DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.
12/30/15	1/4/16		1-4-2016	SWD	PMAM1600432778

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- SWD
- SAN JUAN REFINING CO
37218
- well
- SWD #2 - pending
30-045-

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

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[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

Pool

[C] ☐ Application is One Which Requires Published Legal Notice

- SWD; Entrada
96436

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

John C. Thompson		Agent / Engineer	12/15/2015
Print or Type Name	Signature	Title	Date

johnewalsheng.net
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

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

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____Secondary Recovery _____Pressure Maintenance ___X___Disposal _____Storage
Application qualifies for administrative approval? _____Yes _____No

II. OPERATOR: San Juan Refining Co./Western Refining Southwest, Inc.

ADDRESS: #50 County Road 4990, Bloomfield, NM 87413

CONTACT PARTY: John Thompson PHONE: 505-327-4892

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____Yes ___X___No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

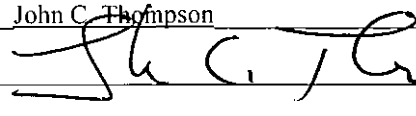
*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: John C. Thompson TITLE: Agent/Engineer

SIGNATURE:  DATE: 12/15/2015

E-MAIL ADDRESS: john@walsheng.net

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

Tubing Size: 4-1/2", 10.5 ppf Lining Material: Plastic Lined

Type of Packer: 7" Baker "FAB-1" (or similar model"

Packer Setting Depth: ~ 7265'

Other Type of Tubing/Casing Seal (if applicable): Baker Model "KBH-22" Anchor tubing seal assembly, landed in packer

Additional Data

1. Is this a new well drilled for injection? X Yes _____ No

   If no, for what purpose was the well originally drilled? _____

2. Name of the Injection Formation: Entrada

3. Name of Field or Pool (if applicable): _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. _____

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Pictured Cliffs, Chacra, Mesaverde, Gallup, Dakota

Side 1

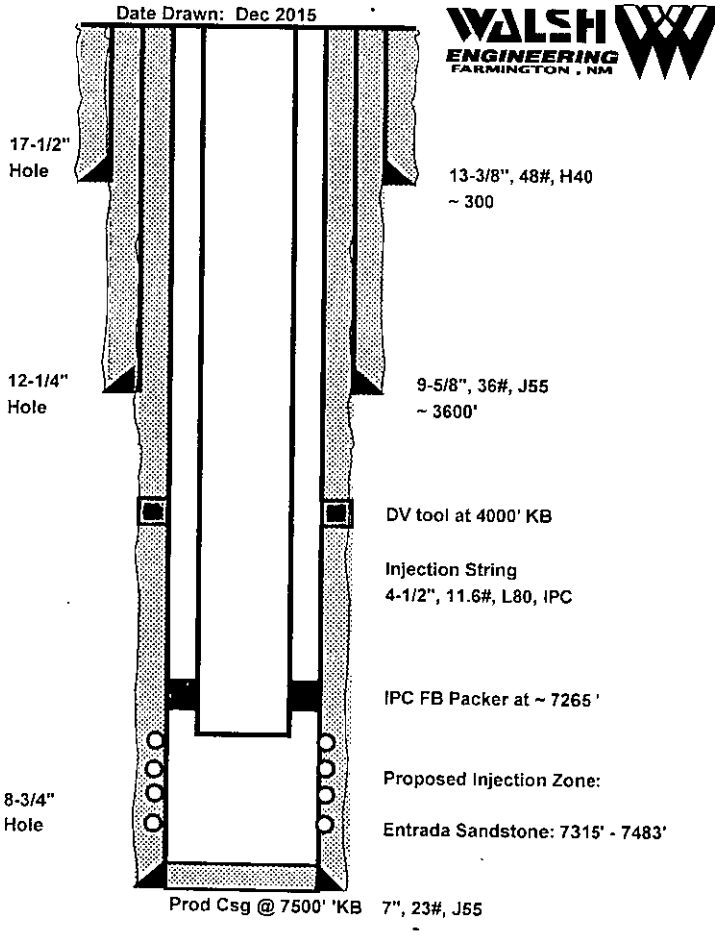
INJECTION WELL DATA SHEET

OPERATOR: Western Refining Southwest, Inc.

WELL NAME & NUMBER: SWD #2

WELL LOCATION: 2028' FNL & 111' FEL (FOOTAGE LOCATION) H (UNIT LETTER) 27 (SECTION) T29N (TOWNSHIP) R11W (RANGE)

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17-1/2" Casing Size: 13-3/8, 48 ppf, H40

Cemented with: 394 sx. *or* 548 ft^3

Top of Cement: Surface Method Determined: _____

Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8", 36#, J55

Cemented with: 857 sx *or* 1693 ft^3

Top of Cement: Surface Method Determined: _____

Production Casing

Hole Size: 8-3/4" Casing Size: 7", 26 ppf, L80

Cemented with: 868 sx. *or* 1692 ft^3

Top of Cement: Surface Method Determined: _____

Total Depth: ~ 7500'

Injection Interval (Proposed) 7315 ~~7316'~~ feet to 7483 ~~7482'~~ (perforated 4 spf) — Published interval

(Perforated or Open Hole; indicate which)

San Juan Refining Co./Western Refining Southwest, Inc.

SWD #2

C-108 Data Sheet

V. See Attached Map

VI. See Attached Tabulation Sheet

VII. Operation Data

1. A. Average Daily Injection Rate = 3,500 bbls
   B. Maximum Daily Injection Rate = 8,500 bbls

2. The system is closed (water will be collected onsite as part of the refinery process and pumped over to the injection well)

3. Proposed pressures
   A. The average and maximum injection pressures will be determined from a step rate test run after the well is completed. The anticipated injection pressures are ~ 2000 psi.

4. The fluid to be disposed of will be non-hazardous treated water generated from the Bloomfield Terminal (former Refinery). Representative water analysis for each formation are attached.

5. A water sample and corresponding water analysis will be provided once the well is perforated and a water sample can be obtained. The closest off set is the Ashcroft SWD #1 (API# 30-045-30788) located approximately 3/4 miles to the east of the proposed Western SWD #1. The Ashcroft is a SWD well operated by XTO Energy Resources and is completed in the Entrada and Bluff formations. The NMOCD records did not containing any data regarding the in-situ water quality found in the Ashcroft SWD #1 prior to injection. However, water analysis of the recently drilled TnT SWD #1, located in the southern portion of the San Juan Basin are included. Additional geologic properties of the Entrada formation are attached.

VIII. Geology

The Entrada Sandstone formation is Jurassic in age and is described as a wind blown deposit with fine to coarse-grained sandstone particles, clean and well sorted. Generally, the Entrada Sandstone formation is 200 to 280 ft thick throughout the San Juan Basin. Natural fractures are few to nonexistent.

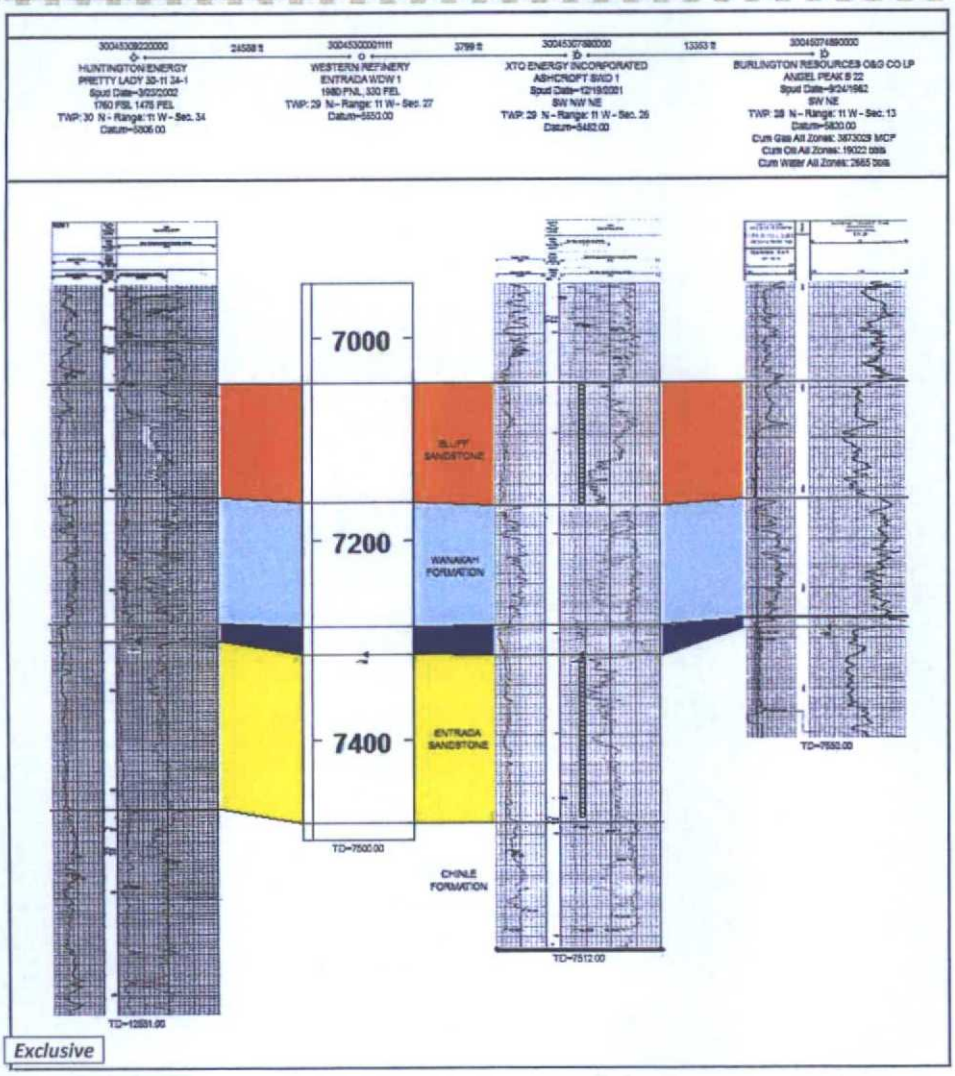
April 15, 2016 - Fluid capacity critical

The overlaying formation is the Todilto Limestone. Cores from the oil bearing portion of the Entrada formation indicate high porosities and permeability's with averages ranging from 22 – 26 percent and 150 – 450 millidarcies respectively. A cross section showing the regional thickness and log characteristics is included (below).

San Juan Refining Co./Western Refining Southwest, Inc. has approximately 70 ground water monitoring wells located within the refinery terminal (map of well locations is attached for reference). A sampling of the seven closest monitoring wells indicates an average depth to ground water to be approximately 24 ft.

Based on the attached comprehensive water analysis for the treated refinery water to be disposed the approximate TDS is 1220 mg/L.

Regional Bluff & Entrada Sandstones Cross-Section



Exclusive

IX. After the well is drilled, cased and perforated a injectivity test will be performed. If the injection rate is less than 6 BPM prior to parting pressure, the well will be stimulated w/ approximately 222,000 lbs of 20/40 white sand in 110,000 gals of 30# cross linked gel at 50 bpm. Note: actual job design (if needed) will be based on actual results of the injectivity test.

X. All open hole and cased hole logs will be filed with NMOCD once the well is drilled and completed.

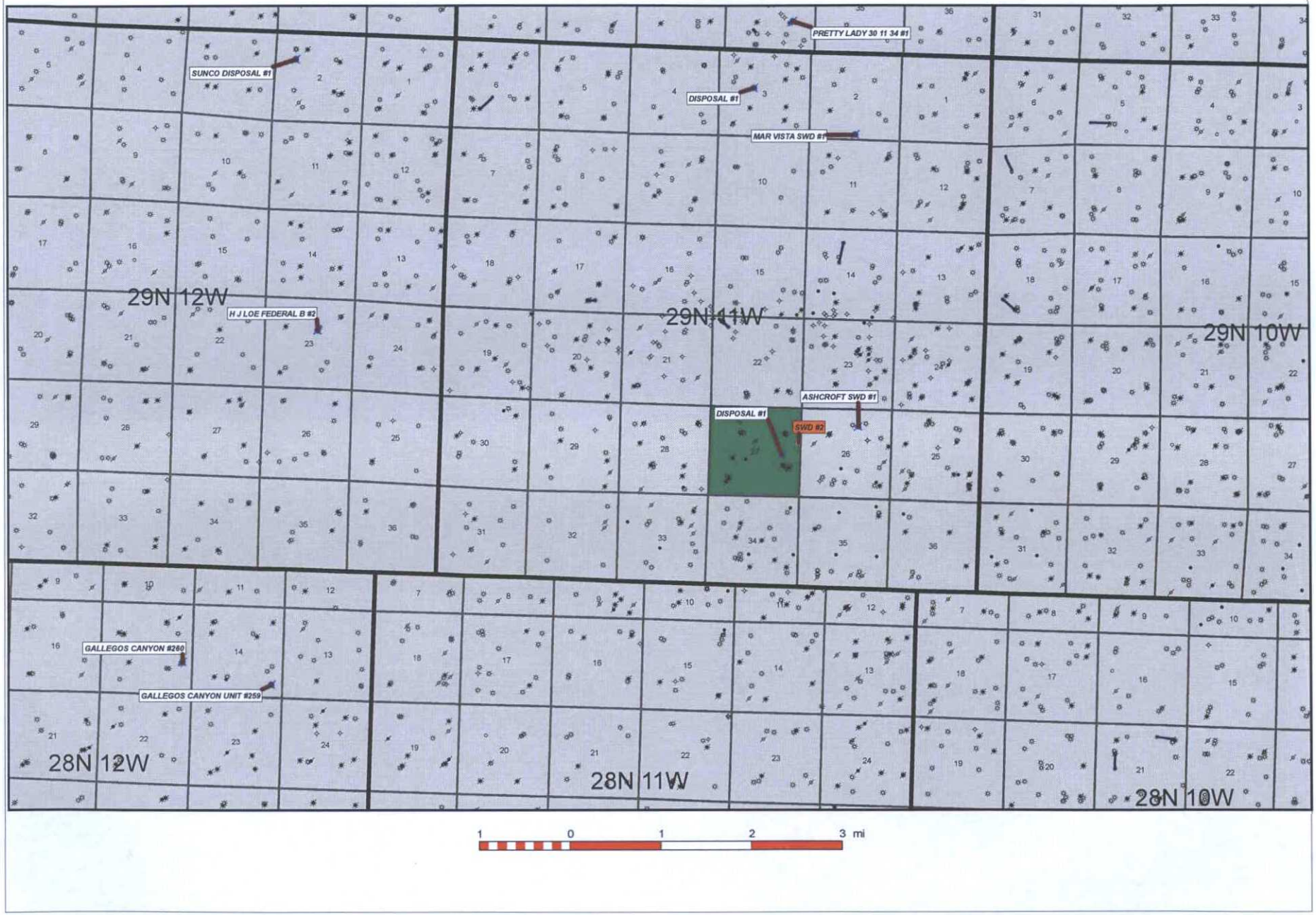
XII. Based on the information available online as well as information from the "Four Corners Geological Society" there are no known faults located in the area of the proposed well. Natural fractures are few to nonexistent in the Entrada formation. The overlaying formation is the relatively impermeable Todilto Limestone. The closest off set is the Ashcroft SWD #1 (API# 30-045-30788) located approximately ¾ of mile to the east of the proposed SWD #1. The Ashcroft SWD #1 is a SWD well operated by XTO Energy and is completed in the Bluff and Entrada formations and has no evidence of water migrating out of the injection zones.

XIII. See attached certified mail receipts.

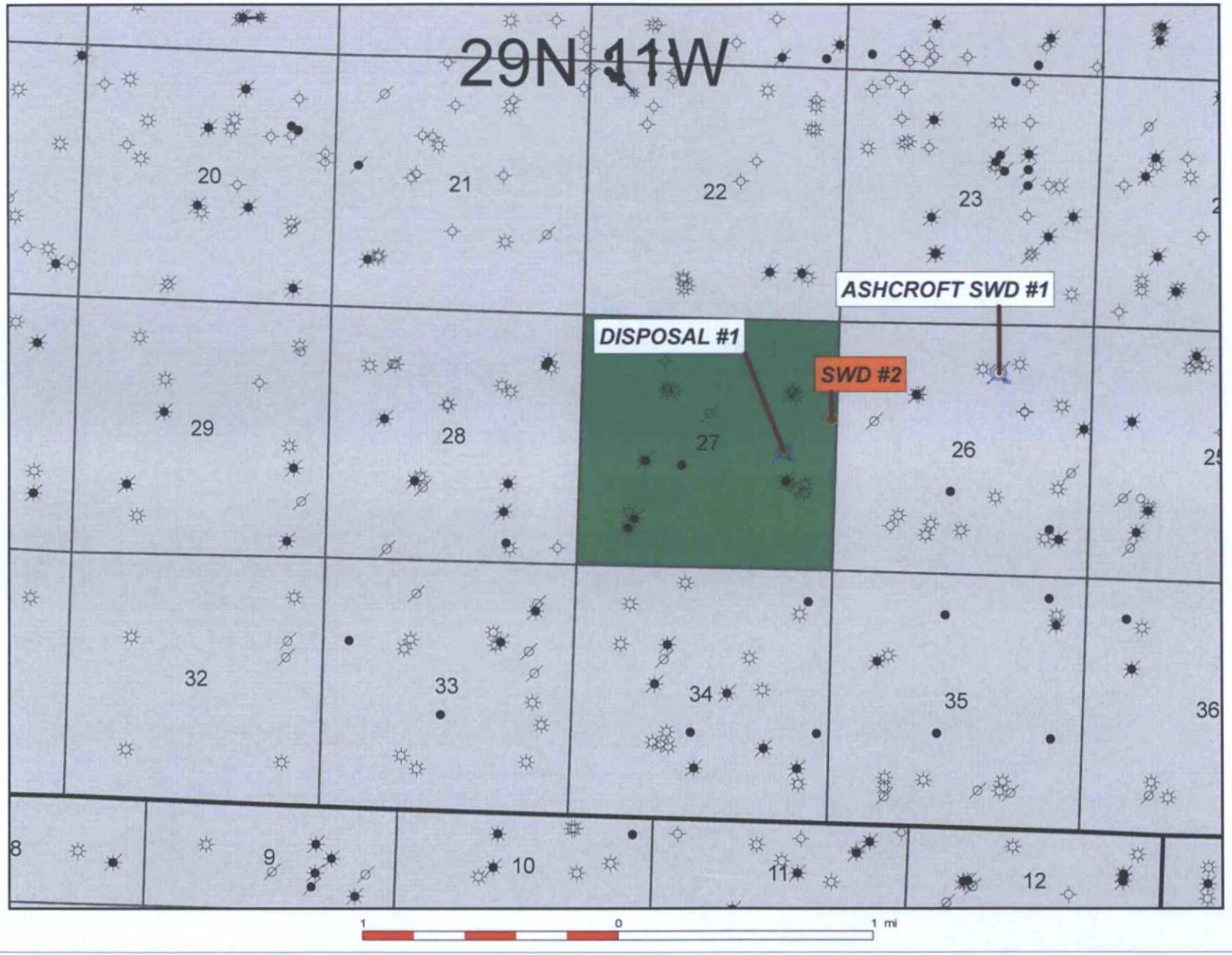
3

SWD-812-B

Well Base Map



Well Base Map



Entrada/Bluff WDW #1

Geologic Prognosis

Entrada & Bluff WDW, San Juan County

Western Refining

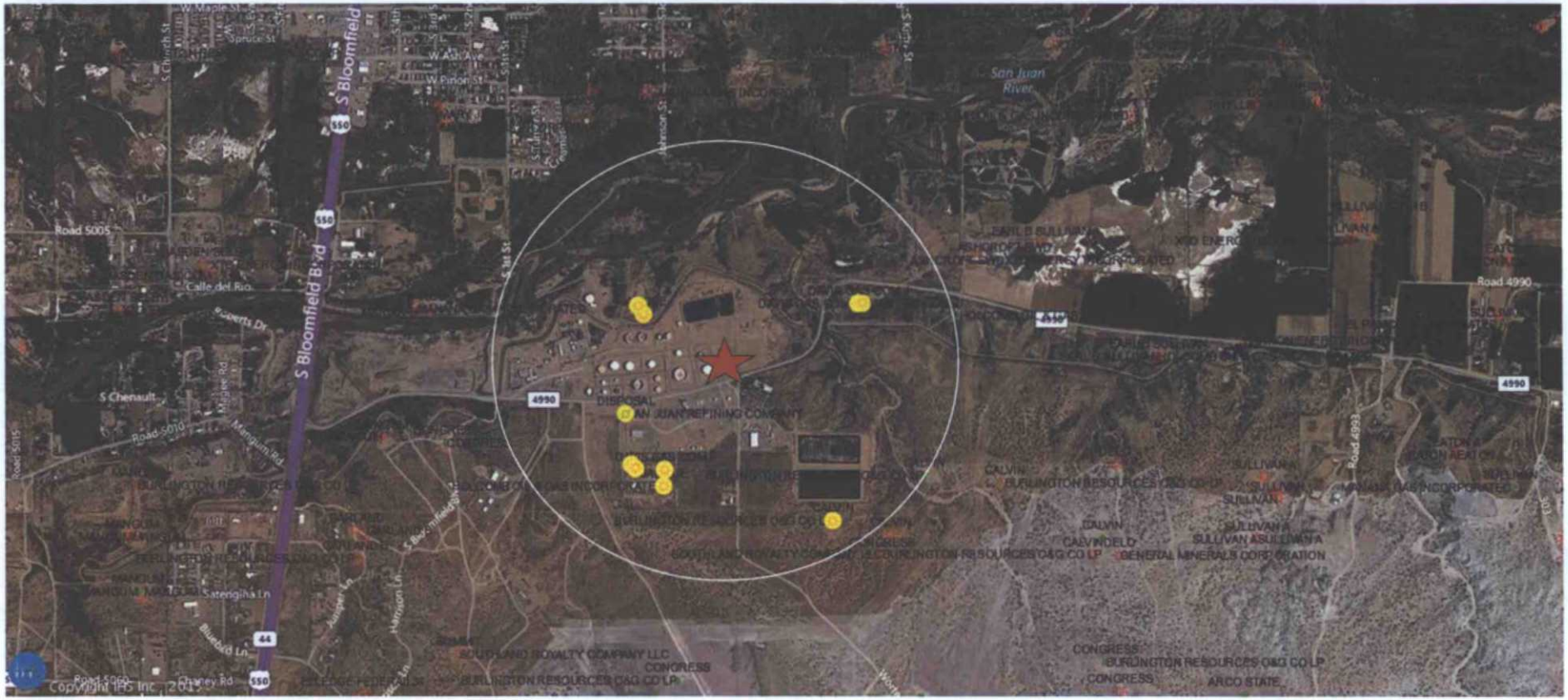
Header			
Well Name & Number:	Entrada/Bluff WDW #1		
API	Pending	Latitude (NAD 83):	36.698499
Objective:	Entrada & Bluff FM Water Disposal	Longitude (NAD 83):	-107.971156
Location:	TWP: 29 N - Range: 11 W - Sec. 27	Field:	Basin
Surface Location Footage:	1980 FNL, 330 FEL	County:	San Juan
Bottom Hole Location Footage:	Same as Surface	State:	New Mexico
Lease:		GL Elevation:	5538
Surface Owner:		KB Elevation:	5550
Type:		**Proposed TD:**	**7500**
Expiration Date:		Proposed Plugback:	
Depth:			

November 25, 2015
Geologist: Peter Kondrat

Formation Tops	Top MD (KB)	Top Subsea (KB)	Thickness (FT)	Rock Type	Drilling Notes	Depositional Environment
Quaternary Alluvium	0	5550	10	Unconsolidated Gravels	Boulders, water, lost circulation	Continental Rivers
Nacimiento FM	10	5540	505	Shale & Sandstone	Water, gas	Continental Rivers
Ojo Alamo Sandstone	515	5035	110	Sandstone & Shale	Water, gas	Continental Rivers
Kirtland Shale	625	4925	578	Interbeddded Shale, sandstone	Water, gas	Coastal to Alluvial Plain
Fruitland FM	1203	4347	515	Interbeddded Shale, sandstone & coal	Coalbed methane	Coastal Plain
Pictured Cliffs Sandstone	1718	3832	162	Sandstone	Gas, water	Regressive Marine Beach
Lewis Shale	1880	3670	780	Shale, thin limestones	Gas	Offshore Marine
Huerfanito Bentonite Bed	2660	2890	28	Alterted volcanic ash, bentonite bed	Swelling clay	Volcanic Ash Layers
Chacra FM	2688	2862	189	Sandstone, siltstone	Gas, Water	Offshore Marine Sands
Lower Lewis Shale	2877	2673	458	Shale, thin limestones	Gas, Water	Offshore Marine
Cliff House Sandstone	3335	2215	59	Sandstone	Gas, Water, Oil	Transgressive Marine Beach
Menefee Member	3394	2156	643	Interbeddded Shale, sandstone & coal	Gas, Water, Oil	Coastal Plain
Point Lookout Sandstone	4037	1513	386	Sandstone	Gas, Water, Oil	Regressive Marine Beach
Mancos Shale	4423	1127	869	Shale, thin sandstones & siltstones	Gas, Water, Oil	Offshore Marine
Niobrara A	5292	258	102	Interbeddded Shale, sandstone	Oil, Gas, Water	Offshore Marine Sands
Niobrara B	5394	156	123	Interbeddded Shale, sandstone	Oil, Gas, Water	Offshore Marine Sands
Niobrara C	5517	33	82	Interbeddded Shale, sandstone	Oil, Gas, Water	Offshore Marine Sands
Gallup FM	5599	-49	243	Interbeddded Shale, sandstone	Oil, Gas, Water	Regressive Marine to Coastal Deposit
Juana Lopez FM	5842	-292	123	Shale, thin limestones	Oil, Gas, Water	Offshore Marine
Carlile Shale	5965	-415	95	Shale, thin limestones	Oil, Gas, Water	Offshore Marine
Greenhorn Limestone	6060	-510	56	Limestone	Oil, Gas, Water	Offshore Marine
Graneros Shale	6116	-566	33	Shale	Oil, Gas, Water	Offshore Marine
Dakota FM	6149	-599	216	Sandstone, shale & coals	Oil, Gas, Water	Transgressive Coastal Plain to Marine
Burro Canyon FM	6365	-815	46	Sandstones, some conglomerate & mudstone	Oil, Gas, Water	Braided Fluvial Fill
Morrison FM	6411	-861	635	Mudstones, sandstone	Oil, Gas, Water	Continental Rivers
Bluff Sandstone (aka Junction Creek Sandstone), Morrison FM Member	**7046**	**-1496**	**118**	**Sandstone**	**Oil, Gas, Water**	**Alluvial Plain and Eolian**
Wanakah FM	7164	-1614	123	Siltstone, Sandstone	Oil, Gas, Water	Alluvial Plain and Eolian
Todilto Limestone & Anhydrite	7287	-1737	28	Interbedded Limestone & Anhydrite	Oil, Gas, Water, Anyhydrite	Alluvial Plain and Eolian
Entrada Sandstone	**7315**	**-1765**	**168**	**Sandstone**	**Oil, Gas, Water**	**Eolian Sand Dunes**
Chinle FM	7483	-1933	17	Interbeddded Shale, sandstone	Oil, Gas, Water	Continental Rivers
Proposed TD	**7500**	**-1950**		**TD designed for complete log covergage over Entrada Sandstone.**		

Notes: Any significant flow rates, abnormal pressures, lost circulation, sticking, fluid loss or gain immediately notify company man, drilling superintendent and/or drilling engineer.

1/2 Mile Radius



Enerdeq Browser Date: Nov 23, 2015 Author: JOHN THOMPSON

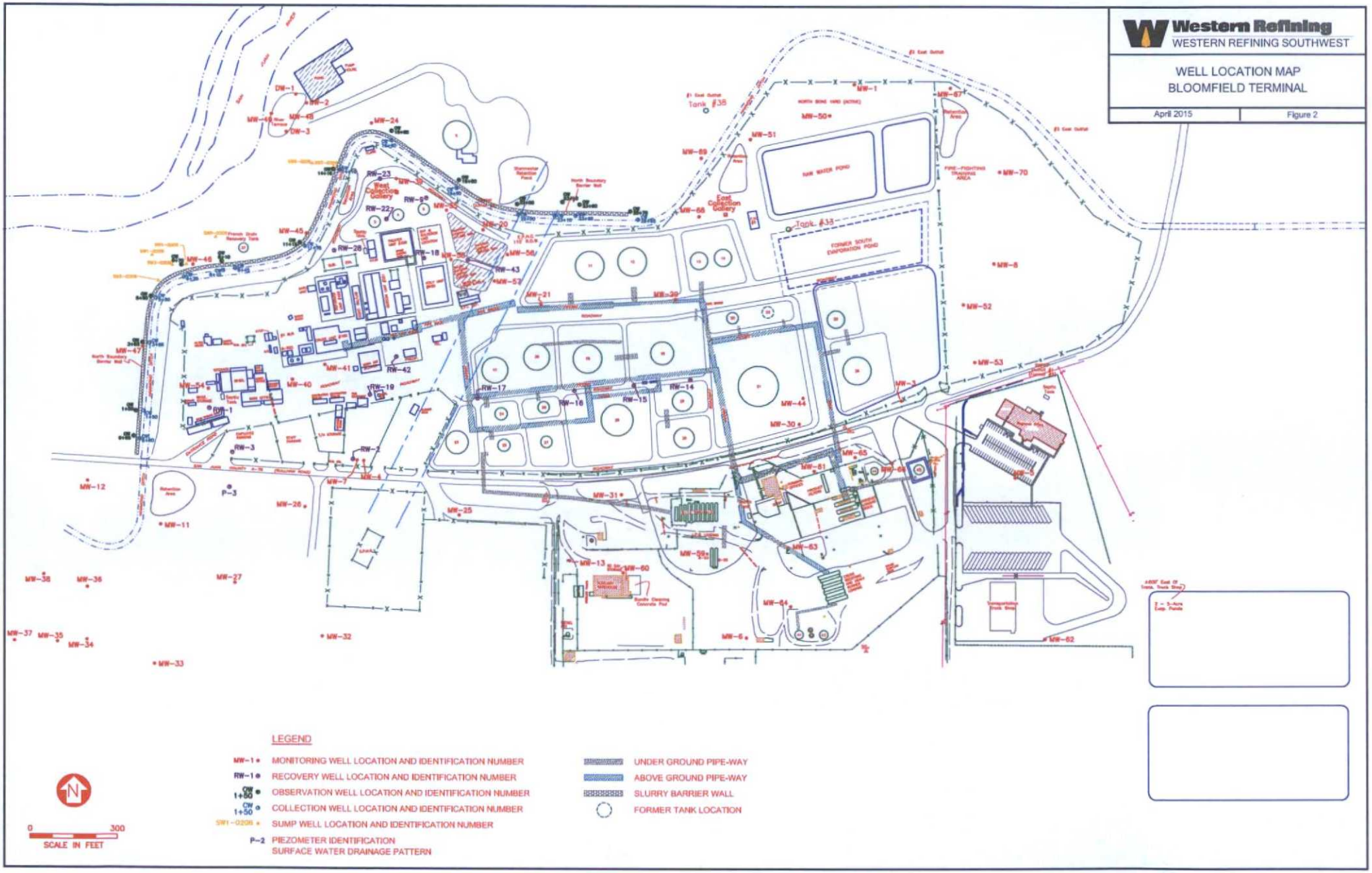
Western Refining
SWD #2
Well Tabulation Sheet

Operator Name	Lease Name	Well Num	Primary API	Location	First Prod Date	TD	Status Na	Upper Perf	Lower Perf
SAN JUAN REFINING COMPA	DISPOSAL	1	30045290020000	29N 11W 27I NW NE SE			P&A	3276	3514
BP AMERICA PRODUCTION C	DAVIS GAS COM F	1	30045078250000	29N 11W 27I SW NE SE	1960-12-01	6365	P&A	6215	6240
BURLINGTON RESOURCES OI	CALVIN	1	30045120030000	29N 11W 26M SW SW	1963-03-01	6450	ACTIVE	6176	6348
XTO ENERGY INCORPORATEI	DAVIS GAS COM G	1	30045235540000	29N 11W 27I SW NE SE	1981-01-01	2951	P&A	2827	2839
XTO ENERGY INCORPORATEI	SULLIVAN GAS COM D	1E	30045240830000	29N 11W 26F NW SE NW	1980-09-01	6329	ACTIVE	6086	6242
XTO ENERGY INCORPORATEI	DAVIS GAS COM F	1E	30045240840000	29N 11W 27H NW SE NE	1981-05-01	6386	ACTIVE	6163	6262
XTO ENERGY INCORPORATEI	DAVIS GAS COM F	1E	30045240840000	29N 11W 27H NW SE NE	1981-06-01	6386	ACTIVE	2701	2810
HOLCOMB OIL & GAS INCOR	DAVIS GAS COM J	1	30045253290000	29N 11W 26F NW SE NW	2008-04-01		ACTIVE	1462	1645
HOLCOMB OIL & GAS INCOR	DAVIS GAS COM J	1	30045253290000	29N 11W 26F NW SE NW	1985-02-01	4331	INACTIVE	3970	4030
XTO ENERGY INCORPORATEI	DAVIS GAS COM J	1	30045253290000	29N 11W 26F NW SE NW	1983-05-01	4331	INACTIVE	2631	2772
XTO ENERGY INCORPORATEI	DAVIS GAS COM F	1R	30045308330001	29N 11W 27I SW NE SE	2002-05-01		ACTIVE	5314	5646
XTO ENERGY INCORPORATEI	DAVIS GAS COM F	1R	30045308330000	29N 11W 27I SW NE SE	2002-03-01		ACTIVE	6177	6308
HOLCOMB OIL & GAS INCOR	JACQUE	2	30045344090000	29N 11W 27H NW SE NE	2008-01-01	1897	ACTIVE	1483	1689
HOLCOMB OIL & GAS INCOR	JACQUE	1	30045344630000	29N 11W 27L	2008-02-01	1890	ACTIVE	1543	1714

San Juan Refining Co./Western Refining Southwest

Monitor Well Information

	Depth to Groundwater	Approximate GW Elevation
	(ft)	(ft amsl)
MW-1	15	5502.2
MW-8	31	5502.9
MW-50	16	5502.1
MW-52	33	5502.6
MW-53	35	5502.5
MW-67	18	5502.1
MW-70	22	5502.4


Western Refining
WESTERN REFINING SOUTHWEST
WELL LOCATION MAP
BLOOMFIELD TERMINAL
April 2015
Figure 2
LEGEND
MW-1 • MONITORING WELL LOCATION AND IDENTIFICATION NUMBER
RW-1 • RECOVERY WELL LOCATION AND IDENTIFICATION NUMBER
OW 1+00 • OBSERVATION WELL LOCATION AND IDENTIFICATION NUMBER
CW 1+50 • COLLECTION WELL LOCATION AND IDENTIFICATION NUMBER
SW1-0206 • SUMP WELL LOCATION AND IDENTIFICATION NUMBER
P-2 PIEZOMETER IDENTIFICATION
SURFACE WATER DRAINAGE PATTERN
UNDER GROUND PIPE-WAY
ABOVE GROUND PIPE-WAY
SLURRY BARRIER WALL
FORMER TANK LOCATION
0
300
SCALE IN FEET

Comprehensive Water Analysis

non-hazardous, treated water from Western Refinery facility – Bloomfield, NM

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Injection Well 7-1-15
Lab ID: 1507094-001 **Matrix:** AQUEOUS

Client Sample ID: Injection Well
Collection Date: 7/1/2015 9:00:00 AM
Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	480	50		mg/L	100	7/2/2015 5:18:55 PM	R27295
Sulfate	65	5.0		mg/L	10	7/2/2015 5:06:31 PM	R27295
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **JRR**	
Conductivity	2000	0.010		µmhos/cm	1	7/6/2015 11:31:17 AM	R27329
SM2320B: ALKALINITY						Analyst: **JRR**	
Bicarbonate (As CaCO3)	274.6	20.00		mg/L CaCO3	1	7/6/2015 11:31:17 AM	R27329
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	7/6/2015 11:31:17 AM	R27329
Total Alkalinity (as CaCO3)	274.6	20.00		mg/L CaCO3	1	7/6/2015 11:31:17 AM	R27329
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1220	40.0	*	mg/L	1	7/8/2015 5:09:00 PM	20129
SM4500-H+B: PH						Analyst: **JRR**	
pH	7.45	1.68	H	pH units	1	7/6/2015 11:31:17 AM	R27329
EPA METHOD 7470: MERCURY						Analyst: **JLF**	
Mercury	ND	0.0010		mg/L	5	7/8/2015 4:47:51 PM	20158
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: **MED**	
Arsenic	ND	0.020		mg/L	1	7/9/2015 10:51:23 AM	20102
Barium	0.27	0.020		mg/L	1	7/9/2015 10:51:23 AM	20102
Cadmium	ND	0.0020		mg/L	1	7/16/2015 12:13:28 PM	20102
Calcium	120	5.0		mg/L	5	7/9/2015 1:02:36 PM	20102
Chromium	ND	0.0060		mg/L	1	7/14/2015 3:52:06 PM	20102
Lead	ND	0.0050		mg/L	1	7/9/2015 10:51:23 AM	20102
Magnesium	28	1.0		mg/L	1	7/9/2015 10:51:23 AM	20102
Potassium	7.7	1.0		mg/L	1	7/9/2015 10:51:23 AM	20102
Selenium	ND	0.050		mg/L	1	7/16/2015 12:13:28 PM	20102
Silver	ND	0.0050		mg/L	1	7/16/2015 12:13:28 PM	20102
Sodium	280	5.0		mg/L	5	7/9/2015 1:02:36 PM	20102
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Acenaphthylene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Aniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Azobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benz(a)anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(a)pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(b)fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(g,h,i)perylene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. **Client Sample ID:** Injection Well
Project: Injection Well 7-1-15 **Collection Date:** 7/1/2015 9:00:00 AM
Lab ID: 1507094-001 **Matrix:** AQUEOUS **Received Date:** 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Benzo(k)fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzoic acid	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzyl alcohol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Butyl benzyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Carbazole	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chloro-3-methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chloroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Chloronaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Chlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Chrysene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Di-n-butyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Di-n-octyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dibenzofuran	*ND*	*10*		*µg/L*	*1*	*7/10/2015 1:30:30 PM*	*20095*
1,2-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,3-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,4-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Diethyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dimethyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dichlorophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dimethylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dinitrophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dinitrotoluene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,6-Dinitrotoluene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Fluorene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorobutadiene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorocyclopentadiene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachloroethane	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095

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Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc. **Client Sample ID:** Injection Well
Project: Injection Well 7-1-15 **Collection Date:** 7/1/2015 9:00:00 AM
Lab ID: 1507094-001 **Matrix:** AQUEOUS **Received Date:** 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Isophorone	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1-Methylnaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Methylnaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3+4-Methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodimethylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Naphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Nitrobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Nitrophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Nitrophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pentachlorophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
Phenanthrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Phenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pyridine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,2,4-Trichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Surr: 2-Fluorophenol	66.2	14.9-111		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: Phenol-d5	64.1	11.3-108		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 2,4,6-Tribromophenol	75.7	15.7-154		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: Nitrobenzene-d5	84.6	47.8-106		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 2-Fluorobiphenyl	63.7	21.3-123		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 4-Terphenyl-d14	51.4	14.3-135		%REC	1	7/10/2015 1:30:30 PM	20095
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
Benzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Toluene	1.5	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Ethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Naphthalene	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Injection Well 7-1-15
Lab ID: 1507094-001 **Matrix:** AQUEOUS

Client Sample ID: Injection Well
Collection Date: 7/1/2015 9:00:00 AM
Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
1-Methylnaphthalene	ND	4.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Methylnaphthalene	ND	4.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Acetone	72	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromodichloromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromoform	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromomethane	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Butanone	11	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Carbon disulfide	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Carbon Tetrachloride	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloroethane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloroform	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloromethane	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Chlorotoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Chlorotoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
cis-1,2-DCE	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dibromochloromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dibromomethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloroethene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichloropropane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3-Dichloropropane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2,2-Dichloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Hexachlorobutadiene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Hexanone	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Isopropylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Isopropyltoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Methyl-2-pentanone	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Methylene Chloride	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
n-Butylbenzene	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
n-Propylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.
Project: Injection Well 7-1-15
Lab ID: 1507094-001 **Matrix:** AQUEOUS

Client Sample ID: Injection Well
Collection Date: 7/1/2015 9:00:00 AM
Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **BCN**	
sec-Butylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Styrene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
tert-Butylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
trans-1,2-DCE	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Trichlorofluoromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Vinyl chloride	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Xylenes, Total	ND	1.5		µg/L	1	7/9/2015 8:19:52 PM	R27397
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: 4-Bromofluorobenzene	90.8	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: Dibromofluoromethane	103	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: Toluene-d8	95.5	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client:	HALL ENVIRONMENTAL ANALYSIS LAB	**Batch #:**	150707035
Address:	4901 HAWKINS NE SUITE D	***Project Name:***	1507094
	ALBUQUERQUE, NM 87109		
Attn:	ANDY FREEMAN		

Analytical Results Report

Sample Number	150707035-001	**Sampling Date**	7/1/2015	**Date/Time Received**	7/7/2015 11:00 AM
Client Sample ID	1507094-001E / INJECTION WELL			**Sampling Time**	9:00 AM
Matrix	Water	**Sample Location**			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/L	1	7/15/2015	CRW	SW846 CH7	
Flashpoint	>200	°F		7/15/2015	KFG	EPA 1010	
pH	7.36	ph Units		7/8/2015	KMC	SM 4500pH-B	
Reactive sulfide	ND	mg/L	1	7/15/2015	HSW	SW846 CH7	

Authorized Signature

John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150707035
Project Name: 1507094

Analytical Results Report

Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	*0.816*	*mg/L*	*0.907*	*90.0*	*70-130*	*7/15/2015*	*7/15/2015*
Cyanide (reactive)	0.486	mg/L	0.5	97.2	80-120	7/15/2015	7/15/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150707035-001A	Reactive sulfide	ND	0.816	mg/L	0.907	90.0	70-130	7/15/2015	7/15/2015
150707035-001	*Cyanide (reactive)*	*ND*	*0.462*	*mg/L*	*0.5*	*92.4*	*80-120*	*7/15/2015*	*7/15/2015*

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	0.454	mg/L	0.5	90.8	1.7	0-25	7/15/2015	7/15/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/L	1	7/15/2015	7/15/2015
Reactive sulfide	ND	mg/L	1	7/15/2015	7/15/2015

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013, FL(NELAP) E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP). E871099

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R27295**	RunNo: **27295**
Prep Date:	Analysis Date: **7/2/2015**	SeqNo: **817819** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R27295**	RunNo: **27295**
Prep Date:	Analysis Date: **7/2/2015**	SeqNo: **817820** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.0	90	110			
Sulfate	10	0.50	10.00	0	103	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **100ng LCS**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R27397**	RunNo: **27397**
Prep Date:	Analysis Date: **7/9/2015**	SeqNo: **822125** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.9	70	130			
Toluene	17	1.0	20.00	0	87.2	70	130			
Chlorobenzene	17	1.0	20.00	0	85.5	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.4	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.4	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R27397**	RunNo: **27397**
Prep Date:	Analysis Date: **7/9/2015**	SeqNo: **822418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R27397**	RunNo: **27397**
Prep Date:	Analysis Date: **7/9/2015**	SeqNo: **822418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **rb1**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R27397**	RunNo: **27397**
Prep Date:	Analysis Date: **7/9/2015**	SeqNo: **822418** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **mb-20095**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **20095**	RunNo: **27414**
Prep Date: **7/6/2015**	Analysis Date: **7/10/2015**	SeqNo: **822558** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **mb-20095**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **20095**	RunNo: **27414**
Prep Date: **7/6/2015**	Analysis Date: **7/10/2015**	SeqNo: **822558** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	140		200.0		69.6	14.9	111			
Surr: Phenol-d5	150		200.0		74.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		75.2	15.7	154			
Surr: Nitrobenzene-d5	75		100.0		75.0	47.8	106			
Surr: 2-Fluorobiphenyl	76		100.0		75.9	21.3	123			
Surr: 4-Terphenyl-d14	52		100.0		52.2	14.3	135			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **lcs-20095**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **20095**	RunNo: **27414**
Prep Date: **7/6/2015**	Analysis Date: **7/10/2015**	SeqNo: **822559** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	51	10	100.0	0	51.2	47.8	99.7			
4-Chloro-3-methylphenol	110	10	200.0	0	56.2	58.1	103			S
2-Chlorophenol	73	10	200.0	0	36.7	49.5	96.8			S
1,4-Dichlorobenzene	34	10	100.0	0	33.8	40.4	89.4			S
2,4-Dinitrotoluene	42	10	100.0	0	41.8	38.6	91.3			
N-Nitrosodi-n-propylamine	51	10	100.0	0	51.1	53.9	95.6			S
4-Nitrophenol	93	10	200.0	0	46.3	26.4	108			
Pentachlorophenol	98	20	200.0	0	49.1	36.5	86.6			
Phenol	85	10	200.0	0	42.7	29.3	108			
Pyrene	56	10	100.0	0	56.2	45.7	100			
1,2,4-Trichlorobenzene	43	10	100.0	0	42.9	39.3	94.5			
Surr: 2-Fluorophenol	67		200.0		33.4	14.9	111			
Surr: Phenol-d5	86		200.0		43.0	11.3	108			
Surr: 2,4,6-Tribromophenol	120		200.0		62.3	15.7	154			
Surr: Nitrobenzene-d5	47		100.0		46.6	47.8	106			S
Surr: 2-Fluorobiphenyl	53		100.0		53.0	21.3	123			
Surr: 4-Terphenyl-d14	44		100.0		44.1	14.3	135			

Sample ID **lcsd-20095**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **20095**	RunNo: **27414**
Prep Date: **7/6/2015**	Analysis Date: **7/10/2015**	SeqNo: **822560** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	76.1	47.8	99.7	39.1	28.2	R
4-Chloro-3-methylphenol	160	10	200.0	0	81.3	58.1	103	36.4	24.4	R
2-Chlorophenol	150	10	200.0	0	76.8	49.5	96.8	70.6	28.1	R
1,4-Dichlorobenzene	72	10	100.0	0	72.5	40.4	89.4	72.9	31.2	R
2,4-Dinitrotoluene	55	10	100.0	0	54.6	38.6	91.3	26.4	44.4	
N-Nitrosodi-n-propylamine	76	10	100.0	0	76.4	53.9	95.6	39.6	24.2	R
4-Nitrophenol	130	10	200.0	0	63.8	26.4	108	31.8	36.6	
Pentachlorophenol	130	20	200.0	0	65.8	36.5	86.6	29.1	29.5	
Phenol	160	10	200.0	0	77.8	29.3	108	58.2	30	R
Pyrene	69	10	100.0	0	69.3	45.7	100	20.8	31	
1,2,4-Trichlorobenzene	86	10	100.0	0	85.7	39.3	94.5	66.6	24	R
Surr: 2-Fluorophenol	140		200.0		70.6	14.9	111	0	0	
Surr: Phenol-d5	160		200.0		79.2	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		82.0	15.7	154	0	0	
Surr: Nitrobenzene-d5	80		100.0		79.5	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	77		100.0		77.3	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **lcsd-20095**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **20095**	RunNo: **27414**
Prep Date: **7/6/2015**	Analysis Date: **7/10/2015**	SeqNo: **822560** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	51		100.0		51.2	14.3	135	0	0	

Sample ID **mb-20218**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **20218**	RunNo: **27531**
Prep Date: **7/13/2015**	Analysis Date: **7/15/2015**	SeqNo: **826536** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	90		200.0		45.0	14.9	111			
Surr: Phenol-d5	75		200.0		37.3	11.3	108			
Surr: 2,4,6-Tribromophenol	140		200.0		69.6	15.7	154			
Surr: Nitrobenzene-d5	64		100.0		64.4	47.8	106			
Surr: 2-Fluorobiphenyl	61		100.0		61.2	21.3	123			
Surr: 4-Terphenyl-d14	45		100.0		45.2	14.3	135			

Sample ID **lcs-20218**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **20218**	RunNo: **27531**
Prep Date: **7/13/2015**	Analysis Date: **7/15/2015**	SeqNo: **826537** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	110		200.0		53.4	14.9	111			
Surr: Phenol-d5	82		200.0		41.0	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	74		100.0		74.2	47.8	106			
Surr: 2-Fluorobiphenyl	74		100.0		73.5	21.3	123			
Surr: 4-Terphenyl-d14	44		100.0		44.2	14.3	135			

Sample ID **lcsd-20218**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **20218**	RunNo: **27531**
Prep Date: **7/13/2015**	Analysis Date: **7/15/2015**	SeqNo: **826538** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	100		200.0		52.2	14.9	111	0	0	
Surr: Phenol-d5	84		200.0		41.8	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	76		100.0		76.0	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	69		100.0		68.5	21.3	123	0	0	
Surr: 4-Terphenyl-d14	46		100.0		45.5	14.3	135	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	**1507094-001b dup**	SampType:	**DUP**	TestCode:	**SM2510B: Specific Conductance**
Client ID:	**Injection Well**	Batch ID:	**R27329**	RunNo:	**27329**
Prep Date:		Analysis Date:	**7/6/2015**	SeqNo:	**819171** Units: **µmhos/cm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	2000	0.010						0.0491	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **MB-20158**	SampType: **MBLK**	TestCode: **EPA Method 7470: Mercury**
Client ID: **PBW**	Batch ID: **20158**	RunNo: **27365**
Prep Date: **7/8/2015**	Analysis Date: **7/8/2015**	SeqNo: **820590** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID **LCS-20158**	SampType: **LCS**	TestCode: **EPA Method 7470: Mercury**
Client ID: **LCSW**	Batch ID: **20158**	RunNo: **27365**
Prep Date: **7/8/2015**	Analysis Date: **7/8/2015**	SeqNo: **820591** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Sample ID **1507094-001DMS**	SampType: **MS**	TestCode: **EPA Method 7470: Mercury**
Client ID: **Injection Well**	Batch ID: **20158**	RunNo: **27365**
Prep Date: **7/8/2015**	Analysis Date: **7/8/2015**	SeqNo: **820635** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0059	0.0010	0.005000	0	118	75	125			

Sample ID **1507094-001DMSD**	SampType: **MSD**	TestCode: **EPA Method 7470: Mercury**
Client ID: **Injection Well**	Batch ID: **20158**	RunNo: **27365**
Prep Date: **7/8/2015**	Analysis Date: **7/8/2015**	SeqNo: **820638** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0058	0.0010	0.005000	0	116	75	125	1.62	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **MB-20102**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **20102**	RunNo: **27378**
Prep Date: **7/6/2015**	Analysis Date: **7/9/2015**	SeqNo: **821352** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Calcium	ND	1.0								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID **LCS-20102**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **20102**	RunNo: **27378**
Prep Date: **7/6/2015**	Analysis Date: **7/9/2015**	SeqNo: **821353** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	80	120			
Barium	0.49	0.020	0.5000	0	98.5	80	120			
Calcium	51	1.0	50.00	0	102	80	120			
Lead	0.50	0.0050	0.5000	0	100	80	120			
Magnesium	50	1.0	50.00	0	101	80	120			
Potassium	48	1.0	50.00	0	96.8	80	120			
Sodium	49	1.0	50.00	0	98.9	80	120			

Sample ID **MB-20102**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **20102**	RunNo: **27491**
Prep Date: **7/6/2015**	Analysis Date: **7/14/2015**	SeqNo: **824974** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	ND	0.0060								

Sample ID **LCS-20102**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **20102**	RunNo: **27491**
Prep Date: **7/6/2015**	Analysis Date: **7/14/2015**	SeqNo: **824975** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.49	0.0060	0.5000	0	98.5	80	120			

Sample ID **MB-20102**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **20102**	RunNo: **27540**
Prep Date: **7/6/2015**	Analysis Date: **7/16/2015**	SeqNo: **826932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **MB-20102**	SampType: **MBLK**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **PBW**	Batch ID: **20102**	RunNo: **27540**
Prep Date: **7/6/2015**	Analysis Date: **7/16/2015**	SeqNo: **826932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID **LCS-20102**	SampType: **LCS**	TestCode: **EPA 6010B: Total Recoverable Metals**
Client ID: **LCSW**	Batch ID: **20102**	RunNo: **27540**
Prep Date: **7/6/2015**	Analysis Date: **7/16/2015**	SeqNo: **826933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.7	80	120			
Silver	0.10	0.0050	0.1000	0	105	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	**1507094-001b dup**	SampType:	**DUP**		TestCode:	**SM4500-H+B: pH**					
Client ID:	**Injection Well**	Batch ID:	**R27329**		RunNo:	**27329**					
Prep Date:		Analysis Date:	**7/6/2015**		SeqNo:	**819204**	Units:	**pH units**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		7.46	1.68								H

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	mb-1	SampType:	MBLK		TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R27329		RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015		SeqNo:	819128	Units:	mg/L CaCO3			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)		ND	20.00								

Sample ID	lcs-1	SampType:	LCS		TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R27329		RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015		SeqNo:	819129	Units:	mg/L CaCO3			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)		78.36	20.00	80.00	0	98.0	90	110			

Sample ID	mb-2	SampType:	MBLK		TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R27329		RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015		SeqNo:	819152	Units:	mg/L CaCO3			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)		ND	20.00								

Sample ID	lcs-2	SampType:	LCS		TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R27329		RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015		SeqNo:	819153	Units:	mg/L CaCO3			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)		79.44	20.00	80.00	0	99.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1507094**

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID **MB-20129**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **20129**	RunNo: **27360**
Prep Date: **7/7/2015**	Analysis Date: **7/8/2015**	SeqNo: **820297** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID **LCS-20129**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **20129**	RunNo: **27360**
Prep Date: **7/7/2015**	Analysis Date: **7/8/2015**	SeqNo: **820298** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw Work Order Number: 1507094 RcptNo: 1

Received by/date: AT 07/02/15

Logged By: Anne Thorne 7/2/2015 7:00:00 AM

Completed By: Anne Thorne 7/2/2015

Reviewed By: CS 07/02/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2 2 (<2 or >12 unless noted)

Adjusted? —

Checked by: JA

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Western Refining

Mailing Address: #50 CR 4990
Bloomfield, NM 87413

Phone #: 505-632-4135

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
Injection Well 7-1-15

Project #:
P.O.# 12610939

Project Manager:

Sampler: Bob

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1501094	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	~~TPH (Method 418.1)~~ TDS	~~EDB (Method 504.1)~~ Back up	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals Ca, Mg, Na, K	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Ignitability	Reactivity, Corrosivity	Fe, pH, SO_4, Alk, Cl	Sulfides	Air Bubbles (Y or N)
7-1-15	9:00	H_2O	injection well	5-VOA	HCl	-001										X						
				1-liter	amber	-002											X					
				1-500ml	—	-003												X				
				1-500ml	—	-004				X										X		
				1-125ml	H_2SO_4	-005					X											
				1-500ml	HNO_3	-006							X									
				1-500ml	NaOH	-007													X			
				1-500ml	Zn Acetate	-008															X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
7-1-15	1215	Robert Bratton	Christy Walker	7/1/15	1215
7/1/15	1810	Christy Walker		07/02/15	0700

Remarks:

Water Analysis of Entrada Formation Water

(from TnT Disposal well located in section 8/T25N/R3W)

Multi-Chem Analytical Laboratory
1122 S. FM1788
Midland, TX 76706

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company: **TNT Environmental**
Well Name: **SWD ENTRADA**
Sample Point: **SWD**
Sample Date: **11/20/2014**
Sample ID: **WA-294316**

Sales Rep: **Greg Ramalho**
Lab Tech: **Andrew Callaghan**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	11/25/2014
System Temperature 1 (°F):	31
System Pressure 1 (psig):	15
System Temperature 2 (°F):	300
System Pressure 2 (psig):	300
Calculated Density (g/ml):	1.0059
pH:	7.60
Calculated TDS (mg/L):	12320.63
CO2 in Gas (%):	
Dissolved CO2 (mg/L)):	80.00
H2S in Gas (%):	
H2S in Water (mg/L):	2.50

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	4455.35	Chloride (Cl):	6000.00
Potassium (K):	44.79	Sulfate (SO_4):	1094.00
Magnesium (Mg):	23.10	Bicarbonate (HCO_3):	427.00
Calcium (Ca):	115.67	Carbonate (CO_3):	120.00
Strontium (Sr):	7.60	Acetic Acid (CH_3COO)	
Barium (Ba):	9.30	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.82	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.10	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.55	Silica (SiO_2):	21.35

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
300.00	300.00	1.90	85.63	1.92	5.47	2.21	0.99	1.95	1.31	0.00	0.00	0.09	1.02	0.00	0.00	6.95	0.05
270.00	268.00	1.68	77.73	1.90	5.47	2.04	0.99	1.80	1.30	0.00	0.00	0.00	0.00	0.00	0.00	7.04	0.05
240.00	236.00	1.47	68.31	1.90	5.47	1.89	0.98	1.63	1.29	0.00	0.00	0.00	0.00	0.00	0.00	7.17	0.05
210.00	205.00	1.26	57.99	1.92	5.47	1.76	0.97	1.45	1.27	0.00	0.00	0.00	0.00	0.00	0.00	7.32	0.05
180.00	173.00	1.06	47.51	1.98	5.48	1.67	0.96	1.25	1.24	0.00	0.00	0.00	0.00	0.00	0.00	7.53	0.05
150.00	141.00	0.88	37.61	2.08	5.49	1.62	0.96	1.03	1.19	0.00	0.00	0.00	0.00	0.00	0.00	7.79	0.05
120.00	110.00	0.71	29.02	2.23	5.51	1.64	0.96	0.81	1.11	0.00	0.00	0.00	0.00	0.00	0.00	8.13	0.05
90.00	78.00	0.57	22.00	2.44	5.52	1.73	0.97	0.59	0.96	0.00	0.00	0.00	0.00	0.00	0.00	8.56	0.05
60.00	46.00	0.46	16.76	2.73	5.53	1.92	0.98	0.36	0.73	0.00	0.00	0.00	0.00	0.00	0.00	9.11	0.05
31.00	15.00	0.39	13.73	3.10	5.53	2.26	0.99	0.16	0.39	0.00	0.00	0.00	0.00	0.00	0.00	9.83	0.05

		Hemihydrate $CaSO_4 \cdot 0.5H_2O$		*Anhydrate* $CaSO_4$		*Calcium* Fluoride		*Zinc* Carbonate		*Lead* Sulfide		*Mg* Silicate		*Ca Mg* Silicate		*Fe* Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
300.00	300.00	0.00	0.00	0.14	31.79	0.00	0.00	0.91	0.06	0.00	0.00	7.71	25.75	4.14	13.11	9.66	1.42
270.00	268.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.06	0.00	0.00	6.34	25.03	3.32	12.39	8.62	1.41
240.00	236.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.05	0.00	0.00	4.87	22.02	2.45	10.55	7.49	1.41
210.00	205.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.03	0.00	0.00	3.30	15.59	1.51	7.07	6.31	1.40
180.00	173.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	7.51	0.54	2.57	5.08	1.38
150.00	141.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.84	1.32
120.00	110.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66	1.18
90.00	78.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	0.90
60.00	46.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.45
31.00	15.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

AFFIDAVIT OF PUBLICATION

Ad No. 72205

STATE OF NEW MEXICO
County of San Juan:

SAMMY LOPEZ, being duly sworn says: That he IS the PUBLISHER of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said *DAILY TIMES*, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication and appeared in the Internet at The Daily Times web site on the following day(s):

Monday, December 14, 2015

And the cost of the publication is $60.13

ON 12/15/15 SAMMY LOPEZ appeared before me, whom I know personally to be the person who signed the above document.

Christine Sellers

OFFICIAL SEAL
CHRISTINE SELLERS
Notary Public
State of New Mexico
My Comm. Expires 11/05/19

COPY OF PUBLICATION

Western Refining Southwest, Inc., represented by John Thompson (505) 327-4892, has applied to the New Mexico Oil Conservation Division for administrative approval to be authorized to inject nonhazardous treated water generated from the Bloomfield Terminal (former Refinery) into the proposed Class I (nonhazardous) disposal well. The proposed SWD #2, will be located 2019' FNL & 110' FEL, Section 27, T29N, R11W, San Juan County, New Mexico.

The proposed injection zone is the Entrada formation. The estimated injection depths are 7315' to 7,483' and the maximum anticipated injection rate is 8000 BPD. The maximum injection pressure will be determined from a step rate test. Interested parties can make comments to this application to the NM Oil Conservation Division, 1220 St. Francis Dr., Santa Fe, NM 87505. Comments must be received within 15 days of the date of this publication.

Legal No. 72205 published in The Daily Times on Dec 14, 2015

December 10, 2015

VIA CERTIFIED MAIL

Attn: Crystal Walker (Regulatory Coordinator)
Burlington Resources Oil & Gas Company LP
3401 E. 30th Street
Farmington, NM 87402

Re: Application of Western Refining Southwest, Inc. for Authorization to Inject in the proposed SWD #2, San Juan, New Mexico.

Dear Ms. Walker,

Western Refining Southwest, Inc. has applied to the New Mexico Oil Conservation Division to dispose of non-hazardous treated water generated from the Bloomfield Terminal (former Refinery) into the Entrada formation in the proposed SWD #2. The SWD #2 will be located 2019' feet from the North line and 110' feet from the East in Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico. As an offset operator (the Calvin #1 is within a half mile of the proposed SWD #2) you are being notified of this application pursuant to NMOCD rules

If you have no objection to this Application then no further action is required on your part. If you would like to file an objection or to request a hearing please notify the NMOCD at 1220 South St. Francis, St., Santa Fe, NM 87505 within 20 days of receipt of this notice.

If you have any questions or need additional information please feel free to call me at (505) 327-4892.

Sincerely,

John Thompson
Walsh Engineering & Production
Agent/Engineer for Western Refining Southwest

December 10, 2015

VIA CERTIFIED MAIL

Attn: Diane Montano (Regulatory
Compliance Mgr.)
XTO Energy, Inc.
382 Road 3100
Aztec, NM 87410

Re: Application of Western Refining Southwest, Inc. for Authorization to Inject in the proposed SWD #2, San Juan, New Mexico.

Dear Ms. Montano,

Western Refining Southwest, Inc. has applied to the New Mexico Oil Conservation Division to dispose of non-hazardous treated water generated from the Bloomfield Terminal (former Refinery) into the Entrada formation in the proposed SWD #2. The SWD #2 will be located 2019' feet from the North line and 110' feet from the East in Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico. As an offset operator of the Sullivan Gas Com D #1E, Davis Gas Com F #1E, Davis Gas Com F #1R, all of which are within a half mile of the proposed SWD #2, you are being notified of this application pursuant to NMOCD rules

If you have no objection to this Application then no further action is required on your part. If you would like to file an objection or to request a hearing please notify the NMOCD at 1220 South St. Francis, St., Santa Fe, NM 87505 within 20 days of receipt of this notice.

If you have any questions or need additional information please feel free to call me at (505) 327-4892.

Sincerely,

John Thompson
Walsh Engineering & Production
Agent/Engineer for Western Refining Southwest

December 10, 2015

VIA CERTIFIED MAIL

Attn: Regulatory Coordinator
Holcomb Oil & Gas Inc.
512 W. Arrington
Farmington, NM 87402

Re: Application of Western Refining Southwest, Inc. for Authorization to Inject in the proposed SWD #2, San Juan, New Mexico.

Dear Mr. Holcomb,

Western Refining Southwest, Inc. has applied to the New Mexico Oil Conservation Division to dispose of non-hazardous treated water generated from the Bloomfield Terminal (former Refinery) into the Entrada formation in the proposed SWD #2. The SWD #2 will be located 2019' feet from the North line and 110' feet from the East in Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico. As an offset operator of the Davis Com J#1, Jacque #1, Jacque #2, all of which are within a half mile of the proposed SWD #2, you are being notified of this application pursuant to NMOCD rules

If you have no objection to this Application then no further action is required on your part. If you would like to file an objection or to request a hearing please notify the NMOCD at 1220 South St. Francis, St., Santa Fe, NM 87505 within 20 days of receipt of this notice.

If you have any questions or need additional information please feel free to call me at (505) 327-4892.

Sincerely,

John Thompson
Walsh Engineering & Production
Agent/Engineer for Western Refining Southwest

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Burlington Resources Oil & Gas
Attn: Crystal Walker
3401 E. 30th St.
Farmington, NM 87401

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Judith Dee ☒ Agent ☐ Addressee

B. Received by (Printed Name) Judith Dee
C. Date of Delivery 12-17-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7011 1570 0001 0594 4465

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

XTO Energy, Inc
Attn: Diane Montano
382 Rd. 3100
Aztec, NM 87410

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Renee S. Mendias ☐ Agent ☐ Addressee

B. Received by (Printed Name) Renee S. Mendias
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

DEC 17 2015

3. Service Type
☐ Certified Mail ☐ Express Mail
☒ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7011 1570 0001 0594 4441

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Hobomp Oil + Gas Corp
Attn: Regulatory Coordinator
512 W. Arrington
Farmington NM 87402

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

DEC 17

3. Service Type
☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7011 1570 0001 0594 4458

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540