1/1/95	7/1/95	12/1/95	1/1/97	1/1/98	1/1/99	1/1/00	1/1/01	1/1/02	1/1/03	1/1/05	1/1/06
Volatiles																			
benzene	10	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
toluene	750	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ethylbenzene	750	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methyl tert-butyl ether (MTBE)	NE	µg/L	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	620	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND
1,3,5-trimethylbenzene	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND
1,2-dichloroethane (EDC)	10	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dibromoethane (EDB)	NE	µg/L	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromomethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	10	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	100	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloromethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-dichloropropene	NE	µg/L	NT	NT	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dibromo-3-chloropropane	NE	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND
dibromochloromethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	25	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	5	µg/L	< 1.0	< 1.0	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylene chloride	100	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	10	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tetrachloroethene (PCE)	20	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	NE	µg/L	NT	NT	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	60	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	10	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trichloroethene (TCE)	100	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-4

Analyte	NMWQCC Standard	Unit	6/19/90	7/7/92	10/1/92	1/1/94	7/1/94	1/1/95	7/1/95	12/1/95	1/1/97	1/1/98	1/1/99	1/1/00	1/1/01	1/1/02	1/1/03	1/1/05	1/1/06
trichlorofluoromethane	NE	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
vinyl chloride	1	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes, total	620	µg/L	< 1.0	< 1.0	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anions																			
chloride	250	mg/L	NT	NT	NT	41	NT	NT	NT	NT	43.2	81	45	91	76	56	64	63	71
sulfate	600	mg/L	NT	NT	NT	1,680	NT	NT	NT	NT	1,728	1,500	1,830	1,530	1,670	1,670	1,700	1,600	1,590
Cations																			
calcium	NE	mg/L	NT	NT	NT	392	NT	NT	NT	NT	463	438	532	532	475	441	474	490	433
magnesium	NE	mg/L	NT	NT	NT	88	NT	NT	NT	NT	38.3	36	38.1	36.7	37.5	36	37.1	39	36.6
potassium	NE	mg/L	NT	NT	NT	4.6	NT	NT	NT	NT	0.78	1.4	1.8	1.2	1.7	1.7	3.6	5.1	8.9
sodium	NE	mg/L	NT	NT	NT	312	NT	NT	NT	NT	310	331	321	251	322	313	303	320	311
Hardness																			
hardness (as CaCO3)	NE	mg/L	NT	NT	NT	1,340	NT	NT	NT	NT	1,312	1,240	1,480	1,480	1,340	1,250	1,330	1,400	1,250
Alkalinity																			
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	NT	NT	NT	214	NT	NT	NT	NT	251	203	170	141	211	192	200	210	69.5
carbonate	NE	mg/L CaCO4	NT	NT	NT	0	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	1	ND
bicarbonate	NE	mg/L CaCO5	NT	NT	NT	261	NT	NT	NT	NT	306	248	207	171	257	234	244	210	69.5
Specific Conductance																			
specific conductance	NE	µmhos/cm	NT	NT	NT	3,110	NT	NT	NT	NT	3,160	4,590	3,090	3,360	3,230	3,060	3,260	3,200	3,180
pH																			
pH	6-9	pH units	NT	NT	NT	7.5	NT	NT	NT	NT	7	7.2	7.1	7.4	7.2	7.0	7.0	7.3	7.4
Total Dissolved Solids																			
total dissolved solids	1,000	mg/L	NT	NT	NT	2,600	NT	NT	NT	NT	2,734	2,720	2,710	2,770	2,680	2,730	2,720	2,700	2,750

Notes:
RED HIGHLIGHT - indicates concentration exceeds the NMWQCC standard
µg/L - micrograms per liter
µmhos/cm -micromhos per centimeter
mg/L - milligrams per liter
ND - non detect
NE - not established
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
USEPA - United States Environmental Protection Agency

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-5

Analyte	NMWQCC Standard	Unit	11/27/89	6/20/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
Volatiles									
benzene	10	µg/L	< 1.0	< 2.0	ND	ND	ND	ND	< 1.0
toluene	750	µg/L	< 1.0	< 1.0	ND	ND	ND	ND	< 1.0
ethylbenzene	750	µg/L	< 1.0	< 2.0	ND	ND	ND	ND	< 1.0
methyl tert-butyl ether (MTBE)	NE	µg/L	NT	NT	NT	NT	NT	ND	< 1.0
1,2,4-trimethylbenzene	620	µg/L	NT	NT	NT	NT	NT	NT	< 1.0
1,3,5-trimethylbenzene	NE	µg/L	NT	NT	NT	NT	NT	NT	< 1.0
1,2-dichloroethane (EDC)	10	µg/L	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
1,2-dibromoethane (EDB)	NE	µg/L	NT	NT	ND	ND	ND	NT	< 1.0
bromodichloromethane	NE	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
bromoform	NE	µg/L	< 1.0	< 5.0	ND	ND	ND	NT	< 1.0
bromomethane	NE	µg/L	< 1.0	< 12.0	ND	ND	ND	NT	< 1.0
carbon tetrachloride	10	µg/L	< 1.0	< 1.2	ND	ND	ND	NT	< 1.0
chlorobenzene	NE	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
chloroethane	NE	µg/L	< 1.0	< 5.2	ND	ND	ND	NT	< 2.0
chloroform	100	µg/L	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
chloromethane	NE	µg/L	< 1.0	< 3.0	ND	ND	ND	NT	< 1.0
cis-1,2-DCE	NE	µg/L	NT	14.0	NT	NT	NT	NT	< 1.0
cis-1,3-dichloropropene	NE	µg/L	NT	NT	ND	ND	ND	NT	< 1.0
1,2-dibromo-3-chloropropane	NE	µg/L	NT	NT	NT	NT	NT	NT	< 2.0
dibromochloromethane	NE	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichlorobenzene	NE	µg/L	0.5	< 4.0	ND	ND	ND	NT	< 1.0
1,3-dichlorobenzene	NE	µg/L	< 1.0	< 4.0	ND	ND	ND	NT	< 1.0
1,4-dichlorobenzene	NE	µg/L	< 1.0	< 3.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethane	25	µg/L	< 1.0	< 5.0	ND	ND	ND	NT	< 1.0
1,1-dichloroethene	5	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
1,2-dichloropropane	NE	µg/L	< 1.0	< 1.0	ND	ND	ND	NT	< 1.0
methylene chloride	100	µg/L	0.72	< 4.0	ND	ND	ND	NT	< 3.0
1,1,2,2-tetrachloroethane	10	µg/L	< 1.0	< 1.5	ND	ND	ND	NT	< 2.0
tetrachloroethene (PCE)	20	µg/L	1.3	2.7	ND	ND	ND	NT	< 1.0
trans-1,2-DCE	NE	µg/L	12.0	< 2.0	ND	ND	ND	NT	< 1.0
trans-1,3-dichloropropene	NE	µg/L	NT	NT	ND	ND	ND	NT	< 1.0
1,1,1-trichloroethane	60	µg/L	0.88	< 2.0	ND	ND	ND	NT	< 1.0
1,1,2-trichloroethane	10	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
trichloroethene (TCE)	100	µg/L	1.8	3.0	ND	ND	ND	NT	< 1.0
trichlorofluoromethane	NE	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
vinyl chloride	1	µg/L	< 1.0	< 2.0	ND	ND	ND	NT	< 1.0
xylenes, total	620	µg/L	< 1.0	< 2.0	ND	ND	ND	ND	< 1.5
Anions									
chloride	250	mg/L	355.35	NT	62.8	61	56	NT	190
sulfate	600	mg/L	1,119.28	NT	1,200	1,400	1,500	NT	2,100
Cations									
calcium	NE	mg/L	408.47	NT	405	380	350	NT	NT
magnesium	NE	mg/L	8.14	NT	33.6	35	29	NT	NT
potassium	NE	mg/L	3.90	NT	4.03	10	1.7	NT	NT
sodium	NE	mg/L	471.60	NT	312	370	320	NT	NT
Hardness									
hardness (as CaCO3)	NE	mg/L	1,052.60	NT	1030	1100	NT	NT	NT
Alkalinity									
alkalinity, total (As CaCO3)	NE	mg/L CaCO3	424.49	NT	251	240	220	NT	210
carbonate	NE	mg/L CaCO4	0	NT	ND	1.1	ND	NT	< 4.0
bicarbonate	NE	mg/L CaCO5	517.88	NT	251	240	220	NT	210

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-5

Analyte	NMWQCC Standard	Unit	11/27/89	6/20/90	1/1/08	4/1/08	7/1/08	10/1/08	1/1/09
Specific Conductance									
specific conductance	NE	µmhos/cm	3,623	NT	3,010	3,200	2,900	NT	2,900
pH									
pH	6-9	pH units	7.51	NT	7.3	7.3	7.23	NT	7.28
Total Dissolved Solids									
total dissolved solids	1,000	mg/L	2,621	NT	2,530	2,400	2,500	NT	3,000

Notes:

RED HIGHLIGHT - indicates concentration exceeds the NMWQCC standard
µg/L - micrograms per liter
µmhos/cm -micromhos per centimeter
mg/L - milligrams per liter
ND - non detect
NE - not established
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
USEPA - United States Environmental Protection Agency

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FORMER GIANT BLOOMFIELD REFINERY
WESTERN REFINING SOUTHWEST, INC.
SHS-6

Analyte	NMWQCC Standard	Unit	11/27/89	6/20/90	1/23/91	4/5/91	7/3/91	10/2/91	1/9/92	4/10/92	7/1/92	10/8/92	1/1/93	4/1/93	7/1/93	10/1/93	1/1/94	1/1/95	12/1/95	1/1/97	1/1/98	1/1/99	1/1/00	1/1/01	1/1/02	1/1/03	1/1/05	1/1/06
Volatiles																												
benzene	**10**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
toluene	**750**	µg/L	< 1.0	< 1.0	< 1.0	**0.81**	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ethylbenzene	**750**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methyl tert-butyl ether (MTBE)	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	**620**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,3,5-trimethylbenzene	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichloroethane (EDC)	**10**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dibromoethane (EDB)	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromodichloromethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromoform	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
bromomethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
carbon tetrachloride	**10**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chlorobenzene	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloroform	**100**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
chloromethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-DCE	**NE**	µg/L	NT	< 1.0	NT	NT	NT	NT	NT	NT	NT	NT	ND	**0.80**	ND	ND	NT	ND	**0.2**	ND	ND	ND	ND	ND	ND	ND	ND	NT	NT
cis-1,3-dichloropropene	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	**0.6**	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NT
1,2-dibromo-3-chloropropane	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
dibromochloromethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichlorobenzene	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-dichlorobenzene	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-dichlorobenzene	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	**25**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethene	**5**	µg/L	**0.93**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-dichloropropane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylene chloride	**100**	µg/L	< 1.0	< 1.0	< 1.0	**3.1**	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-tetrachloroethane	**10**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tetrachloroethene (PCE)	**20**	µg/L	**0.45**	**0.42**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	**0.2**	**0.3**	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-DCE	**NE**	µg/L	< 1.0	< 1.0	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-dichloropropene	**NE**	µg/L	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-trichloroethane	**60**	µg/L	< 1.0	**0.35**	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-trichloroethane	**10**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trichloroethene (TCE)	**100**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trichlorofluoromethane	**NE**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
vinyl chloride	**1**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
xylenes, total	**620**	µg/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NT	< 1.0	ND	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Well Abandonment Information

TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 27 UNDERGROUND WATER
PART 4 WELL DRILLER LICENSING; CONSTRUCTION, REPAIR AND PLUGGING OF WELLS

19.27.4.30 WELL DRILLING - NON-ARTESIAN WELL REQUIREMENTS: A licensed well driller shall ensure that the well drilling activities associated with the drilling of non-artesian wells are made in accordance with 19.27.4.29 NMAC and the following requirements:

C. Well plugging: A non-artesian well that is abandoned or not properly constructed shall be immediately plugged. A plan for plugging the well shall be filed with - and approved by - the state engineer prior to plugging. The state engineer may require that the plugging process be witnessed by an authorized representative.

(1) Methods and materials: To plug a well, the entire well shall be filled from the bottom upwards to land surface using a tremie pipe. The well shall be plugged with neat cement slurry, bentonite based plugging material, or other sealing material approved by the state engineer for use in the plugging of non-artesian wells. Wells that do not encounter a water bearing stratum shall be immediately plugged by filling the well with drill cuttings or clean native fill to within ten (10) feet of land surface and by plugging the remaining ten (10) feet of the well to land surface with a plug of neat cement slurry, bentonite based plugging material, or other sealing material approved by the state engineer.

(2) Contamination indicated: Wells encountering contaminated water or soil may require coordination between the office of the state engineer and the New Mexico environment department (or other authorized agency or department) prior to the plugging of the well. Specialty plugging materials and plugging methods may be required.

(3) Plugging record: A licensed well driller shall keep a record of each well plugged as the work progresses. The well driller shall file a complete plugging record with the state engineer and the permit holder no later than twenty (20) days after completion of the plugging. The plugging record shall be on a form prescribed by the state engineer and shall include the name and address of the well owner, the well driller's name and license number, the name of each drill rig supervisor that supervised the well plugging, the state engineer file number for the well, the location of the well (reported in latitude and longitude using a global positioning system (gps) receiver capable of five (5) meters accuracy), the date when plugging began, the date when plugging concluded, the plugging material(s) used, the depth of the well, the size and type of casing, the location of perforations, the location of the sanitary seal, and other information deemed necessary by the state engineer. The plugging record shall include a completed well log. The well log shall include detailed information on the depth and thickness of all strata plugged, including whether each stratum was water bearing.

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP:

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: _____

Name of well owner: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

Phone number: _____ E-mail: _____

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: _____

New Mexico Well Driller License No.: _____ Expiration Date: _____

IV. WELL INFORMATION:

Note: A copy of the existing Well Record for the well to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: _____deg, _____ min, _____sec
Longitude: _____deg, _____min, _____sec, NAD 83

2) Reason(s) for plugging well: _____

_____

_____

3) Was well used for any type of monitoring program or environmental assessment? _____ If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? _____ If yes, provide additional detail, including analytical results and/or laboratory report(s): _____

_____

_____

5) Static water level: _____feet below land surface / feet above land surface (circle one)

6) Depth of the well: _____feet

Trn. No

7) Inside diameter of innermost casing: _____inches.

8) Casing material: _____

9) The well was constructed with:

_____ an open-hole production interval, state the open interval: _____

_____ a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? _____

11) Was the well built with surface casing? _____If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? _____ If yes, please describe: _____

_____

12) Has all pumping equipment and associated piping been removed from the well? _____If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well: _____

_____

_____

2) Will well head be cut-off below land surface after plugging? _____

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: _____

4) Type of Cement proposed: _____

5) Proposed cement grout mix: _____gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____batch-mixed and delivered to the site

_____ mixed on site

Trn. No

7) Grout additives requested, and percent by dry weight relative to cement: _____

_____

_____

_____

8) Additional notes and calculations: _____

_____

_____

_____

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

_____

_____

_____

_____

_____

_____

_____

VIII. SIGNATURE:

I, _____, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

_____ _____

Signature of Applicant Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

_____ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this _____day of _____, _____

Tom Blaine P.E., New Mexico State Engineer

By: _____

Trn. No

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			
Bottom of proposed interval of grout placement (ft bgl)			
Theoretical volume of grout required per interval (gallons)			
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			
Mixed on-site or batch-mixed and delivered?			
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

Trn. No

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

Trn. No

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: _____

Well owner: _____ Phone No.: _____

Mailing address: _____

City: _____ State: _____ Zip code: _____

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: _____

2) New Mexico Well Driller License No.: _____ Expiration Date: _____

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): _____

_____

4) Date well plugging began: _____ Date well plugging concluded: _____

5) GPS Well Location: Latitude: _____deg, _____ min, _____ sec
Longitude: _____deg, _____ min, _____ sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: _____ ft below ground level (bgl),
by the following manner: _____

7) Static water level measured at initiation of plugging: _____ ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: _____

9) Were all plugging activities consistent with an approved plugging plan? _____ If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, _____ , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

_____ _____

Signature of Well Driller Date