GW - 1

REPORTS

YEAR(S):

2006

GIANT
REFINING COMPANY

January 5, 2006

Hope Monzeglio
New Mexico Environmental Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East
Bldg 1
Santa Fe, NM 87505

Wayne Price
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr
Santa Fe, NM 87505

Re: System Start-up Six Month Report of the North Boundary Barrier Collection System
Phase II
May 2005 Through October 2005

Dear Hope and Wayne,

Giant Refining Company, Bloomfield Refinery submits the System Start-Up Six Month Report for the North Boundary Barrier Collection System as requested by NMED. This report summarizes data gathered from the Observation and Collection wells during the first six months after the barrier installation.

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz
Environmental Manager
San Juan Refining Company
Bloomfield Refinery

Cc: Robert Wilkinson, USEPA – Region VI
Denny Foust, NMOCD Aztec District Office
Ed Riege, Environmental Superintendent – Giant Refinery

PHONE
505-632-8013
FAX
505-632-3911

50 ROAD 4990
P.O. BOX 159
BLOOMFIELD
NEW MEXICO
87413

GIANT
REFINING COMPANY

Wayne Price
New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Dr
Santa Fe, NM 87505

Certified Mail: 7004 2510 0005 1641 4712

January 19, 2006

Re: Approval with Modifications
2004 Ground Water Remediation and Monitoring Annual Report April 2005
Giant Refining Company, Bloomfield Refinery
NMED ID # NMD089416416
HWB-GRCB-05-001

Dear Mr. Price,

Giant Refining Company Bloomfield (GRCB) received the October 31, 2005 letter from the New Mexico Environmental Department (NMED) requesting additional information regarding the 2004 Ground Water Remediation and Monitoring Annual Report 2005 Giant Refining Company, Bloomfield Refinery. The following correspondence will address NMED's requests.

Item #3 identifies a typographical error mislabeling RW #16 as MW #16. An updated map is not required.

Item #6 requests information pertaining to the *Groundwater Elevation* Tables 1 and 2.

- Collar Elevation is the top of concrete at the base of the well casing
- Well casing height is the measurement from the collar elevation to the top of casing.
- Separate phase hydrocarbon not detected = Measuring point elevation – Depth to water

PHONE
505-632-8013
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- Separate phase hydrocarbon detected = Measuring point elevation – Depth to water = (Depth to water – Depth to product X 0.8)

- Measuring Point Elevation = Collar Elevation + Well Casing Height

- Zero indicates that there was no separate phase hydrocarbon measured in the well

Item #8 requests a revision of Table 3. The revised edition of Table 3 is attached to this letter.

Item #11 asks why DO and ORP were not measured in MW #48 and MW #49. There was not a request by NMED or OCD to measure DO or ORP in these wells. GRCB followed guidelines specified in Item #12 from the January 6, 2003 letter from NMED.

Future groundwater reports will be modified to correspond with NMEDs requirements.

If you need additional information, please contact me at (505) 632-4161.

Sincerely,

Cindy Hurtado

Cindy Hurtado
Environmental Coordinator – Giant Refining – Bloomfield

Cc: Randy Schmaltz – Environmental Manager – Giant Refining – Bloomfield
Hope Monzeglio – NMWD

SYSTEM START-UP SIX MONTH REPORT
OF THE
NORTH BOUNDARY BARRIER COLLECTION SYSTEM
PHASE II

MAY 2005 THROUGH OCTOBER 2005

SAN JUAN REFINING COMPANY
GIANT - BLOOMFIELD REFINERY

SYSTEM START-UP SIX MONTH REPORT
of the
NORTH BOUNDARY BARRIER COLLECTION SYSTEM
PHASE II

May 2005 through October 2005

Owner:	San Juan Refining Company 23733 North Scottsdale Road Scottsdale, Arizona 85255	(parent corporation)
Operator:	Giant Refining Company P.O. Box 159 Bloomfield, New Mexico 87413	(postal address)
	Giant Refining Company #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Name:	Bloomfield Refinery	
US EPA ID	NMD089416416	
SIC Code	2911	
Submittal Date:	January 5, 2006	

CONTENTS

Section 1.0 Executive Summary

Executive Summary

The North Boundary Barrier Wall Collection System was completed in early 2005. The primary purpose of the wall and collection system was to prevent the flow of hydrocarbon-impacted groundwater to the San Juan River. The wall and the collection wells were designed to accumulate fluids in the depressions or troughs of the Naciemento Formation.

Observation wells were installed adjacent to and 5 to 10 feet downgradient of the wall to allow monitoring of fluid levels. The spacing of the wells (~300 feet between Collection Wells) captures groundwater/SPH behind the barrier preventing fluid levels to build up behind the barrier.

Monitoring of fluids levels on both sides of the barrier wall consisted of measuring the Depth to Water and Depth to Product in accordance with the schedule provided by NMED through the first three months. In order to better determine if the barrier wall is preventing contaminated groundwater from migrating beyond the barrier wall, Giant continues to measure all Observation and Collection Wells on a twice per month basis instead of the once per month as specified by NMED.

Using a vacuum truck, separate phase hydrocarbon has been removed from the Collection Wells on a 3X per week basis since May. SPH was removed from the Observation Wells on a monthly basis until September. At that time, the schedule was modified to 3X per week.

At the request of NMED, initial groundwater samples from all Observation and Collection Wells that do not contain separate phase hydrocarbon were taken in May. A second round of sampling was completed in August. The collected data will establish a baseline to identify what contaminant concentrations are present. An unforeseen detection of mercury was reported in CW 0+60 August results. The well was re-sampled and results were <0.0002 mg/l.

Inspections of the draws north of the barrier wall indicate that the barrier wall is preventing migration of contaminated groundwater toward the San Juan River. Since installation of the barrier wall, all previous areas where seepage of fuel hydrocarbon impacted water was present have been reduced or eliminated. Monitoring results show groundwater levels have not risen significantly in the Collection Wells following fluids removal.

Section 2.0 Introduction

INTRODUCTION

Owner:	San Juan Refining Company 23733 North Scottsdale Road Scottsdale, Arizona 85255	(parent corporation)
Operator:	Giant Refining Company P.O. Box 159 Bloomfield, New Mexico 87413	(postal address)
	Giant Refining Company #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Name:	Bloomfield Refinery: #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Status	Corrective Action/Compliance	
US EPA ID	NMD089416416	
SIC Code	2911	
Purpose of Groundwater Monitoring:	To Evaluate the North Boundary Barrier and Collection System	
Type of Groundwater Monitoring:	Baseline and Annual	

BACKGROUND INFORMATION

SITE LOCATION AND DESCRIPTION

The Bloomfield Refinery is a crude oil refining facility with a crude capacity of 18,000 barrels per day. It is located approximately 1 mile south of Bloomfield, New Mexico, in San Juan County, latitude N36 41' 87", longitude W107 58' 70". It is further located approximately ½ mile east of State Route 550 on Count Road 4990 (a.k.a. Sullivan Road).

The refinery is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. The geological units that comprise the site include, in order of increasing depth, San Juan River Alluvium, Quaternary apron deposits, Aeolian sand and silt, Jackson Lake Terrace, and the Tertiary Nacimiento Formation. An unnamed arroyo flows toward the San Juan River on the southern and western edges of the site. East of the site, a well-defined arroyo cuts a small canyon from the bluff to the San Juan River. Hammond Ditch lies on the bluff between the limit of the Jackson Lake Terrace and the refinery.

Refinery offices are on the western end of the facility, along with warehouse space, maintenance areas, and a storage yard containing used material (e.g., pipes, valves). Petroleum processing units, located in the northwest portion of the refinery, include the crude unit, fluidized cracking unit, catalytic polymerization unit, and hydrodesulfurization unit. The API Separator is located in the northwestern portion of the site. The aeration lagoons are located in the north central section of the refinery.

In the central portion of the site, aboveground storage tanks (AST's) occupy a large percentage of refinery property. South of the refinery and across Sullivan Road are terminals for loading product and off-loading crude, as well as gas storage and hazardous waste storage.

The Refinery owner is San Juan Refining Company (SJRC) and is operated by Giant Refining Company. The historical and current activities conducted at the refinery are petroleum processing, crude and product storage, crude unloading and product loading, waste management (closed and existing facilities), and offices and non-petroleum material storage

HISTORY OF NORTH BOUNDARY BARRIER, COLLECTION SYSTEM, AND MONITORING PLAN

2002

A concrete liner was installed on the Hammond Ditch. At that time, Giant constructed the Hammond Ditch French Drain Recovery System to address contamination under the ditch.

2003

Converted several monitoring wells into recovery wells to further enhance the continuing ground water remediation efforts. Installed MW #45, #46 & #47 to replace unreliable seeps. Installed East Outfall #1 Recovery System to return impacted water back to the refinery.

2004

Initiated the development of a slurry wall that will be constructed on the north side of Hammond Ditch to prevent the spread of hydrocarbons to the San Juan River. Construction will begin in 2005.

2005

Barrier wall construction was completed in March. Collection and Observation Wells were installed in April.
Collection Wells consist of six-inch diameter PVC well casing and slotted screen The depth of each well was dependent on the depth to the top of Naciemento Formation of each well location. Observation Wells consist of two-inch diameter PVC well casing and slotted screen. The well depths are similar to the Collection Wells.
Baseline sampling occurred in May and Annual sampling was conducted in August.

Section 3.0 Scope of Activities

Scope of Activities

Installation of the North Boundary Barrier (barrier), the collection well system located behind the barrier, and the down gradient observation wells were completed by late April 2005 per OCD specifications. Beginning May 9,2005, fluids were measured in the collection and observation wells and in specified monitoring wells twice a week for seven weeks. From June, 28,2005 through August 11, 2005, fluids were measured on a weekly basis. A bi-weekly fluid measurement scheme was established on August 23, 2005. The Groundwater Elevation and Depth to Water tables are in Section 5.0.

RW #1, RW #9, RW #22, and RW #28 are active recovery wells and were not measured. MW #24 was designed for air sparging and does not accommodate monitoring.

Initial groundwater sample collection occurred during the week of May 9, 2005. Samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA Method 8021B, RCRA Metals using EPA Methods 6010C and 7470, and general chemistry using EPA Method 300. Field measurements of total dissolved solids (TDS), conductivity, temperature, dissolved oxygen, and pH were taken as well.

The second round of sampling took place during the week of August 15, 2005 following the same parameters as the initial event. CW 0+60 was re-sampled in October 2005 due to an unexpected detection of Mercury. A summary of the analytical results are in Section 6.0 with analytical reports in Section 13.0

Dissolved oxygen was determined using the Hach High Range Dissolved Oxygen AccuVac method. Organic compounds or salts present in our groundwater possibly caused enough interference to the skew the results. As a consequence of that interference, dissolved oxygen results are not included in the summary tables.

Field Data Collection

All water/product levels were measured to an accuracy of 0.01 foot using a Geotech Interface Meter. After determining water levels, well volumes were calculated.

At least three well volumes were purged from each well prior to sampling. Electrical conductance,total dissolved solids (TDS), pH, and temperature were monitored during purging using an Ultrameter 6P. The wells were considered satisfactorily purged when the pH, E.C., and temperature values did not vary by more than 10 percent for at least three measurements.

All purged water was collected in a fifty-five gallon drum and disposed of through the refinery wastewater system.

Section 4.0 Regulatory Criteria / Groundwater Cleanup Standards

TABLE OF NEW MEXICO AND THE U. S. EPA'S GROUNDWATER STANDARDS

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
General Properties				
non-aqueous phase liquid (NAPL)	NP			
petroleum				
floating product	NP			
undesirable odor (a)	NP			
pH (units) (a)	6 - 9	6.5 - 8.5		
total dissolved solids (TDS) (a)	1000	500		
turbidity		tt		
Biological Contaminants				
giardia lambia	tt	Zero		
legionella	tt	Zero		
total coliform	<5%+	Zero		
viruses	tt	Zero		
Inorganic Contaminants				
aluminum	5.0 (i)	0.05 - 0.2 (a)		
ammonia				30
antimony		0.006	0.006	
arsenic	0.1	0.05	0.05	
asbestos-fibers/liter (longer than 10 um)		7 million	7 million	
barium	1.0	2	2	
beryllium		0.004	0.004	
boron	0.75 (i)			0.06
bromate		0.01 (p)	Zero (p)	
cadmium	0.01	0.005	0.005	
chlorate				0.01

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
chloride (a)	250	250		0.01
chlorine				1
chlorine dioxide				0.08
chlorite		1.0 (p)	0.08 (p)	
chromium	0.05	0.1	0.1	
cobalt (i)	0.05			
copper		1.3 (al)	1.3	
cyanide	0.2	0.2	0.2	
fluoride	1.6	4.0		
fluoride (a)		2		
iron (a)	1.0	0.3		
lead	0.05	0.015 (al)	Zero	
manganese (a)	0.2	0.05		
mercury	0.002	0.002	0.002	
molybdenum	1.0 (i)			0.05
nickel	0.2 (i)	0.1	0.1	
nitrate - N	10	10	10	
nitrite - N		1	1	
nitrate + nitrite (as N)		10	10	
selenium	0.05	0.05	0.05	
silver	0.05	0.05	0.05	
silver (a)		0.1		
sodium				20
strontium				17
sulfate	600 (a)	250 (a) / 400 (p)	400	
thallium		0.002	0.0005	
vanadium				0.02
zinc (a)	10.0	5		
Radioactive Contaminants				
Gross alpha (pCi/L) *		15	Zero	
Gross beta & photon emitters (mrem/yr) **		4	Zero	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
radium 226 (pCi/L)		20 (p)	Zero	
radium 228 (pCi/L)		20 (p)	Zero	
radium 226 + 228 (pCi/L)	30	5	Zero	
radon 222 (pCi/L)		300 (p)	Zero	
uranium	5	0.02 (p)	Zero	
Benzenes				
benzene	0.01	0.005	Zero	
Alkyl Benzenes				
methylbenzene (toluene)	0.75	1 (p) / 0.04 (a)	1	
ethylbenzene	0.75	0.7 (p) / 0.03 (a)	0.7	
dimethyl benzene isomers (xylenes)	0.62	10 (p) / 0.02 (a)	10	
vinylbenzene (styrene)		0.1	0.1	
trimethyl benzene isomers				
propyl benzene isomers				
butyl benzene isomers				
Chlorinated Benzenes				
chlorobenzene	tox	0.1	0.1	
o-dichlorobenzene	tox	0.6	0.6	
m-dichlorobenzene	tox			
p-dichlorobenzene	tox	0.075 (p) / 0.005 (a)	0.075	
1,2,4-trichlorobenzene		0.07	0.07	
1,3,5-trichlorobenzene				0.04
1,2,4,5-tetrachlorobenzene	tox			
pentachlorobenzene	tox			
hexachlorobenzene	tox	0.001	Zero	
Toluenes				
o-chlorotoluene				0.1
p-chlorotoluene				0.1
2,4-dinitrotoluene (2,4-DNT)	tox			

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
2,4,6-trinitrotoluene (TNT)				0.002
isopropyltoluene				
Nitrogenated Benzenes				
aminobenzene (aniline)				
nitrobenzene	tox			
1,3-dinitrobenzene				0.001
Phenols (hydroxybenzenes)	0.005 (a)			
phenol (carbolic acid)	tox			4
2-chlorophenol				0.04
2,4-dichlorophenol	tox			0.02
2,4-dinitro-o-creosol	tox			
2,4-dimethylphenol				
2-methylphenol				
4-methylphenol				
2-nitrophenol				
dinitrophenols	tox			
2,4,5-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			
pentachlorophenol	tox	0.001 (p) / 0.03 (a)	Zero	
p-cresol				
Polycyclics				
acenapthene				
anthracene	tox			
benz(a)anthracene		0.0001 (p)	Zero	
benzo(a)pyrene	0.0007	0.0002	Zero	
benzo(b)fluoranthene		0.0002 (p)	Zero	
benzo(k)fluoranthene	tox	0.0002 (p)	Zero	
chrysene		0.0002 (p)	Zero	
dibenz(a)anthracene		0.0003 (p)	Zero	
diphenylhydrazine	tox			

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
fluoranthene	tox			
fluorene	tox			
indeno(1,2,3-c,d)pyrene		0.0004 (p)	Zero	
naphthalene	tox			0.3
naphthalenes ****	0.03			
phenanthrene	tox			
polychlorinated biphenyls (PCBs)	0.001			
PCBs as decachlorobiphenyl		0.0005	Zero	
pyrene	tox			
Methanes				
chloromethane (methyl chloride)	tox			0.003
dichloromethane (methylene chloride)	0.1	0.005	Zero	
trichloromethane (chloroform)	0.1		Zero (p)	
tetrachloromethane (carbon tetrachloride)	0.01	0.005	Zero	
bromomethane (methyl bromide)	tox			0.01
bromochloromethane				0.09
bromodichloromethane	tox		Zero (p)	
chlorodibromomethane			Zero (p)	0.1
tribromomethane (bromoform)	tox		Zero (p)	
trihalomethanes (THMs) ***		0.1/0.08 (p)	Zero	
fluorotrichloromethane (Freon 11)	tox			2
dichlorodifluoromethane (Freon 12)	tox			1
Ethanes				
1,2-dibromoethane (ethylene dibromide, EDB)	0.0001	0.00005	Zero	
1,1-dichloroethane	0.025			
1,2-dichloroethane (ethylene dichloride, EDC)	0.01	0.005	Zero	
1,1,1-trichloroethane (TCA)	0.06	0.2	0.2	
1,1,2-trichloroethane	0.01	0.005	0.003	
1,1,1,2-tetrachloroethane				0.07

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
1,1,2,2-tetrachloroethane	0.01			
hexachloroethane	tox			
Ethenes (Ethylenes)				
chloroethane (vinyl chloride)	0.001	0.002	Zero	
1,1-dichloroethene	0.005	0.007	0.007	
cis-1,2-dichloroethene	tox	0.07	0.07	
trans-1,2-dichloroethene	tox	0.1	0.1	
trichloroethene (TCE)	0.1	0.005	Zero	
tetrachloroethene (perchloroethylene, PCE)	0.02	0.005	Zero	
Propanes & Propenes				
1,2-dichloropropane (propylene dichloride, PDC)		0.005	Zero	
1,2,3-trichloropropane				0.04
1,2-dibromo-3-chloropropane (DBCP)		0.0002	Zero	
dichloropropenes	tox			
1.3-dichloropropene	tox			0.01
Aldehydes, Ethers, Furans, & Ketones				
acetone				
bis (2-chloroethyl) ether	tox			
bis (2-chloroisopropyl) ether	tox			0.3
bis (chloromethyl) ether	tox			
dibenzofuran				
p-dioxane (diethylene dioxide)				0.568
formaldehyde (methanal)				1
isophorone	tox			0.1
methyl ethyl ketone (MEK, 2-butanone)				0.1
methyl tertiary butyl ether (MTBE)	0.1 (a)			0.04
tetrahydrofuran				

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
Nitrosamines				
N-nitrosodiethylamine	tox			
N-nitrosodimethylamine (NDMA)	tox			
N-nitrosodibutylamine	tox			
N-nitrosodiphenylamine	tox			
N-nitrosopyrrolidine	tox			
Phthalate Esters				
dibutyl phthalate	tox			
di-2-ethylhexyl phthalate	tox	0.006	Zero	
diethyl phthalate	tox			
dimethyl phthlate	tox			
Explosives				
dinitrophenols	tox			
2,4-dinitrotoluene (2,4-DNT)	tox			
hexahydro-1,3,5-trinitro-s-triazine (RDX)				0.002
HMX				0.4
nitroglycerin (glycerol trinitrate)				0.005
nitroguanidine				0.7
2,4,6-trinitrotoluene (TNT)				0.002
Other Organics				
acrolein	tox			
acrylamide		tt	Zero	
acrylonitrile	tox			0.004
benzidine	tox			
chloral hydrate		tt (p)	0.04 (p)	
chloramine				0.3

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
dibromoacetonitrile				0.02
dichloroacetic acid				0.003
dichloroacetonitrile				0.006
dichlorobenzidine	tox			
di(2-ethylhexyl)adipate		0.4	0.4	
diisopropyl methylphosphonate				0.6
epichlorohydrin (1-chlor-2,3-epoxypropane)		tt	Zero	
ethylene glycol (1,2-ethanediol)				7
Haloacetic Acids ****		0.06 (p)		
dichloroacetic acid			Zero (p)	
trichloroacetic acid			0.3 (p)	
hexachlorobutadiene	tox			0.001
hexachlorocyclopentadiene	tox	0.05 (p) / 0.008 (a)	0.05	
n-hexane				4.0
Other Pesticides				
acifluorfen				0.1
alachlor		0.002	Zero	
aldicarb		0.003 (p)	0.001	
aldicarb sulfone		0.002 (p)	0.001	
aldicarb sulfoxide		0.004 (p)	0.001	
aldrin	tox			0.001
ametryn				0.06
ammonium sulfamate				2
arsenal (imazapyr)				
atrazine		0.003	0.003	
baygon				0.003
bentazon				0.02
bromacil				0.09
butylate				0.35
carbaryl				0.7
carbofuran		0.04	0.04	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
carboxin				0.7
chloramben				0.1
chlordane	tox	0.002	Zero	
chlorothalonil				0.5
chlorpyrifos				0.02
cyanazine				0.01
2,4-D (2,4-dichlorophenoxyacetic acid)		0.07	0.07	
dacthal				4
dalapon		0.2	0.2	
DDT (dichloro diphenyl trichloroethane)	tox			
4,4'-DDD				
4,4'-DDE				
diazinon				0.0006
dicamba				0.2
dieldrin	tox			0.002
dimethrin				2
dinoseb		0.007	0.007	
dioxin		0.00000005	Zero	
diphenamid				0.2
diquat		0.02	0.02	
disulfoton				0.0003
diuron				0.01
endosulfan	tox			
endothall		0.1	0.1	
endrin	tox	0.002	0.002	
ethylene thiourea				0.001
fenamiphos				0.002
fluometuron				0.09
fonofos				0.01
glyphosate		0.7	0.7	
heptachlor	tox	0.0004	Zero	
heptachlor epoxide		0.0002	Zero	
hexazinone				0.2
lindane (gamma-BHC)	tox	0.0002	0.0002	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
alpha-BHC	tox			
beta-BHC	tox			
delta-BHC				
malathion				0.2
maleic hydrazide				4
methomyl				0.2
methoxychlor		0.04	0.04	
methyl chlorophenoxyacetic acid (MCPA)				0.011
methyl parathion				0.002
metolachlor				0.1
metribuzin				0.2
oxamyl (vydate)		0.2	0.2	
paraquat				0.03
picloram		0.5	0.5	
prometon				0.1
pronamide				0.05
propachlor				0.09
propazine				0.01
propham				0.1
simazine		0.004	0.004	
2,4,5-T (2,4,5-trichlorophenoxyacetic acid)				0.07
tebuthiuron				0.5
terbacil				0.09
terbufos				0.0009
toxaphene	tox	0.003	Zero	
2,4,5-TP (silvex)		0.05	0.05	
trifluralin				0.005

Abbreviations

al Action Level that, if exceeded, requires water treatment
BHC benzene hexachloride, also called hexachlorocyclohexane
DDD 1,1'-(2,2-dichloroethylidene) -bis/4-chlorobenzene

DDE 1,1'-(2,2-dichloroetheneylidene)-bis/4-chlorobenzene
HA Health Advisory
HMX octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
MCL Maximum Contaminant Level
MCLG Maximum Contaminant Level Goal
mg/L milligrams per liter
mrem/yr millirem per year
mrem ede/yr dose committed over a 50-year period to a "reference man" from an annual intake rate of 2 liters drinking water per day
MTBE methyl tertiary butyl ether, a synonym for 2-methoxy-2-methyl propane (the standard includes other ether-based gasoline additives)
NP the contaminant shall Not be Present
pCi/L picocuries per liter
tox a numerical standard has not been established, but the contaminant is listed in a narrative standard of "toxic pollutant" defined in WQCC regulations
2,4,5-TP 2,4,5-trichlorophenoxpropionic acid
tt Treatment Technique that public water system operators must adhere to instead of a numerical standard
um micrometer
U.S. EPA Uniter States Environmental Protection Agency
WQCC New Mexico Water Quality Control Commission

Footnotes

* The proposed standard excludes radon 222, radium 226 and uranium activity
** This standard excludes radium 228 activity. Units for the existing standard are mrem/yr. U.S. EPA has proposed to change the units to mrem ede/yr.
*** The "THMs" standard applies to the sum of chloroform, dichlorobromomethane, dibromochloromethane, and bromoform.
**** This standard applies to the sum of naphthalene and monomethylnaphthalene isomers.
***** This standard applies to the sum of mono-, di-, and trichloroacetic acids, and mono- and dibromoacetic acids.

Use and Applicability of Standards

All New Mexico standards are adopted by the WQCC except for the MTBE and petroleum (floating product and undesirable odor) standards, which are adopted by the New Mexico Environmental Improvement Board.

U.S. EPA's MCLGs are set at levels that would result in no known or anticipated adverse health effects with an adequate margin of safety. MCLGs do not take treatment costs into considerartion and are not enforceable. Health-based proposed MCLs and final enforceable MCLs are set as close to MCLGs as feasible with use of best technology, treatment techniques and other means.

U.S. EPA's HAs serve as informal technical guidance to assist Federal, State and Local officials responsible for protecting public health when emergency spills or contamination situations occur. They are not to be construed as legally enforceable Federal standards and are subject to change as new information becomes available. All HAs listed are for lifetime exposures except for p-dioxane (10 day) and n-hexane (7 year).

Section 5.0

Section 5.0 Groundwater Elevation Measurements

Groundwater Elevation Information

RW #1, RW #9, RW #22, RW #23, and RW#28 are active recovery wells and were not measured. MW #24 was designed for air sparging activities and does not accommodate monitoring.

Well vaults, pads, and barriers were completed the week of September 29th. Measuring point changes are reflected in the October tables.

The following equations were used to calculate "Corrected Groundwater Elevation":

(1) Separate Phase Hydrocarbon not detected=
MPE– DTW

(2) Separate Phase Hydrocarbon detected=
MPE – DTW+ (DTW – DTP X 0.8)

MPE = Measuring Point Elevation
DTW = Depth to Water
DTP = Dept to Product

Observation Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	5/9/2005	5508.69	14.98	13.61	14.03	5495.00
	5/12/2005	5508.69	14.98	13.63	14.09	5494.97
	5/17/2005	5508.69	14.98	13.26	14.31	5495.22
	5/19/2005	5508.69	14.98	13.69	14.16	5494.91
	5/24/2005	5508.69	14.98	13.72	14.22	5494.87
	5/26/2005	5508.69	14.98	13.74	14.28	5494.84
	5/31/2005	5508.69	14.98	13.75	14.44	5494.80
OW 1+50	5/9/2005	5505.22	14.98	13.19	13.21	5492.03
	5/12/2005	5505.22	14.98	13.22	14.29	5491.79
	5/17/2005	5505.22	14.98	13.65	14.13	5491.47
	5/19/2005	5505.22	14.98	13.28	14.25	5491.75
	5/24/2005	5505.22	14.98	13.33	14.35	5491.69
	5/26/2005	5505.22	14.98	13.36	14.38	5491.66
	5/31/2005	5505.22	14.98	13.41	14.42	5491.61
OW 3+85	5/9/2005	5506.17	15.06	11.95	13.10	5493.99
	5/12/2005	5506.17	15.06	11.95	13.10	5493.99
	5/17/2005	5506.17	15.06	12.02	13.14	5493.93
	5/19/2005	5506.17	15.06	12.03	13.18	5493.91
	5/24/2005	5506.17	15.06	12.07	13.22	5493.87
	5/26/2005	5506.17	15.06	12.10	13.24	5493.84
	5/31/2005	5506.17	15.06	12.13	13.31	5493.80

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 5+50	5/9/2005	5506.94	14.09	NPM	NWM	
	5/12/2005	5506.94	14.09	13.88	NWM	
	5/17/2005	5506.94	14.09	12.02	13.16	5494.69
	5/19/2005	5506.94	14.09	13.40	NWM	
	5/24/2005	5506.94	14.09	13.27	NWM	
	5/26/2005	5506.94	14.09	13.24	NWM	
	5/31/2005	5506.94	14.09	13.22	NWM	
OW 6+70	5/9/2005	5501.32	14.67	NPM	NWM	
	5/12/2005	5501.32	14.67	NPM	NWM	
	5/17/2005	5501.32	14.67	NPM	NWM	
	5/19/2005	5501.32	14.67	NPM	NWM	
	5/24/2005	5501.32	14.67	NPM	NWM	
	5/26/2005	5501.32	14.67	NPM	NWM	
	5/31/2005	5501.32	14.67	NPM	NWM	
OW 8+10	5/9/2005	5503.10	17.99	NPM	NWM	
	5/12/2005	5503.10	17.99	NPM	NWM	
	5/17/2005	5503.10	17.99	NPM	NWM	
	5/19/2005	5503.10	17.99	NPM	NWM	
	5/24/2005	5503.10	17.99	NPM	NWM	
	5/26/2005	5503.10	17.99	NPM	NWM	
	5/31/2005	5503.10	17.99	NPM	NWM	

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 11+15	5/9/2005	5505.43	16.67	NPM	11.45	5493.98
	5/12/2005	5505.43	16.67	NPM	11.5	5493.93
	5/17/2005	5505.43	16.67	NPM	11.49	5493.94
	5/19/2005	5505.43	16.67	NPM	11.52	5493.91
	5/24/2005	5505.43	16.67	NPM	11.54	5493.89
	5/26/2005	5505.43	16.67	NPM	11.55	5493.88
	5/31/2005	5505.43	16.67	NPM	11.56	5493.87
OW 14+10	5/9/2005	5506.95	13.03	NPM	12.25	5494.70
	5/12/2005	5506.95	13.03	NPM	12.30	5494.65
	5/17/2005	5506.95	13.03	NPM	12.30	5494.65
	5/19/2005	5506.95	13.03	NPM	12.32	5494.63
	5/24/2005	5506.95	13.03	NPM	12.33	5494.62
	5/26/2005	5506.95	13.03	NPM	12.30	5494.65
	5/31/2005	5506.95	13.03	12.36	12.37	5494.59
OW 16+60	5/9/2005	5507.03	15.21	11.92	12.78	5494.94
	5/12/2005	5507.03	15.21	11.90	12.78	5494.95
	5/17/2005	5507.03	15.21	12.02	12.79	5494.86
	5/19/2005	5507.03	15.21	12.02	12.83	5494.85
	5/24/2005	5507.03	15.21	12.06	12.78	5494.83
	5/26/2005	5507.03	15.21	12.03	12.79	5494.85
	5/31/2005	5507.03	15.21	12.11	12.74	5494.79

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 19+50	5/9/2005	5506.91	13.07	NPM	11.27	5495.64
	5/12/2005	5506.91	13.07	NPM	11.93	5494.98
	5/17/2005	5506.91	13.07	NPM	12.64	5494.27
	5/19/2005	5506.91	13.07	NPM	12.38	5494.53
	5/24/2005	5506.91	13.07	NPM	12.03	5494.88
	5/26/2005	5506.91	13.07	NPM	11.94	5494.97
	5/31/2005	5506.91	13.07	NPM	11.8	5495.11
OW 22+00	5/9/2005	5506.47	14.31	NPM	10.62	5495.85
	5/12/2005	5506.47	14.31	NPM	10.67	5495.80
	5/17/2005	5506.47	14.31	NPM	10.73	5495.74
	5/19/2005	5506.47	14.31	NPM	10.72	5495.75
	5/24/2005	5506.47	14.31	NPM	10.73	5495.74
	5/26/2005	5506.47	14.31	NPM	10.75	5495.72
	5/31/2005	5506.47	14.31	NPM	10.77	5495.70
OW 23+10	5/9/2005	5510.51	15.79	NPM	13.58	5496.93
	5/12/2005	5510.51	15.79	NPM	13.58	5496.93
	5/17/2005	5510.51	15.79	NPM	13.63	5496.88
	5/19/2005	5510.51	15.79	NPM	13.62	5496.89
	5/24/2005	5510.51	15.79	NPM	13.62	5496.89
	5/26/2005	5510.51	15.79	NPM	13.61	5496.90
	5/31/2005	5510.51	15.79	NPM	13.61	5496.90

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 23+90	5/9/2005	5511.15	15.07	NPM	13.96	5497.19
	5/12/2005	5511.15	15.07	NPM	13.96	5497.19
	5/17/2005	5511.15	15.07	NPM	11.49	5499.66
	5/19/2005	5511.15	15.07	NPM	13.99	5497.16
	5/24/2005	5511.15	15.07	NPM	13.99	5497.16
	5/26/2005	5511.15	15.07	NPM	13.99	5497.16
	5/31/2005	5511.15	15.07	NPM	13.98	5497.17
OW 25+70	5/9/2005	5507.59	14.01	NPM	10.69	5496.90
	5/12/2005	5507.59	14.01	NPM	10.69	5496.90
	5/17/2005	5507.59	14.01	NPM	10.71	5496.88
	5/19/2005	5507.59	14.01	NPM	10.72	5496.87
	5/24/2005	5507.59	14.01	NPM	10.72	5496.87
	5/26/2005	5507.59	14.01	NPM	10.72	5496.87
	5/31/2005	5507.59	14.01	NPM	10.72	5496.87

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	5/9/2005	5506.90	14.93	NPM	8.68	5498.22
	5/12/2005	5506.90	14.93	NPM	8.74	5498.16
	5/17/2005	5506.90	14.93	NPM	8.76	5498.14
	5/19/2005	5506.90	14.93	NPM	8.79	5498.11
	5/24/2005	5506.90	14.93	NPM	8.80	5498.10
	5/26/2005	5506.90	14.93	NPM	8.82	5498.08
	5/31/2005	5506.90	14.93	NPM	8.82	5498.08
CW 1+50	5/9/2005	5504.46	13.84	NPM	6.71	5497.75
	5/12/2005	5504.46	13.84	NPM	6.76	5497.70
	5/17/2005	5504.46	13.84	NPM	6.80	5497.66
	5/19/2005	5504.46	13.84	NPM	6.82	5497.64
	5/24/2005	5504.46	13.84	NPM	6.82	5497.64
	5/26/2005	5504.46	13.84	NPM	6.83	5497.63
	5/31/2005	5504.46	13.84	NPM	6.85	5497.61
CW 3+85	5/9/2005	5505.05	15.21	0.00	7.41	5503.57
	5/12/2005	5505.05	15.21	0.00	7.51	5503.55
	5/17/2005	5505.05	15.21	0.00	7.48	5503.55
	5/19/2005	5505.05	15.21	0.00	7.52	5503.55
	5/24/2005	5505.05	15.21	0.00	7.56	5503.54
	5/26/2005	5505.05	15.21	0.00	7.52	5503.55
	5/31/2005	5505.05	15.21	0.00	7.52	5503.55

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Collection Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 5+50	5/9/2005	5504.11	13.45	NPM	7.37	5496.74
	5/12/2005	5504.11	13.45	NPM	7.4	5496.71
	5/17/2005	5504.11	13.45	NPM	7.37	5496.74
	5/19/2005	5504.11	13.45	NPM	7.4	5496.71
	5/24/2005	5504.11	13.45	NPM	7.38	5496.73
	5/26/2005	5504.11	13.45	NPM	7.38	5496.73
	5/31/2005	5504.11	13.45	NPM	7.38	5496.73
CW 6+70	5/9/2005	5504.31	12.70	NPM	7.80	5496.51
	5/12/2005	5504.31	12.70	NPM	7.91	5496.40
	5/17/2005	5504.31	12.70	NPM	7.86	5496.45
	5/19/2005	5504.31	12.70	NPM	7.90	5496.41
	5/24/2005	5504.31	12.70	NPM	7.88	5496.43
	5/26/2005	5504.31	12.70	NPM	7.89	5496.42
	5/31/2005	5504.31	12.70	NPM	7.85	5496.46
CW 8+10	5/9/2005	5503.52	12.02	NPM	7.78	5495.74
	5/12/2005	5503.52	12.02	NPM	7.85	5495.67
	5/17/2005	5503.52	12.02	NPM	7.80	5495.72
	5/19/2005	5503.52	12.02	NPM	7.88	5495.64
	5/24/2005	5503.52	12.02	NPM	7.84	5495.68
	5/26/2005	5503.52	12.02	NPM	7.86	5495.66
	5/31/2005	5503.52	12.02	NPM	7.85	5495.67

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 8+45	5/9/2005	5505.44	14.95	9.32	9.78	5496.03
	5/12/2005	5505.44	14.95	9.44	9.64	5495.96
	5/17/2005	5505.44	14.95	9.35	9.77	5496.01
	5/19/2005	5505.44	14.95	9.46	9.74	5495.92
	5/24/2005	5505.44	14.95	9.42	9.6	5495.98
	5/26/2005	5505.44	14.95	9.37	9.7	5496.00
	5/31/2005	5505.44	14.95	9.38	9.86	5495.96
CW 11+15	5/9/2005	5505.08	13.88	7.27	7.39	5497.79
	5/12/2005	5505.08	13.88	7.35	7.39	5497.72
	5/17/2005	5505.08	13.88	7.34	7.41	5497.73
	5/19/2005	5505.08	13.88	7.40	7.50	5497.66
	5/24/2005	5505.08	13.88	7.37	7.47	5497.69
	5/26/2005	5505.08	13.88	7.32	7.42	5497.74
	5/31/2005	5505.08	13.88	7.37	7.47	5497.69
CW 14+10	5/9/2005	5504.57	14.09	NPM	7.43	5497.14
	5/12/2005	5504.57	14.09	NPM	7.52	5497.05
	5/17/2005	5504.57	14.09	NPM	7.45	5497.12
	5/19/2005	5504.57	14.09	NPM	7.56	5497.01
	5/24/2005	5504.57	14.09	NPM	7.54	5497.03
	5/26/2005	5504.57	14.09	NPM	7.52	5497.05
	5/31/2005	5504.57	14.09	NPM	7.52	5497.05

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Collection Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 16+60	5/9/2005	5505.65	14.87	NPM	8.34	5497.31
	5/12/2005	5505.65	14.87	NPM	8.39	5497.26
	5/17/2005	5505.65	14.87	NPM	8.35	5497.30
	5/19/2005	5505.65	14.87	NPM	8.38	5497.27
	5/24/2005	5505.65	14.87	NPM	8.38	5497.27
	5/26/2005	5505.65	14.87	NPM	8.39	5497.26
	5/31/2005	5505.65	14.87	NPM	8.4	5497.25
CW 19+50	5/9/2005	5505.70	12.07	NPM	8.58	5497.12
	5/12/2005	5505.70	12.07	NPM	8.61	5497.09
	5/17/2005	5505.70	12.07	NPM	8.57	5497.13
	5/19/2005	5505.70	12.07	NPM	8.66	5497.04
	5/24/2005	5505.70	12.07	NPM	8.62	5497.08
	5/26/2005	5505.70	12.07	NPM	8.63	5497.07
	5/31/2005	5505.70	12.07	NPM	8.61	5497.09
CW 22+00	5/9/2005	5509.04	14.10	NPM	10.97	5498.07
	5/12/2005	5509.04	14.10	NPM	10.98	5498.06
	5/17/2005	5509.04	14.10	NPM	10.98	5498.06
	5/19/2005	5509.04	14.10	NPM	11.00	5498.04
	5/24/2005	5509.04	14.10	NPM	11.00	5498.04
	5/26/2005	5509.04	14.10	NPM	11.00	5498.04
	5/31/2005	5509.04	14.10	NPM	10.77	5498.27

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 23+10	5/9/2005	5510.06	15.5	NPM	11.53	5498.53
	5/12/2005	5510.06	15.5	NPM	11.53	5498.53
	5/17/2005	5510.06	15.5	NPM	11.53	5498.53
	5/19/2005	5510.06	15.5	NPM	11.56	5498.50
	5/24/2005	5510.06	15.5	NPM	11.54	5498.52
	5/26/2005	5510.06	15.5	NPM	11.55	5498.51
	5/31/2005	5510.06	15.5	NPM	11.55	5498.51
CW 23+90	5/9/2005	5507.46	12.66	NPM	9.27	5498.19
	5/12/2005	5507.46	12.66	NPM	9.27	5498.19
	5/17/2005	5507.46	12.66	NPM	9.28	5498.18
	5/19/2005	5507.46	12.66	NPM	9.29	5498.17
	5/24/2005	5507.46	12.66	NPM	9.28	5498.18
	5/26/2005	5507.46	12.66	NPM	9.28	5498.18
	5/31/2005	5507.46	12.66	NPM	9.27	5498.19
CW 25+95	5/9/2005	5506.81	14.07	NPM	9.02	5497.79
	5/12/2005	5506.81	14.07	NPM	9.02	5497.79
	5/17/2005	5506.81	14.07	NPM	9.02	5497.79
	5/19/2005	5506.81	14.07	NPM	9.02	5497.79
	5/24/2005	5506.81	14.07	NPM	9.01	5497.80
	5/26/2005	5506.81	14.07	NPM	9.02	5497.79
	5/31/2005	5506.81	14.07	NPM	9.01	5497.80

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	5/9/2005	5506.82	22.94	NPM	11.3	5495.52
	5/12/2005	5506.82	22.94	NPM	11.32	5495.50
	5/17/2005	5506.82	22.94	NPM	11.35	5495.47
	5/19/2005	5506.82	22.94	NPM	11.37	5495.45
	5/24/2005	5506.82	22.94	NPM	11.43	5495.39
	5/26/2005	5506.82	22.94	NPM	11.40	5495.42
	5/31/2005	5506.82	22.94	NPM	11.50	5495.32
MW #12	5/9/2005	5498.95	14.98	NPM	10.43	5488.52
	5/12/2005	5498.95	14.98	NPM	10.45	5488.50
	5/17/2005	5498.95	14.98	NPM	10.51	5488.44
	5/19/2005	5498.95	14.98	NPM	10.57	5488.38
	5/24/2005	5498.95	14.98	NPM	10.68	5488.27
	5/26/2005	5498.95	14.98	NPM	10.63	5488.32
	5/31/2005	5498.95	14.98	NPM	10.85	5488.10
MW #20	5/9/2005	5516.28	27.13	20.91	21.18	5495.32
	5/12/2005	5516.28	27.13	20.92	21.20	5495.30
	5/17/2005	5516.28	27.13	20.89	21.18	5495.33
	5/19/2005	5516.28	27.13	20.93	21.20	5495.30
	5/24/2005	5516.28	27.13	20.91	21.19	5495.31
	5/26/2005	5516.28	27.13	20.91	21.20	5495.31
	5/31/2005	5516.28	27.13	20.90	21.18	5495.32

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #21	5/9/2005	5519.72	30.38	21.98	21.99	5497.74
	5/12/2005	5519.72	30.38	21.97	21.98	5497.75
	5/17/2005	5519.72	30.38	21.96	21.97	5497.76
	5/19/2005	5519.72	30.38	21.97	21.98	5497.75
	5/24/2005	5519.72	30.38	21.97	21.98	5497.75
	5/26/2005	5519.72	30.38	21.96	21.97	5497.76
	5/31/2005	5519.72	30.38	21.97	21.98	5497.75
MW #39	5/9/2005	5517.96	38.34	NPM	29.46	5488.50
	5/12/2005	5517.96	38.34	NPM	29.18	5488.78
	5/17/2005	5517.96	38.34	NPM	28.72	5489.24
	5/19/2005	5517.96	38.34	NPM	28.58	5489.38
	5/24/2005	5517.96	38.34	NPM	28.35	5489.61
	5/26/2005	5517.96	38.34	NPM	28.51	5489.45
	5/31/2005	5517.96	38.34	NPM	28.34	5489.62
MW #45	5/9/2005	5498.43	16.92	11.64	11.98	5486.72
	5/12/2005	5496.33	16.92	11.07	11.43	5485.19
	5/17/2005	5496.33	16.92	11.03	11.41	5485.22
	5/19/2005	5496.33	16.92	11.15	11.59	5485.09
	5/24/2005	5496.33	16.92	11.12	11.58	5485.12
	5/26/2005	5496.33	16.92	11.11	11.57	5485.13
	5/31/2005	5496.33	16.92	11.11	11.56	5485.13

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring May 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #46	5/9/2005	5498.22	10.39	NPM	10.28	5487.94
	5/12/2005	5498.22	10.39	NPM	10.28	5487.94
	5/17/2005	5498.22	10.39	NPM	10.27	5487.95
	5/19/2005	5498.22	10.39	NPM	10.26	5487.96
	5/24/2005	5498.22	10.39	NPM	10.28	5487.94
	5/26/2005	5498.22	10.39	NPM	10.28	5487.94
	5/31/2005	5498.22	10.39	NPM	10.27	5487.95
MW #47	5/9/2005	5499.07	14.28	11.60	12.58	5487.27
	5/12/2005	5499.07	14.28	11.71	12.71	5487.16
	5/17/2005	5499.07	14.28	11.72	12.84	5487.13
	5/19/2005	5499.07	14.28	11.74	12.81	5487.12
	5/24/2005	5499.07	14.28	11.74	12.86	5487.11
	5/26/2005	5499.07	14.28	11.73	12.84	5487.12
	5/31/2005	5499.07	14.28	11.72	12.83	5487.13

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	6/2/2005	5508.69	14.98	13.77	14.46	5494.78
	6/7/2005	5508.69	14.98	13.75	14.43	5494.80
	6/9/2005	5508.69	14.98	13.78	14.45	5494.78
	6/14/2005	5508.69	14.98	13.93	14.49	5494.65
	6/16/2005	5508.69	14.98	13.91	14.49	5494.66
	6/21/2005	5508.69	14.98	13.93	14.48	5494.65
	6/23/2005	5508.69	14.98	13.90	14.48	5494.67
	6/28/2005	5508.69	14.98	13.92	14.49	5494.66
OW 1+50	6/2/2005	5505.22	14.98	13.43	14.43	5491.59
	6/7/2005	5505.22	14.98	13.37	14.41	5491.64
	6/9/2005	5505.22	14.98	13.44	14.44	5491.58
	6/14/2005	5505.22	14.98	13.60	14.56	5491.43
	6/16/2005	5505.22	14.56	13.56	14.51	5491.47
	6/21/2005	5505.22	14.98	13.57	14.50	5491.46
	6/23/2005	5505.22	14.98	13.57	14.49	5491.47
	6/28/2005	5505.22	14.98	13.58	14.51	5491.45
OW 3+85	6/2/2005	5506.17	15.06	12.16	13.32	5493.78
	6/7/2005	5506.17	15.06	12.17	13.33	5493.77
	6/9/2005	5506.17	15.06	12.18	13.34	5493.76
	6/14/2005	5506.17	15.06	12.24	13.43	5493.69
	6/16/2005	5506.17	15.06	12.25	13.43	5493.68
	6/21/2005	5506.17	15.06	12.25	13.42	5493.69
	6/23/2005	5506.17	15.06	12.32	13.52	5493.61
	6/28/2005	5506.17	15.06	12.31	13.53	5493.62

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 5+50	6/2/2005	5506.94	14.09	13.22	NWM	
	6/7/2005	5506.94	14.09	13.21	NWM	
	6/9/2005	5506.94	14.09	13.22	NWM	
	6/14/2005	5506.94	14.09	13.28	NWM	
	6/16/2005	5506.94	14.09	13.29	NWM	
	6/21/2005	5506.94	14.09	13.30	NWM	
	6/23/2005	5506.94	14.09	13.31	NWM	
	6/28/2005	5506.94	14.09	13.32	NWM	
OW 6+70	6/2/2005	5503.79	14.67	NPM	NWM	
	6/7/2005	5503.79	14.67	NPM	NWM	
	6/9/2005	5503.79	14.67	NPM	NWM	
	6/14/2005	5503.79	14.67	NPM	NWM	
	6/16/2005	5503.79	14.67	NPM	NWM	
	6/21/2005	5503.79	14.67	NPM	NWM	
	6/23/2005	5503.79	14.67	NPM	NWM	
	6/28/2005	5503.79	14.67	NPM	NWM	
OW 8+10	6/2/2005	5507.26	17.99	NPM	NWM	
	6/7/2005	5507.26	17.99	NPM	NWM	
	6/9/2005	5507.26	17.99	NPM	NWM	
	6/14/2005	5507.26	17.99	NPM	NWM	
	6/16/2005	5507.26	17.99	NPM	NWM	
	6/21/2005	5507.26	17.99	NPM	NWM	
	6/23/2005	5507.26	17.99	NPM	NWM	
	6/28/2005	5507.26	17.99	NPM	NWM	

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 11+15	6/2/2005	5505.43	16.67	NPM	11.55	5493.88
	6/7/2005	5505.43	16.67	NPM	11.57	5493.86
	6/9/2005	5505.43	16.67	NPM	11.56	5493.87
	6/14/2005	5505.43	16.67	NPM	11.59	5493.84
	6/16/2005	5505.43	16.67	NPM	11.6	5493.83
	6/21/2005	5505.43	16.67	NPM	11.61	5493.82
	6/23/2005	5505.43	16.67	NPM	11.62	5493.81
	6/28/2005	5505.43	16.67	NPM	11.62	5493.81
OW 14+10	6/2/2005	5506.95	13.03	12.37	12.38	5494.58
	6/7/2005	5506.95	13.03	12.36	12.37	5494.59
	6/9/2005	5506.95	13.03	12.34	12.35	5494.61
	6/14/2005	5506.95	13.03	12.43	12.46	5494.51
	6/16/2005	5506.95	13.03	12.43	12.46	5494.51
	6/21/2005	5506.95	13.03	12.42	12.46	5494.52
	6/23/2005	5506.95	13.03	12.50	12.54	5494.44
	6/28/2005	5506.95	13.03	12.50	12.59	5494.43
OW 16+60	6/2/2005	5507.03	15.21	12.12	12.84	5494.77
	6/7/2005	5507.03	15.21	12.10	12.74	5494.80
	6/9/2005	5507.03	15.21	12.12	12.80	5494.77
	6/14/2005	5507.03	15.21	12.21	12.94	5494.67
	6/16/2005	5507.03	15.21	12.20	12.95	5494.68
	6/21/2005	5507.03	15.21	12.22	12.94	5494.67
	6/23/2005	5507.03	15.21	12.28	12.97	5494.61
	6/28/2005	5507.03	15.21	12.43	12.94	5494.50

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 19+50	6/2/2005	5506.91	13.07	NPM	11.77	5495.14
	6/7/2005	5506.91	13.07	NPM	11.76	5495.15
	6/9/2005	5506.91	13.07	NPM	11.77	5495.14
	6/14/2005	5506.91	13.07	NPM	11.83	5495.08
	6/16/2005	5506.91	13.07	NPM	11.85	5495.06
	6/21/2005	5506.91	13.07	NPM	11.84	5495.07
	6/23/2005	5506.91	13.07	NPM	11.94	5494.97
	6/28/2005	5506.91	13.07	NPM	11.97	5494.94
OW 22+00	6/2/2005	5506.47	14.31	NPM	10.78	5495.69
	6/7/2005	5506.47	14.31	NPM	10.79	5495.68
	6/9/2005	5506.47	14.31	NPM	10.79	5495.68
	6/14/2005	5506.47	14.31	NPM	11.11	5495.36
	6/16/2005	5506.47	14.31	NPM	11.14	5495.33
	6/21/2005	5506.47	14.31	NPM	11.20	5495.27
	6/23/2005	5506.47	14.31	NPM	11.14	5495.33
	6/28/2005	5506.47	14.31	NPM	11.26	5495.21
OW 23+10	6/2/2005	5510.51	15.79	NPM	13.61	5496.90
	6/7/2005	5510.51	15.79	NPM	13.62	5496.89
	6/9/2005	5510.51	15.79	NPM	13.63	5496.88
	6/14/2005	5510.51	15.79	NPM	13.64	5496.87
	6/16/2005	5510.51	15.79	NPM	13.63	5496.88
	6/21/2005	5510.51	15.79	NPM	13.66	5496.85
	6/23/2005	5510.51	15.79	NPM	13.63	5496.88
	6/28/2005	5510.51	15.79	NPM	13.64	5496.87

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 23+90	6/2/2005	5511.15	15.07	NPM	13.99	5497.16
	6/7/2005	5511.15	15.07	NPM	14.00	5497.15
	6/9/2005	5511.15	15.07	NPM	14.00	5497.15
	6/14/2005	5511.15	15.07	NPM	14.00	5497.15
	6/16/2005	5511.15	15.07	NPM	14.00	5497.15
	6/21/2005	5511.15	15.07	NPM	14.01	5497.14
	6/23/2005	5511.15	15.07	NPM	14.01	5497.14
	6/28/2005	5511.15	15.07	NPM	14.01	5497.14
OW 25+70	6/2/2005	5507.59	14.01	NPM	10.71	5496.88
	6/7/2005	5507.59	14.01	NPM	10.72	5496.87
	6/9/2005	5507.59	14.01	NPM	10.73	5496.86
	6/14/2005	5507.59	14.01	NPM	10.73	5496.86
	6/16/2005	5507.59	14.01	NPM	10.73	5496.86
	6/21/2005	5507.59	14.01	NPM	10.72	5496.87
	6/23/2005	5507.59	14.01	NPM	10.73	5496.86
	6/28/2005	5507.59	14.01	NPM	10.72	5496.87

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	6/2/2005	5506.90	14.93	NPM	8.83	5498.07
	6/7/2005	5506.90	14.93	NPM	8.82	5498.08
	6/9/2005	5506.90	14.93	NPM	8.85	5498.05
	6/14/2005	5506.90	14.93	NPM	8.9	5498.00
	6/16/2005	5506.90	14.93	NPM	8.88	5498.02
	6/21/2005	5506.90	14.93	NPM	8.84	5498.06
	6/23/2005	5506.90	14.93	NPM	8.89	5498.01
	6/28/2005	5506.90	14.93	NPM	8.91	5497.99
CW 1+50	6/2/2005	5504.46	13.84	NPM	6.82	5497.64
	6/7/2005	5504.46	13.84	NPM	6.83	5497.63
	6/9/2005	5504.46	13.84	NPM	6.81	5497.65
	6/14/2005	5504.46	13.84	NPM	6.85	5497.61
	6/16/2005	5504.46	13.84	NPM	6.80	5497.66
	6/21/2005	5504.46	13.84	NPM	6.81	5497.65
	6/23/2005	5504.46	13.84	NPM	6.81	5497.65
	6/28/2005	5504.46	13.84	NPM	6.87	5497.59
CW 3+85	6/2/2005	5505.05	15.21	NPM	7.50	5497.55
	6/7/2005	5505.05	15.21	NPM	7.51	5497.54
	6/9/2005	5505.05	15.21	NPM	7.49	5497.56
	6/14/2005	5505.05	15.21	NPM	7.41	5497.64
	6/16/2005	5505.05	15.21	NPM	7.52	5497.53
	6/21/2005	5505.05	15.21	NPM	7.52	5497.53
	6/23/2005	5505.05	15.21	NPM	7.53	5497.52
	6/28/2005	5505.05	15.21	NPM	7.52	5497.53

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 5+50	6/2/2005	5504.11	13.45	NPM	7.37	5496.74
	6/7/2005	5504.11	13.45	NPM	7.38	5496.73
	6/9/2005	5504.11	13.45	NPM	7.36	5496.75
	6/14/2005	5504.11	13.45	NPM	7.38	5496.73
	6/16/2005	5504.11	13.45	NPM	7.38	5496.73
	6/21/2005	5504.11	13.45	NPM	7.39	5496.72
	6/23/2005	5504.11	13.45	7.36	7.37	5496.75
	6/28/2005	5504.11	13.45	7.35	7.36	5496.76
CW 6+70	6/2/2005	5504.31	12.70	NPM	7.87	5496.44
	6/7/2005	5504.31	12.70	NPM	7.86	5496.45
	6/9/2005	5504.31	12.70	NPM	7.86	5496.45
	6/14/2005	5504.31	12.70	NPM	7.90	5496.41
	6/16/2005	5504.31	12.70	7.89	7.90	5496.42
	6/21/2005	5504.31	12.70	7.90	7.91	5496.41
	6/23/2005	5504.31	12.70	7.89	7.90	5496.42
	6/28/2005	5504.31	12.70	7.89	7.90	5496.42
CW 8+10	6/2/2005	5503.52	12.02	NPM	7.85	5495.67
	6/7/2005	5503.52	12.02	NPM	7.86	5495.66
	6/9/2005	5503.52	12.02	NPM	7.87	5495.65
	6/14/2005	5503.52	12.02	NPM	7.90	5495.62
	6/16/2005	5503.52	12.02	7.88	7.89	5495.64
	6/21/2005	5503.52	12.02	7.89	7.90	5495.63
	6/23/2005	5503.52	12.02	7.86	7.87	5495.66
	6/28/2005	5503.52	12.02	7.86	7.85	5495.66

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 8+45	6/2/2005	5505.44	14.95	9.43	9.52	5495.99
	6/7/2005	5505.44	14.95	9.40	9.6	5496.00
	6/9/2005	5505.44	14.95	9.44	9.73	5495.94
	6/14/2005	5505.44	14.95	9.50	11.59	5495.52
	6/16/2005	5505.44	14.95	9.49	9.53	5495.94
	6/21/2005	5505.44	14.95	9.47	9.62	5495.94
	6/23/2005	5505.44	14.95	9.47	9.49	5495.97
	6/28/2005	5505.44	14.95	9.43	9.55	5495.99
CW 11+15	6/2/2005	5505.08	13.88	7.34	7.42	5497.72
	6/7/2005	5505.08	13.88	7.35	7.47	5497.71
	6/9/2005	5505.08	13.88	7.35	7.46	5497.71
	6/14/2005	5505.08	13.88	7.40	7.47	5497.67
	6/16/2005	5505.08	13.88	7.38	7.43	5497.69
	6/21/2005	5505.08	13.88	7.36	7.48	5497.70
	6/23/2005	5505.08	13.88	7.35	7.42	5497.72
	6/28/2005	5505.08	13.88	7.35	7.41	5497.72
CW 14+10	6/2/2005	5504.57	14.09	NPM	7.50	5497.07
	6/7/2005	5504.57	14.09	NPM	7.51	5497.06
	6/9/2005	5504.57	14.09	NPM	7.46	5497.11
	6/14/2005	5504.57	14.09	NPM	7.55	5497.02
	6/16/2005	5504.57	14.09	NPM	7.54	5497.03
	6/21/2005	5504.57	14.09	NPM	7.55	5497.02
	6/23/2005	5504.57	14.09	7.52	7.53	5497.05
	6/28/2005	5504.57	14.09	NPM	7.46	5497.11

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 16+60	6/2/2005	5505.65	14.87	NPM	8.4	5497.25
	6/7/2005	5505.65	14.87	NPM	8.4	5497.25
	6/9/2005	5505.65	14.87	NPM	8.39	5497.26
	6/14/2005	5505.65	14.87	8.39	8.4	5497.26
	6/16/2005	5505.65	14.87	8.38	8.39	5497.27
	6/21/2005	5505.65	14.87	NPM	8.4	5497.25
	6/23/2005	5505.65	14.87	8.40	8.41	5497.25
	6/28/2005	5505.65	14.87	8.39	8.4	5497.26
CW 19+50	6/2/2005	5505.70	12.07	NPM	8.60	5497.10
	6/7/2005	5505.70	12.07	NPM	8.61	5497.09
	6/9/2005	5505.70	12.07	NPM	8.58	5497.12
	6/14/2005	5505.70	12.07	NPM	8.62	5497.08
	6/16/2005	5505.70	12.07	NPM	8.64	5497.06
	6/21/2005	5505.70	12.07	NPM	8.65	5497.05
	6/23/2005	5505.70	12.07	NPM	8.62	5497.08
	6/28/2005	5505.70	12.07	NPM	8.60	5497.10
CW 22+00	6/2/2005	5509.04	14.10	NPM	10.98	5498.06
	6/7/2005	5509.04	14.10	NPM	11.00	5498.04
	6/9/2005	5509.04	14.10	NPM	11.00	5498.04
	6/14/2005	5509.04	14.10	NPM	10.98	5498.06
	6/16/2005	5509.04	14.10	NPM	11.00	5498.04
	6/21/2005	5509.04	14.10	NPM	11.10	5497.94
	6/23/2005	5509.04	14.10	10.97	10.98	5498.07
	6/28/2005	5509.04	14.10	10.60	10.70	5498.42

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 23+10	6/2/2005	5510.06	15.5	NPM	11.52	5498.54
	6/7/2005	5510.06	15.5	NPM	11.54	5498.52
	6/9/2005	5510.06	15.5	NPM	11.53	5498.53
	6/14/2005	5510.06	15.5	NPM	11.55	5498.51
	6/16/2005	5510.06	15.5	NPM	11.55	5498.51
	6/21/2005	5510.06	15.5	NPM	11.54	5498.52
	6/23/2005	5510.06	15.5	NPM	11.54	5498.52
	6/28/2005	5511.15	15.5	NPM	11.53	5499.62
CW 23+90	6/2/2005	5507.46	12.66	NPM	9.23	5498.23
	6/7/2005	5507.46	12.66	NPM	9.28	5498.18
	6/9/2005	5507.46	12.66	NPM	9.28	5498.18
	6/14/2005	5507.46	12.66	NPM	9.28	5498.18
	6/16/2005	5507.46	12.66	NPM	9.28	5498.18
	6/21/2005	5507.46	12.66	NPM	9.28	5498.18
	6/23/2005	5507.46	12.66	NPM	9.27	5498.19
	6/28/2005	5507.46	12.66	NPM	9.27	5498.19
CW 25+95	6/2/2005	5506.81	14.07	NPM	8.97	5497.84
	6/7/2005	5506.81	14.07	NPM	9.01	5497.80
	6/9/2005	5506.81	14.07	NPM	9.01	5497.80
	6/14/2005	5506.81	14.07	NPM	9.01	5497.80
	6/16/2005	5506.81	14.07	NPM	9.01	5497.80
	6/21/2005	5506.81	14.07	NPM	9.01	5497.80
	6/23/2005	5506.81	14.07	NPM	9.00	5497.81
	6/28/2005	5506.81	14.07	NPM	9.00	5497.81

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	6/2/2005	5506.82	22.94	NPM	11.52	5495.30
	6/7/2005	5506.82	22.94	NPM	11.48	5495.34
	6/9/2005	5506.82	22.94	NPM	11.57	5495.25
	6/14/2005	5506.82	22.94	NPM	11.39	5495.43
	6/16/2005	5506.82	22.94	NPM	11.40	5495.42
	6/21/2005	5506.82	22.94	NPM	11.68	5495.14
	6/23/2005	5506.82	22.94	NPM	11.65	5495.17
	6/28/2005	5506.82	22.94	NPM	11.30	5495.52
MW #12	6/2/2005	5498.95	14.98	NPM	10.89	5488.06
	6/7/2005	5498.95	14.98	NPM	10.87	5488.08
	6/9/2005	5498.95	14.98	NPM	11.05	5487.90
	6/14/2005	5498.95	14.98	NPM	10.52	5488.43
	6/16/2005	5498.95	14.98	NPM	10.52	5488.43
	6/21/2005	5498.95	14.98	NPM	11.31	5487.64
	6/23/2005	5498.95	14.98	NPM	11.37	5487.58
	6/28/2005	5498.95	14.98	NPM	10.43	5488.52
MW #20	6/2/2005	5516.28	27.13	20.91	21.15	5495.32
	6/7/2005	5516.28	27.13	20.91	21.18	5495.32
	6/9/2005	5516.28	27.13	20.88	21.15	5495.35
	6/14/2005	5516.28	27.13	20.90	21.17	5495.33
	6/16/2005	5516.28	27.13	20.89	21.16	5495.34
	6/21/2005	5516.28	27.13	20.90	21.14	5495.33
	6/23/2005	5516.28	27.13	20.88	21.14	5495.35
	6/28/2005	5516.28	27.13	20.91	21.18	5495.32

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #21	6/2/2005	5519.72	30.38	21.97	21.98	5497.75
	6/7/2005	5519.72	30.38	21.97	21.98	5497.75
	6/9/2005	5519.72	30.38	21.97	21.98	5497.75
	6/14/2005	5519.72	30.38	21.97	21.98	5497.75
	6/16/2005	5519.72	30.38	21.97	21.98	5497.75
	6/21/2005	5519.72	30.38	21.98	21.99	5497.74
	6/23/2005	5519.72	30.38	21.97	21.98	5497.75
	6/28/2005	5519.72	30.38	21.98	21.99	5497.74
MW #39	6/2/2005	5517.96	38.34	NPM	27.92	5490.04
	6/7/2005	5517.96	38.34	NPM	27.99	5489.97
	6/9/2005	5517.96	38.34	NPM	27.65	5490.31
	6/14/2005	5517.96	38.34	NPM	27.28	5490.68
	6/16/2005	5517.96	38.34	NPM	27.34	5490.62
	6/21/2005	5517.96	38.34	NPM	27.38	5490.58
	6/23/2005	5517.96	38.34	NPM	27.40	5490.56
	6/28/2005	5517.96	38.34	NPM	27.23	5490.73
MW #45	6/2/2005	5498.43	16.92	11.11	11.53	5487.24
	6/7/2005	5498.43	16.92	11.11	11.55	5487.23
	6/9/2005	5498.43	16.92	11.24	11.61	5487.12
	6/14/2005	5498.43	16.92	11.17	11.80	5487.13
	6/16/2005	5498.43	16.92	11.19	11.81	5487.12
	6/21/2005	5498.43	16.92	11.16	11.81	5487.14
	6/23/2005	5498.43	16.92	11.17	11.79	5487.14
	6/28/2005	5498.43	16.92	11.67	11.97	5486.70

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring June 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #46	6/2/2005	5498.22	10.39	NPM	10.27	5487.95
	6/7/2005	5498.22	10.39	NPM	10.27	5487.95
	6/9/2005	5498.22	10.39	NPM	10.25	5487.97
	6/14/2005	5498.22	10.39	NPM	10.28	5487.94
	6/16/2005	5498.22	10.39	NPM	10.26	5487.96
	6/21/2005	5498.22	10.39	NPM	10.29	5487.93
	6/23/2005	5498.22	10.39	NPM	10.27	5487.95
	6/28/2005	5498.22	10.39	NPM	10.27	5487.95
MW #47	6/2/2005	5499.07	14.28	11.96	12.98	5486.91
	6/7/2005	5499.07	14.28	11.89	12.94	5486.97
	6/9/2005	5499.07	14.28	11.80	12.88	5487.05
	6/14/2005	5499.07	14.28	12.00	13.05	5486.86
	6/16/2005	5499.07	14.28	12.10	13.07	5486.78
	6/21/2005	5499.07	14.28	11.96	13.00	5486.90
	6/23/2005	5499.07	14.28	11.98	13.14	5486.86
	6/28/2005	5499.07	14.28	11.94	12.98	5486.92

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	7/7/2005	5508.69	14.98	14.11	14.87	5494.43
	7/14/2005	5508.69	14.98	14.10	14.78	5494.45
	7/19/2005	5508.69	14.98	14.08	14.8	5494.47
	7/28/2005	5508.69	14.98	14.92	14.93	5493.77
OW 1+50	7/7/2005	5505.22	14.98	13.78	14.77	5491.24
	7/14/2005	5505.22	14.98	13.80	14.79	5491.22
	7/19/2005	5505.22	14.98	13.30	14.35	5491.71
	7/28/2005	5505.22	14.98	14.00	14.02	5491.22
OW 3+85	7/7/2005	5506.17	15.06	12.32	13.52	5493.61
	7/14/2005	5506.17	15.06	12.35	13.60	5493.57
	7/19/2005	5506.17	15.06	12.34	13.57	5493.58
	7/28/2005	5506.17	15.06	12.60	13.87	5493.32
OW 5+50	7/7/2005	5506.94	14.09	13.37	NWM	
	7/14/2005	5506.94	14.09	13.38	NWM	
	7/19/2005	5506.94	14.09	13.37	NWM	
	7/28/2005	5506.94	14.09	13.44	NWM	
OW 6+70	7/7/2005	5503.79	14.67	NPM	NWM	
	7/14/2005	5503.79	14.67	NPM	NWM	
	7/19/2005	5503.79	14.67	NPM	NWM	
	7/28/2005	5503.79	14.67	NPM	NWM	

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 8+10	7/7/2005	5507.26	17.99	NPM	NWM	
	7/14/2005	5507.26	17.99	NPM	NWM	
	7/19/2005	5507.26	17.99	NPM	NWM	
	7/28/2005	5507.26	17.99	NPM	NWM	
OW 11+15	7/7/2005	5505.43	16.67	NPM	11.63	5493.80
	7/14/2005	5505.43	16.67	NPM	11.65	5493.78
	7/19/2005	5505.43	16.67	NPM	11.63	5493.80
	7/28/2005	5505.43	16.67	NPM	11.67	5493.76
OW 14+10	7/7/2005	5506.95	13.03	12.51	12.59	5494.42
	7/14/2005	5506.95	13.03	12.52	12.59	5494.42
	7/19/2005	5506.95	13.03	12.52	12.57	5494.42
	7/28/2005	5506.95	13.03	12.60	12.80	5494.31
OW 16+60	7/7/2005	5507.03	15.21	12.41	12.94	5494.51
	7/14/2005	5507.03	15.21	12.42	12.96	5494.50
	7/19/2005	5507.03	15.21	12.43	12.94	5494.50
	7/28/2005	5507.03	15.21	12.47	13.03	5494.45
OW 19+50	7/7/2005	5506.91	13.07	NPM	11.96	5494.95
	7/14/2005	5506.91	13.07	NPM	12	5494.91
	7/19/2005	5506.91	13.07	NPM	12.23	5494.68
	7/28/2005	5506.91	13.07	NPM	12.1	5494.81

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 22+00	7/7/2005	5506.47	14.31	NPM	11.22	5495.25
	7/14/2005	5506.47	14.31	NPM	11.29	5495.18
	7/19/2005	5506.47	14.31	NPM	11.68	5494.79
	7/28/2005	5506.47	14.31	NPM	11.69	5494.78
OW 23+10	7/7/2005	5510.51	15.79	NPM	13.65	5496.86
	7/14/2005	5510.51	15.79	NPM	13.70	5496.81
	7/19/2005	5510.51	15.79	NPM	13.66	5496.85
	7/28/2005	5510.51	15.79	NPM	13.71	5496.80
OW 23+90	7/7/2005	5511.15	15.07	NPM	14	5497.15
	7/14/2005	5511.15	15.07	NPM	14.5	5496.65
	7/19/2005	5511.15	15.07	NPM	14.04	5497.11
	7/28/2005	5511.15	15.07	NPM	14.32	5496.83
OW 25+70	7/7/2005	5507.59	14.01	NPM	10.73	5496.86
	7/14/2005	5507.59	14.01	NPM	10.76	5496.83
	7/19/2005	5507.59	14.01	NPM	10.73	5496.86
	7/28/2005	5507.59	14.01	NPM	10.74	5496.85

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	7/7/2005	5506.90	14.93	NPM	8.9	5498.00
	7/14/2005	5506.90	14.93	NPM	8.92	5497.98
	7/19/2005	5506.90	14.93	NPM	8.93	5497.97
	7/28/2005	5506.90	14.93	NPM	8.90	5498.00
CW 1+50	7/7/2005	5504.46	13.84	NPM	6.85	5497.61
	7/14/2005	5504.46	13.84	NPM	6.87	5497.59
	7/19/2005	5504.46	13.84	NPM	6.88	5497.58
	7/28/2005	5504.46	13.84	NPM	6.87	5497.59
CW 3+85	7/7/2005	5505.05	15.21	NPM	7.51	5497.54
	7/14/2005	5505.05	15.21	NPM	7.53	5497.52
	7/19/2005	5505.05	15.21	NPM	7.53	5497.52
	7/28/2005	5505.05	15.21	NPM	7.53	5497.52
CW 5+50	7/7/2005	5504.11	13.45	NPM	7.38	5496.73
	7/14/2005	5504.11	13.45	7.35	7.37	5496.76
	7/19/2005	5504.11	13.45	NPM	7.38	5496.73
	7/28/2005	5504.11	13.45	NPM	7.37	5496.74
CW 6+70	7/7/2005	5504.31	12.70	NPM	7.91	5496.40
	7/14/2005	5504.31	12.70	7.90	7.91	5496.41
	7/19/2005	5504.31	12.70	7.90	7.91	5496.41
	7/28/2005	5504.31	12.70	NPM	7.90	5496.41

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 8+10	7/7/2005	5503.52	12.02	NPM	7.90	5495.62
	7/14/2005	5503.52	12.02	7.90	7.91	5495.62
	7/19/2005	5503.52	12.02	NPM	7.92	5495.60
	7/28/2005	5503.52	12.02	NPM	7.97	5495.55
CW 8+45	7/7/2005	5505.44	14.95	9.41	9.46	5496.02
	7/14/2005	5505.44	14.95	9.49	9.61	5495.93
	7/19/2005	5505.44	14.95	9.49	9.62	5495.92
	7/28/2005	5505.44	14.95	9.46	9.62	5495.95
CW 11+15	7/7/2005	5505.08	13.88	7.35	7.47	5497.71
	7/14/2005	5505.08	13.88	7.36	7.47	5497.70
	7/19/2005	555.08	13.88	7.37	7.41	547.70
	7/28/2005	5505.08	13.88	7.36	7.40	5497.71
CW 14+10	7/7/2005	5504.57	14.09	7.51	7.52	5497.06
	7/14/2005	5504.57	14.09	7.53	7.54	5497.04
	7/19/2005	5504.57	14.09	NPM	7.46	5497.11
	7/28/2005	5504.57	14.09	NPM	7.48	5497.09
CW 16+60	7/7/2005	5505.65	14.87	8.40	8.41	5497.25
	7/14/2005	5505.65	14.87	8.41	8.42	5497.24
	7/19/2005	5505.65	14.87	8.37	8.38	5497.28
	7/28/2005	5505.65	14.87	8.37	8.39	5497.28

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 19+50	7/7/2005	5505.70	12.07	NPM	8.62	5497.08
	7/14/2005	5505.70	12.07	NPM	8.66	5497.04
	7/19/2005	5505.70	12.07	NPM	8.55	5497.15
	7/28/2005	5505.70	12.07	NPM	8.65	5497.05
CW 22+00	7/7/2005	5509.04	14.10	10.70	10.80	5498.32
	7/14/2005	5509.04	14.10	10.73	10.82	5498.29
	7/19/2005	5509.04	14.10	NPM	10.97	5498.07
	7/28/2005	5509.04	14.10	NPM	11.00	5498.04
CW 23+10	7/7/2005	5510.06	15.5	NPM	11.53	5498.53
	7/14/2005	5510.06	15.5	NPM	11.55	5498.51
	7/19/2005	5510.06	15.5	NPM	11.54	5498.52
	7/28/2005	5510.06	15.5	NPM	11.56	5498.50
CW 23+90	7/7/2005	5507.46	12.66	0.00	9.28	5505.60
	7/14/2005	5507.46	12.66	NPM	9.29	5498.17
	7/19/2005	5507.46	12.66	NPM	9.25	5498.21
	7/28/2005	5507.46	12.66	NPM	9.29	5498.17
CW 25+95	7/7/2005	5506.81	14.07	NPM	9.01	5497.80
	7/14/2005	5506.81	14.07	NPM	9.02	5497.79
	7/19/2005	5506.81	14.07	NPM	9.01	5497.80
	7/28/2005	5506.81	14.07	NPM	9.02	5497.79

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	7/7/2005	5506.82	22.94	NPM	11.78	5495.04
	7/14/2005	5506.82	22.94	NPM	11.82	5495.00
	7/19/2005	5506.82	22.94	NPM	11.87	5494.95
	7/28/2005	5506.82	22.94	NPM	11.85	5494.97
MW #12	7/7/2005	5498.95	14.98	NPM	11.42	5487.53
	7/14/2005	5498.95	14.98	NPM	11.85	5487.10
	7/19/2005	5498.95	14.98	NPM	12.10	5486.85
	7/28/2005	5498.95	14.98	NPM	12.14	5486.81
MW #20	7/7/2005	5516.28	27.13	20.87	21.19	5495.35
	7/14/2005	5516.28	27.13	20.91	21.21	5495.31
	7/19/2005	5516.28	27.13	20.96	21.23	5495.27
	7/28/2005	5516.28	27.13	20.87	21.10	5495.36
MW #21	7/7/2005	5519.72	30.38	21.97	21.98	5497.75
	7/14/2005	5519.72	30.38	21.97	21.98	5497.75
	7/19/2005	5519.72	30.38	21.98	21.99	5497.74
	7/28/2005	5519.72	30.38	21.95	21.96	5497.77
MW #39	7/7/2005	5517.96	38.34	NPM	27.30	5490.66
	7/14/2005	5517.96	38.34	NPM	27.44	5490.52
	7/19/2005	5517.96	38.34	NPM	27.60	5490.36
	7/28/2005	5517.96	38.34	NPM	26.78	5491.18

NPM = No Product Measured NWM = No Water Measured

Montioring Well Fluids Monitoring July 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #45	7/7/2005	5498.43	16.92	11.66	11.99	5486.70
	7/14/2005	5498.43	16.92	11.68	11.98	5486.69
	7/19/2005	5498.43	16.92	11.69	12.00	5486.68
	7/28/2005	5498.43	16.92	11.16	11.95	5487.11
MW #46	7/7/2005	5498.22	10.39	NPM	10.27	5487.95
	7/14/2005	5498.22	10.39	NPM	10.28	5487.94
	7/19/2005	5498.22	10.39	NPM	10.29	5487.93
	7/28/2005	5498.22	10.39	NPM	10.3	5487.92
MW #47	7/7/2005	5499.07	14.28	11.96	13.01	5486.90
	7/14/2005	5499.07	14.28	12.00	13.03	5486.86
	7/19/2005	5499.07	14.28	11.99	13.04	5486.87
	7/28/2005	5499.07	14.28	12.87	12.88	5486.20

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	8/2/2005	5508.69	14.98	14.92	14.93	5493.77
	8/11/2005	5508.69	14.98	14.10	14.78	5494.45
	8/23/2005	5508.69	14.98	14.96	15.2	5493.68
OW 1+50	8/2/2005	5505.22	14.98	14.90	14.91	5490.32
	8/11/2005	5505.22	14.98	13.80	14.79	5491.22
	8/23/2005	5505.22	14.98	14.86	14.88	5490.36
OW 3+85	8/2/2005	5506.17	15.06	12.60	12.63	5493.56
	8/11/2005	5506.17	15.06	12.35	13.60	5493.57
	8/23/2005	5506.17	15.06	12.80	12.86	5493.36
OW 5+50	8/2/2005	5506.94	14.09	13.45	NWM	
	8/11/2005	5506.94	14.09	13.38	NWM	
	8/23/2005	5506.94	14.09	13.74	NWM	
OW 6+70	8/2/2005	5503.79	14.67	NPM	NWM	
	8/11/2005	5503.79	14.67	NPM	NWM	
	8/23/2005	5503.79	14.67	NPM	NWM	
OW 8+10	8/2/2005	5507.26	17.99	NPM	NWM	
	8/11/2005	5507.26	17.99	NPM	NWM	
	8/23/2005	5507.26	17.99	NPM	NWM	

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 11+15	8/2/2005	5505.43	16.67	NPM	11.65	5493.78
	8/11/2005	5505.43	16.67	NPM	11.65	5493.78
	8/23/2005	5505.43	16.67	NPM	11.67	5493.76
OW 14+10	8/2/2005	5506.95	13.03	12.58	12.88	5494.31
	8/11/2005	5506.95	13.03	12.52	12.59	5494.42
	8/23/2005	5506.95	13.03	12.63	12.85	5494.28
OW 16+60	8/2/2005	5507.03	15.21	12.50	13.05	5494.42
	8/11/2005	5507.03	15.21	12.42	12.96	5494.50
	8/23/2005	5507.03	15.21	12.54	13.01	5494.40
OW 19+50	8/2/2005	5506.91	13.07	NPM	12.25	5494.66
	8/11/2005	5506.91	13.07	NPM	12	5494.91
	8/23/2005	5506.91	13.07	NPM	12.95	5493.96
OW 22+00	8/2/2005	5506.47	14.31	NPM	11.72	5494.75
	8/11/2005	5506.47	14.31	NPM	11.29	5495.18
	8/23/2005	5506.47	14.31	NPM	11.71	5494.76
OW 23+10	8/2/2005	5510.51	15.79	NPM	13.70	5496.81
	8/11/2005	5510.51	15.79	NPM	13.70	5496.81
	8/23/2005	5510.51	15.79	NPM	13.69	5496.82

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 23+90	8/2/2005	5511.15	15.07	NPM	14.01	5497.14
	8/11/2005	5511.15	15.07	NPM	14.5	5496.65
	8/23/2005	5511.15	15.07	NPM	14.06	5497.09
OW 25+70	8/2/2005	5507.59	14.01	NPM	10.71	5496.88
	8/11/2005	5507.59	14.01	NPM	10.76	5496.83
	8/23/2005	5507.59	14.01	NPM	10.75	5496.84

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	8/2/2005	5506.90	14.93	NPM	8.9	5498.00
	8/11/2005	5506.90	14.93	NPM	8.92	5497.98
	8/23/2005	5506.90	14.93	NPM	8.72	5498.18
CW 1+50	8/2/2005	5504.46	13.84	NPM	6.84	5497.62
	8/11/2005	5504.46	13.84	NPM	6.87	5497.59
	8/23/2005	5504.46	13.84	NPM	6.85	5497.61
CW 3+85	8/2/2005	5505.05	15.21	NPM	7.51	5497.54
	8/11/2005	5505.05	15.21	NPM	7.53	5497.52
	8/23/2005	5505.05	15.21	NPM	7.48	5497.57
CW 5+50	8/2/2005	5504.11	13.45	7.37	7.38	5496.74
	8/11/2005	5504.11	13.45	7.35	7.37	5496.76
	8/23/2005	5504.11	13.45	7.34	7.35	5496.77
CW 6+70	8/2/2005	5504.31	12.70	7.90	7.91	5496.41
	8/11/2005	5504.31	12.70	7.90	7.91	5496.41
	8/23/2005	5504.31	12.70	7.91	7.93	5496.40
CW 8+10	8/2/2005	5503.52	12.02	7.87	7.88	5495.65
	8/11/2005	5503.52	12.02	7.90	7.91	5495.62
	8/23/2005	5503.52	12.02	NPM	7.87	5495.65

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 8+45	8/2/2005	5505.44	14.95	9.47	9.58	5495.95
	8/11/2005	5505.44	14.95	9.49	9.61	5495.93
	8/23/2005	5505.44	14.95	9.42	9.73	5495.96
CW 11+15	8/2/2005	5505.08	13.88	7.34	7.41	5497.73
	8/11/2005	5505.08	13.88	7.36	7.47	5497.70
	8/23/2005	5505.08	13.88	7.30	7.31	5497.78
CW 14+10	8/2/2005	5504.57	14.09	7.43	7.44	5497.14
	8/11/2005	5504.57	14.09	7.53	7.54	5497.04
	8/23/2005	5504.57	14.09	NPM	7.45	5497.12
CW 16+60	8/2/2005	5505.65	14.87	8.33	8.34	5497.32
	8/11/2005	5505.65	14.87	8.41	8.42	5497.24
	8/23/2005	5505.65	14.87	NPM	8.39	5497.26
CW 19+50	8/2/2005	5505.70	12.07	NPM	8.60	5497.10
	8/11/2005	5505.70	12.07	NPM	8.66	5497.04
	8/23/2005	5505.70	12.07	NPM	8.48	5497.22
CW 22+00	8/2/2005	5509.04	14.10	NPM	11.00	5498.04
	8/11/2005	5509.04	14.10	10.73	10.82	5498.29
	8/23/2005	5509.04	14.10	NPM	10.97	5498.07

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 23+10	8/2/2005	5510.06	15.5	NPM	11.52	5498.54
	8/11/2005	5510.06	15.5	NPM	11.55	5498.51
	8/23/2005	5510.06	15.5	NPM	11.53	5498.53
CW 23+90	8/2/2005	5507.46	12.66	NPM	9.27	5498.19
	8/11/2005	5507.46	12.66	NPM	9.29	5498.17
	8/23/2005	5507.46	12.66	NPM	9.21	5498.25
CW 25+95	8/2/2005	5506.81	14.07	NPM	9.02	5497.79
	8/11/2005	5506.81	14.07	NPM	9.02	5497.79
	8/23/2005	5506.81	14.07	NPM	9.00	5497.81

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	8/2/2005	5506.82	22.94	NPM	11.82	5495.00
	8/11/2005	5506.82	22.94	NPM	11.87	5494.95
	8/23/2005	5506.82	22.94	NPM	11.62	5495.20
MW #12	8/2/2005	5498.95	14.98	NPM	12.04	5486.91
	8/11/2005	5498.95	14.98	NPM	12.15	5486.80
	8/23/2005	5498.95	14.98	NPM	12.40	5486.55
MW #20	8/2/2005	5516.28	27.13	20.87	21.11	5495.36
	8/11/2005	5516.28	27.13	20.88	21.12	5495.35
	8/23/2005	5516.28	27.13	20.86	21.08	5495.38
MW #21	8/2/2005	5519.72	30.38	21.96	21.97	5497.76
	8/11/2005	5519.72	30.38	21.96	21.97	5497.76
	8/23/2005	5519.72	30.38	21.97	21.98	5497.75
MW #39	8/2/2005	5517.96	38.34	NPM	27.40	5490.56
	8/11/2005	5517.96	38.34	NPM	27.43	5490.53
	8/23/2005	5517.96	38.34	NPM	26.50	5491.46
MW #45	8/2/2005	5498.43	16.92	11.11	11.19	5487.30
	8/11/2005	5498.43	16.92	11.07	11.90	5487.19
	8/23/2005	5498.43	16.92	11.11	11.89	5487.16

NPM = No Product Measured NWM = No Water Measured

Montioring Well Fluids Monitoring August 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #46	8/2/2005	5498.22	10.39	NPM	10.28	5487.94
	8/11/2005	5498.22	10.39	NPM	10.19	5488.03
	8/23/2005	5498.22	10.39	NPM	10.21	5488.01
MW #47	8/2/2005	5499.07	14.28	12.38	13.32	5486.50
	8/11/2005	5499.07	14.28	12.40	12.51	5486.65
	8/23/2005	5499.07	14.28	12.47	13.51	5486.39

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring September 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	9/6/2005	5508.69	14.98	14.95	15	5493.73
	9/20/2005	5508.69	14.98	14.20	14.31	5494.47
OW 1+50	9/6/2005	5505.22	14.98	14.88	14.91	5490.33
	9/20/2005	5505.22	14.98	13.73	14.15	5491.41
OW 3+85	9/6/2005	5506.17	15.06	12.78	12.80	5493.39
	9/20/2005	5506.17	15.06	12.42	13.05	5493.62
OW 5+50	9/6/2005	5506.94	14.09	13.72	NWM	
	9/20/2005	5506.94	14.09	13.63	NWM	
OW 6+70	9/6/2005	5503.79	14.67	NPM	NWM	
	9/20/2005	5503.79	14.67	NPM	NWM	
OW 8+10	9/6/2005	5507.26	17.99	NPM	NWM	
	9/20/2005	5507.26	17.99	NPM	NWM	
OW 11+ 15	9/6/2005	5505.43	16.67	NPM	11.65	5493.78
	9/20/2005	5505.43	16.67	11.37	11.38	5494.06
OW 14+ 10	9/6/2005	5506.95	13.03	12.64	12.86	5494.27
	9/20/2005	5506.95	13.03	12.72	NWM	
OW 16+ 60	9/6/2005	5507.03	15.21	12.55	13.00	5494.39
	9/20/2005	5507.03	15.21	12.57	13.02	5494.37

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring September 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 19+ 50	9/6/2005	5506.91	13.07	NPM	12.96	5493.95
	9/20/2005	5506.91	13.07	NPM	12.73	5494.18
OW 22+ 00	9/6/2005	5506.47	14.31	NPM	11.71	5494.76
	9/20/2005	5506.47	14.31	11.25	11.35	5495.20
OW 23+ 10	9/6/2005	5510.51	15.79	NPM	13.70	5496.81
	9/20/2005	5510.51	15.79	NPM	13.61	5496.90
OW 23+ 90	9/6/2005	5511.15	15.07	NPM	14.08	5497.07
	9/20/2005	5511.15	15.07	NPM	14.02	5497.13
OW 25+ 70	9/6/2005	5507.59	14.01	NPM	10.76	5496.83
	9/20/2005	5507.59	14.01	NPM	10.72	5496.87

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring September 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	9/6/2005	5506.90	14.93	NPM	8.74	5498.16
	9/20/2005	5506.90	14.93	NPM	8.63	5498.27
CW 1+50	9/6/2005	5504.46	13.84	NPM	6.84	5497.62
	9/20/2005	5504.46	13.84	NPM	6.67	5497.79
CW 3+85	9/6/2005	5505.05	15.21	NPM	7.48	5497.57
	9/20/2005	5505.05	15.21	NPM	5.61	5499.44
CW 5+50	9/6/2005	5504.11	13.45	7.35	7.36	5496.76
	9/20/2005	5504.11	13.45	NPM	7.37	5496.74
CW 6+70	9/6/2005	5504.31	12.70	NPM	7.95	5496.36
	9/20/2005	5504.31	12.70	NPM	7.98	5496.33
CW 8+10	9/6/2005	5503.52	12.02	NPM	7.87	5495.65
	9/20/2005	5503.52	12.02	NPM	7.93	5495.59
CW 8+45	9/6/2005	5505.44	14.95	9.43	9.72	5495.95
	9/20/2005	5505.44	14.95	9.59	9.63	5495.84
CW 11+ 15	9/6/2005	5505.08	13.88	7.31	7.32	5497.77
	9/20/2005	5505.08	13.88	7.29	7.30	5497.79
CW 14+ 10	9/6/2005	5504.57	14.09	NPM	7.42	5497.15
	9/20/2005	5504.57	14.09	NPM	7.50	5497.07

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring September 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 16+ 60	9/6/2005	5505.65	14.87	NPM	8.33	5497.32
	9/20/2005	5505.65	14.87	NPM	8.3	5497.35
CW 19+ 50	9/6/2005	5505.70	12.07	NPM	8.52	5497.18
	9/20/2005	5505.70	12.07	NPM	8.37	5497.33
CW 22+ 00	9/6/2005	5509.04	14.10	NPM	11.00	5498.04
	9/20/2005	5509.04	14.10	NPM	10.94	5498.10
CW 23+ 10	9/6/2005	5510.06	15.5	NPM	11.53	5498.53
	9/20/2005	5510.06	15.5	NPM	11.47	5498.59
CW 23+ 90	9/6/2005	5507.46	12.66	NPM	9.26	5498.20
	9/20/2005	5507.46	12.66	NPM	9.18	5498.28
CW 25+ 95	9/6/2005	5506.81	14.07	NPM	9.00	5497.81
	9/20/2005	5506.81	14.07	NPM	8.98	5497.83

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring September 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	9/6/2005	5506.82	22.94	NPM	11.72	5495.10
	9/20/2005	5506.82	22.94	NPM	11.24	5495.58
MW #12	9/6/2005	5498.95	14.98	NPM	12.47	5486.48
	9/20/2005	5498.95	14.98	NPM	12.38	5486.57
MW #20	9/6/2005	5516.28	27.13	20.88	21.15	5495.35
	9/20/2005	5516.28	27.13	20.78	21.14	5495.43
MW #21	9/6/2005	5519.72	30.38	21.98	21.99	5497.74
	9/20/2005	5519.72	30.38	21.98	21.99	5497.74
MW #39	9/6/2005	5517.96	38.34	NPM	27.40	5490.56
	9/20/2005	5517.96	38.34	NPM	27.14	5490.82
MW #45	9/6/2005	5498.43	16.92	11.24	11.98	5487.04
	9/20/2005	5498.43	16.92	11.47	11.83	5486.89
MW #46	9/6/2005	5498.22	10.39	NPM	10.26	5487.96
	9/20/2005	5498.22	10.39	NPM	10.3	5487.92
MW #47	9/6/2005	5499.07	14.28	12.45	13.50	5486.41
	9/20/2005	5499.07	14.28	12.10	12.73	5486.84

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring October 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 0+60	10/4/2005	5505.97	12.26	11.50	11.54	5494.46
	10/18/2005	5505.97	12.26	11.27	11.3	5494.69
OW 1+50	10/4/2005	5504.60	14.36	13.30	13.35	5491.29
	10/18/2005	5504.60	14.36	12.60	12.61	5492.00
OW 3+85	10/4/2005	5506.17	15.06	12.53	13.24	5493.50
	10/18/2005	5506.17	15.06	12.16	12.18	5494.01
OW 5+50	10/4/2005	5506.52	13.67	13.32	NWM	
	10/18/2005	5506.52	13.67	13.17	NWM	
OW 6+70	10/4/2005	5503.79	14.67	NPM	NWM	
	10/18/2005	5503.79	14.67	NPM	NWM	
OW 8+10	10/4/2005	5505.26	15.99	NPM	NWM	
	10/18/2005	5505.26	15.99	NPM	NWM	
OW 11+ 15	10/4/2005	5505.35	16.59	NPM	11.41	5493.94
	10/18/2005	5505.35	16.59	NPM	11.32	5494.03
OW 14+ 10	10/4/2005	5506.88	12.96	12.80	12.82	5494.08
	10/18/2005	5506.88	12.96	12.73	12.76	5494.14
OW 16+ 60	10/4/2005	5507.03	15.21	12.52	12.97	5494.42
	10/18/2005	5507.03	15.21	12.53	12.69	5494.47

NPM = No Product Measured NWM = No Water Measured

Observation Well Fluids Monitoring October 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
OW 19+ 50	10/4/2005	5506.84	13.00	NPM	12.79	5494.05
	10/18/2005	5506.84	13.00	NPM	12.67	5494.17
OW 22+ 00	10/4/2005	5506.32	14.16	NPM	11.22	5495.10
	10/18/2005	5506.32	14.16	NPM	11.31	5495.01
OW 23+ 10	10/4/2005	5513.06	18.34	NPM	16.26	5496.80
	10/18/2005	5513.06	18.34	NPM	16.06	5497.00
OW 23+ 90	10/4/2005	5514.09	18.01	NPM	17.1	5496.99
	10/18/2005	5514.09	18.01	NPM	16.98	5497.11
OW 25+ 70	10/4/2005	5507.56	13.98	NPM	10.71	5496.85
	10/18/2005	5507.56	13.98	NPM	10.73	5496.83

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring October 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 0+60	10/4/2005	5506.08	14.09	NPM	7.87	5498.21
	10/18/2005	5506.08	14.09	NPM	7.93	5498.15
CW 1+50	10/4/2005	5504.40	13.74	NPM	6.17	5498.23
	10/18/2005	5504.40	13.74	NPM	6.21	5498.19
CW 3+85	10/4/2005	5502.95	13.11	NPM	5.43	5497.52
	10/18/2005	5502.95	13.11	NPM	5.45	5497.50
CW 5+50	10/4/2005	5502.93	12.27	NPM	6.17	5496.76
	10/18/2005	552.93	12.27	NPM	6.70	546.23
CW 6+70	10/4/2005	5503.06	11.45	NPM	6.70	5496.36
	10/18/2005	5503.06	11.45	NPM	6.70	5496.36
CW 8+10	10/4/2005	5502.83	11.63	NPM	7.24	5495.59
	10/18/2005	5502.83	11.63	NPM	7.19	5495.64
CW 8+45	10/4/2005	5503.09	12.6	7.20	7.34	5495.86
	10/18/2005	5503.09	12.6	7.00	7.29	5496.03
CW 11+ 15	10/4/2005	5503.47	12.27	NPM	5.85	5497.62
	10/18/2005	5503.47	12.27	NPM	5.82	5497.65
CW 14+ 10	10/4/2005	5503.53	13.05	NPM	6.47	5497.06
	10/18/2005	5503.53	13.05	NPM	6.44	5497.09

NPM = No Product Measured NWM = No Water Measured

Collection Well Fluids Monitoring October 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
CW 16+ 60	10/4/2005	5503.67	12.86	NPM	6.4	5497.27
	10/18/2005	5503.67	12.89	NPM	6.27	5497.40
CW 19+ 50	10/4/2005	5503.62	9.99	NPM	6.37	5497.25
	10/18/2005	5503.62	9.99	NPM	6.32	5497.30
CW 22+ 00	10/4/2005	5507.28	12.34	NPM	9.22	5498.06
	10/18/2005	5507.28	12.34	NPM	9.18	5498.10
CW 23+ 10	10/4/2005	5509.21	14.65	NPM	10.82	5498.39
	10/18/2005	5509.21	14.65	NPM	10.83	5498.38
CW 23+ 90	10/4/2005	5506.52	11.72	NPM	8.32	5498.20
	10/18/2005	5506.52	11.72	NPM	8.34	5498.18
CW 25+ 95	10/4/2005	5504.99	12.25	NPM	7.23	5497.76
	10/18/2005	5504.99	12.25	NPM	7.25	5497.74

NPM = No Product Measured NWM = No Water Measured

Monitoring Well Fluids Monitoring October 2005

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation
MW #11	10/4/2005	5506.82	22.94	NPM	11.78	5495.04
	10/18/2005	5506.82	22.94	NPM	11.81	5495.01
MW #12	10/4/2005	5498.95	14.98	NPM	12.13	5486.82
	10/18/2005	5498.95	14.98	NPM	12.25	5486.70
MW #20	10/4/2005	5516.28	27.13	20.80	21.00	5495.44
	10/18/2005	5516.28	27.13	20.78	21.04	5495.45
MW #21	10/4/2005	5519.72	30.38	21.98	21.99	5497.74
	10/18/2005	5519.72	30.38	21.97	21.98	5497.75
MW #39	10/4/2005	5517.96	38.34	NPM	26.12	5491.84
	10/18/2005	5517.96	38.34	NPM	26.06	5491.90
MW #45	10/4/2005	5498.43	16.92	11.31	11.78	5487.03
	10/18/2005	5498.43	16.92	11.26	11.73	5487.08
MW #46	10/4/2005	5498.22	10.39	NPM	10.31	5487.91
	10/18/2005	5498.22	10.39	NPM	10.21	5488.01
MW #47	10/4/2005	5499.07	14.28	11.94	12.84	5486.95
	10/18/2005	5499.07	14.28	11.87	12.53	5487.07

NPM = No Product Measured NWM = No Water Measured

Section 6.0 Monitoring Results

PHASE II MONITORING - 2005

General Chemistry Water Analysis- Collection Wells

		EPA Method 300.0					Field Data			
WQCC 20NMAC 6.2.3103		1.6	250		600	10		6.0-9.0		1000
	Date Sampled	mg/L Fluoride	mg/L Chloride	mg/L P	mg/L Sulfate	mg/L Nitrate	mmhos/cm E.C.	pH	Farenheit Temp.	mg/L TDS
CW 0+60	8/16/05	0.53	37	<0.5	0.77	<0.1	1379	7.02	68	994
	5/10/05	0.51	39	<0.5	75	<0.5	1378	6.82	55	1023
CW 1+50	8/16/05	0.59	45	<0.5	1.2	<0.1	1504	7.05	68	1090
	5/10/05	0.59	43	<0.5	5.8	<0.5	1463	6.86	56	1084
CW 3+85	8/17/05	0.25	170	<0.5	1.1	<0.1	2514	6.96	65	1908
	5/10/05	0.21	270	<0.5	32	<0.5	2880	6.87	56	2270
CW 5+50	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/10/05	0.33	2700	<0.5	75	<0.5	8765	6.81	56	7762
CW 6+70	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/11/05	<.5	2400	<0.5	170	<0.5	8175	6.86	55	7191
CW 8+10	8/22/05	0.37	1700	<0.5	210	<0.1	6487	7.06	69	5382
	5/11/05	0.29	1100	<0.5	720	<0.5	5199	6.83	55	4358
CW 8+45	8/16/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/8/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
CW 11+15	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/8/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
CW 14+10	8/17/05	1.6	55	<0.5	1400	<0.1	3502	6.93	69	2739
	5/11/05	2.1	78	<0.5	2300	<0.5	4103	6.85	58	3353

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING - 2005

General Chemistry Water Analysis - Collection Wells

		EPA Method 300.0					Field Data			
WQCC 20NMAC 6.2.3103		1.6	250		600	10		6.0-9.0		1000
	Date Sampled	mg/L Fluoride	mg/L Chloride	mg/L P	mg/L Sulfate	mg/L Nitrate	mmhos/cm E.C.	pH	Farenheit Temp.	mg/L TDS
CW 16+60	8/22/05	0.55	150	<0.5	2.2	<0.1	2108	6.98	73	1569
	5/11/05	0.42	150	<0.5	150	<0.5	2420	6.91	60	1875
CW 19+50	8/17/05	0.41	270	<0.5	140	<0.5	3001	6.88	67	2321
	5/10/05	0.35	230	<0.5	260	<0.5	2844	6.83	56	6724
CW 22+00	8/17/05	0.64	560	<0.5	9	<0.1	3461	6.98	70	2699
	5/10/05	0.74	510	<0.5	38	<0.5	3202	6.83	57	2548
CW 23+10	8/17/05	0.6	500	<0.5	4.4	<0.1	3284	6.96	68	2554
	5/12/05	0.59	450	<0.5	9.7	<0.5	3046	6.92	54	2425
CW 23+90	8/17/05	0.51	480	<0.5	1.8	<0.1	3222	6.96	68	2501
	5/12/05	0.39	350	<0.5	4.9	<0.1	2702	6.86	55	2124
CW 25+95	8/22/05	0.38	80	<0.5	230	<0.1	1252	6.98	66	899
	5/12/05	0.43	85	<0.5	270	<0.1	1287	6.92	56	949

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING - 2005

General Chemistry Water Analysis - Observation Wells

		EPA Method 300.0					Field Data			
WQCC 20NMAC 6.2.3103		1.6	250		600	10		6.0-9.0		1000
	Date Sampled	mg/L Fluoride	mg/L Chloride	mg/L P	mg/L Sulfate	mg/L Nitrate	mmhos/cm E.C.	pH	Farenheit Temp.	mg/L TDS
OW 0+60	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 1+50	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 3+85	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 5+50	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/9/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
OW 6+70	8/22/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/9/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
OW 8+10	8/16/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/9/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
OW 11+15	8/17/05	0.42	340	<0.5	25	<0.1	2467	6.9	66	1866
	5/11/05	0.43	320	<0.5	130	<0.5	2507	6.9	57	1951
OW 14+10	8/17/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/11/05	0.53	73	<0.5	350	<0.5	2311	6.95	60	1784
OW 16+60	8/22/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING - 2005

General Chemistry Water Analysis - Observation Wells

		EPA Method 300.0					Field Data			
WQCC 20NMAC 6.2.3103		1.6	250		600	10		6.0-9.0		1000
	Date Sampled	mg/L Fluoride	mg/L Chloride	mg/L P	mg/L Sulfate	mg/L Nitrate	mmhos/cm E.C.	pH	Farenheit Temp.	mg/L TDS
OW 19+50	8/22/05	0.29	290	<0.5	660	<0.1	3251	6.99	74	2527
	5/10/05	0.35	290	<0.5	290	<0.5	2896	6.82	58	2288
OW 22+00	8/17/05	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/10/05	0.78	480	<0.5	140	<0.5	2928	6.84	57	2311
OW 23+10	8/17/05	0.49	260	<0.5	5.6	2.7	2502	6.98	69	1894
	5/12/05	NA	NA	NA	NA	NA	2678	6.96	59	2095
OW 23+90	8/17/05	0.63	230	<0.5	13	<0.1	2201	6.97	67	1747
	5/12/05	0.72	320	<0.5	77	<0.1	2268	6.97	60	1747
OW 25+70	8/22/05	0.53	50	<0.5	350	<0.1	1161	7.04	69	833
	5/12/05	0.53	50	<0.5	350	<0.1	1303	6.94	56	963

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING - 2005

BTEX & Total Metals Water Analysis - Collection Wells

		EPA Method 8021B					EPA Method 6010C EPA Method 7470: Mercury							
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	MCL	0.05	2	0.005	0.1	0.015	0.05	0.05	0.002
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L EthylBen	mg/L Xylene	40CFR 141.62	mg/L Arsenic	mg/L Barium	mg/L Cadmium	mg/L Cr	mg/L Lead	mg/L Se	mg/L Silver	mg/L Mercury
CW 0+60	08/16/05	0.4	<.005	0.08	0.35		<0.02	0.55	<0.002	<0.006	0.011	<0.05	<0.005	0.4
	5/10/05	0.2	0.032	0.18	1		<0.02	0.33	<0.002	<0.006	0.012	<0.05	<0.005	<0.0002
CW 1+50	08/16/05	1	<0.02	0.2	1.8		<0.02	0.76	<0.002	<0.006	0.006	<0.05	<0.005	<0.0002
	5/10/05	1.2	0.041	0.24	2.3		<0.02	0.59	<0.002	<0.006	0.007	<0.05	<0.005	<0.0002
CW 3+85	8/17/05	0.0045	<.002	0.0075	0.036		<0.02	0.61	<0.002	<0.006	<.005	<0.05	<0.005	<0.0002
	5/10/05	0.035	0.022	0.02	0.25		<0.02	0.68	<0.002	<0.006	<.005	<0.05	<0.005	<0.0002
CW 5+50	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/10/05	0.2	0.011	0.064	0.24		<0.02	0.83	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
CW 6+70	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/11/05	0.0027	<0.005	<0.005	0.0013		<0.02	0.34	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
CW 8+10	8/22/05	0.18	<0.005	0.009	0.21		<0.02	0.64	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/11/05	0.43	<0.025	0.051	0.66		<0.02	0.49	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

CW 0+60 was resampled and analyzed for Hg(10/19/05) -results are < 0.0002 mg/L

PHASE II MONITORING - 2005

BTEX & Total Metals Water Analysis - Collection Wells

		EPA Method 8021B					EPA Method 6010C EPA Method 7470: Mercury							
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	MCL	0.05	2	0.005	0.1	0.015	0.05	0.05	0.002
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L EthylBen	mg/L Xylene	40CFR 141.62	mg/L Arsenic	mg/L Barium	mg/L Cadmium	mg/L Cr	mg/L Lead	mg/L Se	mg/L Silver	mg/L Mercury
CW 8+45	8/16/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/8/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
CW 11+15	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/8/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
CW 14+10	8/17/05	6	<0.1	1.2	0.24		<0.02	0.12	<0.002	<0.006	0.0055	<0.05	<0.005	<0.0002
	5/11/05	9.8	<0.025	2.1	1.3		<0.1	0.33	<0.01	<0.03	<0.025	<0.25	<0.025	<0.0002
CW 16+60	8/22/05	6.8	0.065	3.1	7.1		<0.02	1.1	<0.002	<0.006	0.008	<0.5	<0.005	<0.0002
	5/11/05	5.3	0.075	3.8	7.3		<0.02	0.6	<0.002	<0.006	0.01	<0.05	<0.005	<0.0002
CW 19+50	08/17/05	6.6	<0.05	2.8	4.3		<0.02	0.68	<0.002	<0.006	<0.0005	<0.05	<0.005	<0.0002
	5/10/05	4.8	0.021	1.7	5.1		<0.02	0.2	<0.002	<0.006	0.0061	<0.05	<0.005	<0.0002
CW 22+00	8/17/05	6.5	<0.1	<0.1	0.15		<0.02	0.71	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/10/05	7	0.09	0.095	0.2		<0.02	0.61	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
CW 23+10	8/17/05	9.4	0.015	0.42	0.36		<0.02	1.1	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/12/05	6.3	0.076	0.19	0.35		<0.02	0.73	<0.002	<0.006	<0.005	<0.05	<0.005	0.00038

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

BTEX & Total Metals Water Analysis - Collection Wells

		EPA Method 8021B					EPA Method 6010C EPA Method 7470: Mercury							
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	MCL	0.05	2	0.005	0.1	0.015	0.05	0.05	0.002
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L EthylBen	mg/L Xylene	40CFR 141.62	mg/L Arsenic	mg/L Barium	mg/L Cadmium	mg/L Cr	mg/L Lead	mg/L Se	mg/L Silver	mg/L Mercury
CW 23+90	8/17/05	3.3	<0.05	0.17	0.33		<0.02	0.45	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/12/05	3.4	0.035	0.17	0.4		<0.02	0.4	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
CW 25+95	8/22/05	0.00059	<0.0005	<0.0005	<0.0005		<0.02	0.057	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/12/05	0.001	<0.0005	<0.0005	<0.0005		<0.02	0.085	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING - 2005

BTEX & Total Metals Water Analysis - Observation Wells

		EPA Method 8021B					EPA Method 6010C EPA Method 7470: Mercury							
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	MCL	0.05	2	0.005	0.1	0.015	0.05	0.05	0.002
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L EthylBen	mg/L Xylene	40CFR 141.62	mg/L Arsenic	mg/L Barium	mg/L Cadmium	mg/L Cr	mg/L Lead	mg/L Se	mg/L Silver	mg/L Mercury
OW 0+60	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 1+50	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 3+85	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 5+50	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/9/05	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
OW 6+70	8/22/05	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
	5/9/05	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
OW 8+10	8/16/05	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
	5/9/05	NS	NS	NS	NS		NS	NS	NS	NS	NS	NS	NS	NS
OW 11+15	8/17/05	0.75	<0.01	0.12	0.27		0.038	0.82	<0.002	<0.006	0.0056	<0.05	<0.005	<0.0002
	5/11/05	0.42	<0.025	0.14	0.52		0.037	1.9	<0.002	0.02	0.028	<0.05	<0.005	<0.0002

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

PHASE II MONITORING 2005

BTEX & Total Metals Water Analysis - Observation Wells

		EPA Method 8021B					EPA Method 6010C EPA Method 7470: Mercury							
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	MCL	0.05	2	0.005	0.1	0.015	0.05	0.05	0.002
	Date Sampled	mg/L Benzene	mg/L Toluene	mg/L EthylBen	mg/L Xylene	40CFR 141.62	mg/L Arsenic	mg/L Barium	mg/L Cadmium	mg/L Cr	mg/L Lead	mg/L Se	mg/L Silver	mg/L Mercury
OW 14+10	8/17/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/11/05	10	<.0005	3.9	3.2		0.11	11	<0.002	0.09	0.73	<0.05	<0.005	<0.0002
OW 16+60	8/22/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/12/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
OW 19+50	8/22/05	0.0057	<0.0005	0.0011	0.0019		NA	NA	NA	NA	NA	NA	NA	NA
	5/10/05	1.9	0.013	0.86	3.2		<0.02	0.23	<0.002	<0.006	0.024	<0.05	<0.005	<0.0002
OW 22+00	8/17/05	SPH	SPH	SPH	SPH		SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	5/10/05	3.1	0.045	0.15	0.34		<0.02	0.16	<0.002	<0.006	0.012	<0.05	<0.005	<0.0002
OW 23+10	8/17/05	0.53	<0.01	<0.01	0.047		<0.02	2.3	<0.002	<0.006	<0.005	<0.05	<0.005	<0.0002
	5/10/05	0.34	0.0092	0.011	0.08		<0.02	0.75	<0.002	0.02	0.0091	<0.05	<0.005	0.00096
OW 23+90	8/17/05	0.39	<0.02	0.03	0.072		<0.02	2.4	<0.002	0.0075	<0.005	<0.05	<0.005	<0.0002
	5/12/05	0.98	0.016	0.031	0.13		NA	NA	NA	NA	NA	NA	NA	NA
OW 25+70	8/22/05	<0.0005	<0.0005	<0.0005	<0.0005		<0.02	0.6	<0.002	0.013	0.0065	<0.05	<0.005	<0.0002
	5/12/05	0.00079	<0.0005	<0.0005	<0.0005		0.14	25	<0.01	0.44	0.13	<0.25	<0.025	<0.0002

SPH = Well Contains Separate Phase Hydrocarbon - No Sample
NS = Well is Dry - No Sample
NA = Not Enough Water in the Well to Sample - Not Analyzed

Section 7.0 Remediation System Monitoring

Remediation System Monitoring

Using a vacuum truck, separate phase hydrocarbon has been removed from the Collection wells on a 3X per week basis since May. SPH was removed from the Observation wells on a monthly basis until September. At that time, the schedule was modified to a 3X per week basis at the request of OCD and NMED. All fluid pulled from the wells is disposed of through the refinery wastewater system.

Total volume removed from Collection wells and Observation wells is estimated at 19,200 barrels for the six-month period.

Section 8.0 Summary

Summary

At the request of NMED, (May 9, 2005 letter - Approval With Conditions North Boundary Barrier Collection System Design And Monitoring Phase II) Giant personnel collected initial and annual groundwater samples from all Observation and Collection Wells that do not contain separate phase hydrocarbons in May and August. The following Collection Wells were sampled in May and August: CW0+60, CW 1+50, CW 3+85, CW 8+10, CW14+10, CW 16+60, CW19+50, CW22+00, CW23+10, CW23+90, CW25+95. CW 5+50 and CW 6+70 had separate phase hydrocarbon present in May but were sampled in August. CW 8+45 and CW 11+15 had separate phase hydrocarbon and were not sampled in either May or August. The following Observation Wells were sampled in May and August: OW 11+15, OW 19+50, OW 23+10, OW 23+90, and OW 25+70. OW 14+10 and OW 22+00 had separate phase hydrocarbon present in May but were sampled in August. OW 0+60, OW 1+50, OW 3+85, and OW 16+60 had separate phase hydrocarbon and were not sampled in either May or August. OW 5+50 had separate phase hydrocarbon present in May and was dry in August and was not sampled. OW 6+70 and OW 8+10 were dry and not sampled in either May or August.

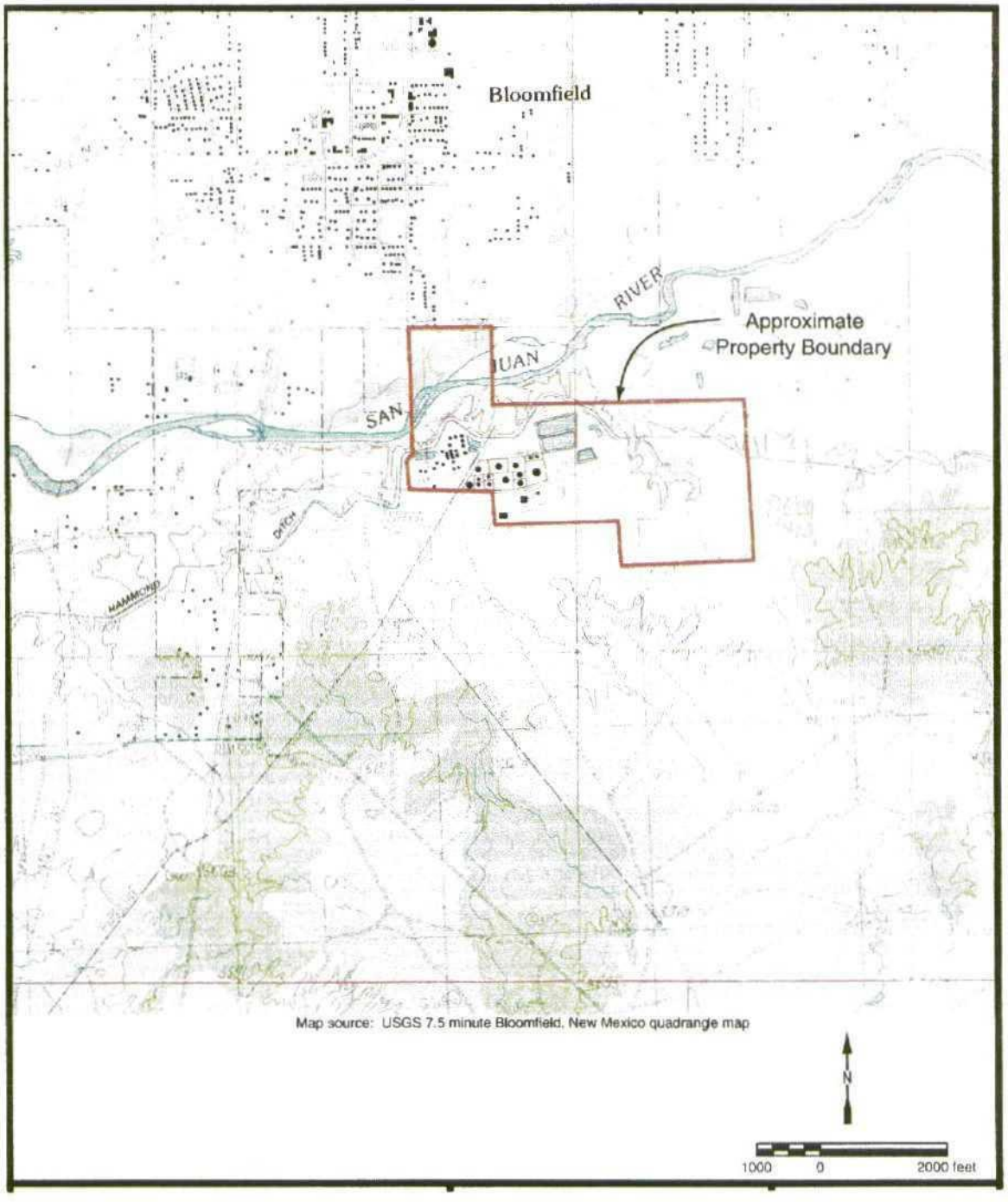
There have only been two sampling events conducted on these new wells therefore historical comparison is not relevant at this time. There were sporadic hits of arsenic, barium, cadmium, chromium, and lead in the Observation wells. Collection wells were below maximum contaminant levels except for a hit of mercury (0.4mg/L) in CW 0+60 during the August sampling event. The well was re-sampled with a result of <0.0002 mg/L. As anticipated, benzene has been detected in all the Collection wells and Observation wells with CW 25+95 and OW 25+70 having the lowest concentration.

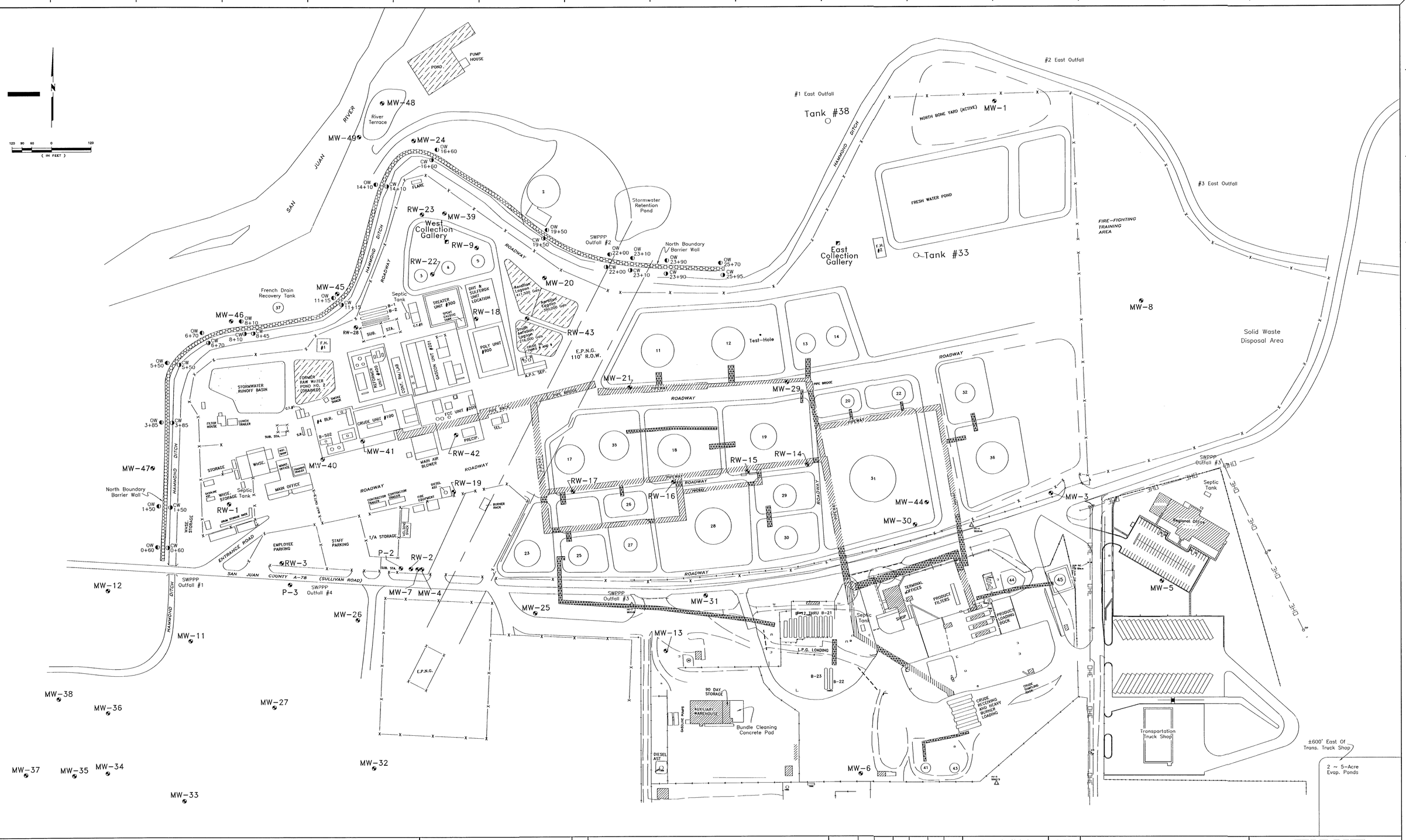
Currently, monitoring results show groundwater levels have not risen significantly in the Collection wells following fluid removal efforts. The presence of separate phase hydrocarbon in Collection wells has decreased behind the barrier and in Observation wells immediately down gradient of the barrier wall. Areas where seepage of fuel hydrocarbon impacted water was present have been reduced or eliminated. The data suggests the barrier has been effective.

Future remedial action will consist of continuing to remove fluids from the Observation and Collection wells three times per week. In addition, fluid monitoring will continue on a bimonthly schedule. The location of separate phase hydrocarbon in all wells along Hammond Ditch will be assessed and trends in detection, absence, SPH thickness, and fluid build up on both sides of the barrier will be assessed.

Section 9.0 Maps

Figure 1


Bloomfield
RIVER
Approximate
Property Boundary
UAN
SAN
DITCH
HAMMOND
Map source: USGS 7.5 minute Bloomfield, New Mexico quadrangle map
N
1000
0
2000 feet



NOTES
"MW-XX" – Monitoring Wells Locations
"RW-XX" – Recovery Well Locations
"P" – Piezometer
– Denotes Under Ground Pipe-Way.
– Denotes Above Ground Pipe-Way.
– Denotes Slurry Barrier Wall
"CW" – Collection Well Locations
"OW" – Observation Well Locations

REFERENCE DWGS.

NO.	REVISION	JOB No.	BY	DATE
7	Observation, & Collection Wells Added As Per Enviro. Dept. Mark-Ups.		NHB	12/05
6	Updated To Indicate Changes As Per Enviro. Dept. Red-Line Mark-Ups.		NHB	7/05
5	Updated To Indicate Changes As Per Enviro. Dept. Red-Line Mark-Ups.		NHB	3/05
4	Updated To Indicate Changes As Per Enviro. Dept. Red-Line Mark-Ups.		NHB	2/04
3	Updated To Indicate Under Ground Pipe Ways In The Tank Farm Area		NHB	12/03
2	Updated As Per Enviromental Dept. Mark-Up. (C. Hurtado)		NHB	5/03
1	Updated As Per Enviromental Dept. Mark Up		BY	DATE

DRAWN		CHECKED		APPROVED	
BY	DATE	BY	DATE	BY	DATE

SCALE	As Noted
DRAWN BY	NHB
INITIAL CHK.	
FINAL CHK.	
ENGR.	
APPR. BY	
AFE/WO No.	
DATE	8/29/02

Giant Bloomfield Refinery Area Plot Plan Recovery Well & Monitoring Well Locations

GIANT REFINING CO.
BLOOMFIELD REFINERY — BLOOMFIELD NEW MEXICO

DWG. NO. D-000-900-023 — REV. 7

Section 10.0 Field Methods

Field Methods

Groundwater Elevation

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. The technician records separate phase hydrocarbon, depth to water, and total well depth using this probe.

Water Quality/Groundwater Sampling

Water quality parameters are measured using an Ultrameter 6P by the Myron L Company. Electrical conductance, total dissolved solids (TDS), pH, and temperature are monitored during purging. Dissolved oxygen is determined using the Hach High Range Dissolved Oxygen AccuVac method within thirty minutes of sampling.

Well Purging Technique

At least three well volumes are purged from the well. Purge volumes are determined using the following equation:
Well Depth – Casing Height – Depth to Liquid X Conversion Factor X Three.
The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	1.50 gal/ft
5"	1.02 gal/ft
4"	0.74 gal/ft
3"	0.367 gal/ft
2"	0.163 gal/ft

Typically disposable bailers are used for purging and sampling. Each bailer holds one liter of liquid. Three well volumes can be calculated by counting the number of times a well is bailed.
All purged water is poured into a 55-gallon drum designated for sampling events.

Well Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative groundwater samples include:

- Interface Probe
- Ultrameter 6P
- Distilled Water
- Disposable Latex Gloves
- Disposable Bailers
- String/Twine
- Cooler with Ice
- Bottle kits with Preservatives (provided by the contract laboratory)
- Glass Filters and Syringes Jar (usually 4 oz.)
- Sharpie Permanent Marker

- Field Paperwork/Logsheet
- Two 5-gallon buckets
- Trash container (plastic garbage bag)
- Ziploc Bags
- Paper towels

After sufficient purging, samples are collected with the bailer and poured into the appropriate sample containers. Two people are usually utilized for sampling. Sampling takes place over a bucket to insure that spills are contained

Samples are labeled immediately with location, date, time, analysis, preservative, and sampler. Then they are put in a Ziploc and placed in a cooler holding sufficient ice to keep them cool. The field logsheet is reviewed to verify all entries.

Purge and Decontamination Water Disposal

The Ultrameter 6P and the interface probe are rinsed with distilled water after every well. The rinse procedure takes place over a bucket to insure that spills are contained.

All rinse and purge water is contained and then disposed of through the refinery wastewater system.

Any glassware used is taken to the refinery laboratory and washed with Alconox and water and rinsed with reverse osmosis water. Laboratory wastewater runs through the refinery system.

Section 11.0 Drilling Logs and Installation Diagrams

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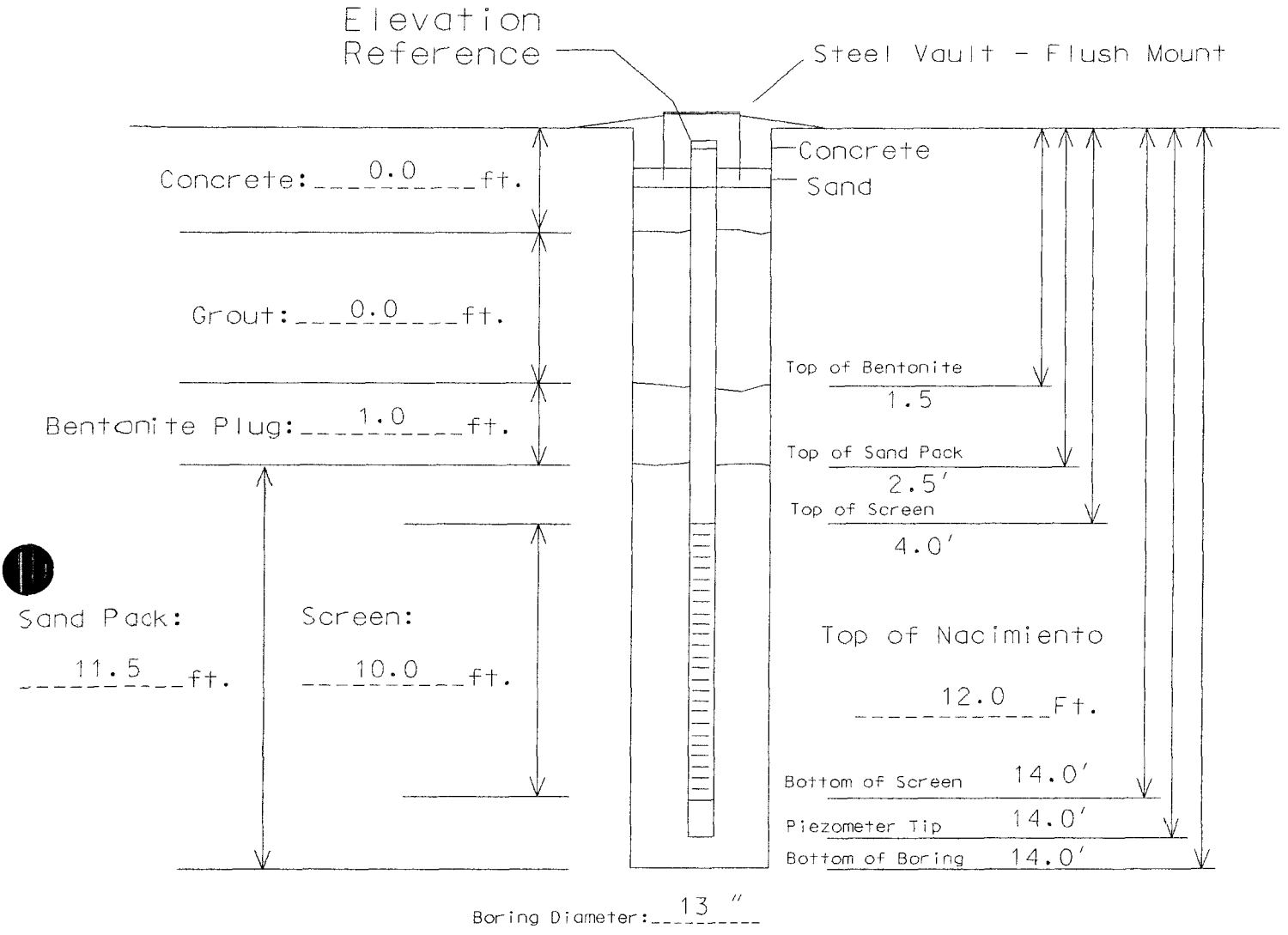
505523-7674

Installation Diagram

Monitoring Well No. CW 0+60



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

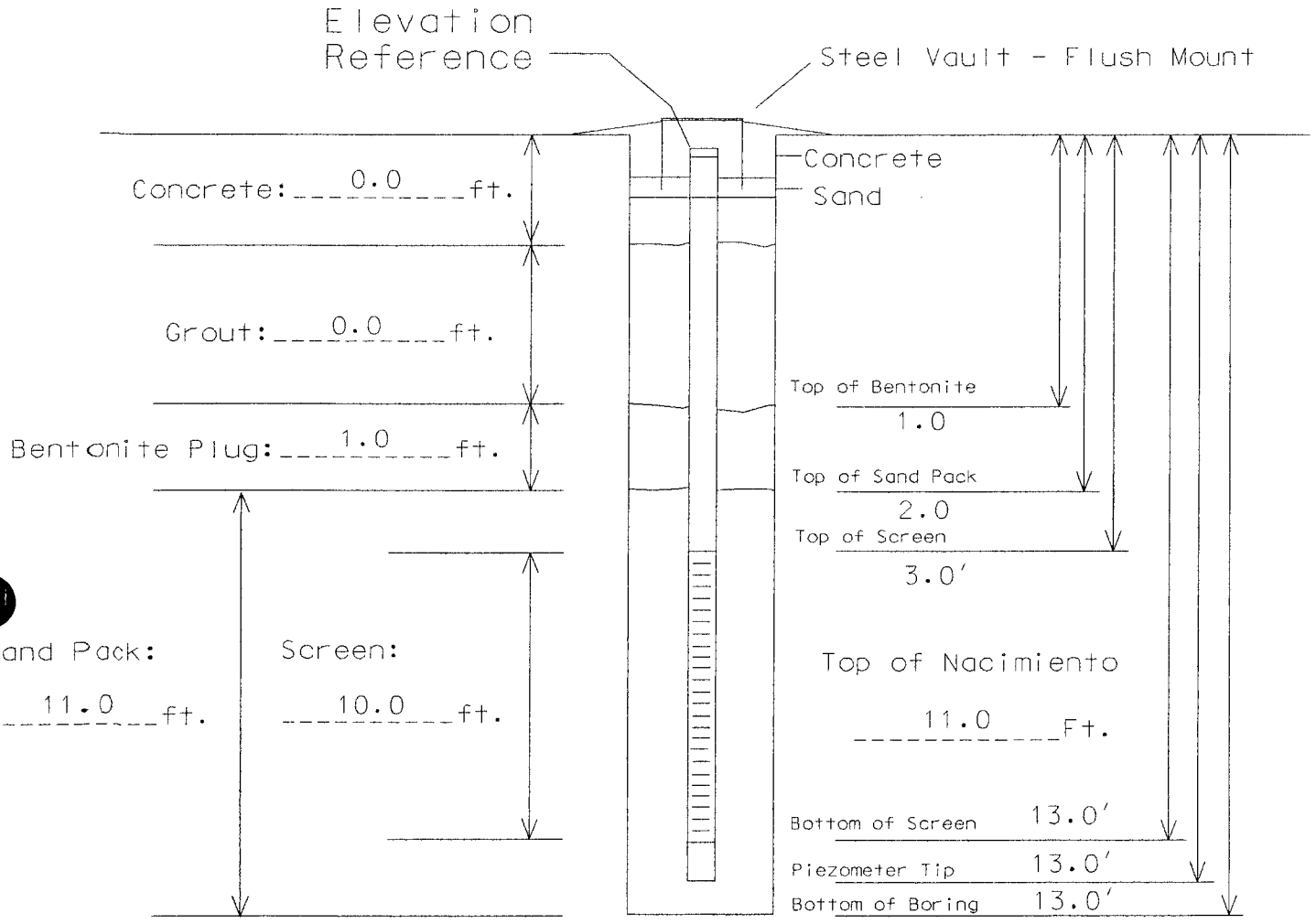
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. CW 1+50



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

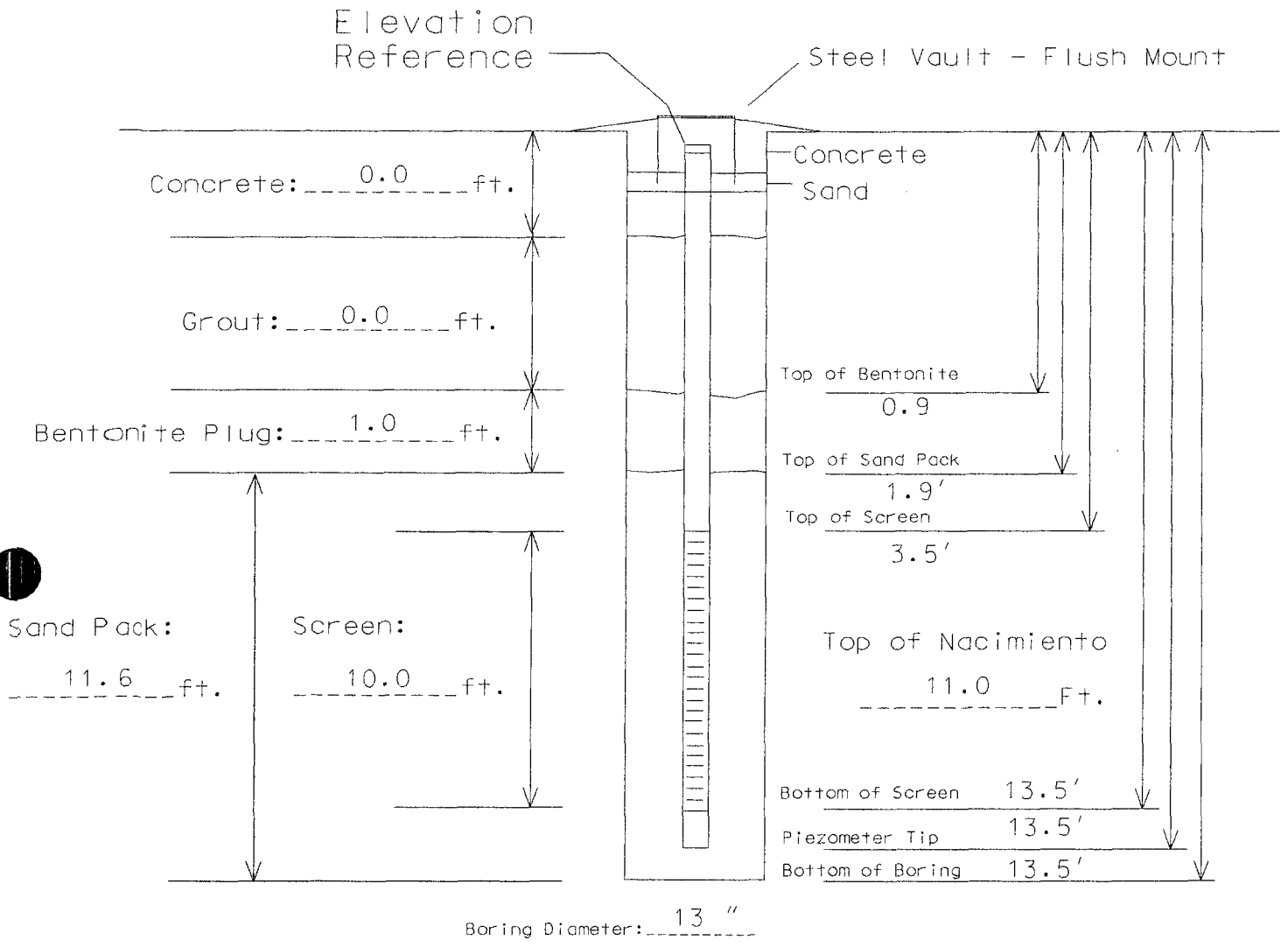
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. CW 3+85



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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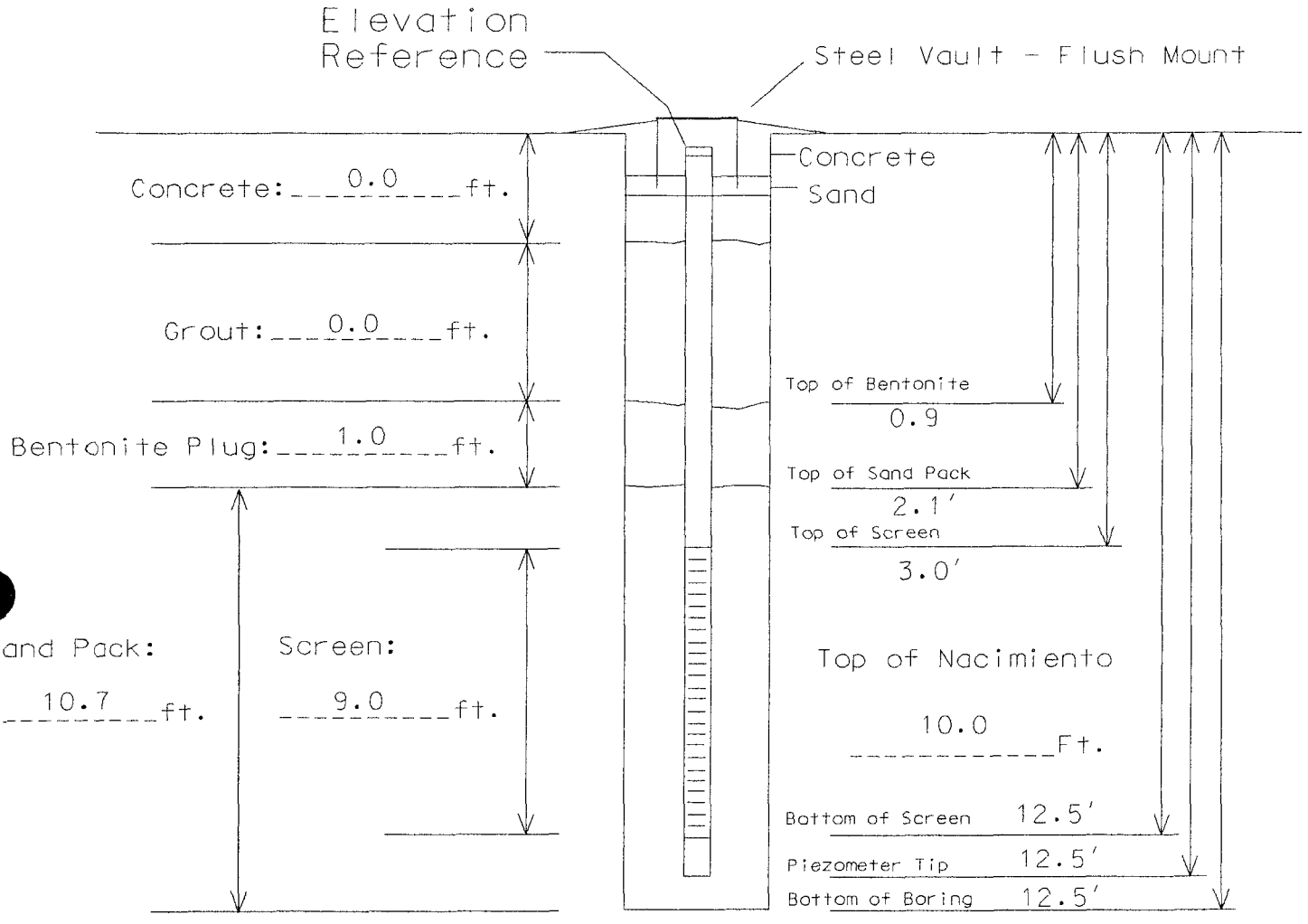
505-523-7674

Installation Diagram

Monitoring Well No. CW 5+50



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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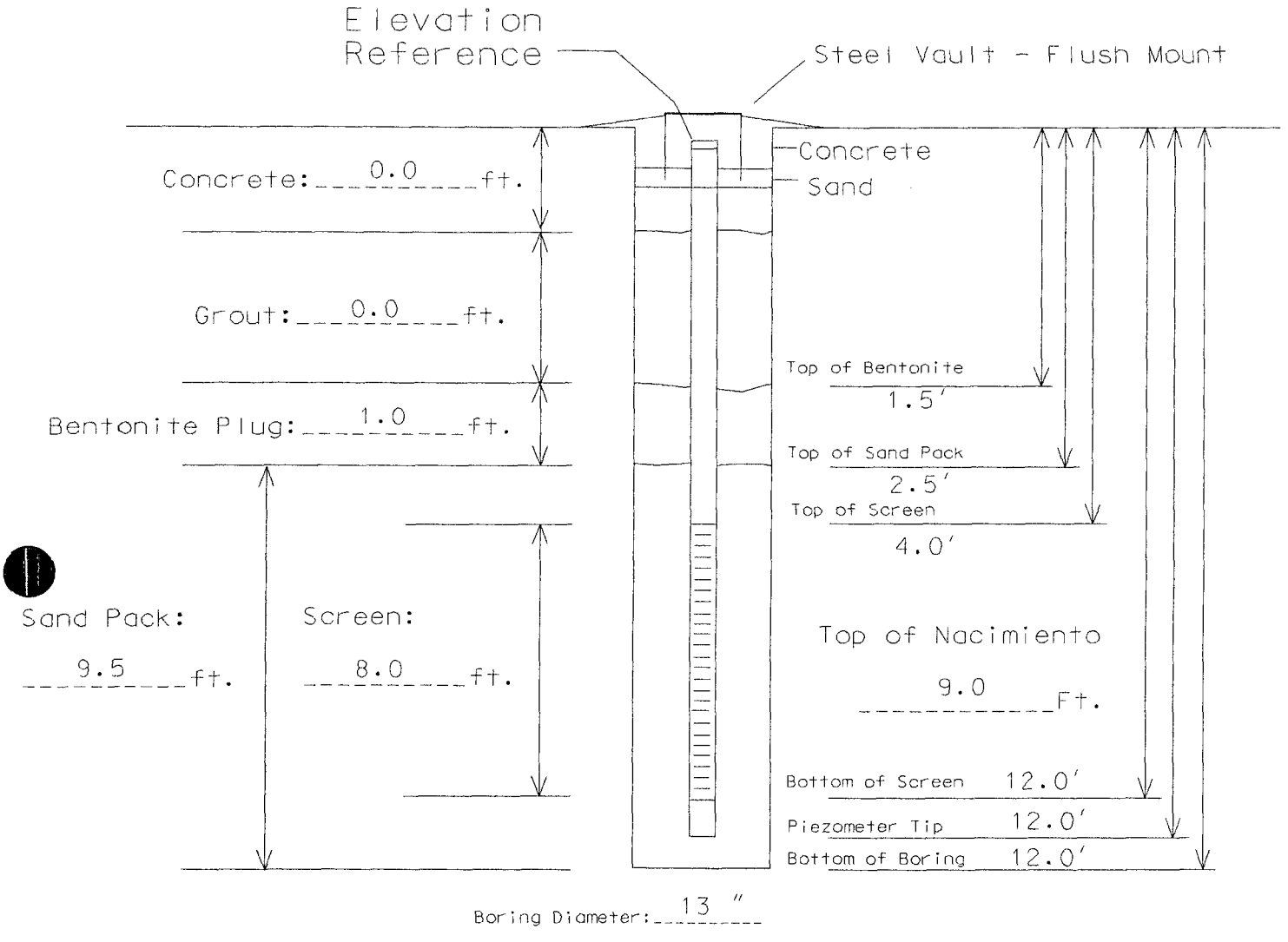
Installation Diagram

Monitoring Well No. CW 6+70



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

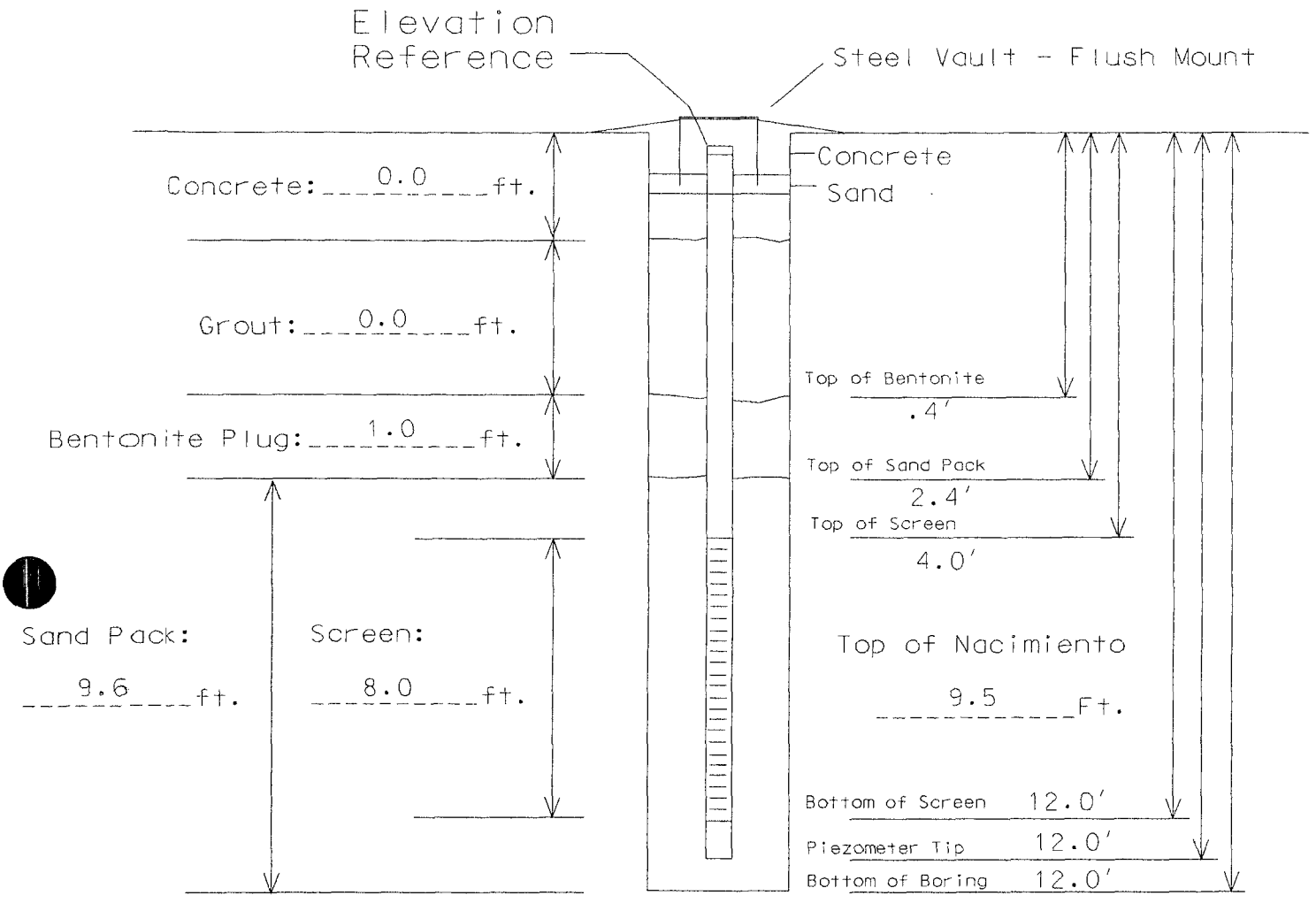
Elevation: TBS

PRECISION ENGINEERING, INC.

505-23-7674

Installation Diagram

Monitoring Well No. CW 8+10



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

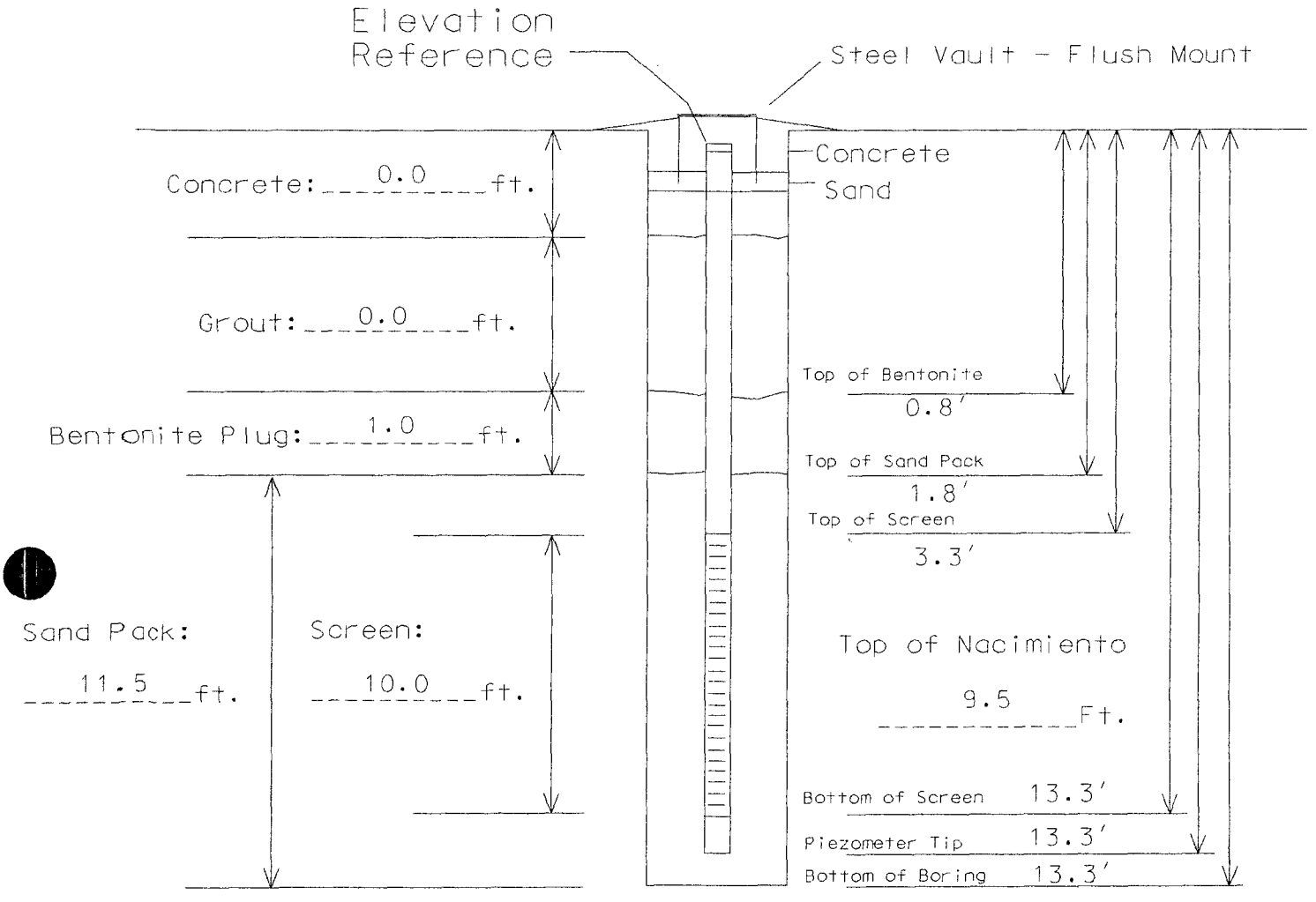
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. CW 8+45



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

PRECISION ENGINEERING, INC.

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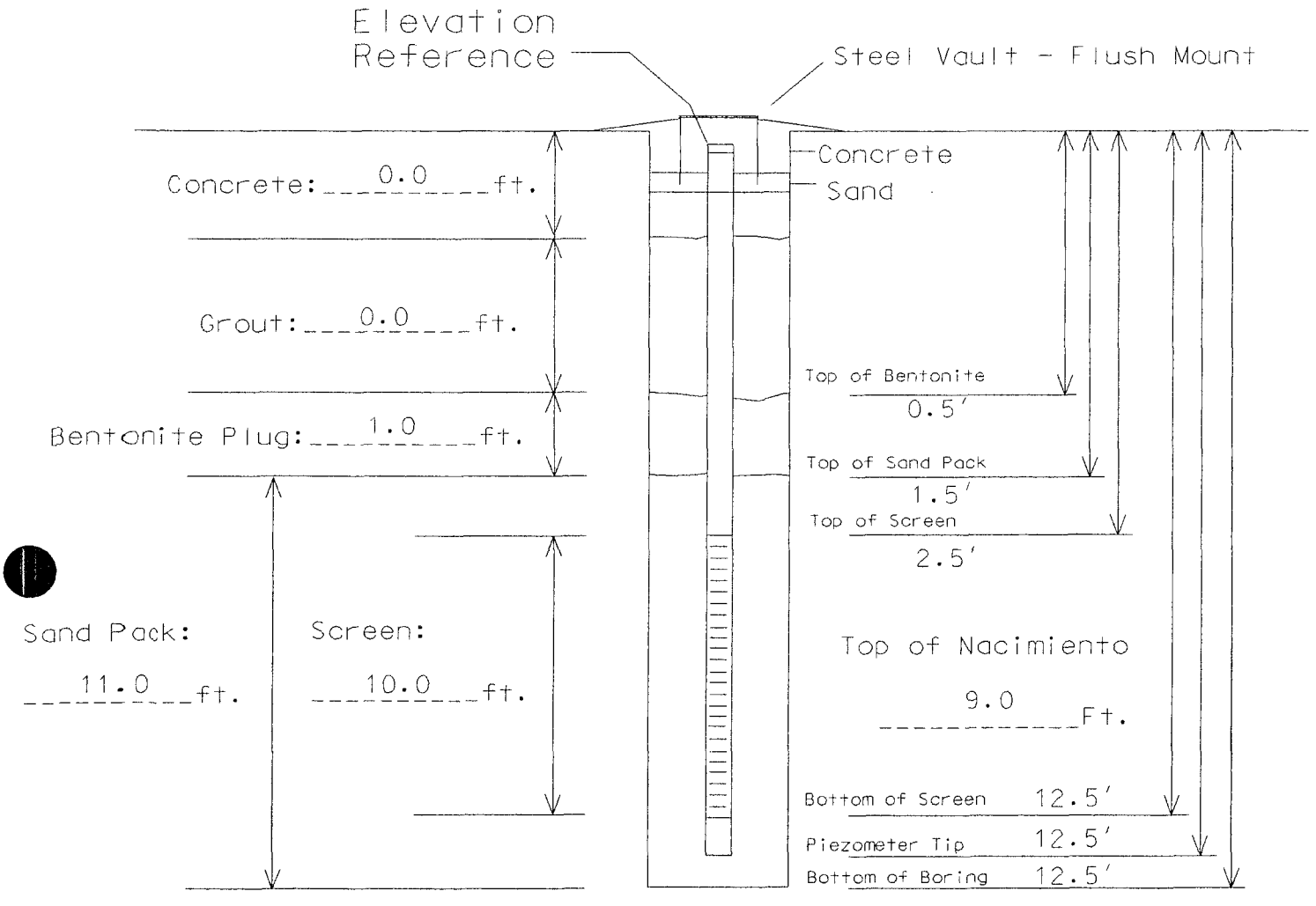
Installation Diagram

Monitoring Well No. CW 11+15



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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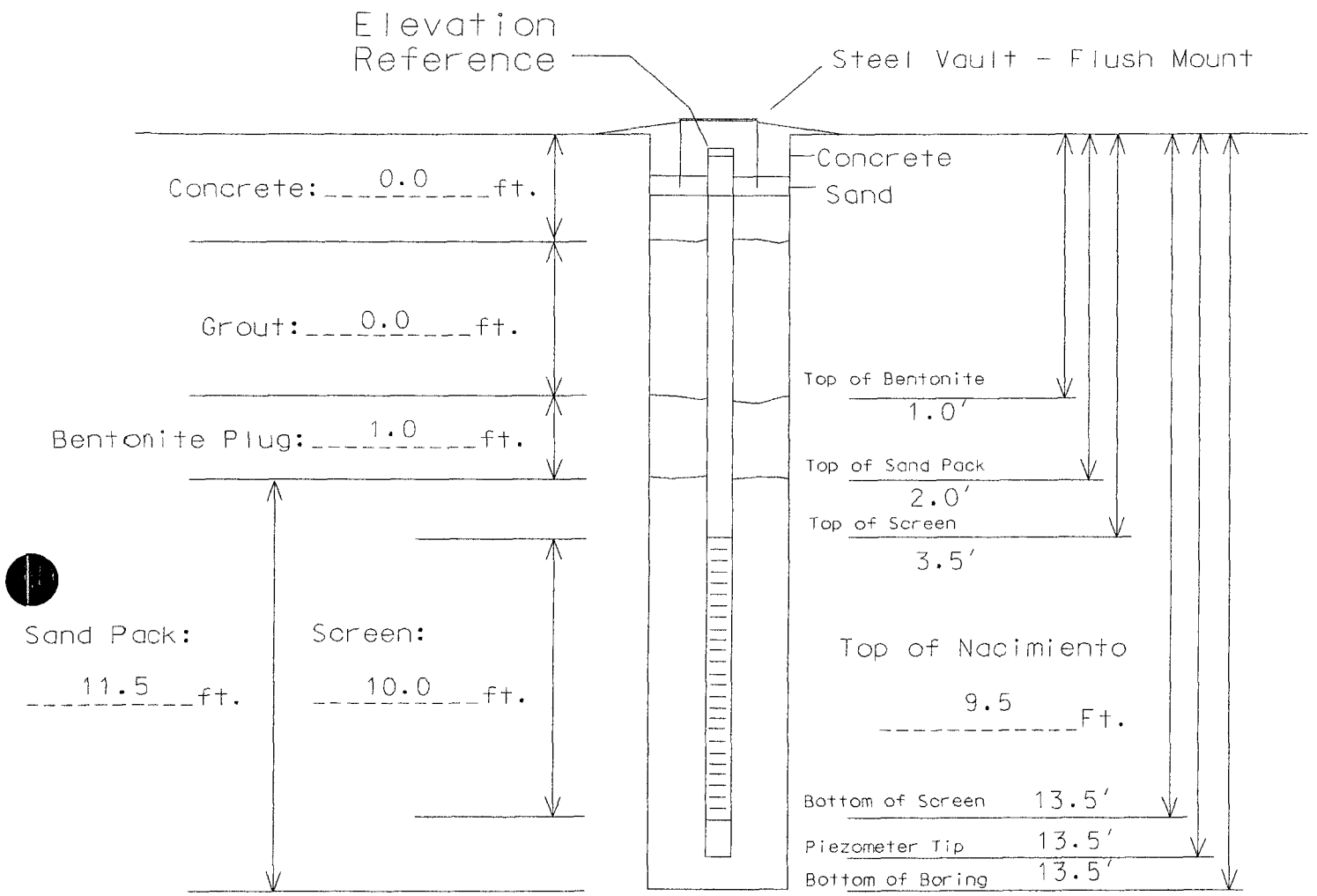
Installation Diagram

Monitoring Well No. CW 14+10



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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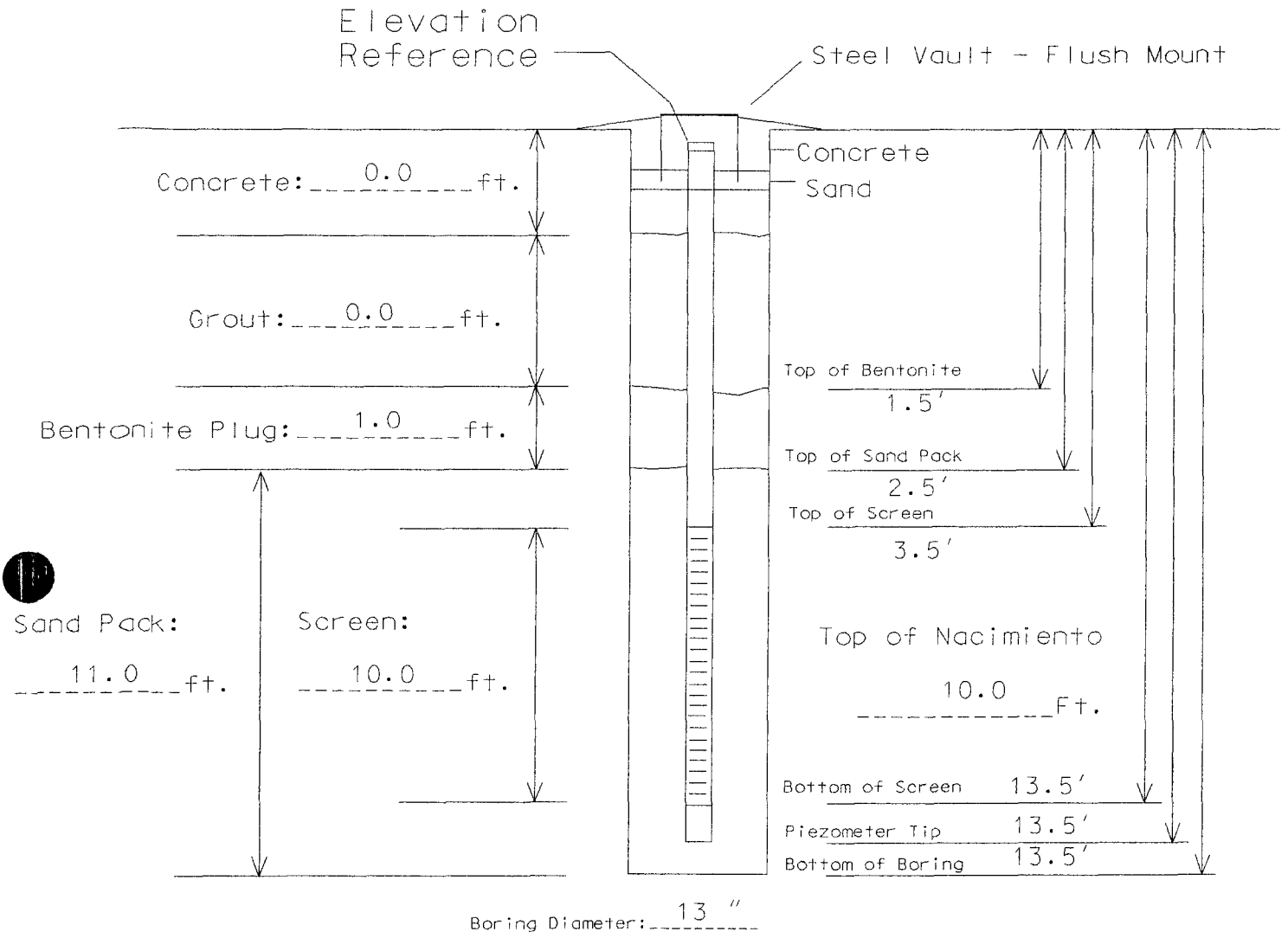
Installation Diagram

Monitoring Well No. CW 16+60



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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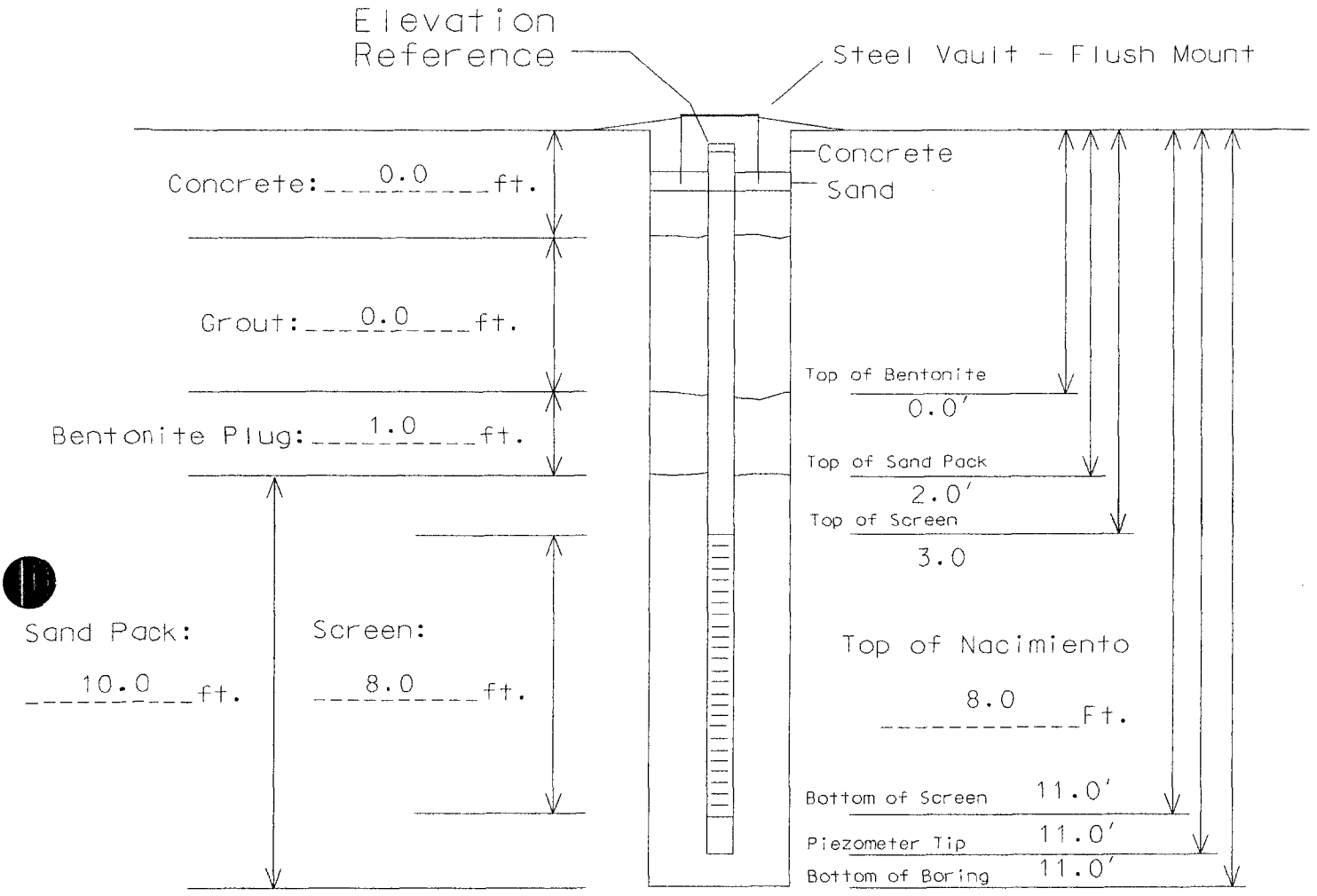
Installation Diagram

Monitoring Well No. CW 19+50



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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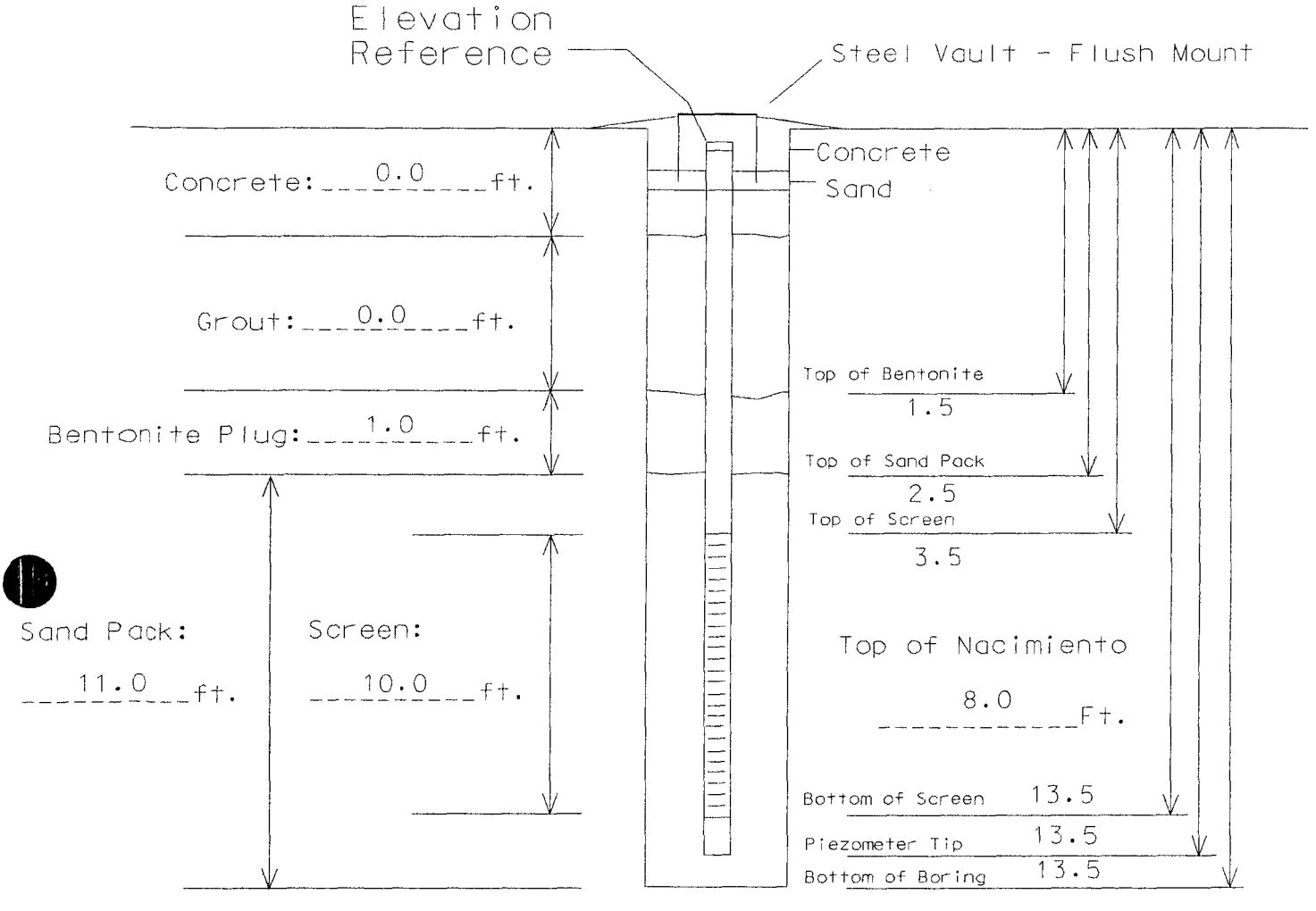
Installation Diagram

Monitoring Well No. CW 22+00



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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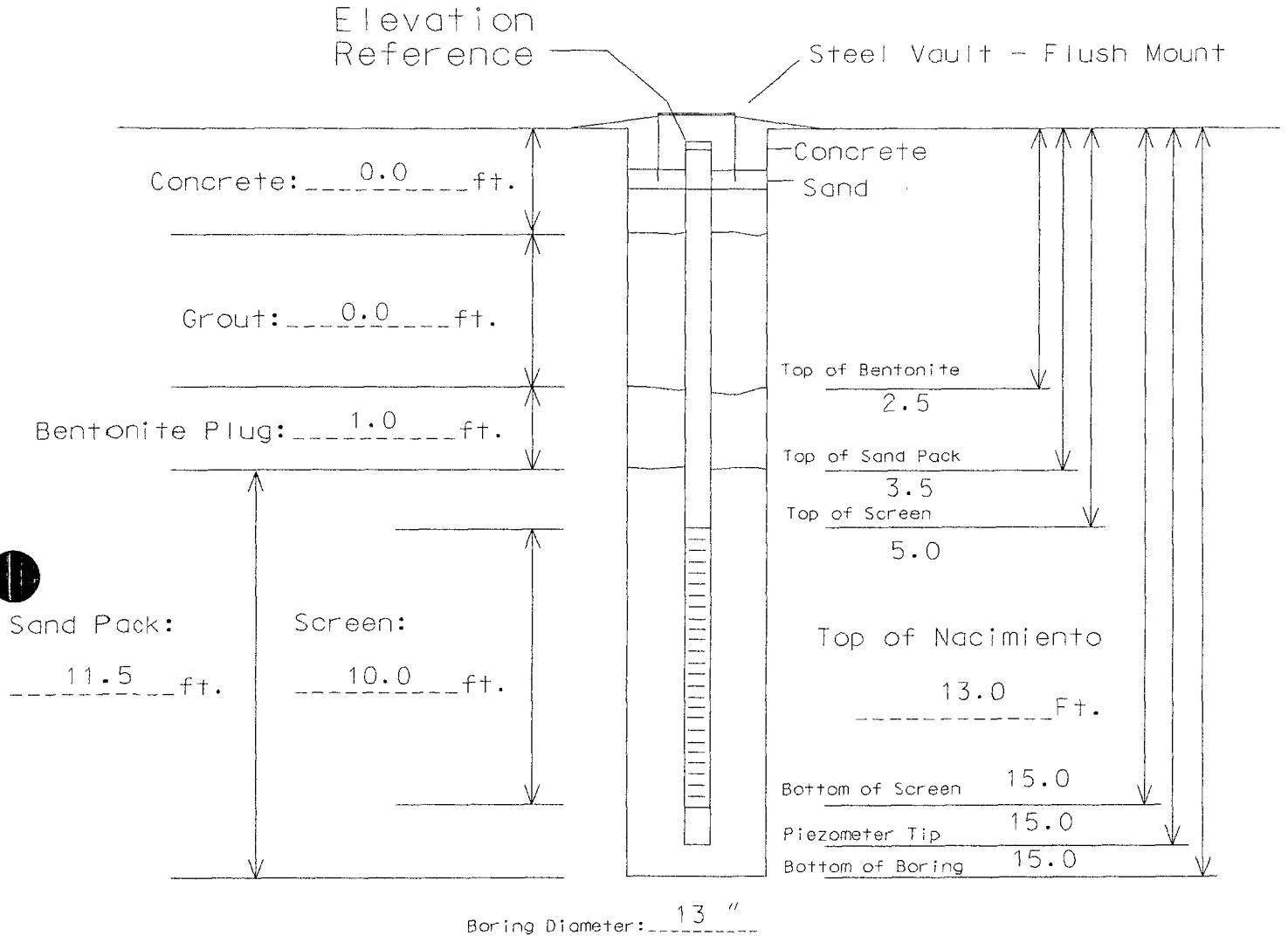
Installation Diagram

Monitoring Well No. CW 23+10



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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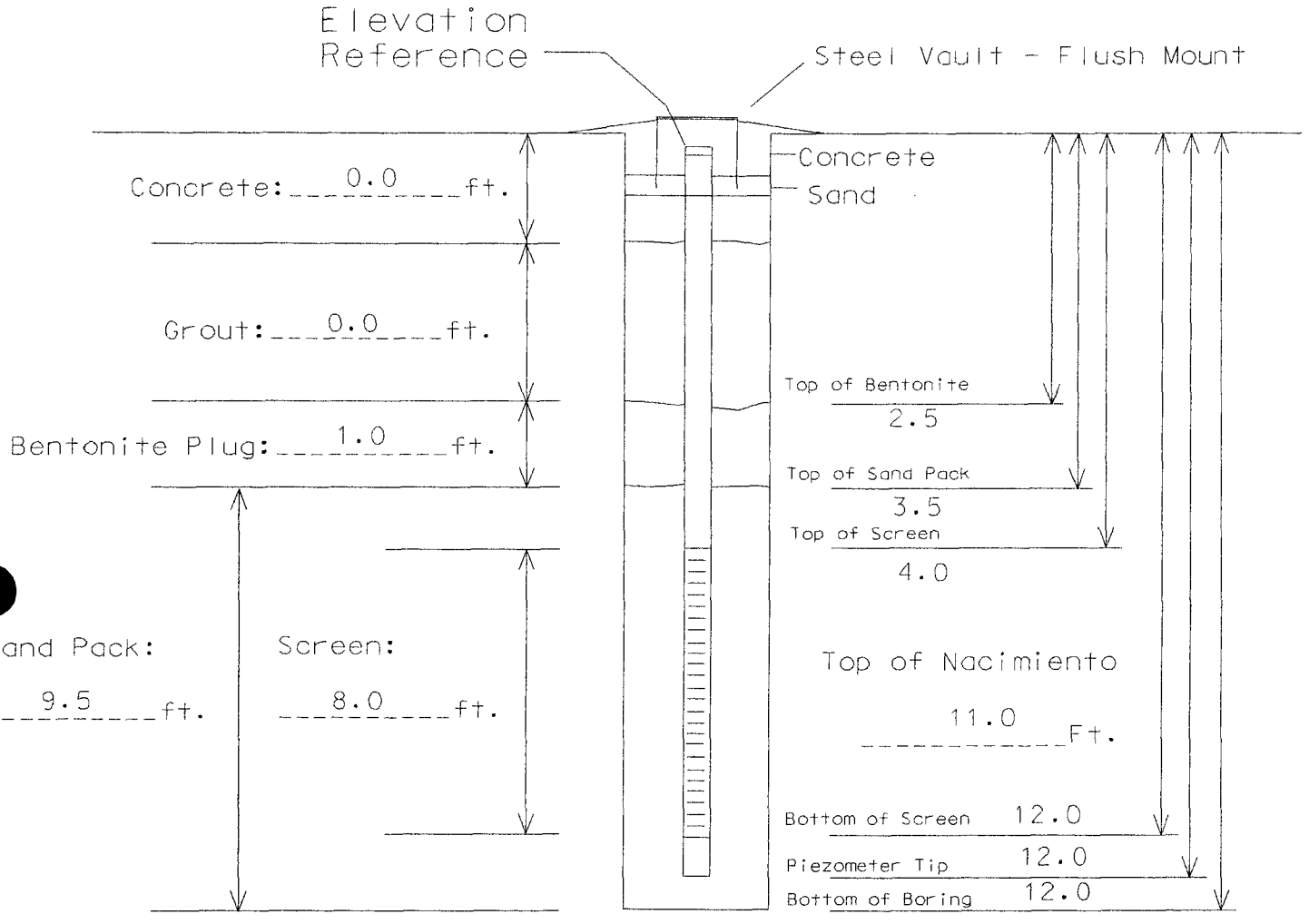
505-523-7674

Installation Diagram

Monitoring Well No. CW 23+90



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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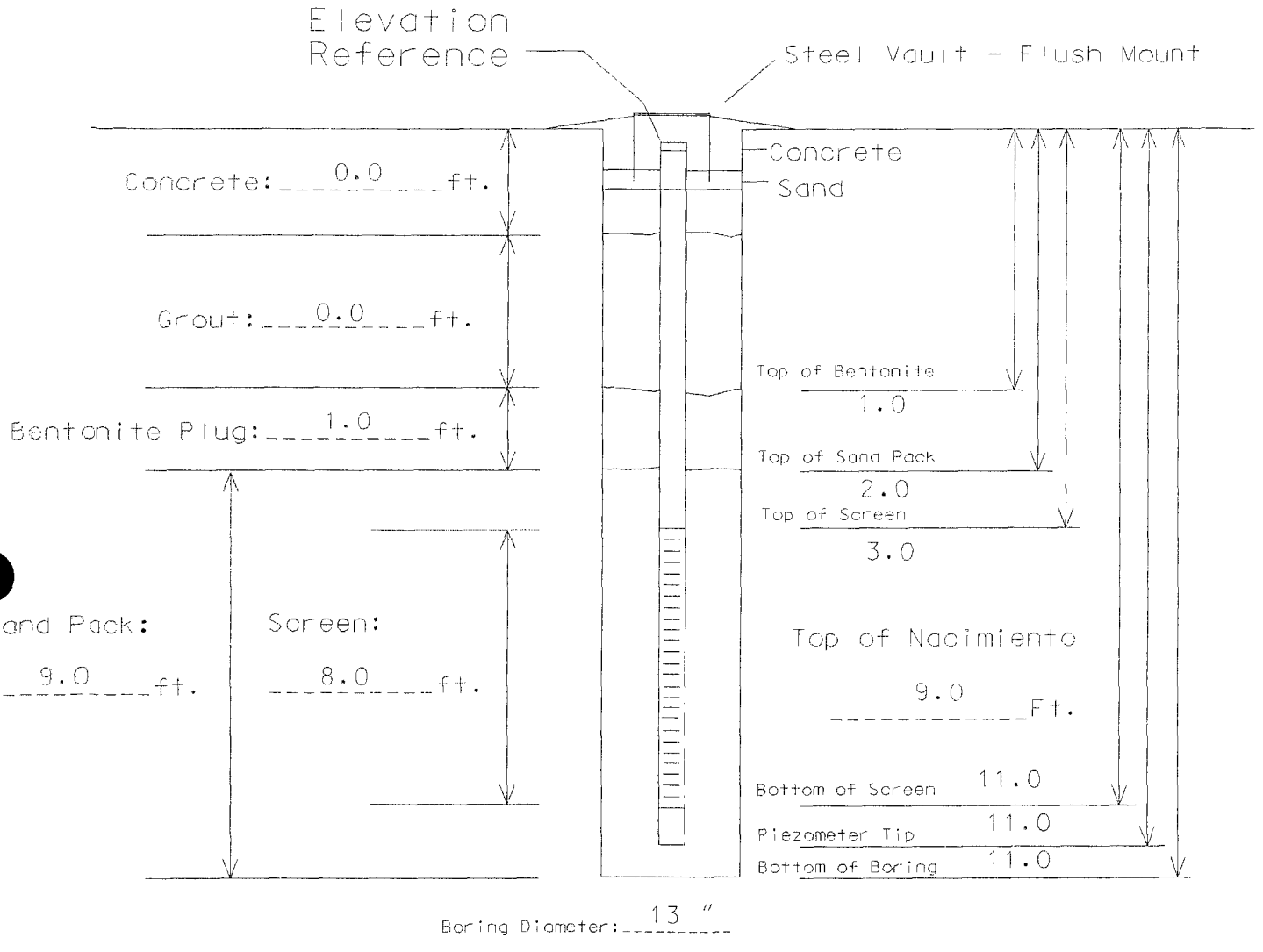
505-632-7674

Installation Diagram

Monitoring Well No. CW 25+95



Boring Diameter: 13 "

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 6" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 6" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

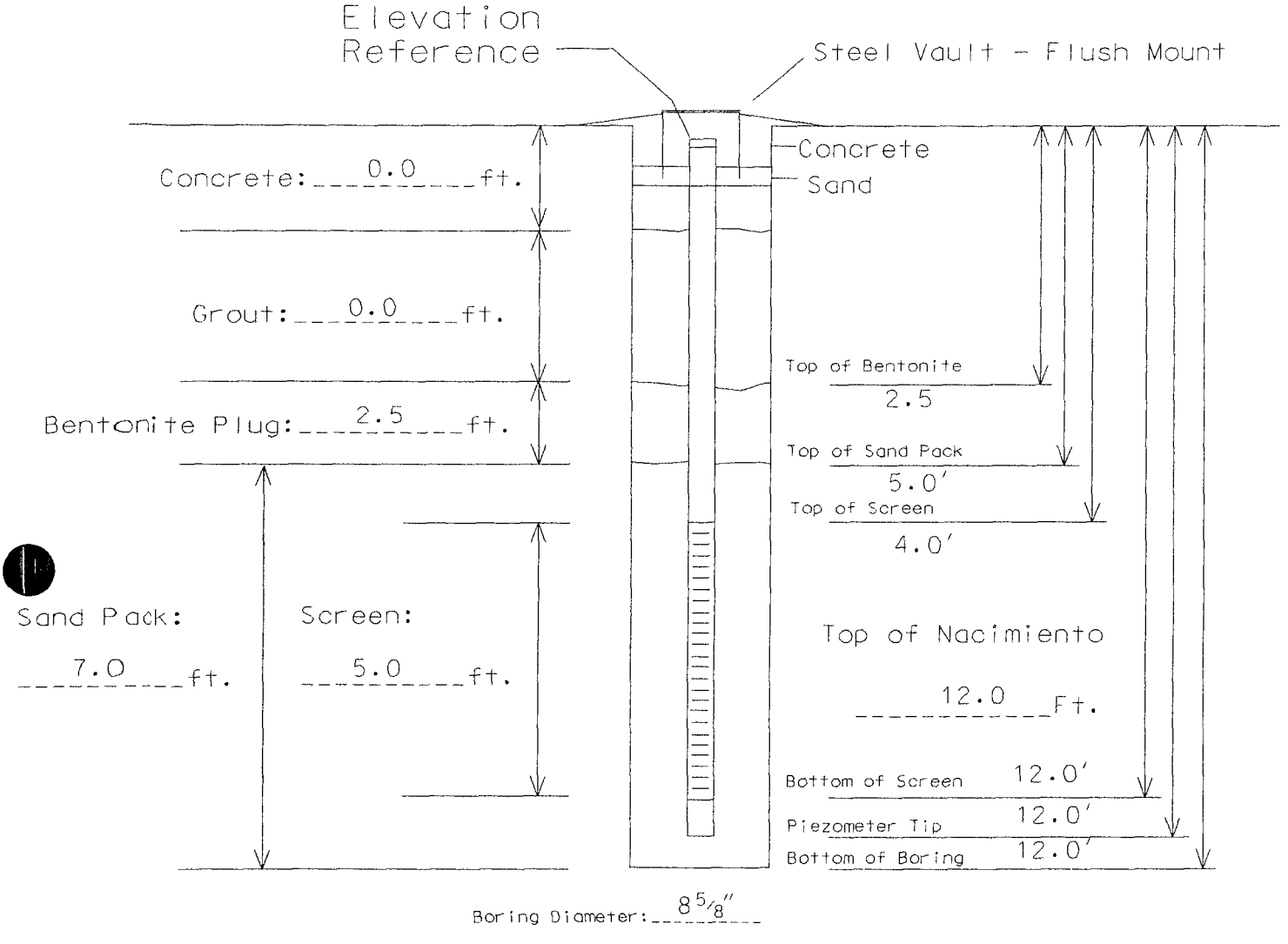
Project Name: Bloomfield Refinery

Elevation: TBS

PRECISION ENGINEERING, INC.
505-523-7674

Installation Diagram

Monitoring Well No. OW 0+60



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards. Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

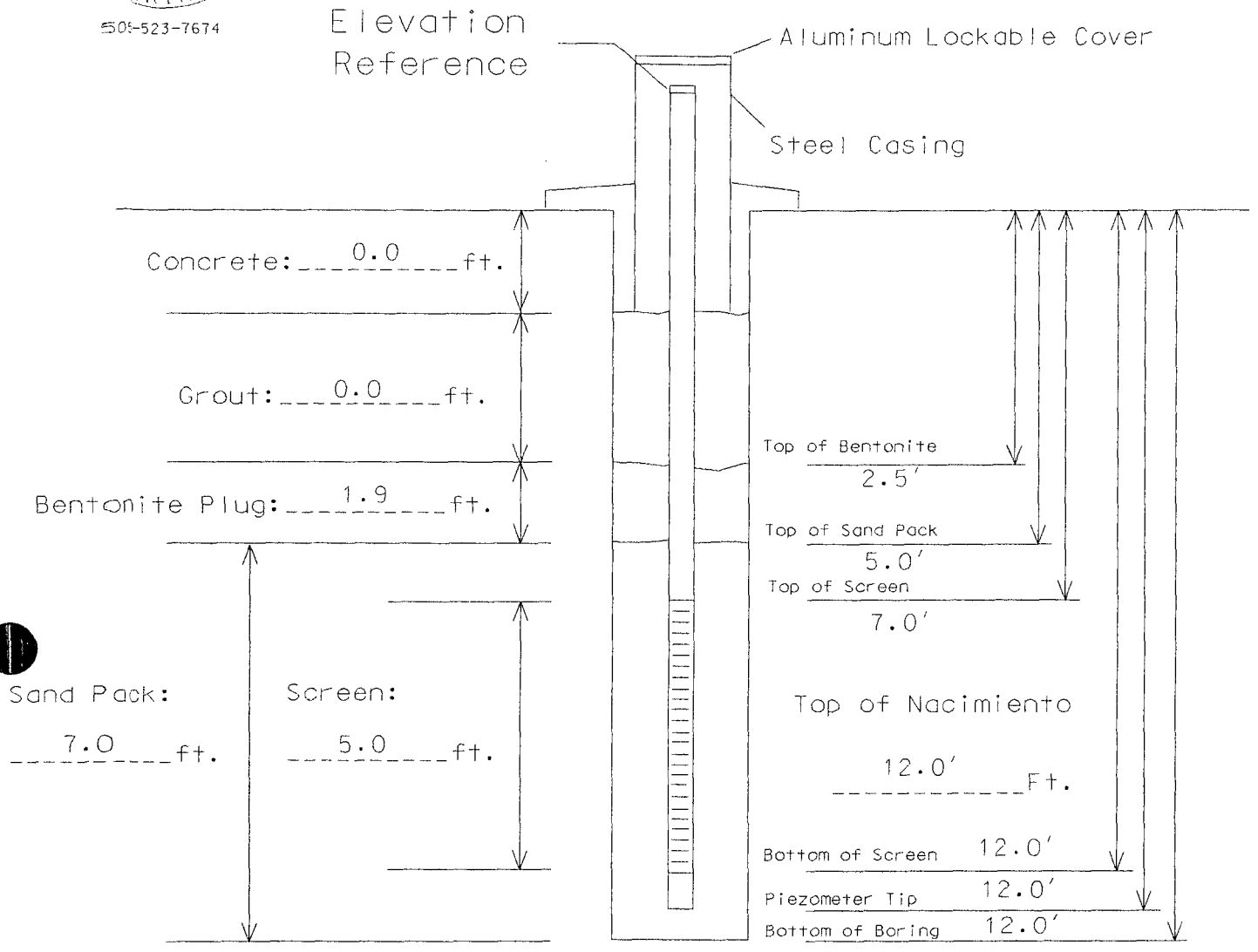
Project Name: Bloomfield Refinery

Elevation: TBS

PRECISION ENGINEERING, INC.
505-523-7674

Installation Diagram

Monitoring Well No. OW 1+50



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

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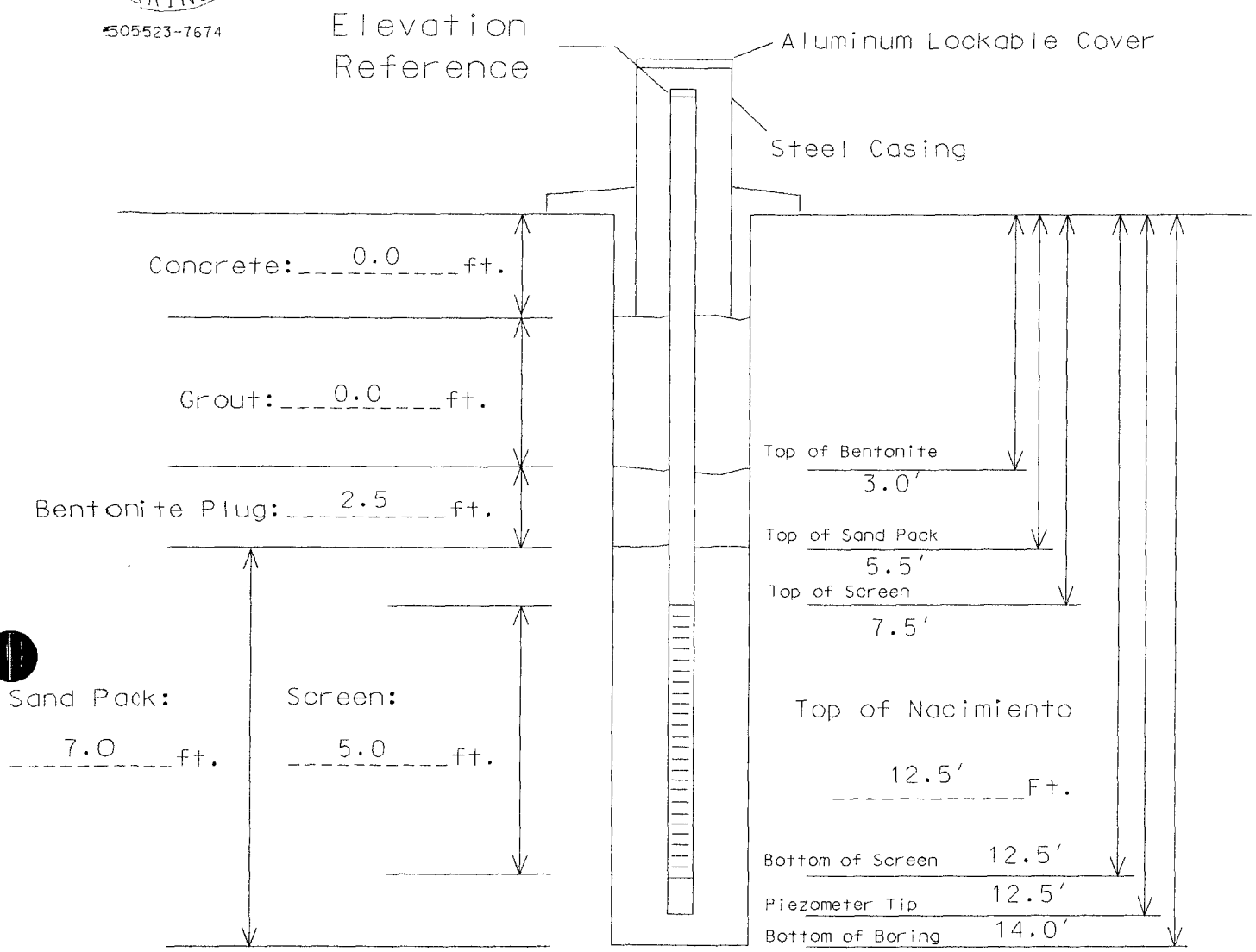
505523-7674

Installation Diagram

Monitoring Well No. OW 3+85



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

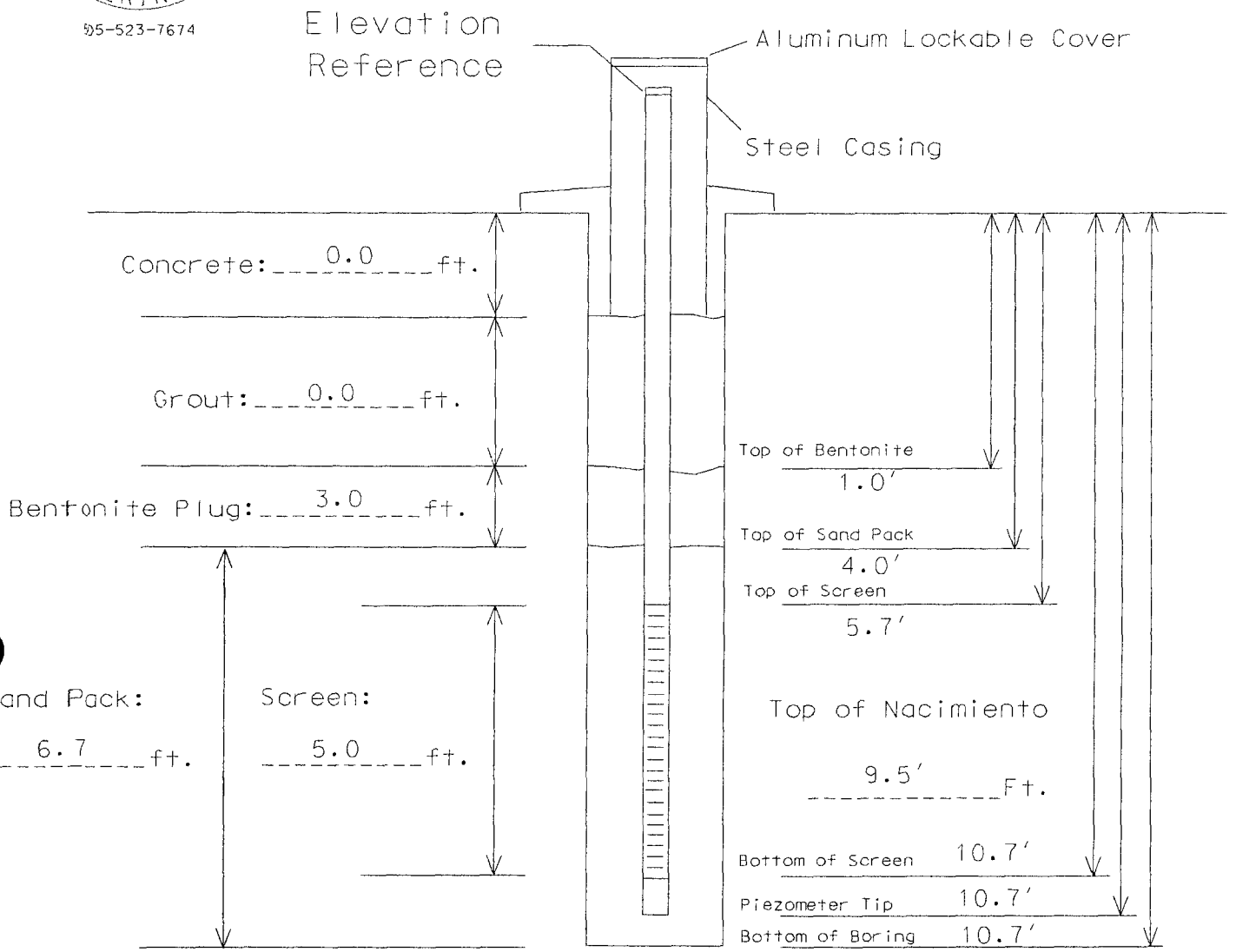
Project Name: Bloomfield Refinery

Elevation: TBS

PRECISION ENGINEERING, INC.
505-523-7674

Installation Diagram

Monitoring Well No. OW 5+50



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards. Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

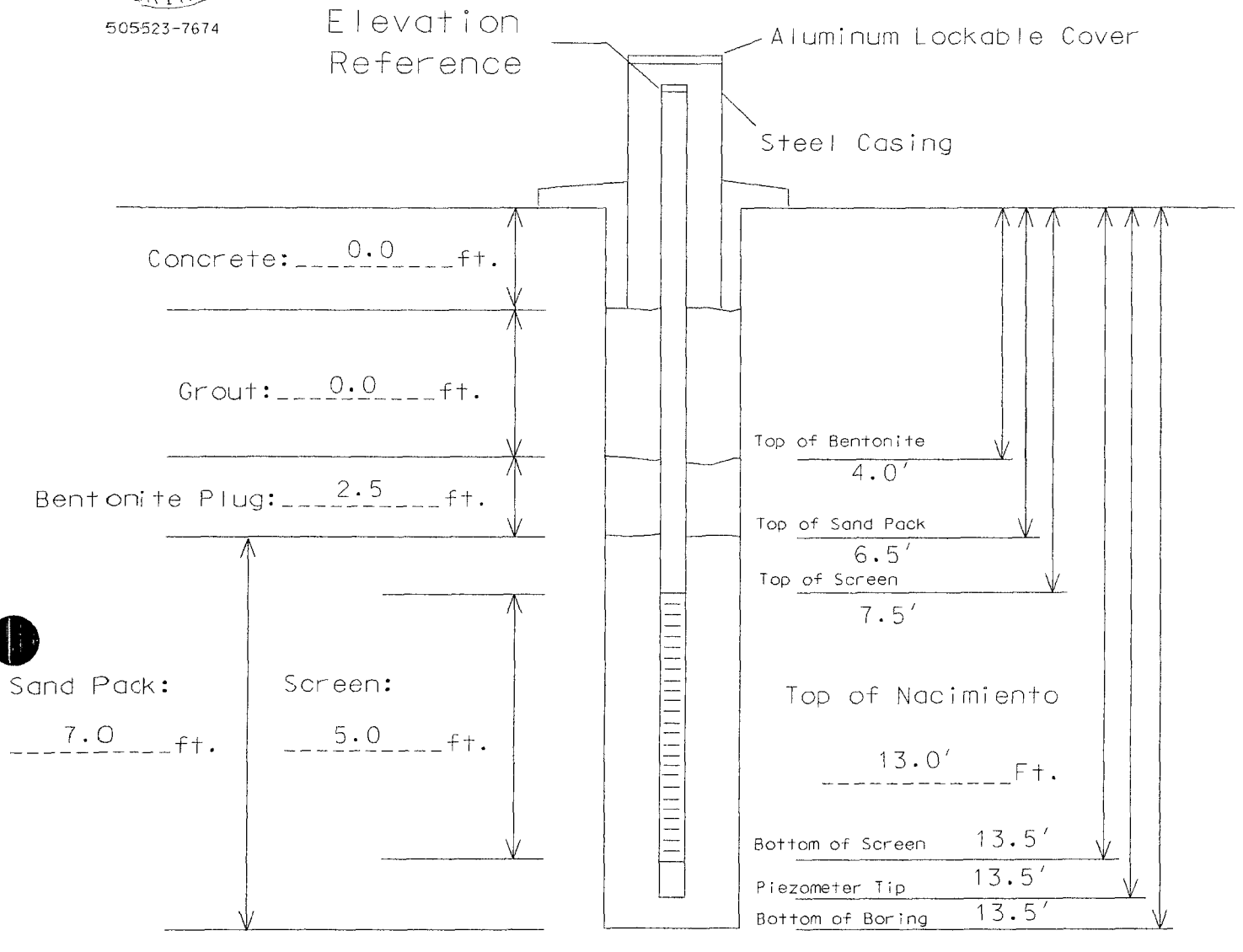
Elevation: TBS

PRECISION ENGINEERING, INC.

505523-7674

Installation Diagram

Monitoring Well No. OW 6+70



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

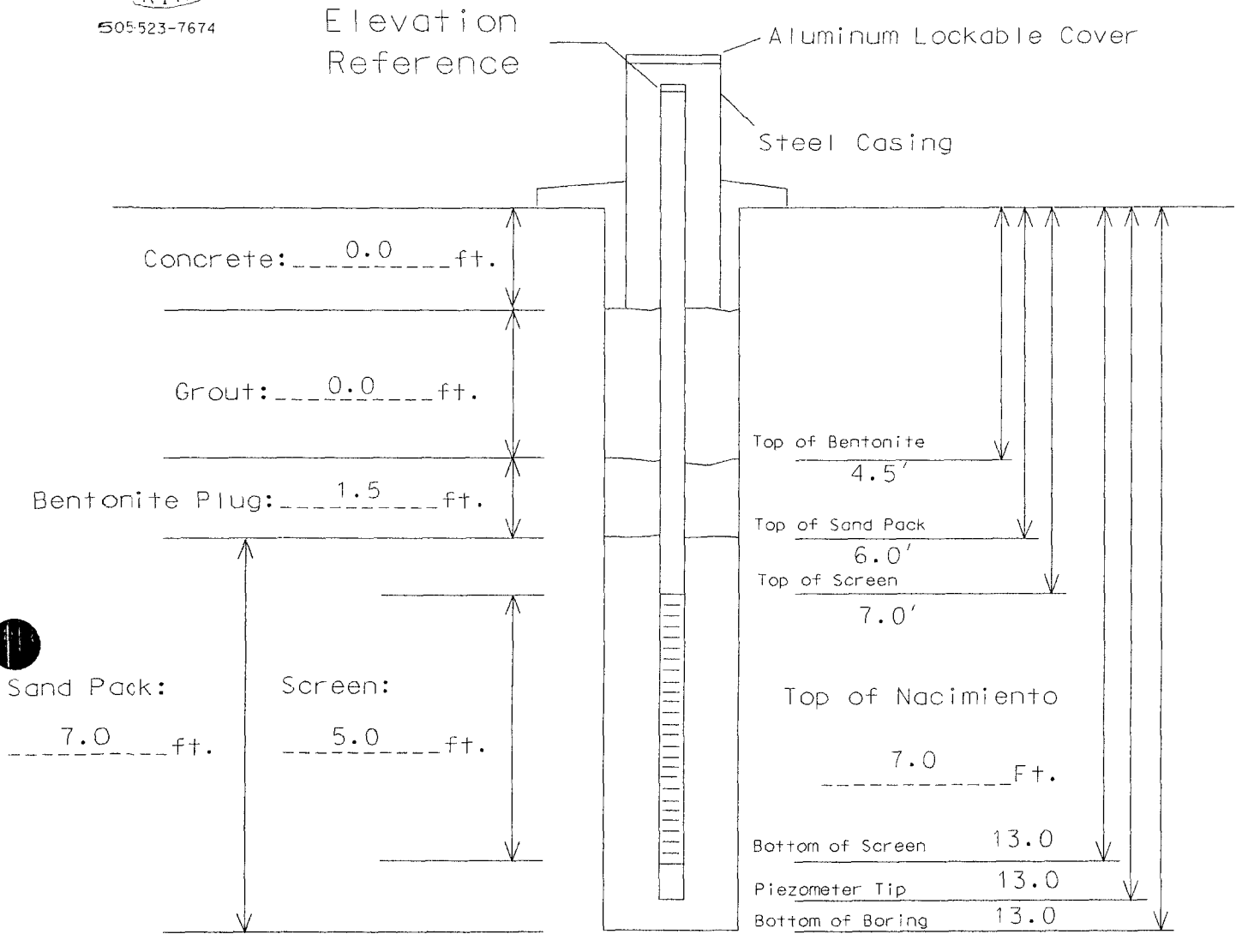
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 8+10



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

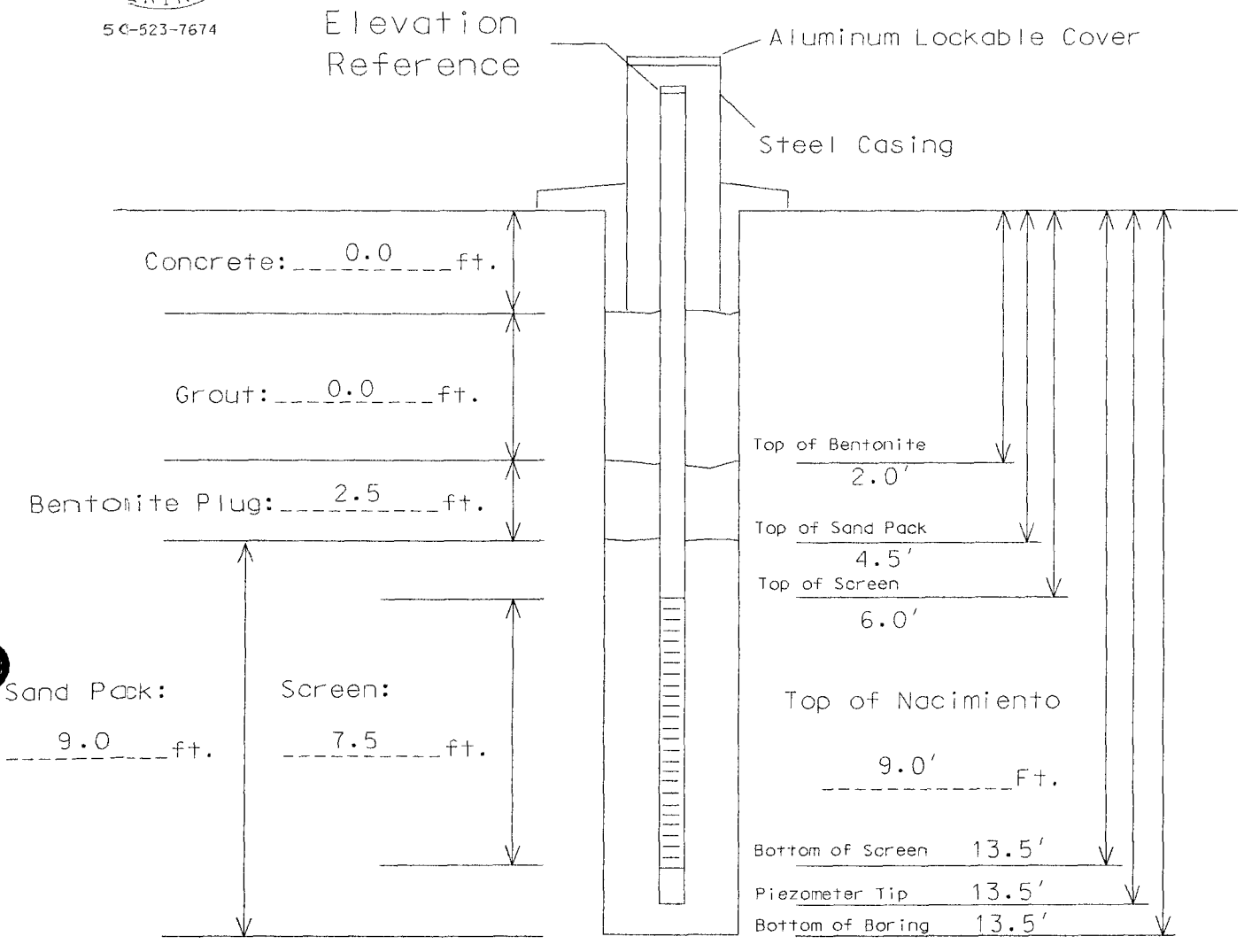
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 11+15



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

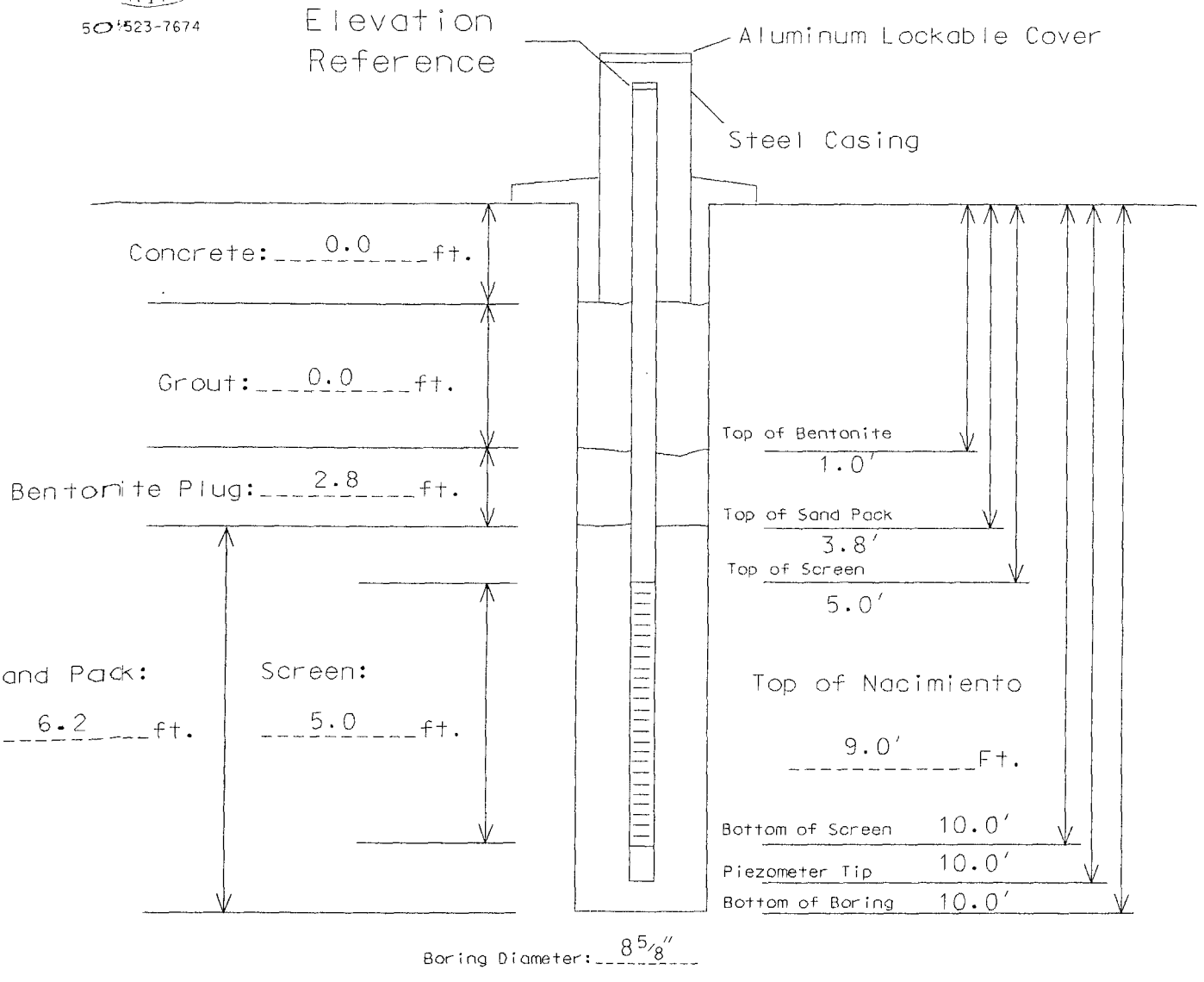
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 14+10



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

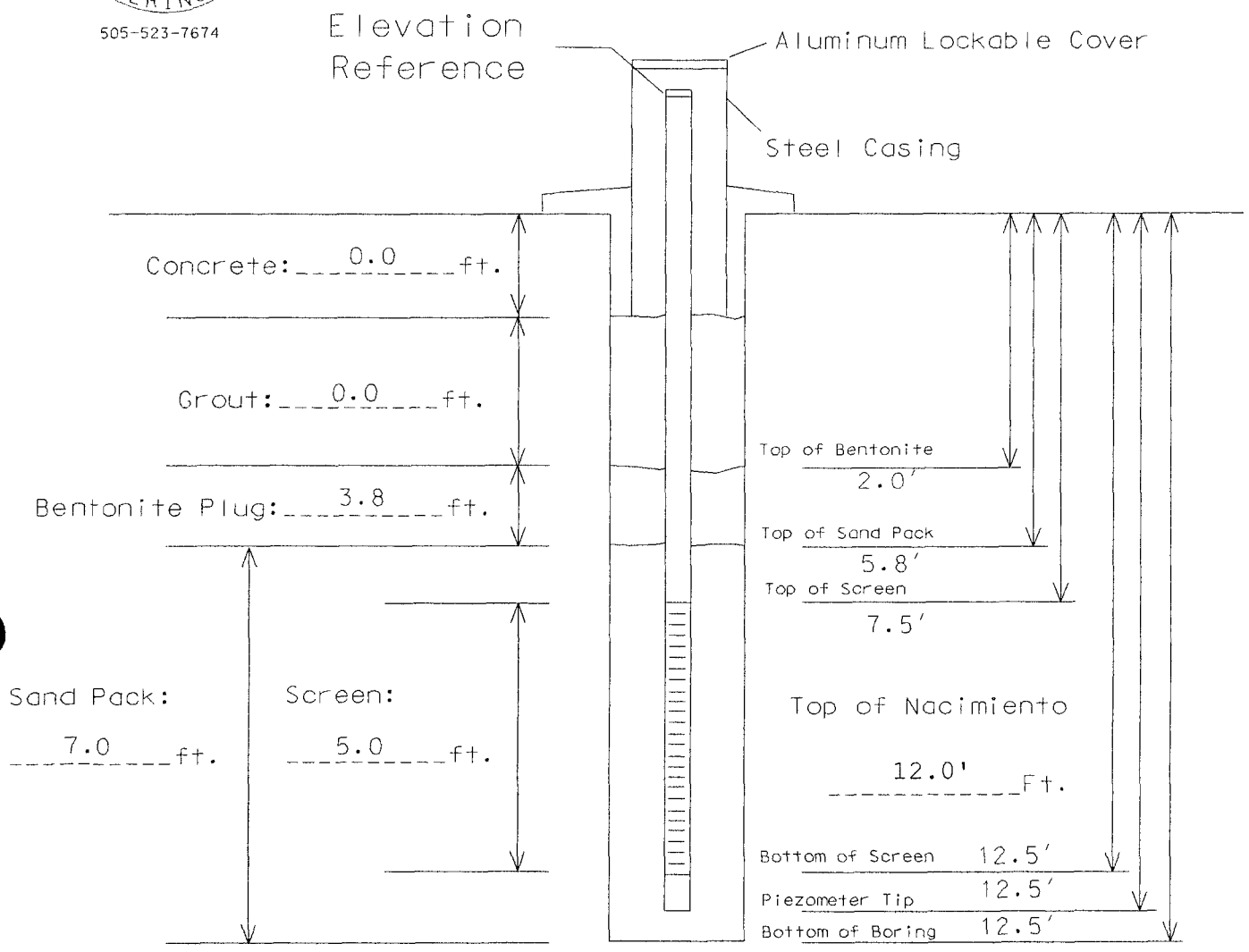
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 16+60



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

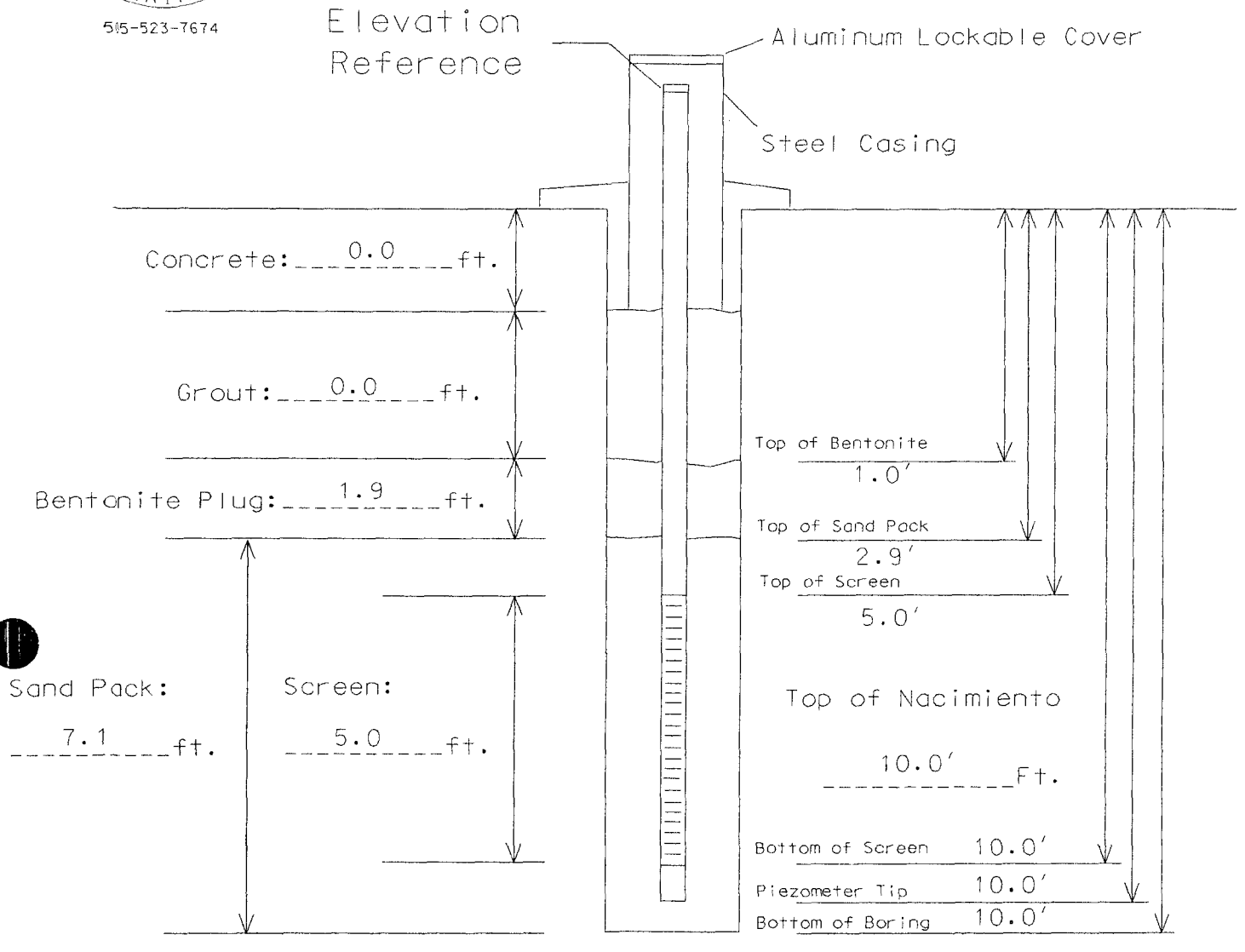
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 19+50



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

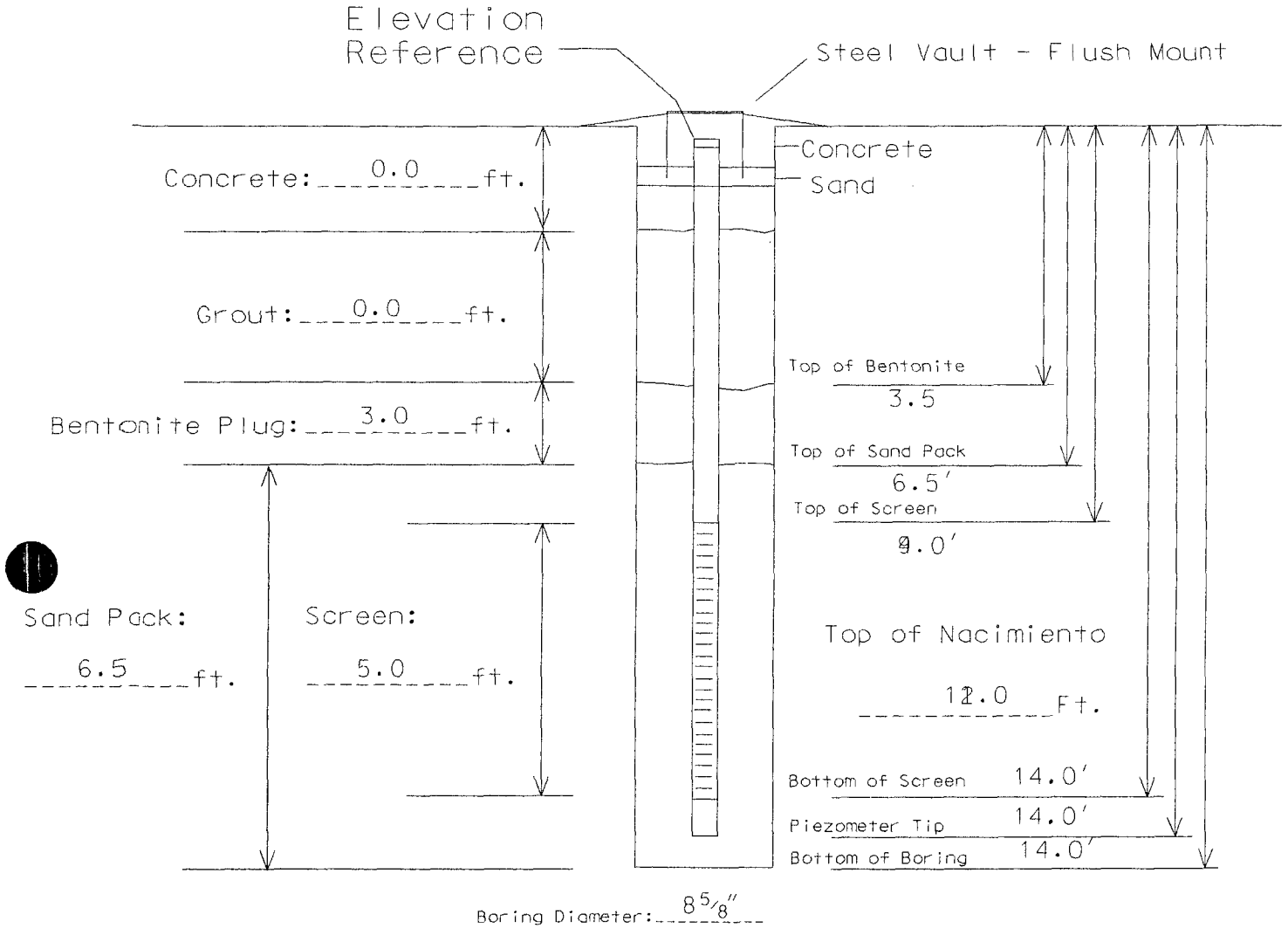
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 22+00



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.40" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

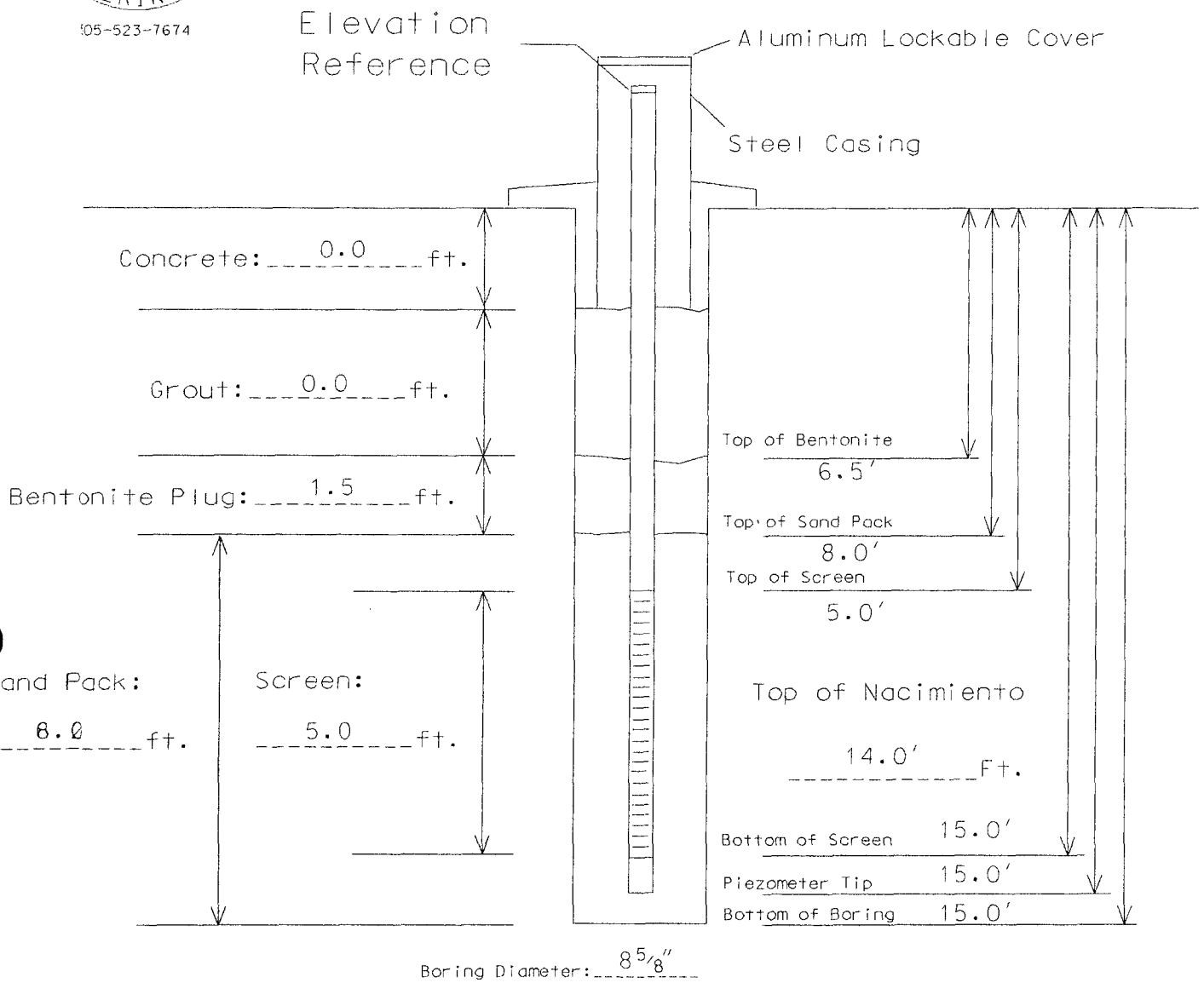
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 23+10



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

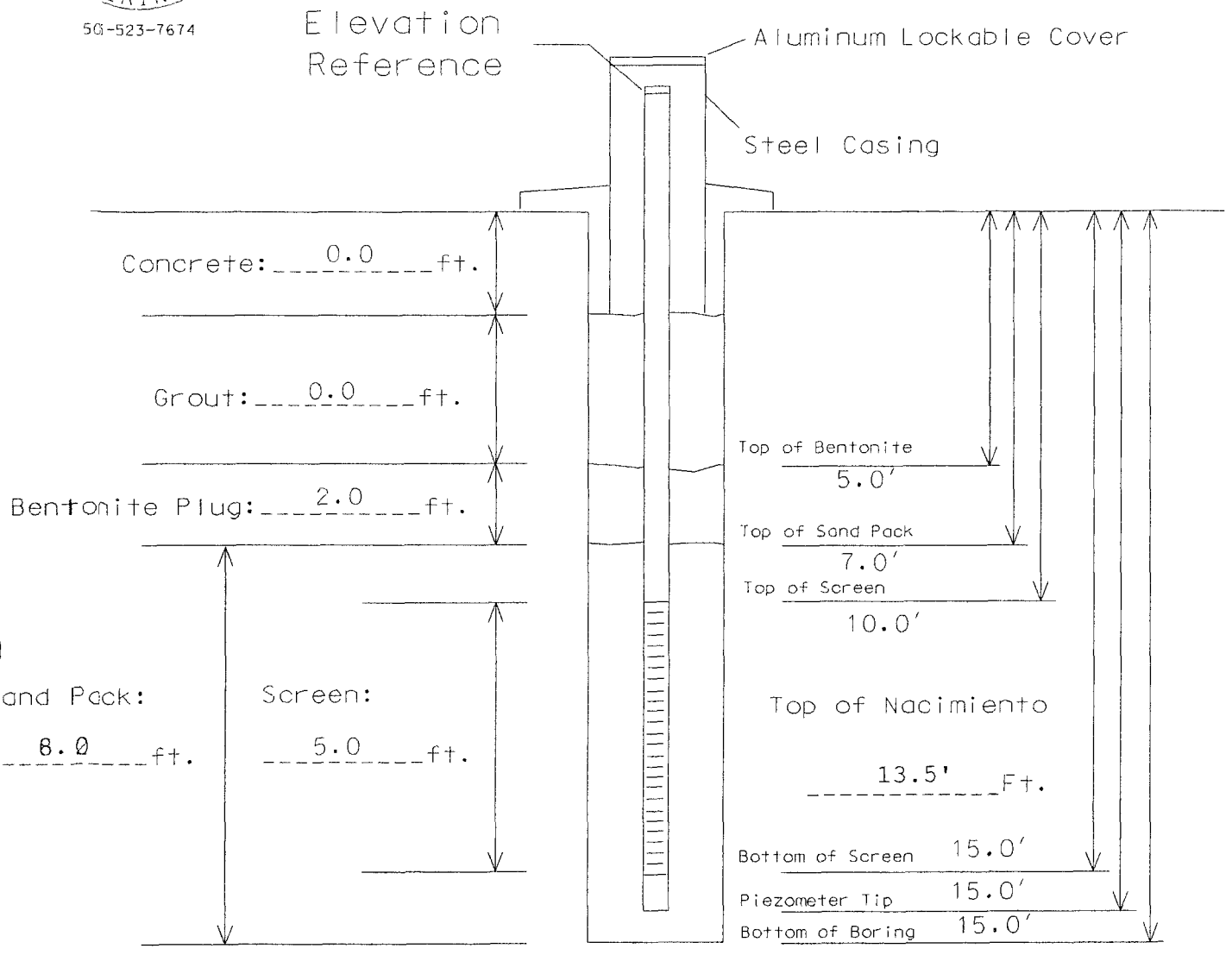
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 23+90



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

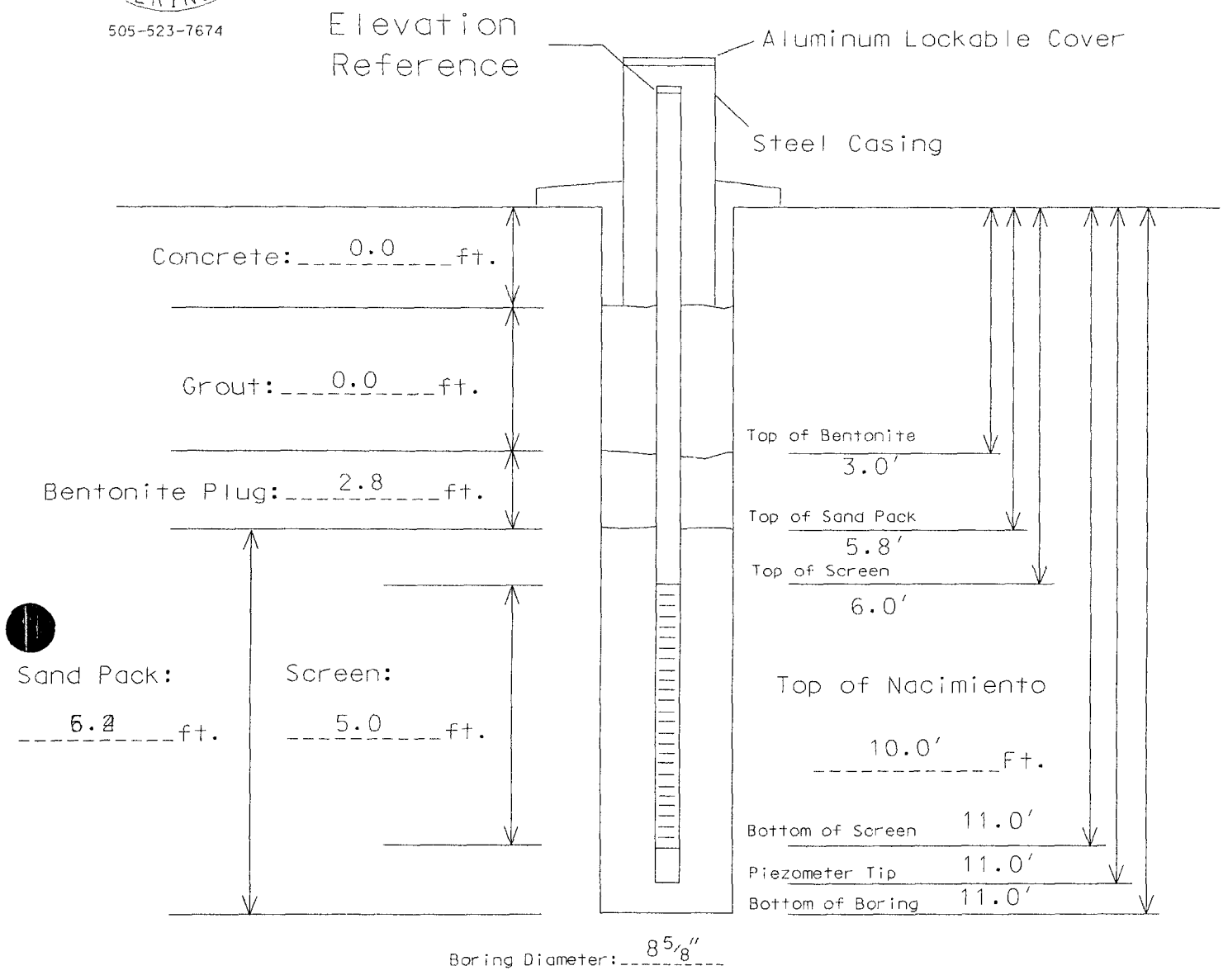
Elevation: TBS

PRECISION ENGINEERING, INC.

505-523-7674

Installation Diagram

Monitoring Well No. OW 25+70



Boring Diameter: 8 5/8"

Sand Type: 10-20 Silica

Bollards, Type/Size: NA

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: NA

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Bottom Cap Used? Yes

Site Easting: TBS

Other:

Project #: 05-038

Project Name: Bloomfield Refinery

Elevation: TBS

Sheet: 1 OF 15
Bor Point: See Plan
Water Elevation: 10.7'
Boring No.: OW 0+60

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/20/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0-2.0		***//*** ***//*** ***//***		**Sand**, very fine to fine, brown, moist				
	2.0-3.5		***oo*** ***oo*** ***oo*** ***oo***	2.5	**Gravel**, cobbles, to boulder size, grey, moist very dense,				
	3.5-8.0		******** ******** ******** ******** ******** ******** ******** ******** ********	5.0 7.5	**Sand**, silty, clayey, yellow-brown, damp, moderately dense				
	8.0-11.5 12.0		******** ******** ******** ******** ******** ******** ******** ******** ********	10.0	**Sand**, silty, grey-black, hydrocarbon odor, dense, moist, Water Level 10.7'				
	12.5		= = = = = = = = = = = =		**Nacimiento Formation** Friable Sandstone, silty, yellow-brown, dense, damp, no odor				
	14.0			15.0 20.0	TD Set 2" Well @ 12.0' 5' of Screen, 7' of Riser Top of Sand 5.0' Top of Bentonite 2.5'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW0+60.xls]Sheet1

Sheet: 2 OF 15
Bore Point: See Plan
Water Elevation:
Boring No.: OW 1+50

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/20/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-8.0		OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo	2.5 5.0 7.5	**Gravel**, cobbles, to boulder size, brown to grey rock, slightly sandy, very dense				
	8.0-11.5		******** ******** ******** ******** ******** ******** ******** ********	10.0	**Sand**, medium, silty, grey/black, wet dense, moist, moderately dense Slighty water bearing				
	12.0		******** = = = = = = = =		**Nacimiento Formation** Sandstone, degraded, weathered, very dense yellow-brown to light brown, damp				
	13.5			15.0 20.0	TD Set 2" Well @ 12.0' 5' of Screen, 7' of Riser Top of Sand 5.0' Top of Bentonite 2.5'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\unzipped\Observation Well Logs\[OW1+50.xls]Sheet1

Sheet: 3 OF 15
Bore Point: See Plan
Water Elevation: 10.7'
Boring No.: OW 3+85

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/20/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-10.5		OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo	2.5 5.0 7.5 10.0	**Gravel**, cobbles, to boulder size, brown to grey rock, slightly sandy, very dense				
	10.5		OoO*Oo		Water Level 10.7'				
			******** ********		**Sand**, medium, silty, grey/black, water bearing dense, moist, moderately dense				
	12.5 14.0		******** = = = = = = = = = = = = = = = =		**Nacimiento Formation** Sandstone, degraded, weathered, fissile, very, dense, yellow-brown to light brown, damp				
				15.0 20.0	TD Set 2" Well @ 12.5' 5' of Screen, 7' of Riser Top of Sand 7.0' Top of Bentonite 5.5'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: WHK

C:\unzipped\Observation Well Logs\[OW3+85_rev.xls]Sheet1

Sheet: 4 OF 15
Bore Point: See Plan
Water Elevation: 10.7'
Boring No.: OW 5+50

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield Giant Refining
Elevation: EXISTING
Date: 5/1/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-9.0		OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo	2.5 5.0 7.5	**Gravel**, cobbles, to boulder size, sandy, silty, brown, very dense				
	9.0		******** ********	10.0	**Sand**, fine to medium, greeniish brown, damp, dense				
	9.5		====		**Nacimiento Formation**				
	10.7				TD				
				15.0 20.0	Set 2" Well @ 10.7 5' of Screen, 9' of Riser Top of Sand 4.0' Top of Bentonite 1.0'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER LOGGED BY: WHK

C:\unzipped\Observation Well Logs\[OW5+50_rev.xls]Sheet1

Sheet: 5 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW6+70

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-5.5		***--***		**Sand**, Very Fine to Fine, Silty, Brown, Moist, Gravel, Cobbles				
			--						
			--						
			--						
			--	2.5					
			--						
			--						
			--						
			--						
			--	5.0					
	5.5-13.0		*o*--*o*		**Sand**, Fine, Silty, Light Brown, Damp, Some Small Gravel, (Cobbles @ 12.0')				
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*	7.5					
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*	10.0					
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*						
			o--*o*						
	13.0'		= = = =		**Nacimiento Formation**				
			= = = =						
			= = = =						
			= = = =	15.0					
	15.0				TD				
					1.5' of Bentonite (Bottom of Hole)				
					Set 2" Well @ 13.5'				
					5' of Screen				
					12.5' of Riser				
					Top of Sand 6.5'				
					Top of Bentonite 4.0'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

Sheet: 6 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW8+10

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-7.0		***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_*** ***_***	2.5 5.0	**Sand**, Fine to Coarse, Slightly Silty, Brown, Damp, Gravel, Cobbles				
	7.0-13.0		= =	7.5 10.0	**Nacimiento**, Sand, Fine, Green/Brown, Damp Hydrocarbon Odor				
	13.0'			15.0 20.0	TD Set 2" Well @ 13.0' 5' of Screen 11.0' of Riser Top of Sand 6.0' Top of Bentonite 4.5'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

Sheet: 7 OF 15
Bore Point: See Plan
Water Elevation: 9.4'
Boring No.: OW11+15

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/7/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-9.0		**o**O**		**Sand**, Very Fine to Medium, Brown, Damp,				
			oO**		Gravel, Cobbles, Hydrocarbon Odor @ 5.0'				
			oO**						
			oO**						
			oO**	2.5					
			oO**						
			oO**						
			oO**						
			oO**						
			oO**	5.0					
			oO**						
			oO**						
			oO**						
			oO**						
			oO**	7.5					
			oO**						
			oO**						
	9.0-13.5		********		**Sand**, Very Fine to Medium, Black/Grey,				
	9.4		********		Damp, Strong Hydrocarbon Odor, **Water 9.4'**				
			********	10.0					
			********						
			********						
			********						
			********						
			********						
			********						
			********						
			= = = =		**Nacimiento**				
	13.5				TD				
				15.0	Set 2" Well @ 13.5'				
					7.5' of Screen, 9' of Riser				
					Top of Sand 4.5'				
					Top of Bentonite 2.0'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW11+15.xls]Sheet1

Sheet: 8 OF 15
Bore Point: See Plan
Water Elevation:
Boring No.: OW 14+10

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 5/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-8.5		OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo OoO*Oo	2.5 5.0 7.5	**Gravel**, cobbles, to boulder size, sand fine to coarse, damp dense				
	8.5		******** ********		**Sand**, fine to coarse, some gravel, grey, moist				
	9.0		=====		**Nacimiento Formation**				
	10.0				TD				
				15.0 20.0	Set 2" Well @ 10.0 5' of Screen, 8' of Riser Top of Sand 3.8' Top of Bentonite 1.5'				

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: WHK

C:\unzipped\Observation Well Logs\[OW14+10_rev.xls]Sheet1

Sheet: 9 OF 15
Bore Point: See Plan
Water Elevation: 9.5'
Boring No.: OW16+60

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/7/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-5.0		***//***		**Sand**, Very Fine to Fine, Clayey, Brown, Moist, Gravel, Cobbles				
			//						
			//						
			//						
			//	2.5					
			//						
			//						
			//						
			//						
			//	5.0					
	5.0-10.0		********		**Sand**, Fine to Coarse, Black, Moist, Gravel, Some Cobbles, Hydrocarbon Odor @ 5.0'				
			********						
			********						
			********						
			********	7.5					
			********						
			********						
			********						
			********						
	9.5		********	10.0	Water Level 9.5'				
	10.0-12.0		********		**Same as Above**, No Gravel or Cobbles, Black Strong Hydrocarbon Odor				
			********						
			********						
	12.0		= = = =		**Nacimiento**				
	12.5				TD				
					Set 2"' Well @ 12.5'				
					5' of Screen, 10' of Riser				
					Top of Sand 5.8'				
				15.0	Top of Bentonite 3.5'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW16+60.xls]Sheet1

Sheet: 10 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW19+50

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 5/7/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-8.0		***o***O*		**Sand**, Fine to Medium, Tan, Damp, Gravel, Cobbles				
			oO*						
			oO*						
			oO*						
			oO*	2.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	5.0					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	7.5					
	8.0-10.0		***o***o*		**Sand**, Fine to Medium, Grey/Black, Moist, Hydrocarbon Odor, Small Gravel				
			oo*						
			oo*						
			oo*						
			oo*	10.0					
	10.0		= = = =		**Nacimiento**				
					Set 2" Well @ 10.0'				
					5' of Screen				
					8.0' of Riser				
					Top of Sand 2.9'				
					Top of Bentonite 1.0'				
				15.0					
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW19+50.xls]Sheet1

Sheet: 11 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW22+00

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 5/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-11.0		***o***O*		**Gravel**, cobbles, to boulder size, brown to grey rock, slightly sandy, very dense				
			oO*						
			oO*						
			oO*						
			oO*	2.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	5.0					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	7.5					
			oo*						
			oo*						
			oo*						
			oo*						
			oo*	10.0					
			oo*						
			oo*						
	11.0-14.0		**-**o**		**Sand**, Fine to Medium, some clay, some gravel, damp dense				
			-o**						
			-o**						
			-o**						
			-o**						
			-o**						
	14.0				TD				
				15.0					
					Set 2" Well @ 14.0'				
					5' of Screen				
					9.5' of Riser				
					Top of Sand 6.5'				
					Top of Bentonite 3.5'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW22+00.xls]Sheet1

Sheet: 12 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW23+10

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 5/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-13.5		***o***O*		**Gravel**, cobbles, to boulder size, brown to grey rock, slightly sandy, very dense				
			oO*						
			oO*						
			oO*						
			oO*	2.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	5.0					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	7.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	10.0					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*						
	13.5		***o***O*						
			********		**Sand**, Fine to coarse, dark brown, moist, dense				
			********						
			********						
	14.0		====		**Nacimiento Formation**				
	15.0			15.0	TD				
					Set 2" Well @ 15.0'				
					5' of Screen				
					10.5' of Riser				
					Top of Sand 8.0'				
					Top of Bentonite 1.0'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW23+10_rev.xls]Sheet1

Sheet: 13 OF 15
Bore Point: See Plan
Water Elevation: Not Encountered
Boring No.: OW23+90

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 5/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-12.0		***o***O*		**Gravel**, cobbles, to boulder size, brown to grey rock, slightly sandy, very dense				
			oO*						
			oO*						
			oO*						
			oO*	2.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	5.0					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	7.5					
			oO*						
			oO*						
			oO*						
			oO*						
			oO*	10.0					
			oO*						
			oO*						
			oO*						
	12.0		***o***O*						
			********		**Sand**, Fine to coarse, dark brown, moist, dense				
			********						
	13.5		====		**Nacimiento Formation**				
					TD				
				15.0					
					Set 2" Well @ 15.0'				
					5' of Screen				
					7.0' of Riser				
					Top of Sand 7.0'				
					Top of Bentonite 5.0'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

C:\unzipped\Observation Well Logs\[OW23+90_rev.xls]Sheet1

Sheet: 14 OF 15
Bore Point: See Plan
Water Elevation: 8.4'
Boring No.: OW25+70

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 05-038
Site: Bloomfield
Giant Refining
Elevation: EXISTING
Date: 4/6/2005

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR,ETC.)	%M	LL	PI	CLASS.
	0.0-10.5		********		**Sand**, Very Fine to Medium, Brown, Damp				
			********		Gravel, Cobbles				
			********						
			********						
			********	2.5					
			********						
			********						
			********						
			********						
			********	5.0					
			********						
			********						
			********						
			********						
			********	7.5					
			********						
			********						
	8.4		********		Water Level 8.4'				
			********						
			********	10.0					
			********						
	10.0		= = = =		**Nacimiento Formation**				
			= = = =						
	11.0				TD				
					Set 2" Well @ 11.0'				
					5' of Screen				
					9.0' of Riser				
					Top of Sand 5.8'				
				15.0	Top of Bentonite 3.0'				
				20.0					

SIZE & TYPE OF BORING: 4 1/4" ID HOLLOW STEMMED AUGER — LOGGED BY: KMM

Section 12.0 Chemical Analytical Program

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

hallenvironmental.com

QUALITY ASSURANCE PLAN

October 2004

Revision 6

Control Number: 0000038

Approved By:

Nancy McDuffie Date
Laboratory Manager

Approved By:

Scott Hallenbeck Date
Laboratory Director

4901 Hawkins NE ▪ Suite D ▪ Albuquerque, NM 87109
505.345.3975 ▪ Fax 505.345.4107
www.hallenvironmental.com

Table of Contents

3.0 Introduction

Purpose of Document

The purpose of this Quality Assurance Manual is to formally document the quality assurance policies and procedures of Hall Environmental Analysis Laboratory, Inc. (HEAL), for the benefit of its employees, clients, and accrediting organizations. This laboratory continually implements the aspects of this plan as an essential and integral part of laboratory operations in order to assure that the results and work produced are accurate, precise, and reliable.

Objectives

The objective of HEAL is to achieve and maintain excellence in environmental testing. This is accomplished by developing, incorporating and documenting the procedures and policies specified in this manual. A laboratory staff that is analytically competent, well qualified, and highly trained carries out these activities. An experienced management team, knowledgeable in their area of expertise, monitors them. Finally, a comprehensive Quality Assurance program governs laboratory practices and assures that the analytical results are valid and defensible.

HEAL establishes and thoroughly documents its practices so that there is no uncertainty in determining appropriate procedures. Routine laboratory activities are detailed in method specific Standard Operating Procedures (SOP's) and Quality Assurance practices are outlined in this QA/QC manual

The management assures that this documentation is correct in terms of required accuracy, data reproducibility, and that the procedures contain proper Quality Control measures. The management additionally assures that all equipment is reliable, well maintained and calibrated. The procedures and practices of the laboratory are able to conform to client specifications and regulatory requirements. Meticulous records are maintained for all samples and their respective analyses so that results are well documented and defensible in a court of law.

The HEAL management is responsible for supervising and administering this quality assurance program, insuring each individual is responsible for its proper implementation. Accordingly, the HEAL management remains committed to the encouragement of excellence in analytical testing and will continue to provide the necessary resources and environment conducive to its achievement.

Understanding that quality cannot be mandated, it is the policy of this laboratory to provide an environment that encourages all staff members to take pride in the quality of their work. In addition to furnishing proper equipment and supplies, HEAL stresses the importance of continued training and professional development. Further, HEAL recognizes the time required for data interpretation. Therefore, no analyst feels pressure to sacrifice data quality for data quantity. Each staff member must perform with the highest level of integrity and professional competence, always being alert to problems that could compromise the quality of technical work. Management and senior personnel supervise analysts closely in all operations. The laboratory staff is encouraged to speak

with lab managers or senior management if they feel that there are any commercial, financial, or other undo pressures, which might adversely affect the quality of their work.

When properly conceived and executed, our quality assurance program will result in a measurement system that operates in analytical control and where error is at a minimum level. The goal of HEAL is to produce quality results that are accurate, reliable and reflect the analytical needs of our clients.

This is a controlled document. Each copy is assigned a unique tracking number and when released to a client or accrediting agency the QA Officer keeps the tracking number on file.

4.0 Organization and Responsibility

Company

HEAL is accredited in accordance with NELAC standards (see NELAC accredited analysis list). Additionally, HEAL is qualified as defined under the Petroleum Storage Tank Regulations of the State of New Mexico Environmental Improvement Board (USTR §1201) and the State of New Mexico Water Quality Control Commission regulations. It is a locally owned small business that was established in 1991. HEAL is a full service Environmental Analysis Laboratory with analytical capabilities that include both organic and inorganic methodologies and has performed analyses of soil, water and air samples for many sites statewide. HEAL's client base includes local, state and federal governmental agencies, private consultants as well as individual homeowners. It has performed as a subcontractor to the state of New Mexico and to the State Highway and Transportation Department. HEAL has been acclaimed by its customers as producing quality results and as being adaptive to client-specific needs.

The laboratory is divided into a volatile organic section, a semi-volatile organic section, and an inorganic section. Each section has a designated supervisor. The section supervisors report directly to the laboratory manager, who oversees all of the operations.

Certifications

National Environmental Laboratory Accreditation Program (NELAP) – Oregon Primary accrediting authority. Accredited for EPA methods 8260, 8310, 8015, 8021.

Personnel

Laboratory Manager

The Laboratory Manager is responsible for the daily operations of the laboratory. Additionally, the laboratory manager reviews and approves new analytical procedures and methods, and performs a technical review of most analytical results. The Lab Manager also observes the performance of supervisors to ensure good laboratory practices and proper techniques are being taught and utilized. Also, the Lab Manager is responsible for meeting with clients, assisting in overall quality control implementation, and strategic planning for the future of the company. Other duties include assisting in establishing laboratory policies which lead to the fulfillment of requirements for various certification programs, assuring that all Quality Assurance and Quality Control documents are reviewed and approved, and assisting in conducting Quality Assurance Audits. The lab manager addresses questions or complaints that cannot be answered by the section managers. Someone with a minimum of 7 years of directly related experience and a scientific degree should fill this position.

Business/ Project Manager

The role of the business/project manager is to act as a liaison between the client and the laboratory. The business project manager reviews reports, updates clients on the status of projects in-house, prepares quotations for new work, and is responsible for the marketing effort. All new work is assessed by the project manager and reviewed with the other managers so as the not exceed the laboratories capacity. It is also the duty of the project manager to work with government agencies and accrediting authorities to make certain that the laboratory is compliant on new regulations or policies. Someone with a minimum of 5 years of directly related experience and a scientific degree should fill this position.

Quality Assurance Officer

The Quality Assurance Officer (QAO) is responsible for developing and carrying out the approved Quality Assurance Program, and advising and assisting management in meeting these requirements. The QAO monitors quality control activities of the laboratory in order to determine conformance with the Quality Assurance Program, performing Quality Assurance Audits, writing reports, providing follow-up action, and issuing Observation and Corrective Action Reports as needed. Additional responsibilities include cataloged documentation of the following: Staff Training and Demonstration Of Capability (DOC) records, Instrument Detection Limits (IDL), Method Detection Limits (MDL), and Instrument/Equipment Certification and/or Maintenance records. Complaints from clients are logged on a complaint form, which is reviewed by the QAO to ensure that it is handled according to the Quality Systems Section 5.5.3.1 and kept on file. When procedures are not in compliance with the requirements of this plan, "stop work orders" can be issued. Finally, the QAO provides clients with Quality Control data and Quality Assurance reports as requested. This position should be filled by someone with a minimum of 3 years of directly related experience and can also be filled by a senior manager.

Section Supervisors

The Section Supervisors are responsible for training and supervising departmental staff. The Section Supervisors schedule incoming work and monitor laboratory personnel to ensure that proper procedures and techniques are being used. The section supervisors implement new Quality Control procedures as directed by the QAO, update and maintain quality control records and evaluate laboratory personnel in their Quality Control activities. They are the technical director of the associated section and review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 3 years of directly related experience should fill this position.

Senior Analyst

A senior analyst performs soil and water analysis in a section of the laboratory. A senior analyst shall have a minimum of one year of analytical instrument experience. A scientific degree is strongly recommended.

Analyst

An analyst performs soil and water analysis in the laboratory. The analyst also performs instrument maintenance. All analysts shall have a minimum 6 months of relevant prior experience or training. A scientific degree is encouraged. An analyst may also perform the duties of a lab technician.

Lab Technician

A lab technician performs multiple duties in the laboratory. These duties may include, but not be limited to sample preparation, glassware washing, sample kit preparation.

Sample Control Manager

The sample control manager is responsible for receiving samples and reviewing the sample login information after it has been entered into the computer. The sample control manager also checks the samples against the chain-of-custody for any sample and/or labeling discrepancies prior to distribution.

The sample control manager is also responsible for sending out samples to the sub-contractors along with the review and shipping of field sampling bottle kits. The sample control manager acts as a liaison between the laboratory and field sampling crew to assure the appropriate analytical tests is assigned.

Delegations in the Absence of Key Personnel

Planned absences shall be preceded by notification to the laboratory manager. The appropriate staff members shall be informed of the absence. In the case of unplanned absences, the organizational superior shall either assume the responsibilities and duties or delegate the responsibilities and duties to an appropriately qualified member.

Laboratory Personnel Qualification and Training

All personnel joining HEAL shall undergo orientation and training. During this period the new personnel shall be introduced to the organization and their responsibilities, as well as the policies and procedures of the company. They shall also undergo on the job training and shall work with trained staff. They will be shown required tasks and be observed while performing them. Initial demonstration of capability must be completed and documented prior to performing assignments unsupervised. New employees that do not have prior analysis experience will not be allowed to perform analysis until they have demonstrated attention to detail with minimal errors in the assigned tasks. To ensure a

sustained level of quality performance among staff members, continuing demonstration of capability shall be performed at least once a year. Laboratory staff must successfully pass an external Proficiency Evaluation (PE) sample or initial PE sample. Each new employee shall sign an ethics and data integrity agreement to ensure that they know that data quality is our main objective. Every HEAL employee recognizes that although turn around time is important, quality is put above any pressure to complete the task expediently. Analysts are not compensated for passing QC parameters nor are incentives given for the quantity of work produced.

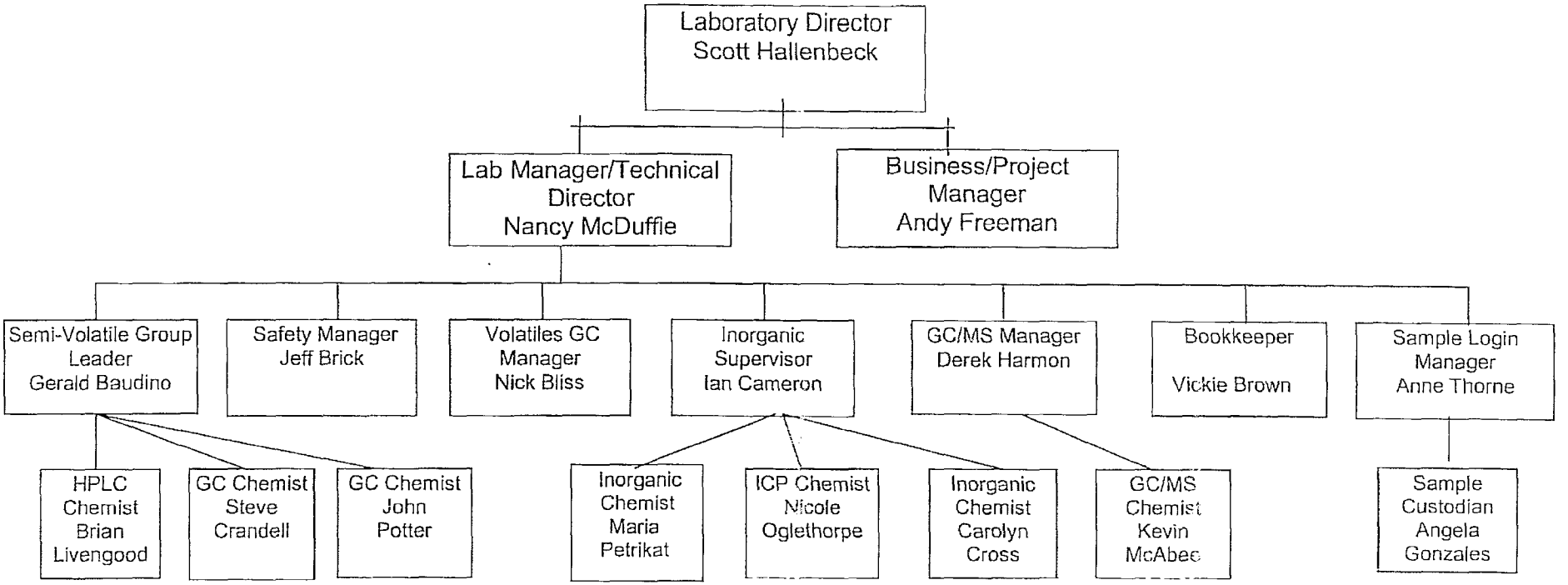


Diagram of organizational Structure

5.0 Receipt and Handling of Samples

Sampling

Procedures

HEAL does not provide field sampling for any projects. Sample kits are prepared and provided for clients upon request. The sample kits contain the appropriate sampling containers (with a preservative when necessary), labels, blue ice, a cooler, chain-of-custody forms, plastic bags, bubble wrap, and any special sampling instructions. The sample control manager reviews the kits prior to shipment.

Containers

Containers which are sent out for sampling are purchased by HEAL from a commercial source. Glass containers are certified "EPA Cleaned" QA level 1. Those containers are received with a Certificate of Analysis verifying that the containers have been cleaned according to the EPA wash procedure.

Preservation

If sampling for an analyte(s) requires preservation, the sample custodians fortify the containers prior to shipment to the field. The required preservative is introduced into the vials in uniform amounts and done so rapidly to minimize the risk of contamination. Vials that contain a preservative are labeled appropriately.

The following pages contain tables specifying additional preservation requirements for samples.

Tables of Standard Holding Times, Preservation, and Containers

Organic Compounds

Compound	Matrix	Container	Preservative	Holding Time
Purgeable halocarbons and aromatics	aqueous	40 mL glass voas, teflon-lined septum	$HgCl_2$, or HCl, pH <2; cool	14 days to analysis
Purgeable halocarbons and aromatics	Soil/MeOH*	4 oz. Jar/2-20 ml VOAs w/ methanol	cool, 4° C	14 days to analysis
Semi-volatiles	aqueous	1 L amber	cool, 4° C	7 days to extract, 40 days after extraction to analyze
Semi-volatiles	soil	8 oz. Jar	cool, 4° C	14 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	aqueous	1 L amber	cool, 4° C	7 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	soil	8 oz. Jar	cool, 4° C	14 days to extract, 40 days after extraction to analyze

*Use of field methanol kits are available and recommended for the PSTB.

Inorganic Compounds

Compound	Matrix	Container	Preservative	Holding time
Acidity	aqueous	250-mL HDP	cool, 4° C	14 days
Alkalinity	aqueous	250-mL HDP	cool, 4° C	14 days
Ammonia	aqueous	1-L HDP	cool, 4° C, H_2SO_4 pH<2	28 days
Biochemical Oxygen Demand	aqueous	2-L HDP	cool, 4° C	48 hours
Bromide	aqueous	250-mL HDP	none required	28 days
Chemical Oxygen Demand	aqueous	125-mL HDP	cool, 4° C, H_2SO_4 pH<2	28 days
Chloride	aqueous	125-mL HDP	none required	28 days
Chloride	solid	4-oz jar	none required	28 days
Chlorine, total residual	aqueous	500-mL HDP	none required	analyze immediately
Chromium VI	aqueous	250-mL HDP	cool, 4° C	24 hours
Chromium VI	solid	8-oz jar	cool, 4° C	as soon as possible
Color	aqueous	125-mL HDP	cool, 4° C	48 hours
Cyanide	aqueous	1-L HDP	cool, 4° C NaOH pH>12	14 days
Cyanide	solid	4-oz jar	cool, 4° C	14 days
Fluoride	aqueous	500-mL HDP	none required	28 days
Hardness	aqueous	250-mL HDP	HNO_3 or H_2SO_4 pH<2	6 months
Hydrogen ion (pH)	aqueous	60-mL HDP	none required	analyze immediately
Hydrogen ion (pH)	solid	4-oz jar	none required	analyze immediately
Kjeldahl and organic nitrogen	aqueous	1-L HDP	cool, 4° C, H_2SO_4 pH<2	28 days

Compound	Matrix	Container	Preservative	Holding time
Mercury	aqueous	250-mL HDP	HNO_3 pH < 2	28 days
Mercury	solid	8-oz jar	none required	28 days
Metals (except Cr VI and Hg)	aqueous	500-mL HDP	HNO_3 pH < 2	6 months
Metals (except Cr VI and Hg)	solid	8-oz jar		6 months
Nitrate	aqueous	250-mL HDP	cool, 4° C	48 hours
Nitrate	solid	8-oz jar	cool, 4° C	analyze immediately
Nitrate-Nitrite	aqueous	250-mL HDP	cool, 4° C, H_2SO_4 pH<2	28 days
Nitrate-Nitrite	solid	8-oz jar	cool, 4° C	28 days
Nitrite	aqueous	125-mL HDP	cool, 4° C	48 hours
Oil and Grease	aqueous	2-L wide-mouth glass	cool, 4° C, H_2SO_4 pH<2	28 days
Oil and Grease	solid	2-L wide-mouth glass	cool, 4° C	28 days
Organic Carbon	aqueous	125-mL HDP	cool, 4° C, HCl or H_2SO_4 pH<2	28 days
Organic Carbon	solid	4-oz jar	cool, 4° C	28 days
Orthophosphate	aqueous	125-mL HDP	Cool, 4° C	48 hours
Phenolics	aqueous	1-L Boston Round	cool, 4° C, H_2SO_4 pH<2	28 days
Phenolics	solid	8-oz jar (glass only)	cool, 4° C	28 days
Phosphorous (elemental)	aqueous	1-L Boston Round	cool, 4° C	48 hours
Phosphorous (total)	aqueous	125-mL HDP	cool, 4° C, H_2SO_4 pH<2	28 days
Residue, total	aqueous	250-mL HDP	cool, 4° C	7 days
Residue, filterable(TDS)	aqueous	250-mL HDP	cool, 4° C	7 days
Residue, non-filterable (TSS)	aqueous	250-mL HDP	cool, 4° C	7 days
Residue, settleable	aqueous	Imhoff Cone	cool, 4° C	48 hours
Residue, volatile	aqueous	250-mL HDP	cool, 4° C	7 days

Compound	Matrix	Container	Preservative	Holding Time
Silica	aqueous	125-mL HDP	cool, 4° C	28 days
Specific conductance	aqueous	250-mL HDP	cool, 4° C	28 days
Specific conductance	solid	8-oz jar	cool, 4° C	28 days
Sulfate	aqueous	125-mL HDP	cool, 4° C	28 days
Sulfate	solid	4-oz jar	cool, 4° C	28 days
Sulfide	aqueous	1-L HDP	cool, 4° C, ZnAc + NaOH pH>9	7 days
Sulfide	solid	8-oz jar	cool, 4° C	7 days
Surfactants	aqueous	500-mL HDP	cool, 4° C	48 hours
Turbidity	aqueous	250-mL HDP	cool, 4° C	48 hours

Sample Custody

Chain-of-Custody Form

A Chain-of-Custody (CoC) form is used to provide a record of sample chronology starting with the field sampling through laboratory analysis. HEALs CoC contains the client's name, address, phone and fax numbers, the project name and number, the project manager's name, and the field sampler's name. It also identifies the date and time of sample collection, sample matrix, field sample ID number, number/volume of sample containers, sample temperature upon receipt, and any sample preservative information.

There is also a space to record the HEAL ID number assigned to samples after they are received. Next to the sample information is a space for the client to indicate the desired analyses to be performed. Finally, there is a section to track the actual custody of the samples. The custody section contains lines for signatures, dates and times when samples are relinquished and received. The CoC form also includes a space to record special sample related instructions, sampling anomalies, time constraints, and any sample disposal considerations.

A sample chain-of-custody form can be found at the end of this section.

Receiving Samples

Samples are received by authorized HEAL personnel. Upon arrival, the CoC is compared to the respective samples. After the samples and CoC have been determined to be complete and accurate, the sampler signs over the CoC. The HEAL staff member in turn signs the chain-of-custody, also noting the current date and time. This relinquishes custody of the samples from the sampler and delegates sample custody to HEAL. The third (pink) copy of the CoC form is given to the person who has relinquished custody of the samples.

Logging in Samples and Storage

Each sample set is given a unique HEAL tracking ID number. Individual sample locations within a defined sample set are given a unique sample ID suffix-number. Labels with the HEAL numbers, and analytes requested, are generated and placed on their respective containers. The samples are reviewed by the sample control manager prior to being distributed to the storage refrigerators or appropriate laboratory personnel.

Samples are stored in the volatile section refrigerator, the semi-volatile section refrigerator, or the inorganic section refrigerator. If a soil sample must be extracted for both volatile and semi-volatile analysis, it is first placed into the volatile soil sample refrigerator. After the volatile extraction, the sample is moved to the semi-volatile refrigerator to minimize any risk of contamination.

Each project (sample set) is entered into the Laboratory Information Management System (LIMS) with a unique ID given to every container. The ID tag includes the Lab ID, Client ID, date and time of collection, and the analysis/analyses to be performed. The LIMS continually updates throughout the lab. Therefore, at any time, an analyst or manager may inquire about a project and/or samples status. For more information about the login procedures, reference the Sample Login SOP.

Disposal of Samples

Analytical results are used to characterize their respective sample contamination level(s) so that the proper disposal can be performed. These wastes will be disposed of according to their hazard as well as their type and level of contamination. Refer to the Hall Environmental Analysis Laboratory Chemical Hygiene Plan for details regarding waste disposal.

Waste drums are provided by an outside agency. These drums are removed by the outside agency and disposed of in a proper manner.

The wastes that are determined to be non-hazardous are disposed of as non-hazardous waste.

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
Other: _____

Client:

Address:

Phone #:

Fax #:

Project Name:

Project #:

Project Manager:

Sampler:

Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					H_2Cl_2	HNO_3		

Date:	Time:	Relinquished By: (Signature)	Remarks:
Date:	Time:	Relinquished By: (Signature)	Remarks:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)				Air Bubbles or Headspace (Y or N)

Remarks:

6.0 Analytical Procedures

All analytical methods used at HEAL incorporate necessary and sufficient Quality Assurance and Quality Control practices. A Standard Operating Procedure is used for each method to provide the necessary criteria to yield acceptable results. These procedures are updated each year or more often if necessary and are attached as a pdf file in the Laboratory Information Management System (LIMS) for easy access by each analyst. The sample is almost always consumed or altered during the analytical process. Therefore, it is important that each step in the analytical process be correctly followed in order to yield valid data.

When unforeseen problems arise, the analyst, section supervisor, and lab manager meet to discuss the factors involved. The analytical requirements are evaluated and a suitable corrective action, or resolution is established.

List of Procedures Used

Typically, the procedures used by HEAL are EPA approved methodologies. However, proprietary methods for client specific samples, are sometimes used. The following tables list EPA Method numbers with their corresponding analytes and/or instrument classification.

Organic Analysis

Methodology	Title of Method
8021B	"Halogenated and Aromatic Volatile Organics by Gas Chromatography"
8015B	"Nonhalogenated Volatile Organics by Gas Chromatography" (Gasoline Range and Diesel Range Organics)
8081A	"Organochlorine Pesticides by Gas Chromatography"
8082	"PCBs as Aroclors by Gas Chromatography"
8151A	"Chlorinated Herbicides by GC using Methylation or Pentafluorobenzylation Derivitization"
8310	"Polynuclear Aromatic Hydrocarbons"
8330	"Nitroaromatics and Nitramines"
8315	"Formaldehyde"
1005	"TNRCC – Total Petroleum Hydrocarbons"
504.1	"EDB" & "DBCP"
418.1	"Total Petroleum Hydrocarbons"
413.2	"Oil and Grease"

Gas Chromatographic/Mass Spectrometric Methods

Methodology	Title of Method
8260B	"Volatile Organic Compounds by GC/MS: Capillary Column Technique"
8270D	"Semivolatile Organic Compounds by GC/MS: Capillary Column Technique"
624	"Purgeables"
625	"Base/Neutrals and Acids"

Inorganic Analysis

Methodology	Title of Method
310.1	Alkalinity
350.3	Ammonia
300.0/300.1	Anions (aqueous)
9065	Anion (soil)
120.1	Electrical Conductivity
3500	Ferrous Iron
351.2	Total Kjeldhal Nitrogen (TKN)
9095	Paint Filter
150.1	pH
420.3	Phenols
160.1	Total Dissolved Solids (TDS)
160.2	Total Suspended Solids (TSS)
180.1	Turbidity
Metals	
200.7/6010C	ICP Metals
7470	Mercury (aqueous)
7471	Mercury (soil)

Preparative Methodologies

Methodology	Title of Method
1311	Toxicity Characteristic Leaching Procedure
1312	Synthetic Precipitation Leaching Procedure
3005	Acid Digestion of Waters for Total Recoverable or Dissolved Metals
3010	Acid Digestion of Aqueous Samples and Extracts for Total Metals
3050	Acid Digestion of Sediment, Sludge, and Soil samples
3510C	Separatory Funnel Liquid-Liquid Extraction
3540	Soxhlet Extraction
3665	Sulfuric Acid/Permanganate Cleanup (PCB)
5030	Purge-and-Trap for Aqueous Samples
5035	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples

7.0 Calibration

Instrument Calibration

An instrument calibration is the relationship between the known concentrations of a set of calibration standards introduced into an analytical instrument and the measured response they produce. Calibration curve standards are a prepared series of aliquots at various known concentrations levels from a primary source reference standard. Specific mathematical types of calibration techniques are outlined in SW-846 8000B. Analysts choose the proper calibration type following guidelines set fourth in their method specific protocol. Field samples are then analyzed on the instrument. The unknown concentration in the sample can be extrapolated from the calibration curve as a function of the instrument response. Any sample with an analyte response which exceeds the highest calibration standard response must be diluted to fall within the calibration range (ideally at or near the mid-level calibration standard response) of that analyte.

Standards

All of the source reference standards used are ordered from a reliable commercial vendor. A Certificate of Analysis (CoA), which verifies the quality of the standard, accompanies the standards from the vendor. The Certificates of Analysis are dated and stored on file by the QAO. These standards are traceable to the National Institute of Standards (NIST).

All standard solutions, calibration curve preparations, and all other quality control solutions are labeled in a manner that can be traced back to the original source reference standard. All source reference standards are entered into the LIMS with an appropriate description of the standard. Dilutions of the source reference standard (or any mixes of the source standards) are fully tracked in the LIMS as well. Standards are labeled with the date received, date opened for use, and an expiration date. New source standards received into the laboratory are checked with current standard solutions. Source standard vials will never be altered. Rather, small aliquots are removed and stored in working standard solution vials from which measured amounts can be withdrawn.

As part of the quality assurance procedures at HEAL, analysts strictly adhere to method protocols for storage times and policies of analytical standards and quality control solutions.

Procedures

Reagents

HEAL assures that the reagents used are of acceptable quality for their intended purpose. This is accomplished by ordering high quality reagents and adhering to good laboratory practices so as to minimize contamination or chemical degradation. All reagents must meet any specifications noted in the analytical method.

Upon receipt, all reagents are assigned a separate ID number, and logged into the LIMS. All reagents shall be labeled with the date received into the laboratory and again with the date opened for use. Recommended shelf life shall be documented and controlled. Dilutions or solutions prepared shall be clearly labeled, dated, and signed. These solutions are traceable back to their primary reagents.

All gases used with an instrument shall meet specifications of the manufacturer. Recommended shelf life shall be documented and controlled. All safety requirements that relate to maximum and/or minimum allowed pressure, fitting types, and leak test frequency, shall be followed. When a new tank of gas is delivered, it shall be checked for leaks and marked with the date put in use. The date and initial pressure of a new tank will be noted on the new tank.

HEAL has a Quality Assurance Procedure designed to assure that the quality of laboratory reagent water meets established criteria for all analytical methods. HEAL continuously monitors the quality of the reagent water and provides the necessary indicators for maintenance of the purification systems.

Analytical balance

All of the analytical balances are capable of weighing to a minimum precision of 0.1 grams. Records are kept of daily calibration checks for the balances in use. Class S weights are used in these checks. The balances are annually certified by an outside source and the certifications are on file with the QAO.

pH Meter

The pH meter measures to a precision of 0.01 pH units. Records showing its calibration before each use, or each day, if used more than once per day. It is calibrated using a certified buffer. Also available with the pH meter is a magnetic stirrer with a temperature sensor.

Thermometers

The thermometers in the laboratory are used to measure the temperatures of the refrigerators/freezers, ovens, water baths, TCLP Extractions and sample log-in.

Refrigerators/Freezers

Each laboratory refrigerator or freezer contains a thermometer capable of measuring to a minimum precision of 1°C. The thermometers are kept with the bulb immersed in liquid. Each workday, the temperatures of the refrigerators are recorded in a designated logbook to insure that the refrigerators are between ± 2° C. Samples are stored separately from the standards to reduce the risk of contamination.

Ovens

The oven contains a thermometer graduated by 1° C. the temperature is measured before and after a cycle when the operating procedure demands this level of precision.

Analytical Instrumentation (GC, IC, HPLC, ICP, Hg analyzer, IR, GCMS)

A calibration curve is analyzed on each instrument according to specific method protocols. The calibration curve typically consists of the analysis a blank and a minimum of five dilutions of the analyte list (or lists) outlined in the analytical method. The quality assurance program requires a second source verification of a calibration curve. Ideally, a second source verification is provided from a separate vendor. However, a different Lot Number from the same vendor is acceptable for second source verification. In the absence of standards from a separate vendor or the same vendor with two different Lot Numbers, two separate preparations from the same source standard can be used for second source verification.

Each day that an analysis is performed on the instrument, the calibration must be verified. This is accomplished by analyzing a calibration standard usually (but not exclusively), a mid-point standard. Another calibration verification is analyzed according to method specific protocols. If during the analysis the specified QC criteria are no longer satisfied, then the analysis should be stopped and the problem examined. When the calibration curve is determined to be no longer acceptable, a new curve is prepared and the instrument re-calibrated. Any samples not bracketed with acceptable daily calibration verifications should be re-analyzed or the results may be subject data qualification or rejection.

Reagent blank samples are also analyzed to ensure that no contamination is present at detectable levels. The frequency of reagent blank analysis is the same as calibration verification samples. The reagent blank and calibration verification should be analyzed successively.

Analytical methods vary in QC acceptance criteria. HEAL follows the method specific guidelines for QC acceptance. The specific acceptance criteria are outlined in the analytical methods and its corresponding SOP.

Other Analytical Instrumentation and Equipment

The conductivity probe constant shall be determined prior to use.

Eppendorf (or equivalent brands) pipettes are calibrated gravimetrically prior to use.

8.0 Maintenance

Maintenance logs are kept for each major instrument. In the front of the log, the following information is included:

Unique name of the item or equipment
Manufacturer
Type of Instrument
Model Number
Serial Number
Date received and date placed into service
Location of Instrument
Condition of instrument upon receipt

For routine maintenance, the following information shall be included in the log:

Maintenance Date
Maintenance Description
Maintenance Performed by Initials

A manufacturer service agreement (or equivalent) covers most major instrumentation to assure prompt and reliable response to maintenance needs beyond HEAL instrument operator capabilities.

9.0 Quality Control

Internal Quality Control Checks

Hall Environmental Analysis Laboratory, Inc. utilizes various internal quality control checks, including replicates, spiked samples, blanks, quality control samples, calibration standards, quality control charts, and surrogate samples.

Replicates, or duplicates, are identical tests repeated for the same sample in order to determine the precision of such a method. A Relative Percent Difference (RPD) is calculated as a measure of this precision.

Spiked Samples are samples evaluated with a known added quantity of a target compound. This is to help determine the accuracy of the analyses. A percent recovery is calculated to assess the quality of the accuracy.

Duplicate samples and spiked samples are performed according to the following schedule for each area:

Organics: LCS and MS/MSD samples are analyzed for every batch of 20 samples (sufficient sample volume permitting for the MS/MSD).

Metals and wet chemistry: LCS, MS, and sample duplicate analysis are performed, at a minimum, for every batch of 20 samples (sufficient sample volume permitting for the MS and sample duplicate).

Anions: LCS, MS, and sample duplicate analysis are performed, at a minimum, for every batch of 10 samples (sufficient sample volume permitting for the MS and sample duplicate).

Blanks consist of all the reagents measured and treated as they are with samples, except without the samples. This enables the laboratory to assure clean reagents and procedures.

Blind Quality Control Samples are samples provided by an unbiased third party. They contain a pre-determined concentration of the target compound, which is unknown to the analyst. They are analyzed quarterly, and enable the laboratory to assess the quality of its results.

Calibration standards are standards run to calibrate and confirm the consistency of the instrumentation. Calibration standards are utilized at the beginning and end of each batch, and more frequently for larger batches.

Quality Control Charts are charts with acceptable ranges of the values of quality control checks. If a value falls outside the appropriate range, immediate evaluation and assessment of the procedures is required.

A surrogate compound, a substance that has similar properties to the target compounds (but not expected to be present), is added in all applicable tests. It is a measure of the level of recovery achieved in testing.

The specific types and frequency of QC sample analysis differ from method to method and section to section. Individual method specific QC sample criteria are outlined in the each Methods SOP.

SOPs will be update annually or more often if changes are deemed necessary. SOPs are stored as a linked pdf file in the test portion of the LIMS. This is done by right clicking on the SOP tab of the test screen and adding the appropriate path where the current SOPs are located on the server. The QAO will update these links as necessary.

An initial demonstration of capability is performed everytime there is a change in instrument type, personnel, or test method. A minimum of 4 replicate samples are prepared and analyzed according to the test method. Sample results are compared against current acceptable LCS recovery limits. On-going DOCs are performed annually through the use of proficiency testing, LCS recoveries, and/or MDL analysis.

Precision, Accuracy, Detection Levels

Precision

The laboratory uses sample duplicates to assess precision. A duplicate sample is analyzed for each batch of 20 samples (5% frequency) when possible. HEAL requires the RPD to fall within the 99% confidence interval of established control charts or a RPD of less than 20 if control charts are not available. RPDs greater than these limits are considered out-of-control and require an appropriate response. Allowances can be made for high RPD values when the sample results are above the detection limit but less than less than 5X the detection limit. Criteria (based on sample matrix and methodology) for these situations require analyst/supervisor review to determine appropriate corrective action required.

Accuracy

The accuracy of an analysis refers to the difference between the calculated value and the actual value of a measurement. The accuracy of a laboratory result is evaluated by comparing the measured amount of QC reference material recovered from a sample and the known amount added. Control limits are established for each analytical method and sample matrix. Recoveries are assessed to determine the method efficiency and/or the matrix effect.

Analytical accuracy is expressed as the percent recovery (%R) of an analyte or parameter. A known amount of analyte is added to an environmental sample before the sample is prepared and subsequently analyzed. The equation used to calculate percent recovery is:

%Recovery = {(concentration* recovered)/(concentration* added)} X 100

*or amount

HEAL requires that the Percent Recovery to fall within the 99 % confidence interval of established control limits. A value that falls outside of the confidence interval requires a warning and process evaluation. The confidence intervals are calculated by determining the mean and sample standard deviation. If control limits are not available, the range of 85 to 115% is used unless the specific method dictates otherwise. Percent Recoveries outside of this range mandate additional action such as analyses by Method of Standard Additions, additional sample preparation(s) where applicable, method changes, out-of-control action or data qualification.

Detection Limit

Current practices at HEAL define the Detection Limit (DL) as the smallest amount that can be detected above the baseline noise in a procedure within a stated confidence level.

HEAL presently utilize an Instrument Detection Limit (IDL), a Method Detection Limit (MDL), and a Practical Quantitation Limit (PQL). The relationship between these levels is approximately
IDL: MDL: PQL = 1:5:5.

The IDL is a measure of the sensitivity of an analytical instrument. The IDL is the amount which, when injected, produces a detectable signal in 99% of the analyses at that concentration. An IDL can be considered the minimum level of analyte concentration that is detectable above random baseline noise.

The MDL is a laboratories measure of the sensitivity of an analytical method. An MDL determination (also outlined in SW-846 Chapter 1) consists of replicate spiked samples carried through all necessary preparation steps. The spike concentration is three to five times the lowest calibration standard level. The replicates are then analyzed successively and their Standard Deviation (s) calculated. The method detection limit (MDL) can be calculated using the standard deviation according to the formula:

$$MDL = s * t\,(99\%)$$

Where t (99%) is the student's t value for the 99% confidence interval. It depends on the number of trials used in calculating the sample standard deviation, so choose the appropriate value according to the number of trials.

Number of Trials	t(99%)
3	6.96
4	4.54
5	3.75
6	3.36
7	3.14
8	3.00
9	2.90

The PQL is significant because different laboratories can produce different MDLs although they may employ the same analytical procedures, instruments and sample matrices. The PQL is about two to five times the MDL and represents a practical, and routinely achievable, reporting level with a good certainty that the reported value is reliable. The reported PQL for a sample is dependent on the dilution factor utilized during sample analysis.

Quality Control Parameter Calculations

Mean

The sample mean is also known as the arithmetic average. It can be calculated by adding all of the appropriate values together, and dividing this sum by the number of values.

$$\text{Average} = (\Sigma x_i) / n$$

x_i = the value x in the i^{th} trial
n = the number of trials

Standard Deviation

The sample standard deviation, represented by s, is a measure of dispersion. The dispersion is considered to be the difference between the average and each of the values x_i. The variance, s^2, can be calculated by summing the squares of the differences and dividing by the number of differences. The sample standard deviation, s, can be found by taking the square root of the variance.

$$\text{Standard deviation} = s = [\Sigma (x_i - \text{average})^2 / (n - 1)]^{1/2}$$

Percent Recovery (MS, MSD, LCS and LCSD)

$$\text{Percent Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{(\text{Spike Added})} \times 100$$

Confidence Intervals

Confidence intervals are calculated using the average (x), the sample standard deviation (s), and the Student's t distribution (s-dist), which depends on the number of values used to calculate the average and sample standard deviation.

The formula is:

$$\text{confidence interval} = x \pm s * \text{s-dist}$$

Student's t Distribution

#values	10	15	20	25	31	41	61	121	> 121
95 %	2.262	2.145	2.093	2.064	2.042	2.021	2.000	1.980	1.960
99%	3.250	2.977	2.861	2.797	2.750	2.704	2.660	2.617	2.576

Unless there is insufficient data, at least 20 values will always be used in calculating the confidence intervals.

RPD (Relative Percent Difference)

Analytical precision is expressed as a percentage of the difference between the results of duplicate samples for a given analyst. Relative percent difference (RPD) is calculated as follows:

$$\text{RPD} = 2 \times \frac{(\text{Sample Result} - \text{Duplicate Result})}{(\text{Sample Result} + \text{Duplicate Result})} \times 100$$

10.0 Data Reduction, Validation, Reporting, and Record Keeping

All data reported must be of the highest possible accuracy and quality. During the processes of data reduction, validation, and report generation, the work is thoroughly checked to insure that error is minimized.

Data Reduction

The analyst who generated the data usually performs the data reduction. The calculations include evaluation of surrogate recoveries (where applicable), response factor calculations for manual calculations, and other miscellaneous calculations related to the sample quantitation.

If the results are computer generated, then the formulas must be confirmed by hand calculations.

Validation

A senior analyst, most often the section supervisor, validates the data. The data is checked at a minimum of 20% after an analyst has shown analytical proficiency. If an error is detected, all of the current data generated by that analyst is reviewed. Previous and/or common mistake areas are stringently monitored throughout the validation process. Data is reported using appropriate significant figure criteria. In most cases, two significant digits are utilized, but three significant digits can be used in QC calculations. Significant digits are not rounded until after the last step of a sample calculation.

If data is to be manually transferred from one medium to another, the transcribed data is checked at a minimum of 20%. This includes data typing, computer data entry, chromatographic data transfer, data table inclusion to a cover letter, or when data results are combined with other data fields.

All hand written data from run logs, analytical standard logbooks, hand entered data logbooks, or on instrument generated chromatograms, are systematically archived should the need for future retrieval arise.

Data that is being reported is treated with the utmost respect and care to help eliminate errors. Unethical practices will be detected through peer review and be dealt with the utmost severity.

Reports and Records

The reports are compiled by the Laboratory Information Management System (LIMS). Most data is transferred directly from the instruments to the LIMS. After being processed by the analyst and reviewed by the section supervisor, reports are approved and signed by the senior laboratory management. A comparative analysis of the data is performed at this point. For example, if TKN and NH3 are analyzed on the same sample the NH3 result should never be greater than the TKN result. Lab

results and reports are released only to appropriately designated individuals. Release of the data can be by fax, email, diskette deliverables, or mailed hard copy.

When a project is completed, the project file folder is stored with a hard copy of the report, relevant supporting data, and the quality assurance/control worksheets. These folders are kept on file and are arranged by project number. Additionally, all electronic data is backed up daily on the HEAL main server. The backup includes raw data, chromatograms and report documents. Hard copies of chromatograms are stored separately according to the instrument and the analysis date. All records and analytical data reports are retained in a secure location as permanent records for a minimum period of five years (unless specified otherwise in a client contract). Access to archived information shall be documented with an access log. Access to archived electronic reports and data will be protected by a project manager password. In the event that HEAL transfers ownership or terminates business practices, complete records will be maintained or transferred according to the client's instructions.

After issuance, the original report shall remain unchanged. If a correction to the report is necessary, then an additional document shall be issued. This document shall have a title of "Addendum to Test Report or Correction to Original Report", or equivalent. Demonstration of original report integrity comes in two forms. First, the report date is included on each page of the final report. Second, each page is numbered in sequential order, making the addition or omission of any data page(s) readily detectable.

11.0 Corrective Action

The limits that have been defined for data acceptability also form the basis for corrective action initiation. Initiation of corrective action occurs when the data generated from continuing calibration standard, sample surrogate recovery, laboratory control spike, matrix spike or sample duplicates exceed acceptance criteria. If corrective action is necessary, the analyst or the section supervisor will coordinate to take the following steps to determine and correct the measurement system deficiency:

Check all calculations and data measurements systems (Calibrations, reagents, instrument performance checks etc.).

Assure that proper procedures were followed.

Unforeseen problems that arise during sample preparation and/or sample analysis that lead to treating a sample differently from documented procedures shall be documented with a corrective action report. The section supervisor and lab manager shall be made aware of the problem at the time of the occurrence. See the SOP regarding departures from documented procedures.

Continuing calibration standards below acceptance criteria can not be used for reporting analytical data unless method specific criteria states otherwise.

An analyte above control limits in a Continuing Calibration may be acceptable if the previous continuing calibration standard was acceptable for that analyte. Further, the target analyte in the samples analyzed after the acceptable calibration standard and before calibration standard with the high bias, are reported as non-detected. Finally, the samples following an analyte that is above control limits for a continuing calibration standard can not be reported for that analyte.

Samples with non-compliant surrogate recoveries should be reanalyzed unless deemed un-necessary by the supervisor for matrix, historical data, or other analysis related anomalies.

Laboratory and Matrix Spike acceptance criteria vary significantly depending on method and matrix. Analysts and supervisors meet and discuss appropriate corrective action measures as spike failures occur.

Sample duplicates with RPD values outside control limits require supervisor evaluation and possible reanalysis.

A second mechanism for initiation of corrective action is that resulting from Quality Assurance performance audits, system audits, inter and intra-laboratory comparison studies. Corrective Actions initiated through this mechanism will be monitored and coordinated by the laboratory QA officer.

All corrective action forms are reviewed by and filed with the QA Officer.

12.0 Quality Assurance Audits, Reports and Complaints

Internal/External Systems' Audits, Performance Evaluations, and Complaints

Several procedures are used to assess the effectiveness of the quality control system. One of the methods includes internal performance evaluations, which are conducted by the use of control samples, replicate measurements and use control charts. Another method is external performance audits, which are conducted by the use of inter-laboratory checks, such as participation in laboratory evaluation programs and performance evaluation samples available from ERA (Environmental Resource Associates).

Proficiency samples will be obtained twice per year from ERA. We also participate in soil and water Underground Storage Tank PE studies. Copies of our results are available upon request.

Quality Assurance Audits are performed annually by the Quality Assurance Officer. They are performed using the guidelines outlined below:

The system audit consists of a qualitative inspection of the QA system in the laboratory and an assessment of the adequacy of the physical facilities for sampling, calibration, and measurement. This audit includes a careful evaluation and review of laboratory quality control procedures. Including but not limited to:

1. Review of staff qualifications, demonstration of capability, and personnel training programs
2. Storage and handling of reagents, standards and samples
3. Standard preparation logbook and LIMS procedures
4. Extraction logbooks
5. Raw data logbooks
6. Analytical logbooks or batch printouts and instrument maintenance logbooks
7. Data review procedures
8. Corrective action procedures

Review of data packages is performed regularly by the lab manager/QA Officer.

The Quality Assurance Officer will conduct these audits on an annual basis. Performance evaluation will, in part, be based upon the results obtained on the ERA proficiency results.

Complaints

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratories policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained for 3 years unless otherwise stated.

Internal and External Reports

The Quality Assurance Officer is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they also include significant QA problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audited, procedures utilized in the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.

13.0 Analytical Protocols Utilized at Hall Environmental Analysis Laboratory, Inc.

1. Standard Methods for the Examination of Water and Wastewater: AOHA, AWWA, and WPCG; 20th Edition, 1999.

2. Methods for Chemical Analysis of Water and Wastes, USEPA, EPA-600/4-79-020, March 1979 and as amended December, 1982 (EPA-600/4-82-055)

3. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, USEPA SW-846, 3rd Edition, Updates I, II, IIA, IIB, III, December, 1996.

4. Methods of Soil Analysis: Parts 1 & 2, 2nd Edition, Agronomy Society of America, Monograph 9

5. Diagnosis & Improvement of Saline & Alkali Soils, Agriculture Handbook No. 60, USDA, 1954

6. Handbook on Reference Methods for Soil Testing, The Council on Soil Testing & Plant Analysis, 1980 and 1992

7. Field and Laboratory Methods Applicable to Overburdens and Mine Soils, USEPA, EPA-600/2-78-054, March 1978

8. Laboratory Procedures for Analyses of Oilfield Waste. Department of Natural Resources, Office of Conservation, Injection and Mining Division, Louisiana, August 1988

9. Soil Testing Methods Used at Colorado State University for the Evaluation of Fertility, Salinity and Trace Element Toxicity, Technical Bulletin LT B88-2 January, 1988

10. Manual of Operating Procedures for the Analysis of Selected Soil, Water, Plant Tissue and Wastes Chemical and physical Parameter. Soil, Water, and Plant Analysis Laboratory, Dept. of Soil and Water Science, The University of Arizona, August 1989

11. Sampling Procedures and Chemical Methods in Use at the U.S. Salinity Laboratory for Characterizing Salt-Affected Soils and Water. USDA Salinity Laboratory.

12. Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey. USDA Soil Conservation Service, SSIR No. 1.

13. Soil Survey Laboratory Methods Manual. Soil Survey Laboratory Staff. Soil Survey Investigations Report No. 42, version 2.0, August 1992.

14. Methods for the Determination of Metals in Environmental Samples, USEPA, EPA-600/4-91-010, June 1991

15. The Merck Index, Eleventh Edition, Merck & Co., Inc. 1989.

16. Handbook of Chemistry and Physics, 62nd Edition, CRC Press, Inc. 1981-1982.

17. Analytical Chemistry of PCB's. Erickson, Mitchell D., CRC Press, Inc. 1992.

18. Environmental Perspective on the Emerging Oil Shale Industry, EPA Oil & Shale Research Group.

19. Polycyclic Aromatic Hydrocarbons in Water Systems, CRC Press, Inc.

Section 13.0 Chemical Analytical Reports

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

May 27, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Monitoring

Order No.: 0505104

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 7 samples on 5/12/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	Client Sample ID:	CW 6 + 70
Lab Order:	0505104	Collection Date:	5/11/2005 9:15:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505104-01	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	ND	0.50		mg/L	5	5/24/2005
Chloride	2400	10		mg/L	100	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	170	2.5		mg/L	5	5/24/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/24/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	2.7	0.50		µg/L	1	5/16/2005 4:54:42 PM
Toluene	ND	0.50		µg/L	1	5/16/2005 4:54:42 PM
Ethylbenzene	ND	0.50		µg/L	1	5/16/2005 4:54:42 PM
Xylenes, Total	1.3	0.50		µg/L	1	5/16/2005 4:54:42 PM
Surr: 4-Bromofluorobenzene	100	83.3-121		%REC	1	5/16/2005 4:54:42 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 2:09:29 PM
Barium	0.34	0.020		mg/L	1	5/16/2005 2:09:29 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 2:09:29 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 2:09:29 PM
Lead	ND	0.0050		mg/L	1	5/16/2005 2:09:29 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 2:09:29 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 2:09:29 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Lab Order: 0505104
Project: Phase II Monitoring
Lab ID: 0505104-02

Client Sample ID: CW 8 + 10
Collection Date: 5/11/2005 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.29	0.10		mg/L	1	5/24/2005
Chloride	1100	10		mg/L	100	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	720	50		mg/L	100	5/24/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/24/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	430	25		µg/L	50	5/16/2005 5:26:08 PM
Toluene	ND	25		µg/L	50	5/16/2005 5:26:08 PM
Ethylbenzene	51	25		µg/L	50	5/16/2005 5:26:08 PM
Xylenes, Total	660	25		µg/L	50	5/16/2005 5:26:08 PM
Surr: 4-Bromofluorobenzene	102	83.3-121		%REC	50	5/16/2005 5:26:08 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 2:13:35 PM
Barium	0.49	0.020		mg/L	1	5/16/2005 2:13:35 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 2:13:35 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 2:13:35 PM
Lead	ND	0.0050		mg/L	1	5/16/2005 2:13:35 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 2:13:35 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 2:13:35 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 11 + 15
Lab Order:	0505104	**Collection Date:**	5/11/2005 11:45:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505104-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.43	0.10		mg/L	1	5/24/2005
Chloride	320	5.0		mg/L	50	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	130	5.0		mg/L	10	5/24/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/24/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	420	25		µg/L	50	5/16/2005 5:57:32 PM
Toluene	ND	25		µg/L	50	5/16/2005 5:57:32 PM
Ethylbenzene	140	25		µg/L	50	5/16/2005 5:57:32 PM
Xylenes, Total	520	25		µg/L	50	5/16/2005 5:57:32 PM
Surr: 4-Bromofluorobenzene	104	83.3-121		%REC	50	5/16/2005 5:57:32 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	0.037	0.020		mg/L	1	5/16/2005 2:17:47 PM
Barium	1.9	0.20		mg/L	10	5/16/2005 3:06:50 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 2:17:47 PM
Chromium	0.020	0.0060		mg/L	1	5/16/2005 2:17:47 PM
Lead	0.028	0.0050		mg/L	1	5/16/2005 2:17:47 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 2:17:47 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 2:17:47 PM

Qualifiers:

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- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 14 + 10
Lab Order:	0505104	**Collection Date:**	5/11/2005 1:45:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505104-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	2.1	0.10		mg/L	1	5/24/2005
Chloride	78	2.0		mg/L	20	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	2300	25		mg/L	50	5/27/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	9800	25		µg/L	50	5/16/2005 6:28:57 PM
Toluene	ND	25		µg/L	50	5/16/2005 6:28:57 PM
Ethylbenzene	2100	25		µg/L	50	5/16/2005 6:28:57 PM
Xylenes, Total	1300	25		µg/L	50	5/16/2005 6:28:57 PM
Surr: 4-Bromofluorobenzene	108	83.3-121		%REC	50	5/16/2005 6:28:57 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.10		mg/L	5	5/16/2005 3:09:42 PM
Barium	0.33	0.10		mg/L	5	5/16/2005 3:09:42 PM
Cadmium	ND	0.010		mg/L	5	5/16/2005 3:09:42 PM
Chromium	ND	0.030		mg/L	5	5/16/2005 3:09:42 PM
Lead	ND	0.025		mg/L	5	5/16/2005 3:09:42 PM
Selenium	ND	0.25		mg/L	5	5/16/2005 3:09:42 PM
Silver	ND	0.025		mg/L	5	5/16/2005 3:09:42 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Lab Order: 0505104
Project: Phase II Monitoring
Lab ID: 0505104-05

Client Sample ID: OW 14 + 10
Collection Date: 5/11/2005 2:15:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.53	0.10		mg/L	1	5/24/2005
Chloride	73	2.0		mg/L	20	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	350	10		mg/L	20	5/24/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	10000	50		µg/L	100	5/16/2005 8:02:40 PM
Toluene	ND	50		µg/L	100	5/16/2005 8:02:40 PM
Ethylbenzene	3900	50		µg/L	100	5/16/2005 8:02:40 PM
Xylenes, Total	3200	50		µg/L	100	5/16/2005 8:02:40 PM
Surr: 4-Bromofluorobenzene	106	83.3-121		%REC	100	5/16/2005 8:02:40 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	0.11	0.020		mg/L	1	5/16/2005 2:30:31 PM
Barium	11	0.40		mg/L	20	5/16/2005 3:35:50 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 2:30:31 PM
Chromium	0.090	0.0060		mg/L	1	5/16/2005 2:30:31 PM
Lead	0.73	0.0050		mg/L	1	5/16/2005 2:30:31 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 2:30:31 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 2:30:31 PM

Qualifiers:

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J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 16 + 60
Lab Order:	0505104	**Collection Date:**	5/11/2005 3:00:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505104-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.42	0.10		mg/L	1	5/24/2005
Chloride	150	2.0		mg/L	20	5/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/12/2005
Sulfate	150	10		mg/L	20	5/24/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	5300	25		µg/L	50	5/16/2005 8:33:39 PM
Toluene	75	25		µg/L	50	5/16/2005 8:33:39 PM
Ethylbenzene	3800	25		µg/L	50	5/16/2005 8:33:39 PM
Xylenes, Total	7300	25		µg/L	50	5/16/2005 8:33:39 PM
Surr: 4-Bromofluorobenzene	106	83.3-121		%REC	50	5/16/2005 8:33:39 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 3:18:45 PM
Barium	0.60	0.020		mg/L	1	5/16/2005 3:18:45 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 3:18:45 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 3:18:45 PM
Lead	0.010	0.0050		mg/L	1	5/16/2005 3:18:45 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 3:18:45 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 3:18:45 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
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R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	Trip Blank
Lab Order:	0505104	**Collection Date:**	
Project:	Phase II Monitoring		
Lab ID:	0505104-07	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	5/16/2005 9:04:43 PM
Toluene	ND	0.50		µg/L	1	5/16/2005 9:04:43 PM
Ethylbenzene	ND	0.50		µg/L	1	5/16/2005 9:04:43 PM
Xylenes, Total	ND	0.50		µg/L	1	5/16/2005 9:04:43 PM
Surr: 4-Bromofluorobenzene	98.2	83.3-121		%REC	1	5/16/2005 9:04:43 PM

Qualifiers:

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J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT

Method Blank

Sample ID **MBLK** Batch ID: **R15380** Test Code: **E300** Units: *mg/L* Analysis Date **5/12/2005** Prep Date

Client ID: Run ID: **LC_050512A** SeqNo: **361746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID **MB** Batch ID: **R15380** Test Code: **E300** Units: **mg/L** Analysis Date **5/12/2005** Prep Date

Client ID: Run ID: **LC_050512A** SeqNo: **361769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID **MB** Batch ID: **R15380** Test Code: **E300** Units: **mg/L** Analysis Date **5/14/2005** Prep Date

Client ID: Run ID: **LC_050512A** SeqNo: **362063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1	0	0	0	0	0	0			
Chloride	ND	0.1	0	0	0	0	0	0			
Phosphorus, Orthophosphate (As P)	ND	0.5	0	0	0	0	0	0			
Sulfate	0.1124	0.5	0	0	0	0	0	0			J
Nitrate (As N)+Nitrite (As N)	ND	0.1	0	0	0	0	0	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

J

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MBLK | Batch ID: R15492 | Test Code: E300 | Units: mg/L | Analysis Date 5/24/2005 | Prep Date
Client ID: | Run ID: LC_050524A | SeqNo: 365448

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID MBLK | Batch ID: R15502 | Test Code: E300 | Units: mg/L | Analysis Date 5/25/2005 | Prep Date
Client ID: | Run ID: LC_050525A | SeqNo: 365704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID MBLK | Batch ID: R15517 | Test Code: E300 | Units: mg/L | Analysis Date 5/26/2005 | Prep Date
Client ID: | Run ID: LC_050526A | SeqNo: 366186

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID Reagent Blank 5m Batch ID: R15402 Test Code: SW8021 Units: µg/L Analysis Date 5/16/2005 7:08:29 AM Prep Date
Client ID: Run ID: PIDFID_050516A SeqNo: 362600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.29	0	20	0	101	83.3	121	0			

Sample ID MB-7989 Batch ID: 7989 Test Code: SW7470 Units: mg/L Analysis Date 5/17/2005 Prep Date 5/17/2005
Client ID: Run ID: MI-LA254_050517A SeqNo: 362937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Sample ID MB-7969 Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 1:06:22 PM Prep Date 5/13/2005
Client ID: Run ID: ICP_050516B SeqNo: 362840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	ND	0.005									

10/18

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT

Sample Duplicate

Sample ID 0505104-01B DUP Batch ID: R15380 Test Code: E300 Units: mg/L Analysis Date 5/12/2005 Prep Date

Client ID: CW 6 + 70 Run ID: LC_050512A SeqNo: 361758

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P)	ND	0.5	0	0	0	0	0	0	0	20	

Sample ID 0505104-06C DUP Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 3:22:52 PM Prep Date 5/13/2005

Client ID: CW 16 + 60 Run ID: ICP_050516B SeqNo: 362863

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.01937	0.02	0	0	0	0	0	0	0	30	J
Barium	0.6666	0.02	0	0	0	0	0	0.6004	10.4	30	
Cadmium	ND	0.002	0	0	0	0	0	0	0	30	
Chromium	ND	0.006	0	0	0	0	0	0	0	30	
Lead	0.01333	0.005	0	0	0	0	0	0.01022	26.4	30	
Selenium	ND	0.05	0	0	0	0	0	0	0	30	
Silver	0.0007985	0.005	0	0	0	0	0	0	0	30	J

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Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID 0505104-01B MS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID: CW 6 + 70		Run ID: LC_050512A		SeqNo: 361759	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P)	5.075	0.5	5	0	102	80	120	0			

Sample ID 0505104-01B MSD	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID: CW 6 + 70		Run ID: LC_050512A		SeqNo: 361760	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P)	4.964	0.5	5	0	99.3	80	120	5.075	2.22	20	

Sample ID 0505104-01a ms	Batch ID: R15402	Test Code: SW8021	Units: µg/L	Analysis Date 5/16/2005 9:35:32 PM	Prep Date
Client ID: CW 6 + 70		Run ID: PIDFID_050516A		SeqNo: 362634	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.01	0.5	20	2.675	96.7	88.7	114	0			
Toluene	19.67	0.5	20	0.297	96.9	89.3	112	0			
Ethylbenzene	20.06	0.5	20	0.4584	98.0	88.6	113	0			
Xylenes, Total	58.06	0.5	60	1.266	94.7	89.4	112	0			
Surr: 4-Bromofluorobenzene	23.36	0	24	0	97.3	83.3	121	0			

Sample ID 0505104-01a msd	Batch ID: R15402	Test Code: SW8021	Units: µg/L	Analysis Date 5/16/2005 10:06:25 PM	Prep Date
Client ID: CW 6 + 70		Run ID: PIDFID_050516A		SeqNo: 362635	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.12	0.5	20	2.675	97.2	88.7	114	22.01	0.464	27	
Toluene	19.48	0.5	20	0.297	95.9	89.3	112	19.67	0.966	19	
Ethylbenzene	20.23	0.5	20	0.4584	98.8	88.6	113	20.06	0.802	10	
Xylenes, Total	57.92	0.5	60	1.266	94.4	89.4	112	58.06	0.242	13	
Surr: 4-Bromofluorobenzene	23.49	0	24	0	97.9	83.3	121	23.36	0.547	0	

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

12/18

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID 0505104-06C MS Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 2:55:37 PM Prep Date 5/13/2005
Client ID: CW 16 + 60 Run ID: ICP_050516B SeqNo: 362856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5693	0.02	0.5	0.02032	110	75	125	0			
Cadmium	0.5242	0.002	0.5	0	105	75	125	0			
Chromium	0.5004	0.006	0.5	0	100	75	125	0			
Lead	0.5047	0.005	0.5	0.01022	98.9	75	125	0			
Selenium	0.4651	0.05	0.5	0	93.0	75	125	0			
Silver	0.5375	0.005	0.5	0	107	75	125	0			

Sample ID 0505104-06C MSD Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 2:59:49 PM Prep Date 5/13/2005
Client ID: CW 16 + 60 Run ID: ICP_050516B SeqNo: 362857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.567	0.02	0.5	0.02032	109	75	125	0.5693	0.415	20	
Cadmium	0.5172	0.002	0.5	0	103	75	125	0.5242	1.33	20	
Chromium	0.4934	0.006	0.5	0	98.7	75	125	0.5004	1.42	20	
Lead	0.4987	0.005	0.5	0.01022	97.7	75	125	0.5047	1.21	20	
Selenium	0.4678	0.05	0.5	0	93.6	75	125	0.4651	0.575	20	
Silver	0.528	0.005	0.5	0	106	75	125	0.5375	1.79	20	

13/18

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361747	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5047	0.1	0.5	0	101	90	110	0			
Chloride	4.755	0.1	5	0	95.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.836	0.5	5	0	96.7	90	110	0			
Sulfate	9.669	0.5	10	0	96.7	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.386	0.1	3.5	0	96.7	90	110	0			

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361770	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5233	0.1	0.5	0	105	90	110	0			
Chloride	4.89	0.1	5	0	97.8	90	110	0			
Phosphorus, Orthophosphate (As P)	5.19	0.5	5	0	104	90	110	0			
Sulfate	9.994	0.5	10	0	99.9	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.485	0.1	3.5	0	99.6	90	110	0			

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/14/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 362064	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.516	0.1	0.5	0	103	90	110	0			
Chloride	4.744	0.1	5	0	94.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.845	0.5	5	0	96.9	90	110	0			
Sulfate	9.712	0.5	10	0.1124	96.0	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.383	0.1	3.5	0	96.7	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS | Batch ID: R15492 | Test Code: E300 | Units: mg/L | Analysis Date 5/24/2005 | Prep Date
Client ID: | Run ID: LC_050524A | SeqNo: 365449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5042	0.1	0.5	0	101	90	110	0			
Chloride	4.586	0.1	5	0	91.7	90	110	0			
Phosphorus, Orthophosphate (As P)	4.653	0.5	5	0	93.1	90	110	0			
Sulfate	9.322	0.5	10	0	93.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.255	0.1	3.5	0	93.0	90	110	0			

Sample ID LCS | Batch ID: R15502 | Test Code: E300 | Units: mg/L | Analysis Date 5/25/2005 | Prep Date
Client ID: | Run ID: LC_050525A | SeqNo: 365705

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5249	0.1	0.5	0	105	90	110	0			
Chloride	4.589	0.1	5	0	91.8	90	110	0			
Phosphorus, Orthophosphate (As P)	4.656	0.5	5	0	93.1	90	110	0			
Sulfate	9.366	0.5	10	0	93.7	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.236	0.1	3.5	0	92.4	90	110	0			

Sample ID LCS | Batch ID: R15517 | Test Code: E300 | Units: mg/L | Analysis Date 5/26/2005 | Prep Date
Client ID: | Run ID: LC_050526A | SeqNo: 366187

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4586	0.1	0.5	0	91.7	90	110	0			
Chloride	4.665	0.1	5	0	93.3	90	110	0			
Phosphorus, Orthophosphate (As P)	4.688	0.5	5	0	93.8	90	110	0			
Sulfate	9.338	0.5	10	0	93.4	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.306	0.1	3.5	0	94.5	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit | J - Analyte detected below quantitation limits | S - Spike Recovery outside accepted recovery limits | R - RPD outside accepted recovery limits | B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID BTEX lcs 100ng | Batch ID: R15402 | Test Code: SW8021 | Units: µg/L | Analysis Date 5/17/2005 2:41:13 AM | Prep Date
Client ID: | Run ID: PIDFID_050516A | SeqNo: 362606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.62	0.5	20	0	98.1	88.7	114	0			
Toluene	19.42	0.5	20	0	97.1	89.3	112	0			
Ethylbenzene	19.56	0.5	20	0	97.8	88.6	113	0			
Xylenes, Total	58.39	0.5	60	0	97.3	89.4	112	0			

Sample ID LCS-7989 | Batch ID: 7989 | Test Code: SW7470 | Units: mg/L | Analysis Date 5/17/2005 | Prep Date 5/17/2005
Client ID: | Run ID: MI-LA254_050517A | SeqNo: 362938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004839	0.0002	0.005	0	96.8	75.2	134	0			

Sample ID LCSD-7989 | Batch ID: 7989 | Test Code: SW7470 | Units: mg/L | Analysis Date 5/17/2005 | Prep Date 5/17/2005
Client ID: | Run ID: MI-LA254_050517A | SeqNo: 362962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004773	0.0002	0.005	0	95.5	75.2	134	0.004839	1.35	0	

Sample ID LCS-7969 | Batch ID: 7969 | Test Code: SW6010A | Units: mg/L | Analysis Date 5/16/2005 1:09:21 PM | Prep Date 5/13/2005
Client ID: | Run ID: ICP_050516B | SeqNo: 362841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.526	0.02	0.5	0	105	80	120	0			
Barium	0.5109	0.02	0.5	0	102	80	120	0			
Cadmium	0.5159	0.002	0.5	0	103	80	120	0			
Chromium	0.5079	0.006	0.5	0	102	80	120	0			
Lead	0.5041	0.005	0.5	0	101	80	120	0			
Selenium	0.5057	0.05	0.5	0	101	80	120	0			
Silver	0.5122	0.005	0.5	0	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit | S - Spike Recovery outside accepted recovery limits | B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits | R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0505104
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID LCSD-7969 Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 1:12:23 PM Prep Date 5/13/2005
Client ID: Run ID: ICP_050516B SeqNo: 362842

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5106	0.02	0.5	0	102	80	120	0.526	2.87	20	
Barium	0.4946	0.02	0.5	0	98.9	80	120	0.5109	3.23	20	
Cadmium	0.5016	0.002	0.5	0	100	80	120	0.5159	2.82	20	
Chromium	0.4943	0.006	0.5	0	98.9	80	120	0.5079	2.71	20	
Lead	0.4894	0.005	0.5	0	97.9	80	120	0.5041	2.95	20	
Selenium	0.4864	0.05	0.5	0	97.3	80	120	0.5057	3.89	20	
Silver	0.4958	0.005	0.5	0	99.2	80	120	0.5122	3.26	20	

17 / 18

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 5/12/2005

Work Order Number 0505104 | Received by AT

Checklist completed by _____ (Signature) 5/12/05 (Date)

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☑	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 21° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: Giant Refinery Sunlar

Project Name: Phase II Monitoring

Address: #50, CR 4990
Bloomfield, NM 87413

Project #:

Project Manager:

Phone #: 505-632-4161

Fax #: 505-632-3911

Sampler: Cindy Hurtado / Angela Folk

Sample Temperature: 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5-11-05	915	H_2O	CW 6 + 70	2-VOA	X			0505104-1	X																
				1-250mL			H_2SO_4										X								
				1-250ml													X								
				1-500ml		X										X									
5-11-05	1030	H_2O	CW 8 + 10	2 VOA	X			- 2	X																
				1-250mL			H_2SO_4										X								
				1-250ml													X								
				1-500 ml		X										X									

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
5-11-05	340pm	Cindy Hurtado	5/12/05 1415
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50 CR 4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature: 6

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
5-11-05	1145am	H_2O	OW11+15	2-VOA	X			0505104-3
				1-250ml			H_2SO_4	
				1-250ml				
				1-500ml		X		
5-11-05	145pm	H_2O	CW14+10	2-VOA	X			-4
				1-250ml			H_2SO_4	
				1-250ml				
				1-500ml		X		

ANALYSIS REQUEST

BTEX + ~~MTBE + TMB's (8021)~~	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
X								X								
								X								
							X									
X																
								X								
								X								
							X									

Date: 5-11-05 Time: 340pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) 5/12/05 1415
Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

QA/QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: SAN Juan Refining
Address: #50 Rd 4990
Bloomfield, NM
87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: PHASE II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature:

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	BTEX + ~~MTBE + TMB's (8021)~~	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles or Headspace (Y or N)
5-11-05	215pm	H_2O	OW14+10	2-VOA	X			0505104-5	X															
				1-250ml			H_2SO_4										X							
				1-250ml													X							
				1-500ml		X										X								
5-11-05	3pm	H_2O	CW16+60	2-VOA	X			-6	X															
				1-250ml			H_2SO_4										X							
				1-250ml													X							
				1-500ml		X										X								
			Trip Blank					-7																

Date: 5-11-05 Time: 340pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature)
Date: 5/12/05 Time: 1415

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

May 27, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Monitoring

Order No.: 0505088

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 9 samples on 5/11/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 0+60
Lab Order:	0505088	**Collection Date:**	5/10/2005 8:30:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505088-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.51	0.10		mg/L	1	5/11/2005
Chloride	39	0.50		mg/L	5	5/16/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	75	0.50		mg/L	1	5/11/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	200	10		µg/L	20	5/13/2005 7:01:46 PM
Toluene	32	10		µg/L	20	5/13/2005 7:01:46 PM
Ethylbenzene	180	10		µg/L	20	5/13/2005 7:01:46 PM
Xylenes, Total	1000	10		µg/L	20	5/13/2005 7:01:46 PM
Surr: 4-Bromofluorobenzene	108	83.3-121		%REC	20	5/13/2005 7:01:46 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:24:22 PM
Barium	0.33	0.020		mg/L	1	5/16/2005 1:24:22 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:24:22 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:24:22 PM
Lead	0.012	0.0050		mg/L	1	5/16/2005 1:24:22 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:24:22 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:24:22 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	Client Sample ID:	CW 1+50
Lab Order:	0505088	Collection Date:	5/10/2005 9:15:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505088-02	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.59	0.10		mg/L	1	5/11/2005
Chloride	43	0.50		mg/L	5	5/16/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	5.8	0.50		mg/L	1	5/11/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	1200	10		µg/L	20	5/13/2005 7:32:51 PM
Toluene	41	10		µg/L	20	5/13/2005 7:32:51 PM
Ethylbenzene	240	10		µg/L	20	5/13/2005 7:32:51 PM
Xylenes, Total	2300	10		µg/L	20	5/13/2005 7:32:51 PM
Surr: 4-Bromofluorobenzene	109	83.3-121		%REC	20	5/13/2005 7:32:51 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:28:17 PM
Barium	0.59	0.020		mg/L	1	5/16/2005 1:28:17 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:28:17 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:28:17 PM
Lead	0.0070	0.0050		mg/L	1	5/16/2005 1:28:17 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:28:17 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:28:17 PM

Qualifiers:

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- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 19+50
Lab Order:	0505088	**Collection Date:**	5/10/2005 10:15:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505088-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.35	0.10		mg/L	1	5/11/2005
Chloride	290	2.0		mg/L	20	5/16/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	290	10		mg/L	20	5/16/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	1900	10		µg/L	20	5/13/2005 8:03:34 PM
Toluene	13	10		µg/L	20	5/13/2005 8:03:34 PM
Ethylbenzene	860	10		µg/L	20	5/13/2005 8:03:34 PM
Xylenes, Total	3200	10		µg/L	20	5/13/2005 8:03:34 PM
Surr: 4-Bromofluorobenzene	109	83.3-121		%REC	20	5/13/2005 8:03:34 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:32:07 PM
Barium	0.23	0.020		mg/L	1	5/16/2005 1:32:07 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:32:07 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:32:07 PM
Lead	0.024	0.0050		mg/L	1	5/16/2005 1:32:07 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:32:07 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:32:07 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
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- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 19+50
Lab Order:	0505088	**Collection Date:**	5/10/2005 10:45:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505088-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.35	0.10		mg/L	1	5/11/2005
Chloride	230	2.0		mg/L	20	5/16/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	260	10		mg/L	20	5/16/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	4800	100		µg/L	200	5/16/2005 9:08:18 AM
Toluene	21	20		µg/L	40	5/13/2005 8:34:07 PM
Ethylbenzene	1700	100		µg/L	200	5/16/2005 9:08:18 AM
Xylenes, Total	5100	100		µg/L	200	5/16/2005 9:08:18 AM
Surr: 4-Bromofluorobenzene	103	83.3-121		%REC	200	5/16/2005 9:08:18 AM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:36:10 PM
Barium	0.20	0.020		mg/L	1	5/16/2005 1:36:10 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:36:10 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:36:10 PM
Lead	0.0061	0.0050		mg/L	1	5/16/2005 1:36:10 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:36:10 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:36:10 PM

Qualifiers:

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- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Lab Order: 0505088
Project: Phase II Monitoring
Lab ID: 0505088-05

Client Sample ID: CW 3+85
Collection Date: 5/10/2005 1:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.21	0.10		mg/L	1	5/11/2005
Chloride	270	2.0		mg/L	20	5/16/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	32	0.50		mg/L	1	5/11/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	35	10		µg/L	20	5/13/2005 9:04:37 PM
Toluene	22	10		µg/L	20	5/13/2005 9:04:37 PM
Ethylbenzene	20	10		µg/L	20	5/13/2005 9:04:37 PM
Xylenes, Total	250	10		µg/L	20	5/13/2005 9:04:37 PM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/13/2005 9:04:37 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:49:03 PM
Barium	0.68	0.020		mg/L	1	5/16/2005 1:49:03 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:49:03 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:49:03 PM
Lead	ND	0.0050		mg/L	1	5/16/2005 1:49:03 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:49:03 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:49:03 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 5+50
Lab Order:	0505088	**Collection Date:**	5/10/2005 2:15:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505088-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.33	0.10		mg/L	1	5/11/2005
Chloride	2700	10		mg/L	100	5/17/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	75	50		mg/L	100	5/17/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	200	10		µg/L	20	5/13/2005 9:35:08 PM
Toluene	11	10		µg/L	20	5/13/2005 9:35:08 PM
Ethylbenzene	64	10		µg/L	20	5/13/2005 9:35:08 PM
Xylenes, Total	240	10		µg/L	20	5/13/2005 9:35:08 PM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/13/2005 9:35:08 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:53:08 PM
Barium	0.83	0.020		mg/L	1	5/16/2005 1:53:08 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:53:08 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:53:08 PM
Lead	ND	0.0050		mg/L	1	5/16/2005 1:53:08 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:53:08 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:53:08 PM

Qualifiers:

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- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	Trip Blank
Lab Order:	0505088	**Collection Date:**	
Project:	Phase II Monitoring		
Lab ID:	0505088-07	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	5/13/2005 10:05:30 PM
Toluene	ND	0.50		µg/L	1	5/13/2005 10:05:30 PM
Ethylbenzene	ND	0.50		µg/L	1	5/13/2005 10:05:30 PM
Xylenes, Total	ND	0.50		µg/L	1	5/13/2005 10:05:30 PM
Surr: 4-Bromofluorobenzene	98.6	83.3-121		%REC	1	5/13/2005 10:05:30 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits.

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 22+00
Lab Order:	0505088	**Collection Date:**	5/10/2005 2:45:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505088-08	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.74	0.10		mg/L	1	5/11/2005
Chloride	510	2.0		mg/L	20	5/17/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	38	0.50		mg/L	1	5/11/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/17/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	7000	100		µg/L	200	5/16/2005 9:38:58 AM
Toluene	90	10		µg/L	20	5/13/2005 10:35:52 PM
Ethylbenzene	95	10		µg/L	20	5/13/2005 10:35:52 PM
Xylenes, Total	200	10		µg/L	20	5/13/2005 10:35:52 PM
Surr: 4-Bromofluorobenzene	106	83.3-121		%REC	20	5/13/2005 10:35:52 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 1:57:15 PM
Barium	0.61	0.020		mg/L	1	5/16/2005 1:57:15 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 1:57:15 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 1:57:15 PM
Lead	ND	0.0050		mg/L	1	5/16/2005 1:57:15 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 1:57:15 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 1:57:15 PM

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- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 22+00
Lab Order:	0505088	**Collection Date:**	5/10/2005 3:10:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505088-09	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.78	0.10		mg/L	1	5/11/2005
Chloride	480	2.0		mg/L	20	5/17/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/11/2005
Sulfate	140	10		mg/L	20	5/17/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/17/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	3100	10		µg/L	20	5/13/2005 11:06:13 PM
Toluene	45	10		µg/L	20	5/13/2005 11:06:13 PM
Ethylbenzene	150	10		µg/L	20	5/13/2005 11:06:13 PM
Xylenes, Total	340	10		µg/L	20	5/13/2005 11:06:13 PM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/13/2005 11:06:13 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/17/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/16/2005 2:01:22 PM
Barium	0.16	0.020		mg/L	1	5/16/2005 2:01:22 PM
Cadmium	ND	0.0020		mg/L	1	5/16/2005 2:01:22 PM
Chromium	ND	0.0060		mg/L	1	5/16/2005 2:01:22 PM
Lead	0.012	0.0050		mg/L	1	5/16/2005 2:01:22 PM
Selenium	ND	0.050		mg/L	1	5/16/2005 2:01:22 PM
Silver	ND	0.0050		mg/L	1	5/16/2005 2:01:22 PM

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R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MBLK	Batch ID: R15366	Test Code: E300	Units: mg/L	Analysis Date 5/11/2005	Prep Date
Client ID:		Run ID: LC_050511A		SeqNo: 361369	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID MBLK	Batch ID: R15404	Test Code: E300	Units: mg/L	Analysis Date 5/16/2005	Prep Date
Client ID:		Run ID: LC_050516A		SeqNo: 362672	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	0.05255	0.1									J
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID MBLK	Batch ID: R15517	Test Code: E300	Units: mg/L	Analysis Date 5/26/2005	Prep Date
Client ID:		Run ID: LC_050526A		SeqNo: 366186	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

10/16

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID Reagent Blank 5m Batch ID: R15378 Test Code: SW8021 Units: µg/L Analysis Date 5/13/2005 8:43:30 AM Prep Date
Client ID: Run ID: PIDFID_050513A SeqNo: 361595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	19.54	0	20	0	97.7	83.3	121	0			

Sample ID Reagent Blank 5m Batch ID: R15402 Test Code: SW8021 Units: µg/L Analysis Date 5/16/2005 7:08:29 AM Prep Date
Client ID: Run ID: PIDFID_050516A SeqNo: 362600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.29	0	20	0	101	83.3	121	0			

Sample ID MB-7989 Batch ID: 7989 Test Code: SW7470 Units: mg/L Analysis Date 5/17/2005 Prep Date 5/17/2005
Client ID: Run ID: MI-LA254_050517A SeqNo: 362937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

11/16

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MB-7969 Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 1:06:22 PM Prep Date 5/13/2005
Client ID: Run ID: ICP_050516B SeqNo: 362840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	ND	0.005									

12/16

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *27-May-05*

CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS	Batch ID: R15366	Test Code: E300	Units: mg/L	Analysis Date 5/11/2005	Prep Date
Client ID:		Run ID: LC_050511A		SeqNo: 361370	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5049	0.1	0.5	0	101	90	110	0			
Chloride	4.695	0.1	5	0	93.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.781	0.5	5	0	95.6	90	110	0			
Sulfate	9.703	0.5	10	0	97.0	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.329	0.1	3.5	0	95.1	90	110	0			

Sample ID LCS	Batch ID: R15404	Test Code: E300	Units: mg/L	Analysis Date 5/16/2005	Prep Date
Client ID:		Run ID: LC_050516A		SeqNo: 362675	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5306	0.1	0.5	0	106	90	110	0			
Chloride	4.664	0.1	5	0.05255	92.2	90	110	0			
Phosphorus, Orthophosphate (As P)	4.747	0.5	5	0	94.9	90	110	0			
Sulfate	9.524	0.5	10	0	95.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.281	0.1	3.5	0	93.7	90	110	0			

Sample ID LCS	Batch ID: R15517	Test Code: E300	Units: mg/L	Analysis Date 5/26/2005	Prep Date
Client ID:		Run ID: LC_050526A		SeqNo: 366187	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4586	0.1	0.5	0	91.7	90	110	0			
Chloride	4.665	0.1	5	0	93.3	90	110	0			
Phosphorus, Orthophosphate (As P)	4.688	0.5	5	0	93.8	90	110	0			
Sulfate	9.338	0.5	10	0	93.4	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.306	0.1	3.5	0	94.5	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID BTEX lcs 100ng | Batch ID: R15378 | Test Code: SW8021 | Units: µg/L | Analysis Date 5/14/2005 2:37:48 AM | Prep Date
Client ID: | Run ID: PIDFID_050513A | SeqNo: 362246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.32	0.5	20	0	102	88.7	114	0			
Toluene	20.41	0.5	20	0	102	89.3	112	0			
Ethylbenzene	21.21	0.5	20	0	106	88.6	113	0			
Xylenes, Total	61.73	0.5	60	0	103	89.4	112	0			

Sample ID BTEX lcs 100ng | Batch ID: R15402 | Test Code: SW8021 | Units: µg/L | Analysis Date 5/17/2005 2:41:13 AM | Prep Date
Client ID: | Run ID: PIDFID_050516A | SeqNo: 362606

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.62	0.5	20	0	98.1	88.7	114	0			
Toluene	19.42	0.5	20	0	97.1	89.3	112	0			
Ethylbenzene	19.56	0.5	20	0	97.8	88.6	113	0			
Xylenes, Total	58.39	0.5	60	0	97.3	89.4	112	0			

Sample ID LCS-7989 | Batch ID: 7989 | Test Code: SW7470 | Units: mg/L | Analysis Date 5/17/2005 | Prep Date 5/17/2005
Client ID: | Run ID: MI-LA254_050517A | SeqNo: 362938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004839	0.0002	0.005	0	96.8	75.2	134	0			

Sample ID LCSD-7989 | Batch ID: 7989 | Test Code: SW7470 | Units: mg/L | Analysis Date 5/17/2005 | Prep Date 5/17/2005
Client ID: | Run ID: MI-LA254_050517A | SeqNo: 362962

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004773	0.0002	0.005	0	95.5	75.2	134	0.004839	1.35	0	

Qualifiers: ND - Not Detected at the Reporting Limit | S - Spike Recovery outside accepted recovery limits | B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits | R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 0505088
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS-7969 Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 1:09:21 PM Prep Date 5/13/2005
Client ID: Run ID: ICP_050516B SeqNo: 362841

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.526	0.02	0.5	0	105	80	120	0			
Barium	0.5109	0.02	0.5	0	102	80	120	0			
Cadmium	0.5159	0.002	0.5	0	103	80	120	0			
Chromium	0.5079	0.006	0.5	0	102	80	120	0			
Lead	0.5041	0.005	0.5	0	101	80	120	0			
Selenium	0.5057	0.05	0.5	0	101	80	120	0			
Silver	0.5122	0.005	0.5	0	102	80	120	0			

Sample ID LCSD-7969 Batch ID: 7969 Test Code: SW6010A Units: mg/L Analysis Date 5/16/2005 1:12:23 PM Prep Date 5/13/2005
Client ID: Run ID: ICP_050516B SeqNo: 362842

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5106	0.02	0.5	0	102	80	120	0.526	2.97	20	
Barium	0.4946	0.02	0.5	0	98.9	80	120	0.5109	3.23	20	
Cadmium	0.5016	0.002	0.5	0	100	80	120	0.5159	2.82	20	
Chromium	0.4943	0.006	0.5	0	98.9	80	120	0.5079	2.71	20	
Lead	0.4894	0.005	0.5	0	97.9	80	120	0.5041	2.95	20	
Selenium	0.4864	0.05	0.5	0	97.3	80	120	0.5057	3.89	20	
Silver	0.4958	0.005	0.5	0	99.2	80	120	0.5122	3.26	20	

15/16

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 5/11/2005

Work Order Number 0505088 | Received by GLS

Checklist completed by [signature] Date 5-11-05

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	1°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: San Juan Refinery
Address: #50 Rd 4990
Bloomfield, Nm 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature: n/a

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
5-10-05	830A	H_2O	CW0+60	2-40A	X			0505088 -1
				1-250ml			H_2SO_4	-1
				1-250ml				-1
				1-500ml		X		-1
5-10-05	915A	H_2O	CW1+50	2-VOA	X			-2
				1-250ml			H_2SO_4	-2
				1-250ml				-2
				1-500ml		X		-2

BTEX + ~~MTBE~~ + ~~TPH~~'s (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles or Headspace (Y or N)
X												
								X				
								X				
							X					
X												
								X				
								X				
							X					

Date: 5-10-05 Time: 330pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) 5-11-05 @ 14:00
Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: San Juan Refining
Address: 50 Rd 4990
Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature: /

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative:	HEAL No. 0505088	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5-10-05	1015A	H_2O	OW19+50	2-VOA	X			-3	X																
				1-250mL			H_2SO_4	-3									X								
				1-250mL				-3									X								
				1-500mL		X		-3								X									
5-10-05	1045A	H_2O	CW19+50	2-VOA	X			-4	X																
				1-250mL			H_2SO_4	-4									X								
				1-250mL				-4									X								
				1-500mL	X			-4								X									

Remarks:

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	
5-10-05	330pm	Cindy Hurtado		5-11-05 @ 14:00
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50 Rd 4990, Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
								0505088
5-10-05	130pm	H_2O	CW3+85	2-VOA	X			-5
				1-250mL			H_2SO_4	-5
				1-250mL				-5
				1-500mL		X		-5
5-10-05	215pm	H_2O	CW5+50	2-VOA	X			-6
				1-250mL			H_2SO_4	-6
				1-250mL				-6
				1-500mL		X		-6
			Trip Blank					-7

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles or Headspace (Y or N)
X																	
								X									
								X									
							X										
X																	
								X									
								X									
							X										

Date: 5-10-05 Time: 330pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) 5-11-05 @1400
Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

QA/QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50 Rd 4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: PHASE II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature: 6°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative HgCl2	Preservative HNO3	Preservative	HEAL No. 0505086	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5-10-05	245pm	H2O	CW22+00	2-VOA	X			-8	X																
				1-250mL		#	H2SO4	-8									X								
				1-250mL				-8									X								
				1-500mL		X		-8								X									
5-10-05	310pm	H2O	OW22+00	2-VOA	X			-9	X																
				1-250mL			H2SO4	-9									X								
				1-250mL				-9									X								
				1-500mL		X		-9								X									

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
5-10-05	330pm	Cindy Hurtado	[signature] 5-11-05 @1400	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

May 31, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Monitoring

Order No.: 0505119

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 7 samples on 5/13/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 23+10
Lab Order:	0505119	**Collection Date:**	5/12/2005 8:30:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505119-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.59	0.10		mg/L	1	5/14/2005
Chloride	450	2.0		mg/L	20	5/25/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	9.7	0.50		mg/L	1	5/14/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	5/25/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	6300	50		µg/L	100	5/17/2005 10:12:56 AM
Toluene	76	10		µg/L	20	5/16/2005 10:37:05 PM
Ethylbenzene	190	10		µg/L	20	5/16/2005 10:37:05 PM
Xylenes, Total	350	10		µg/L	20	5/16/2005 10:37:05 PM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/16/2005 10:37:05 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	0.00038	0.00020		mg/L	1	5/26/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/18/2005 1:15:23 PM
Barium	0.73	0.020		mg/L	1	5/18/2005 1:15:23 PM
Cadmium	ND	0.0020		mg/L	1	5/18/2005 1:15:23 PM
Chromium	ND	0.0060		mg/L	1	5/18/2005 1:15:23 PM
Lead	ND	0.0050		mg/L	1	5/18/2005 1:15:23 PM
Selenium	ND	0.050		mg/L	1	5/18/2005 1:15:23 PM
Silver	ND	0.0050		mg/L	1	5/18/2005 1:15:23 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	Client Sample ID:	CW 23+90
Lab Order:	0505119	Collection Date:	5/12/2005 9:20:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505119-02	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.39	0.10		mg/L	1	5/14/2005
Chloride	350	2.0		mg/L	20	5/25/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	5/14/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	5/14/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	4.9	0.50		mg/L	1	5/14/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	3400	10		µg/L	20	5/16/2005 11:07:51 PM
Toluene	35	10		µg/L	20	5/16/2005 11:07:51 PM
Ethylbenzene	170	10		µg/L	20	5/16/2005 11:07:51 PM
Xylenes, Total	400	10		µg/L	20	5/16/2005 11:07:51 PM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/16/2005 11:07:51 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/26/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/18/2005 1:19:31 PM
Barium	0.40	0.020		mg/L	1	5/18/2005 1:19:31 PM
Cadmium	ND	0.0020		mg/L	1	5/18/2005 1:19:31 PM
Chromium	ND	0.0060		mg/L	1	5/18/2005 1:19:31 PM
Lead	ND	0.0050		mg/L	1	5/18/2005 1:19:31 PM
Selenium	ND	0.050		mg/L	1	5/18/2005 1:19:31 PM
Silver	ND	0.0050		mg/L	1	5/18/2005 1:19:31 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	Client Sample ID:	CW 25+95
Lab Order:	0505119	Collection Date:	5/12/2005 10:10:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505119-03	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.43	0.10		mg/L	1	5/14/2005
Chloride	85	1.0		mg/L	10	5/25/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	5/14/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	5/14/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	270	5.0		mg/L	10	5/25/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	1.0	0.50		µg/L	1	5/16/2005 11:38:28 PM
Toluene	ND	0.50		µg/L	1	5/16/2005 11:38:28 PM
Ethylbenzene	ND	0.50		µg/L	1	5/16/2005 11:38:28 PM
Xylenes, Total	ND	0.50		µg/L	1	5/16/2005 11:38:28 PM
Surr: 4-Bromofluorobenzene	100	83.3-121		%REC	1	5/16/2005 11:38:28 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/26/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/18/2005 1:23:39 PM
Barium	0.085	0.020		mg/L	1	5/18/2005 1:23:39 PM
Cadmium	ND	0.0020		mg/L	1	5/18/2005 1:23:39 PM
Chromium	ND	0.0060		mg/L	1	5/18/2005 1:23:39 PM
Lead	ND	0.0050		mg/L	1	5/18/2005 1:23:39 PM
Selenium	ND	0.050		mg/L	1	5/18/2005 1:23:39 PM
Silver	ND	0.0050		mg/L	1	5/18/2005 1:23:39 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 25+70
Lab Order:	0505119	**Collection Date:**	5/12/2005 10:20:00 AM
Project:	Phase II Monitoring		
Lab ID:	0505119-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.53	0.10		mg/L	1	5/14/2005
Chloride	50	1.0		mg/L	10	5/25/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	5/14/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	5/14/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	350	5.0		mg/L	10	5/25/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	0.79	0.50		µg/L	1	5/17/2005 12:09:01 AM
Toluene	ND	0.50		µg/L	1	5/17/2005 12:09:01 AM
Ethylbenzene	ND	0.50		µg/L	1	5/17/2005 12:09:01 AM
Xylenes, Total	ND	0.50		µg/L	1	5/17/2005 12:09:01 AM
Surr: 4-Bromofluorobenzene	101	83.3-121		%REC	1	5/17/2005 12:09:01 AM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	5/26/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	0.14	0.10		mg/L	5	5/18/2005 2:48:09 PM
Barium	25	2.0		mg/L	100	5/18/2005 3:22:11 PM
Cadmium	ND	0.010		mg/L	5	5/18/2005 2:48:09 PM
Chromium	0.44	0.030		mg/L	5	5/18/2005 2:48:09 PM
Lead	0.13	0.025		mg/L	5	5/18/2005 2:48:09 PM
Selenium	ND	0.25		mg/L	5	5/18/2005 2:48:09 PM
Silver	ND	0.025		mg/L	5	5/18/2005 2:48:09 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 23+90
Lab Order:	0505119	**Collection Date:**	5/12/2005 12:30:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505119-05	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.72	0.10		mg/L	1	5/14/2005
Chloride	320	2.0		mg/L	20	5/25/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	5/14/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	5/14/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	77	0.50		mg/L	1	5/14/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	980	10		µg/L	20	5/17/2005 12:39:31 AM
Toluene	16	10		µg/L	20	5/17/2005 12:39:31 AM
Ethylbenzene	31	10		µg/L	20	5/17/2005 12:39:31 AM
Xylenes, Total	130	10		µg/L	20	5/17/2005 12:39:31 AM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	20	5/17/2005 12:39:31 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	OW 23+10
Lab Order:	0505119	**Collection Date:**	5/12/2005 1:00:00 PM
Project:	Phase II Monitoring		
Lab ID:	0505119-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: IC
Fluoride	0.47	0.10		mg/L	1	5/14/2005
Chloride	270	2.0		mg/L	20	5/25/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	5/14/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	5/14/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	5/14/2005
Sulfate	360	10		mg/L	20	5/25/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	340	5.0		µg/L	10	5/17/2005 10:43:37 AM
Toluene	9.2	5.0		µg/L	10	5/17/2005 10:43:37 AM
Ethylbenzene	11	5.0		µg/L	10	5/17/2005 10:43:37 AM
Xylenes, Total	80	5.0		µg/L	10	5/17/2005 10:43:37 AM
Surr: 4-Bromofluorobenzene	105	83.3-121		%REC	10	5/17/2005 10:43:37 AM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	0.00096	0.00020		mg/L	1	5/26/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	5/18/2005 1:34:49 PM
Barium	0.75	0.020		mg/L	1	5/18/2005 1:34:49 PM
Cadmium	ND	0.0020		mg/L	1	5/18/2005 1:34:49 PM
Chromium	0.020	0.0060		mg/L	1	5/18/2005 1:34:49 PM
Lead	0.0091	0.0050		mg/L	1	5/18/2005 1:34:49 PM
Selenium	ND	0.050		mg/L	1	5/18/2005 1:34:49 PM
Silver	ND	0.0050		mg/L	1	5/18/2005 1:34:49 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	Trip Blank
Lab Order:	0505119	**Collection Date:**	
Project:	Phase II Monitoring		
Lab ID:	0505119-07	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	5/17/2005 2:10:51 AM
Toluene	ND	0.50		µg/L	1	5/17/2005 2:10:51 AM
Ethylbenzene	ND	0.50		µg/L	1	5/17/2005 2:10:51 AM
Xylenes, Total	ND	0.50		µg/L	1	5/17/2005 2:10:51 AM
Surr: 4-Bromofluorobenzene	97.4	83.3-121		%REC	1	5/17/2005 2:10:51 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *31-May-05*

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MBLK	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361746	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID MB	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361769	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

J

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MB | Batch ID: R15380 | Test Code: E300 | Units: mg/L | Analysis Date 5/14/2005 | Prep Date
Client ID: | Run ID: LC_050512A | SeqNo: 362063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1	0	0	0	0	0	0			
Chloride	ND	0.1	0	0	0	0	0	0			
Nitrogen, Nitrite (As N)	ND	0.1	0	0	0	0	0	0			
Nitrogen, Nitrate (As N)	ND	0.1	0	0	0	0	0	0			
Phosphorus, Orthophosphate (As P)	ND	0.5	0	0	0	0	0	0			
Sulfate	0.1124	0.5	0	0	0	0	0	0			J
Nitrate (As N)+Nitrite (As N)	ND	0.1	0	0	0	0	0	0			

Sample ID MBLK | Batch ID: R15502 | Test Code: E300 | Units: mg/L | Analysis Date 5/25/2005 | Prep Date
Client ID: | Run ID: LC_050525A | SeqNo: 365704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

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Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID Reagent Blank 5m Batch ID: R15402 Test Code: SW8021 Units: µg/L Analysis Date 5/16/2005 7:08:29 AM Prep Date
Client ID: Run ID: PIDFID_050516A SeqNo: 362600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.29	0	20	0	101	83.3	121	0			

Sample ID Reagent Blank 5m Batch ID: R15413 Test Code: SW8021 Units: µg/L Analysis Date 5/17/2005 8:39:57 AM Prep Date
Client ID: Run ID: PIDFID_050517A SeqNo: 362968

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	19.76	0	20	0	98.8	83.3	121	0			

Sample ID MB-8047 Batch ID: 8047 Test Code: SW7470 Units: mg/L Analysis Date 5/26/2005 Prep Date 5/26/2005
Client ID: Run ID: MI-LA254_050526A SeqNo: 366067

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

10/16

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Method Blank

Sample ID MB-7986 Batch ID: 7986 Test Code: SW6010A Units: mg/L Analysis Date 5/18/2005 1:00:33 PM Prep Date 5/17/2005
Client ID: Run ID: ICP_050518A SeqNo: 363313

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	ND	0.005									

11/16

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 31-May-05

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361747	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5047	0.1	0.5	0	101	90	110	0			
Chloride	4.755	0.1	5	0	95.1	90	110	0			
Nitrogen, Nitrite (As N)	0.9372	0.1	1	0	93.7	90	110	0			
Nitrogen, Nitrate (As N)	2.449	0.1	2.5	0	98.0	90	110	0			
Phosphorus, Orthophosphate (As P)	4.836	0.5	5	0	96.7	90	110	0			
Sulfate	9.669	0.5	10	0	96.7	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.386	0.1	3.5	0	96.7	90	110	0			

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/12/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 361770	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5233	0.1	0.5	0	105	90	110	0			
Chloride	4.89	0.1	5	0	97.8	90	110	0			
Nitrogen, Nitrite (As N)	0.978	0.1	1	0	97.8	90	110	0			
Nitrogen, Nitrate (As N)	2.507	0.1	2.5	0	100	90	110	0			
Phosphorus, Orthophosphate (As P)	5.19	0.5	5	0	104	90	110	0			
Sulfate	9.994	0.5	10	0	99.9	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.485	0.1	3.5	0	99.6	90	110	0			

12/16

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS	Batch ID: R15380	Test Code: E300	Units: mg/L	Analysis Date 5/14/2005	Prep Date
Client ID:		Run ID: LC_050512A		SeqNo: 362064	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.516	0.1	0.5	0	103	90	110	0			
Chloride	4.744	0.1	5	0	94.9	90	110	0			
Nitrogen, Nitrite (As N)	0.9562	0.1	1	0	95.6	90	110	0			
Nitrogen, Nitrate (As N)	2.427	0.1	2.5	0	97.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.845	0.5	5	0	96.9	90	110	0			
Sulfate	9.712	0.5	10	0.1124	96.0	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.383	0.1	3.5	0	96.7	90	110	0			

Sample ID LCS	Batch ID: R15502	Test Code: E300	Units: mg/L	Analysis Date 5/25/2005	Prep Date
Client ID:		Run ID: LC_050525A		SeqNo: 365705	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5249	0.1	0.5	0	105	90	110	0			
Chloride	4.589	0.1	5	0	91.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9075	0.1	1	0	90.8	90	110	0			
Nitrogen, Nitrate (As N)	2.328	0.1	2.5	0	93.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.656	0.5	5	0	93.1	90	110	0			
Sulfate	9.366	0.5	10	0	93.7	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.236	0.1	3.5	0	92.4	90	110	0			

Sample ID BTEX lcs 100ng	Batch ID: R15402	Test Code: SW8021	Units: µg/L	Analysis Date 5/17/2005 2:41:13 AM	Prep Date
Client ID:		Run ID: PIDFID_050516A		SeqNo: 362606	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.62	0.5	20	0	98.1	88.7	114	0			
Toluene	19.42	0.5	20	0	97.1	89.3	112	0			
Ethylbenzene	19.56	0.5	20	0	97.8	88.6	113	0			
Xylenes, Total	58.39	0.5	60	0	97.3	89.4	112	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID BTEX lcs 100ng Batch ID: R15413 Test Code: SW8021 Units: µg/L Analysis Date 5/17/2005 10:39:14 PM Prep Date
Client ID: Run ID: PIDFID_050517A SeqNo: 363019

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.19	0.5	20	0	95.9	88.7	114	0			
Toluene	19.54	0.5	20	0	97.7	89.3	112	0			
Ethylbenzene	19.59	0.5	20	0	97.9	88.6	113	0			
Xylenes, Total	59.19	0.5	60	0	98.7	89.4	112	0			

Sample ID LCS-8047 Batch ID: 8047 Test Code: SW7470 Units: mg/L Analysis Date 5/26/2005 Prep Date 5/26/2005
Client ID: Run ID: MI-LA254_050526A SeqNo: 366068

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004958	0.0002	0.005	0	99.2	75.2	134	0			

Sample ID LCSD-8047 Batch ID: 8047 Test Code: SW7470 Units: mg/L Analysis Date 5/26/2005 Prep Date 5/26/2005
Client ID: Run ID: MI-LA254_050526A SeqNo: 366084

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005284	0.0002	0.005	0	106	75.2	134	0.004958	6.36	0	

Sample ID LCS-7986 Batch ID: 7986 Test Code: SW6010A Units: mg/L Analysis Date 5/18/2005 1:03:29 PM Prep Date 5/17/2005
Client ID: Run ID: ICP_050518A SeqNo: 363314

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.528	0.02	0.5	0	106	80	120	0			
Barium	0.5084	0.02	0.5	0	102	80	120	0			
Cadmium	0.5097	0.002	0.5	0	102	80	120	0			
Chromium	0.5011	0.006	0.5	0	100	80	120	0			
Lead	0.4976	0.005	0.5	0	99.5	80	120	0			
Selenium	0.4864	0.05	0.5	0	97.3	80	120	0			
Silver	0.5102	0.005	0.5	0	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0505119
Project: Phase II Monitoring

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID LCSD-7986 Batch ID: 7986 Test Code: SW6010A Units: mg/L Analysis Date 5/18/2005 1:06:28 PM Prep Date 5/17/2005

Client ID: Run ID: ICP_050518A SeqNo: 363315

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5204	0.02	0.5	0	104	80	120	0.528	1.44	20	
Barium	0.5108	0.02	0.5	0	102	80	120	0.5084	0.483	20	
Cadmium	0.5099	0.002	0.5	0	102	80	120	0.5097	0.0392	20	
Chromium	0.5056	0.006	0.5	0	101	80	120	0.5011	0.894	20	
Lead	0.4979	0.005	0.5	0	99.6	80	120	0.4976	0.0656	20	
Selenium	0.4785	0.05	0.5	0	95.7	80	120	0.4864	1.65	20	
Silver	0.5105	0.005	0.5	0	102	80	120	0.5102	0.0645	20	

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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 5/13/2005

Work Order Number 0505119 | Received by GLS

Checklist completed by [signature] Signature | 5-13-05 Date

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	1°	4° C ± 2 *Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: SAN Juan Refining
Address: #50 CR4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature: 1°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0505119
5-12-05	830AM	H_2O	CW23+10	2-VOA	X			-1
				1-250ml			H_2SO_4	-1
				1-250ml				-1
				1-500ml		X		-1
5-12-05	920AM	H_2O	CW23+90	2-VOA	X			-2
				1-250ml			H_2SO_4	-2
				1-250ml				-2
				1-500ml		X		-2

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles or Headspace (Y or N)
X	X																
								X									
								X									
							X										
X																	
								X									
								X									
							X										

Date: 5-12-05 Time: 330pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) 5-13-05 12:40
Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50 Rd 4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0505119	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
5-12-05	1010 Am	H_2O	CW25+95	2-VOA	X			-3	X																
				1-250ml			H_2SO_4	-3									X								
				1-250ml				-3									X								
				1-500ml		X		-3								X									
5-12-05	1020 Am	H_2O	OW25+70	2-VOA	X			-4	X																
				1-250ml			H_2SO_4	-4									X								
				1-250 ml				-4									X								
				1-500 ml		X		-4								X									

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
5-12-05	330pm	Cindy Hurtado	[signature]	5-13-05 @ 7:10
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks:

CHAIN-OF-CUSTODY RECORD

Accreditation Applies: NELAC ☐ USACE ☐ Other: _____

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Client: San Juan Refining
Address: #50 Rd 4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II Monitoring
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative:	HEAL No.
5-12-05	1230pm	H_2O	OW23+90	2-VOA	Y			0505119-5
				1-250mL			H_2SO_4	-5
				1-250mL				-5
5-12-05	1pm	H_2O	OW23+10	2-VOA	X			-6
				1-250mL			H_2SO_4	-6
				1-250mL				-6
				1-500mL		X		-6
			trip blank	1-40mL	X			-7

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
X																
								X								
								X								
							X									
X																
								X								
								X								
							X									
X																

Date: 5-12-05 Time: 330pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) 5-13-05 @ 1240

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks: Limited amount of sample - wells kept drying up - Do what you can

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

September 06. 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Annual 2005 Order No.: 0508275

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 8/24/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory

Date: *06-Sep-05*

CLIENT: San Juan Refining
Client Sample ID: OW 19+50
Lab Order: 0508275
Collection Date: 8/22/2005 1:10:00 PM
Project: Phase II Annual 2005
Lab ID: 0508275-01
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.29	0.10		mg/L	1	8/24/2005
Chloride	290	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/24/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/24/2005
Sulfate	660	10		mg/L	20	8/24/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	5.7	0.50		µg/L	1	9/2/2005 1:53:40 AM
Toluene	ND	0.50		µg/L	1	9/2/2005 1:53:40 AM
Ethylbenzene	1.1	0.50		µg/L	1	9/2/2005 1:53:40 AM
Xylenes, Total	1.9	0.50		µg/L	1	9/2/2005 1:53:40 AM
Surr: 4-Bromofluorobenzene	106	82.2-119		%REC	1	9/2/2005 1:53:40 AM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *06-Sep-05*

CLIENT: San Juan Refining
Lab Order: 0508275
Project: Phase II Annual 2005
Lab ID: 0508275-02

Client Sample ID: Trip Blank
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	9/1/2005 1:32:40 PM
Toluene	ND	0.50		µg/L	1	9/1/2005 1:32:40 PM
Ethylbenzene	ND	0.50		µg/L	1	9/1/2005 1:32:40 PM
Xylenes, Total	ND	0.50		µg/L	1	9/1/2005 1:32:40 PM
Surr: 4-Bromofluorobenzene	96.8	82.2-119		%REC	1	9/1/2005 1:32:40 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *06-Sep-05*

CLIENT: San Juan Refining
Work Order: 0508275
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID MBLK	Batch ID: R16415	Test Code: E300	Units: mg/L	Analysis Date 8/23/2005	Prep Date
Client ID:		Run ID: LC_050823A		SeqNo: 391368	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID MBLK	Batch ID: R16423	Test Code: E300	Units: mg/L	Analysis Date 8/24/2005	Prep Date
Client ID:		Run ID: LC_050824A		SeqNo: 391843	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID Reagent Blank 5m	Batch ID: R16519	Test Code: SW8021	Units: µg/L	Analysis Date 9/1/2005 9:24:37 AM	Prep Date
Client ID:		Run ID: PIDFID_050901A		SeqNo: 394723	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	18.53	0	20	0	92.6	82.2	119	0			

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *06-Sep-05*

CLIENT: San Juan Refining
Work Order: 0508275
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID LCS ST300-05021	Batch ID: R16415	Test Code: E300	Units: mg/L	Analysis Date 8/23/2005	Prep Date
Client ID:		Run ID: LC_050823A		SeqNo: 391369	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5143	0.1	0.5	0	103	90	110	0			
Chloride	4.738	0.1	5	0	94.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9548	0.1	1	0	95.5	90	110	0			
Nitrogen, Nitrate (As N)	2.402	0.1	2.5	0	96.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.872	0.5	5	0	97.4	90	110	0			
Sulfate	9.675	0.5	10	0	96.8	90	110	0			

Sample ID LCS ST300-05021	Batch ID: R16423	Test Code: E300	Units: mg/L	Analysis Date 8/24/2005	Prep Date
Client ID:		Run ID: LC_050824A		SeqNo: 391844	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5134	0.1	0.5	0	103	90	110	0			
Chloride	4.804	0.1	5	0	96.1	90	110	0			
Nitrogen, Nitrite (As N)	0.9619	0.1	1	0	96.2	90	110	0			
Nitrogen, Nitrate (As N)	2.441	0.1	2.5	0	97.6	90	110	0			
Phosphorus, Orthophosphate (As P)	4.966	0.5	5	0	99.3	90	110	0			
Sulfate	9.911	0.5	10	0	99.1	90	110	0			

Sample ID BTEX lcs 100ng	Batch ID: R16519	Test Code: SW8021	Units: µg/L	Analysis Date 9/1/2005 4:41:34 PM	Prep Date
Client ID:		Run ID: PIDFID_050901A		SeqNo: 394724	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.45	0.5	20	0	107	88.5	114	0			
Toluene	20.27	0.5	20	0	101	87.2	114	0			
Ethylbenzene	20.13	0.5	20	0	101	88.6	113	0			
Xylenes, Total	41.72	0.5	40	0	104	83.3	114	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 8/24/2005

Work Order Number 0508275 | Received by SSB

Checklist completed by [signature] Signature [8/24/05] Date

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 5° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA/QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50 CR4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II - Annual 2005
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature: 5.0

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0508275	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles or Headspace (Y or N)
9/24/05	110pm	H_2O	OW 19+50	2-VOA				-1	X															
"	"	"	"	1-250			H_2SO_4	-1									X							
				1-250				-1									X							
			trip blank	3/40mL				2	X															

Date: 9/23/05 Time: 330pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature)

Date: Time: Relinquished By: (Signature)
Received By: (Signature) 9/24/05 1:25

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

September 14, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Annual 2005 Order No.: 0508258

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 5 samples on 8/23/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

ACCREDITED IN ACCORDANCE WITH nelac

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW 25+95
Lab Order: 0508258
Collection Date: 8/22/2005 10:00:00 AM
Project: Phase II Annual 2005
Lab ID: 0508258-01
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.38	0.10		mg/L	1	8/23/2005
Chloride	80	0.50		mg/L	5	8/26/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/23/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/23/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/23/2005
Sulfate	230	2.5		mg/L	5	8/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	0.59	0.50		µg/L	1	9/1/2005 12:57:48 AM
Toluene	ND	0.50		µg/L	1	9/1/2005 12:57:48 AM
Ethylbenzene	ND	0.50		µg/L	1	9/1/2005 12:57:48 AM
Xylenes, Total	ND	0.50		µg/L	1	9/1/2005 12:57:48 AM
Surr: 4-Bromofluorobenzene	102	82.2-119		%REC	1	9/1/2005 12:57:48 AM
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	9/6/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/7/2005 3:59:57 PM
Barium	0.057	0.020		mg/L	1	9/7/2005 3:59:57 PM
Cadmium	ND	0.0020		mg/L	1	9/7/2005 3:59:57 PM
Chromium	ND	0.0060		mg/L	1	9/7/2005 3:59:57 PM
Lead	ND	0.0050		mg/L	1	9/7/2005 3:59:57 PM
Selenium	ND	0.050		mg/L	1	9/7/2005 3:59:57 PM
Silver	ND	0.0050		mg/L	1	9/7/2005 3:59:57 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Lab Order: 0508258
Project: Phase II Annual 2005
Lab ID: 0508258-02

Client Sample ID: OW 25+70
Collection Date: 8/22/2005 10:35:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.62	0.10		mg/L	1	8/23/2005
Chloride	49	0.50		mg/L	5	8/26/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/23/2005
Nitrogen, Nitrate (As N)	0.18	0.10		mg/L	1	8/23/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/23/2005
Sulfate	270	2.5		mg/L	5	8/26/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	9/1/2005 1:28:23 AM
Toluene	ND	0.50		µg/L	1	9/1/2005 1:28:23 AM
Ethylbenzene	ND	0.50		µg/L	1	9/1/2005 1:28:23 AM
Xylenes, Total	ND	0.50		µg/L	1	9/1/2005 1:28:23 AM
Surr: 4-Bromofluorobenzene	99.4	82.2-119		%REC	1	9/1/2005 1:28:23 AM
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	9/6/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/7/2005 4:02:50 PM
Barium	0.60	0.020		mg/L	1	9/7/2005 4:02:50 PM
Cadmium	ND	0.0020		mg/L	1	9/7/2005 4:02:50 PM
Chromium	0.013	0.0060		mg/L	1	9/7/2005 4:02:50 PM
Lead	0.0065	0.0050		mg/L	1	9/7/2005 4:02:50 PM
Selenium	ND	0.050		mg/L	1	9/7/2005 4:02:50 PM
Silver	ND	0.0050		mg/L	1	9/7/2005 4:02:50 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	Client Sample ID:	CW 8+10
Lab Order:	0508258	Collection Date:	8/22/2005 12:45:00 PM
Project:	Phase II Annual 2005		
Lab ID:	0508258-03	Matrix:	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.37	0.10		mg/L	1	8/23/2005
Chloride	1700	5.0		mg/L	50	8/26/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/23/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/23/2005
Sulfate	210	2.5		mg/L	5	8/26/2005
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	8/30/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	180	5.0		µg/L	10	9/1/2005 1:59:11 AM
Toluene	ND	5.0		µg/L	10	9/1/2005 1:59:11 AM
Ethylbenzene	9.0	5.0		µg/L	10	9/1/2005 1:59:11 AM
Xylenes, Total	210	5.0		µg/L	10	9/1/2005 1:59:11 AM
Surr: 4-Bromofluorobenzene	108	82.2-119		%REC	10	9/1/2005 1:59:11 AM
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	9/6/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/7/2005 4:05:54 PM
Barium	0.64	0.020		mg/L	1	9/7/2005 4:05:54 PM
Cadmium	ND	0.0020		mg/L	1	9/7/2005 4:05:54 PM
Chromium	ND	0.0060		mg/L	1	9/7/2005 4:05:54 PM
Lead	ND	0.0050		mg/L	1	9/7/2005 4:05:54 PM
Selenium	ND	0.050		mg/L	1	9/7/2005 4:05:54 PM
Silver	ND	0.0050		mg/L	1	9/7/2005 4:05:54 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Lab Order: 0508258
Project: Phase II Annual 2005
Lab ID: 0508258-04

Client Sample ID: CW 16+60
Collection Date: 8/22/2005 1:55:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.55	0.10		mg/L	1	8/23/2005
Chloride	150	1.0		mg/L	10	8/26/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/23/2005
Nitrogen, Nitrate (As N)	0.22	0.10		mg/L	1	8/23/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/23/2005
Sulfate	2.2	0.50		mg/L	1	8/23/2005
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	6800	50		µg/L	100	9/1/2005 2:29:40 AM
Toluene	65	50		µg/L	100	9/1/2005 2:29:40 AM
Ethylbenzene	3100	50		µg/L	100	9/1/2005 2:29:40 AM
Xylenes, Total	7100	50		µg/L	100	9/1/2005 2:29:40 AM
Surr: 4-Bromofluorobenzene	108	82.2-119		%REC	100	9/1/2005 2:29:40 AM
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	9/6/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	9/7/2005 4:10:04 PM
Barium	1.1	0.040		mg/L	2	9/8/2005 3:52:19 PM
Cadmium	ND	0.0020		mg/L	1	9/7/2005 4:10:04 PM
Chromium	ND	0.0060		mg/L	1	9/7/2005 4:10:04 PM
Lead	0.0080	0.0050		mg/L	1	9/7/2005 4:10:04 PM
Selenium	ND	0.050		mg/L	1	9/7/2005 4:10:04 PM
Silver	ND	0.0050		mg/L	1	9/7/2005 4:10:04 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	Trip Blank
Lab Order:	0508258	**Collection Date:**	
Project:	Phase II Annual 2005		
Lab ID:	0508258-05	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50		µg/L	1	9/1/2005 3:00:30 AM
Toluene	ND	0.50		µg/L	1	9/1/2005 3:00:30 AM
Ethylbenzene	ND	0.50		µg/L	1	9/1/2005 3:00:30 AM
Xylenes, Total	ND	0.50		µg/L	1	9/1/2005 3:00:30 AM
Surr: 4-Bromofluorobenzene	99.0	82.2-119		%REC	1	9/1/2005 3:00:30 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK	Batch ID: R16415	Test Code: E300	Units: mg/L	Analysis Date: 8/23/2005	Prep Date:
Client ID:		Run ID: LC_050823A		SeqNo: 391368	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: MBLK	Batch ID: R16462	Test Code: E300	Units: mg/L	Analysis Date: 8/26/2005	Prep Date:
Client ID:		Run ID: LC_050826A		SeqNo: 393070	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK | Batch ID: R16512 | Test Code: E300 | Units: mg/L | Analysis Date: 8/30/2005 | Prep Date:
Client ID: | Run ID: LC_050830A | SeqNo: 394400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: Reagent Blank 5m | Batch ID: R16499 | Test Code: SW8021 | Units: µg/L | Analysis Date: 8/31/2005 1:27:11 PM | Prep Date:
Client ID: | Run ID: PIDFID_050831A | SeqNo: 394157

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	18.57	0	20	0	92.8	82.2	119	0			

Sample ID: MB-8671 | Batch ID: 8671 | Test Code: SW7470 | Units: mg/L | Analysis Date: 9/6/2005 | Prep Date: 9/6/2005
Client ID: | Run ID: MI-LA254_050906B | SeqNo: 395816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit; J - Analyte detected below quantitation limits; S - Spike Recovery outside accepted recovery limits; R - RPD outside accepted recovery limits; B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MB-8667 Batch ID: 8667 Test Code: SW6010A Units: mg/L Analysis Date: 9/7/2005 3:18:12 PM Prep Date: 9/2/2005

Client ID: Run ID: ICP_050907A SeqNo: 396479

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	ND	0.005									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS ST300-05021 Batch ID: R16415 Test Code: E300 Units: mg/L Analysis Date: 8/23/2005 Prep Date:
Client ID: Run ID: LC_050823A SeqNo: 391369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5143	0.1	0.5	0	103	90	110	0			
Chloride	4.738	0.1	5	0	94.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9548	0.1	1	0	95.5	90	110	0			
Nitrogen, Nitrate (As N)	2.402	0.1	2.5	0	96.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.872	0.5	5	0	97.4	90	110	0			
Sulfate	9.675	0.5	10	0	96.8	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.357	0.1	3.5	0	95.9	90	110	0			

Sample ID: LCS ST300-05021 Batch ID: R16462 Test Code: E300 Units: mg/L Analysis Date: 8/26/2005 Prep Date:
Client ID: Run ID: LC_050826A SeqNo: 393071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5159	0.1	0.5	0	103	90	110	0			
Chloride	4.791	0.1	5	0	95.8	90	110	0			
Nitrogen, Nitrite (As N)	0.957	0.1	1	0	95.7	90	110	0			
Nitrogen, Nitrate (As N)	2.438	0.1	2.5	0	97.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.884	0.5	5	0	97.7	90	110	0			
Sulfate	9.721	0.5	10	0	97.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.395	0.1	3.5	0	97.0	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS ST300-05021 Batch ID: R16512 Test Code: E300 Units: mg/L Analysis Date: 8/30/2005 Prep Date:
Client ID: Run ID: LC_050830A SeqNo: 394401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5219	0.1	0.5	0	104	90	110	0			
Chloride	4.752	0.1	5	0	95.0	90	110	0			
Nitrogen, Nitrite (As N)	0.9199	0.1	1	0	92.0	90	110	0			
Nitrogen, Nitrate (As N)	2.464	0.1	2.5	0	98.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.885	0.5	5	0	97.7	90	110	0			
Sulfate	9.806	0.5	10	0	98.1	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.384	0.1	3.5	0	96.7	90	110	0			

Sample ID: BTEX lcv 100ng Batch ID: R16499 Test Code: SW8021 Units: µg/L Analysis Date: 8/31/2005 6:13:27 PM Prep Date:
Client ID: Run ID: PIDFID_050831A SeqNo: 394159

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.79	0.5	20	0	104	88.5	114	0			
Toluene	20.01	0.5	20	0	100	87.2	114	0			
Ethylbenzene	20.17	0.5	20	0	101	88.6	113	0			
Xylenes, Total	41.19	0.5	40	0	103	83.3	114	0			

Sample ID: LCS-8671 Batch ID: 8671 Test Code: SW7470 Units: mg/L Analysis Date: 9/6/2005 Prep Date: 9/6/2005
Client ID: Run ID: MI-LA254_050906B SeqNo: 395817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005162	0.0002	0.005	0	103	75.2	134	0			

Sample ID: LCSD-8671 Batch ID: 8671 Test Code: SW7470 Units: mg/L Analysis Date: 9/6/2005 Prep Date: 9/6/2005
Client ID: Run ID: MI-LA254_050906B SeqNo: 395835

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005036	0.0002	0.005	0	101	75.2	134	0.005162	2.47	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508258
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS-8667 Batch ID: 8667 Test Code: SW6010A Units: mg/L Analysis Date: 9/7/2005 3:21:13 PM Prep Date: 9/2/2005
Client ID: Run ID: ICP_050907A SeqNo: 396480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5295	0.02	0.5	0	106	80	120	0			
Barium	0.5036	0.02	0.5	0	101	80	120	0			
Cadmium	0.5108	0.002	0.5	0	102	80	120	0			
Chromium	0.5029	0.006	0.5	0	101	80	120	0			
Lead	0.5083	0.005	0.5	0	102	80	120	0			
Selenium	0.5011	0.05	0.5	0	100	80	120	0			
Silver	0.5148	0.005	0.5	0	103	80	120	0			

Sample ID: LCSD-8667 Batch ID: 8667 Test Code: SW6010A Units: mg/L Analysis Date: 9/7/2005 3:23:47 PM Prep Date: 9/2/2005
Client ID: Run ID: ICP_050907A SeqNo: 396481

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5145	0.02	0.5	0	103	80	120	0.5295	2.87	20	
Barium	0.4938	0.02	0.5	0	98.8	80	120	0.5036	1.95	20	
Cadmium	0.5044	0.002	0.5	0	101	80	120	0.5108	1.25	20	
Chromium	0.4965	0.006	0.5	0	99.3	80	120	0.5029	1.28	20	
Lead	0.5027	0.005	0.5	0	101	80	120	0.5083	1.11	20	
Selenium	0.4885	0.05	0.5	0	97.7	80	120	0.5011	2.56	20	
Silver	0.5053	0.005	0.5	0	101	80	120	0.5148	1.87	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANT REFINERY BLOOM | Date and Time Received: 8/23/1954

Work Order Number 0508258 | Received by SSB

Checklist completed by Signature [signature] Date 8-23-05

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 6° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: Spoke with Per. Cindy H. on 8-23 @ 1400, confirmed 0508258-2 sample ID is OW 25+70 as listed on bottle. GS 8/23/5

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package: Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refinery
Address: ~~#50~~, CR 4990
Bloomfield, NM. 87413
Phone #: 505-~~63~~2-4161
Fax #: 505-~~63~~2-3911

Project Name: PHASE II - Annual 2005
Project #:
Project Manager:
Sampler: Cindy Hurtado/Angela Folk
Sample Temperature: 6°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	NO_3 Backup				Air Bubbles or Headspace (Y or N)
								0508258																	
8/22/05	10Am	H_2O	CW 25+95	2-VOA	X			-1	X																
				1-500 nl			X	1								X									
				1-500mL			H_2SO_4	1												X					
				1-500ml				1									X								
8/22/05	1035m	H_2O	~~OW 23+90~~ OW 25+70 (2)	2-VOA	X			2	X																
				1-500mL			X	2								X									
				1-500mL			H_2SO_4	2												X					
				1-500m				2									X				"				

Date: 8/22/05 Time: 5pm Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature)
Date: Time: Relinquished By: (Signature)
Received By: (Signature) 8/23/05 11:30

Remarks:

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: San Juan Refinery

Project Name: Phase II - Annual 2005

Address: #50, CR 4990
Bloomfield, NM 87413

Project #:

Project Manager:

Phone #: 505-632-4161

Sampler: Cindy Hurtado / Angela Folk

Fax #: 505-632-3911

Sample Temperature: 6°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0508258-
8/22/05	12:45p	H_2O	CW 8+10	2-VOA	X			3
				1-500ml			X	3
				1-250ml			H_2SO_4	3
				1-250ml				3
8/22/05	155pm	H_2O	CW 16+60	2-VOA	X			4
				1-500ml			X	4
				1-500ml			H_2SO_4	4
				1-500ml				4
			trip blank	3/40ml				

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
8/22/05	3PM	Cindy Hurtado	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
			8/23/05 11:30

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

BTEX + ~~MTBE~~ + ~~TMB~~'s (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	NO_3 Backup				Air Bubbles or Headspace (Y or N)
X																
							X									
												X				
								X								
X																
							X					X				
								X								
X																

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

September 08, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Annual 2005 Order No.: 0508193

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 5 samples on 8/17/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Lab Order: 0508193
Project: Phase II Annual 2005
Lab ID: 0508193-01

Client Sample ID: CW1+50
Collection Date: 8/16/2005 2:15:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.59	0.10		mg/L	1	8/18/2005
Chloride	45	0.50		mg/L	5	8/19/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/18/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/18/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/18/2005
Sulfate	1.2	0.50		mg/L	1	8/18/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: HLM
Benzene	1000	20		µg/L	20	8/27/2005
Toluene	ND	20		µg/L	20	8/27/2005
Ethylbenzene	200	20		µg/L	20	8/27/2005
Xylenes, Total	1800	20		µg/L	20	8/27/2005
Surr: 4-Bromofluorobenzene	99.6	86.1-121		%REC	20	8/27/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 1:32:29 PM
Barium	0.76	0.020		mg/L	1	8/31/2005 1:32:29 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 1:32:29 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 1:32:29 PM
Lead	0.0060	0.0050		mg/L	1	8/31/2005 1:32:29 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 1:32:29 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 1:32:29 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW0 + 60
Lab Order: 0508193
Collection Date: 8/16/2005 3:45:00 PM
Project: Phase II Annual 2005
Lab ID: 0508193-02
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.53	0.10		mg/L	1	8/18/2005
Chloride	37	0.50		mg/L	5	8/24/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/18/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/18/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/18/2005
Sulfate	0.77	0.50		mg/L	1	8/18/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: HLM
Benzene	400	5.0		µg/L	5	8/27/2005
Toluene	ND	5.0		µg/L	5	8/27/2005
Ethylbenzene	80	5.0		µg/L	5	8/27/2005
Xylenes, Total	350	5.0		µg/L	5	8/27/2005
Surr: 4-Bromofluorobenzene	105	86.1-121		%REC	5	8/27/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	0.40	0.040		mg/L	200	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 1:36:29 PM
Barium	0.55	0.020		mg/L	1	8/31/2005 1:36:29 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 1:36:29 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 1:36:29 PM
Lead	0.011	0.0050		mg/L	1	8/31/2005 1:36:29 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 1:36:29 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 1:36:29 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW3 + 85
Lab Order: 0508193
Collection Date: 8/17/2005 8:00:00 AM
Project: Phase II Annual 2005
Lab ID: 0508193-03
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.25	0.10		mg/L	1	8/18/2005
Chloride	170	1.0		mg/L	10	8/24/2005
Nitrogen, Nitrite (As N)	ND	1.0		mg/L	10	8/19/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/18/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/18/2005
Sulfate	1.1	0.50		mg/L	1	8/18/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: HLM
Benzene	4.5	2.0		µg/L	2	8/27/2005
Toluene	ND	2.0		µg/L	2	8/27/2005
Ethylbenzene	7.5	2.0		µg/L	2	8/27/2005
Xylenes, Total	36	2.0		µg/L	2	8/27/2005
Surr: 4-Bromofluorobenzene	109	86.1-121		%REC	2	8/27/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 1:40:23 PM
Barium	0.61	0.020		mg/L	1	8/31/2005 1:40:23 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 1:40:23 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 1:40:23 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 1:40:23 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 1:40:23 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 1:40:23 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW19 + 50
Lab Order:	0508193	**Collection Date:**	8/17/2005 9:05:00 AM
Project:	Phase II Annual 2005		
Lab ID:	0508193-04	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.41	0.10		mg/L	1	8/30/2005
Chloride	270	1.0		mg/L	10	8/30/2005
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	8/30/2005
Sulfate	140	2.5		mg/L	5	8/26/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	8/26/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: HLM
Benzene	6600	250		µg/L	250	8/29/2005
Toluene	ND	50		µg/L	50	8/27/2005
Ethylbenzene	2800	50		µg/L	50	8/27/2005
Xylenes, Total	4300	50		µg/L	50	8/27/2005
Surr: 4-Bromofluorobenzene	98.6	86.1-121		%REC	50	8/27/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 1:44:25 PM
Barium	0.68	0.020		mg/L	1	8/31/2005 1:44:25 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 1:44:25 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 1:44:25 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 1:44:25 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 1:44:25 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 1:44:25 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
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- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	TRIP BLANK
Lab Order:	0508193	**Collection Date:**	
Project:	Phase II Annual 2005		
Lab ID:	0508193-05	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: HLM
Benzene	ND	1.0		µg/L	1	8/27/2005
Toluene	ND	1.0		µg/L	1	8/27/2005
Ethylbenzene	ND	1.0		µg/L	1	8/27/2005
Xylenes, Total	ND	1.0		µg/L	1	8/27/2005
Surr: 4-Bromofluorobenzene	103	86.1-121		%REC	1	8/27/2005

Qualifiers:

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- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK | Batch ID: R16354 | Test Code: E300 | Units: mg/L | Analysis Date: 8/18/2005 | Prep Date:
Client ID: | Run ID: LC_050818A | SeqNo: 390049

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: MBLK | Batch ID: R16415 | Test Code: E300 | Units: mg/L | Analysis Date: 8/23/2005 | Prep Date:
Client ID: | Run ID: LC_050823A | SeqNo: 391368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK	Batch ID: R16462	Test Code: E300	Units: mg/L	Analysis Date: 8/26/2005	Prep Date:
Client ID:		Run ID: LC_050826A		SeqNo: 393070	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: MBLK	Batch ID: R16512	Test Code: E300	Units: mg/L	Analysis Date: 8/30/2005	Prep Date:
Client ID:		Run ID: LC_050830A		SeqNo: 394400	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: *0508193*
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: 5ml rb	Batch ID: R16460	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/27/2005	Prep Date:
Client ID:		Run ID: VAL_050826B		SeqNo: 392928	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.192	1									J
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	10.67	0	10	0	107	86.1	121	0			

Sample ID: 5ml rb	Batch ID: R16476	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/29/2005	Prep Date:
Client ID:		Run ID: VAL_050829A		SeqNo: 393504	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	10.36	0	10	0	104	86.1	121	0			

Sample ID: MB-8590	Batch ID: 8590	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2005	Prep Date: 8/22/2005
Client ID:		Run ID: MI-LA254_050822A		SeqNo: 390791	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MB-8584 Batch ID: 8584 Test Code: SW6010A Units: mg/L Analysis Date: 8/31/2005 1:13:44 PM Prep Date: 8/23/2005
Client ID: Run ID: ICP_050831D SeqNo: 394031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	0.009111	0.005									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *08-Sep-05*

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT

Sample Duplicate

Sample ID **0508193-01B DUP** Batch ID: **R16354** Test Code: **E300** Units: **mg/L** Analysis Date **8/18/2005** Prep Date

Client ID: **CW1+50** Run ID: **LC_050818A** SeqNo: **390052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5847	0.1	0	0	0	0	0	0.5941	1.59	20	
Nitrogen, Nitrite (As N)	ND	0.1	0	0	0	0	0	0	0	20	
Nitrogen, Nitrate (As N)	ND	0.1	0	0	0	0	0	0	0	20	
Phosphorus, Orthophosphate (As P)	ND	0.5	0	0	0	0	0	0	0	20	
Sulfate	1.155	0.5	0	0	0	0	0	1.165	0.845	20	

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Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *08-Sep-05*

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0508193-01B MS** Batch ID: **R16354** Test Code: **E300** Units: **mg/L** Analysis Date **8/18/2005** Prep Date

Client ID: **CW1+50** Run ID: **LC_050818A** SeqNo: **390053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.093	0.1	0.5	0.5941	99.7	80	120	0			
Nitrogen, Nitrite (As N)	0.964	0.1	1	0	96.4	80	120	0			
Nitrogen, Nitrate (As N)	2.766	0.1	2.5	0	111	80	120	0			
Phosphorus, Orthophosphate (As P)	5.267	0.5	5	0	105	80	120	0			
Sulfate	12.19	0.5	10	1.165	110	80	120	0			

Sample ID **0508193-01B MSD** Batch ID: **R16354** Test Code: **E300** Units: **mg/L** Analysis Date **8/18/2005** Prep Date

Client ID: **CW1+50** Run ID: **LC_050818A** SeqNo: **390054**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.066	0.1	0.5	0.5941	94.4	80	120	1.093	2.46	20	
Nitrogen, Nitrite (As N)	0.967	0.1	1	0	96.7	80	120	0.964	0.311	20	
Nitrogen, Nitrate (As N)	2.737	0.1	2.5	0	109	80	120	2.766	1.06	20	
Phosphorus, Orthophosphate (As P)	5.212	0.5	5	0	104	80	120	5.267	1.05	20	
Sulfate	12.04	0.5	10	1.165	109	80	120	12.19	1.29	20	

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Qualifiers:
ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS | Batch ID: R16354 | Test Code: E300 | Units: mg/L | Analysis Date: 8/18/2005 | Prep Date:
Client ID: | Run ID: LC_050818A | SeqNo: 390050

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4552	0.1	0.5	0	91.0	90	110	0			
Chloride	4.809	0.1	5	0	96.2	90	110	0			
Nitrogen, Nitrite (As N)	0.9869	0.1	1	0	98.7	90	110	0			
Nitrogen, Nitrate (As N)	2.455	0.1	2.5	0	98.2	90	110	0			
Phosphorus, Orthophosphate (As P)	4.876	0.5	5	0	97.5	90	110	0			
Sulfate	9.813	0.5	10	0	98.1	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.442	0.1	3.5	0	98.3	90	110	0			

Sample ID: LCS ST300-05021 | Batch ID: R16415 | Test Code: E300 | Units: mg/L | Analysis Date: 8/23/2005 | Prep Date:
Client ID: | Run ID: LC_050823A | SeqNo: 391369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5143	0.1	0.5	0	103	90	110	0			
Chloride	4.738	0.1	5	0	94.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9548	0.1	1	0	95.5	90	110	0			
Nitrogen, Nitrate (As N)	2.402	0.1	2.5	0	96.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.872	0.5	5	0	97.4	90	110	0			
Sulfate	9.675	0.5	10	0	96.8	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.357	0.1	3.5	0	95.9	90	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS ST300-05021 Batch ID: R16462 Test Code: E300 Units: mg/L Analysis Date: 8/26/2005 Prep Date:
Client ID: Run ID: LC_050826A SeqNo: 393071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5159	0.1	0.5	0	103	90	110	0			
Chloride	4.791	0.1	5	0	95.8	90	110	0			
Nitrogen, Nitrite (As N)	0.957	0.1	1	0	95.7	90	110	0			
Nitrogen, Nitrate (As N)	2.438	0.1	2.5	0	97.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.884	0.5	5	0	97.7	90	110	0			
Sulfate	9.721	0.5	10	0	97.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.395	0.1	3.5	0	97.0	90	110	0			

Sample ID: LCS ST300-05021 Batch ID: R16512 Test Code: E300 Units: mg/L Analysis Date: 8/30/2005 Prep Date:
Client ID: Run ID: LC_050830A SeqNo: 394401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5219	0.1	0.5	0	104	90	110	0			
Chloride	4.752	0.1	5	0	95.0	90	110	0			
Nitrogen, Nitrite (As N)	0.9199	0.1	1	0	92.0	90	110	0			
Nitrogen, Nitrate (As N)	2.464	0.1	2.5	0	98.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.885	0.5	5	0	97.7	90	110	0			
Sulfate	9.806	0.5	10	0	98.1	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.384	0.1	3.5	0	96.7	90	110	0			

Sample ID: 100ng lcs Batch ID: R16460 Test Code: SW8260B Units: µg/L Analysis Date: 8/27/2005 Prep Date:
Client ID: Run ID: VAL_050826B SeqNo: 392930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.91	1	20	0.192	104	80	130	0			
Toluene	22.61	1	20	0	113	77	121	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: 100ng lcs	Batch ID: R16476	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/29/2005	Prep Date:
Client ID:		Run ID: VAL_050829A		SeqNo: 393509	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.98	1	20	0	94.9	80	130	0			
Toluene	22.79	1	20	0	114	77	121	0			

Sample ID: LCS-8590	Batch ID: 8590	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2005	Prep Date: 8/22/2005
Client ID:		Run ID: MI-LA254_050822A		SeqNo: 390792	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005303	0.0002	0.005	0	106	75.2	134	0			

Sample ID: LCSD-8590	Batch ID: 8590	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2005	Prep Date: 8/22/2005
Client ID:		Run ID: MI-LA254_050822A		SeqNo: 390812	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005444	0.0002	0.005	0	109	75.2	134	0.005303	2.63	0	

Sample ID: LCS-8584	Batch ID: 8584	Test Code: SW6010A	Units: mg/L	Analysis Date: 8/31/2005 1:16:44 PM	Prep Date: 8/23/2005
Client ID:		Run ID: ICP_050831D		SeqNo: 394032	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.499	0.02	0.5	0	99.8	80	120	0			
Barium	0.4868	0.02	0.5	0	97.4	80	120	0			
Cadmium	0.4904	0.002	0.5	0	98.1	80	120	0			
Chromium	0.4818	0.006	0.5	0	96.4	80	120	0			
Lead	0.4724	0.005	0.5	0	94.5	80	120	0			
Selenium	0.4776	0.05	0.5	0	95.5	80	120	0			
Silver	0.4905	0.005	0.5	0.009111	96.3	80	120	0			B

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

J

CLIENT: San Juan Refining
Work Order: 0508193
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: LCSD-8584 Batch ID: 8584 Test Code: SW6010A Units: mg/L Analysis Date: 8/31/2005 1:20:05 PM Prep Date: 8/23/2005

Client ID: Run ID: ICP_050831D SeqNo: 394033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.496	0.02	0.5	0	99.2	80	120	0.499	0.616	20	
Barium	0.4883	0.02	0.5	0	97.7	80	120	0.4868	0.300	20	
Cadmium	0.4882	0.002	0.5	0	97.6	80	120	0.4904	0.464	20	
Chromium	0.4853	0.006	0.5	0	97.1	80	120	0.4818	0.717	20	
Lead	0.4706	0.005	0.5	0	94.1	80	120	0.4724	0.381	20	
Selenium	0.4675	0.05	0.5	0	93.5	80	120	0.4776	2.12	20	
Silver	0.4907	0.005	0.5	0.009111	96.3	80	120	0.4905	0.0265	20	B

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 8/17/2005

Work Order Number 0508193 | Received by SSB

Checklist completed by [signature] Signature | 8/18/05 Date

Matrix | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☑	No ☐	N/A ☐	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
[illegible]r - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? **2°** *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: Per Cindy Confirmed ID For 0508193-3 as CW3+85 Not CW3+80 GS 8/18/05

[illegible]rective Action _____

CHAIN-OF-CUSTODY RECORD

Accreditation Applied
NELAC ☐ USACE ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refinery

Project Name: ~~Phase~~ Phase II - Annual 2005

Address: #50, Road 4990
Bloomfield, NM
87413

Project #:

Project Manager:

Phone #: 505-632-4161

Fax #: 505-632-~~4781~~ 3911

Sampler: Cindy Hurtado / Angela Fick

Sample Temperature: 20

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0508193
8/16/05	215pm	H_2O	CW1+50	2-VOA	X			1
				1-500ml			H_2SO_4	2
				1-500ml				3
				1-500ml		X		4
8/16/05	345pm	H_2O	CW0+60	2-VOA	X			5
				1-500ml			H_2SO_4	6
				1-500ml				7
				1-500ml		X		8

ANALYSIS REQUEST

	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
1	X								X								
2									X								
3									X								
4								X									
5	X																
6									X								
7									X								
8								X									

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
8/17/05	930am	Cindy Hurtado	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 8/17/05 10:40

Remarks:

CHAIN-OF-CUSTODY RECORD

Accreditation Applied: NELAC ☐ USACE ☐ Other: _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refinery

Project Name: Phase II - Annual 2005

Address: #50, Rd 4990
Bloomfield, NM
87413

Project #:

Project Manager:

Phone #: 505-632-4161

Fax #: 505-632-3911

Sampler: Cindy Hurtado/Angela Folk

Sample Temperature: 2°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	BTEX + ~~MTBE~~ + ~~TMB~~'s (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/17/05	8AM	H_2O	CW 3 ~~+80~~ 85	2-VOA	X			0508193 3	X																
				1-500ml			H_2SO_4										X								
				1-500ml													Y								
				1-500ml		X										X									
		H_2O																							
8/17/05	905AM	~~905AM~~ H_2O	CW 19 +50	2-VOA	X			4	X																
				1-500ml			H_2SO_4										X								
				1-500ml													X								
				1-500ml		X										X									

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
8/17/05	930AM	Cindy Hurtado	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 8/17/05 16:40

Remarks:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

October 20, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield. NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Phase II Annual 2005 Order No.: 0508214

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 8 samples on 8/18/2005 for the analyses presented in the following report.

This report is an addendum to the report dated September 6, 2005. The name for sample ID #2 has been changed. Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109
505.345.3975 ■ Fax 505.345.4107
www.hallenvironmental.com

Hall Environmental Analysis Laboratory

Date: *20-Oct-05*

CLIENT: San Juan Refining
Project: Phase II Annual 2005
Lab Order: 0508214

CASE NARRATIVE

Method 6010: Hit for Ag in digestion blank MB-8584. All samples requiring Ag are ND. Results reported. IN36-05165

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW 22+00
Lab Order: 0508214
Collection Date: 8/17/2005 2:00:00 PM
Project: Phase II Annual 2005
Lab ID: 0508214-01
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.64	0.10		mg/L	1	8/19/2005
Chloride	560	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	9.0	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	6500	100		µg/L	100	8/29/2005
Toluene	ND	100		µg/L	100	8/29/2005
Ethylbenzene	ND	100		µg/L	100	8/29/2005
Xylenes, Total	150	100		µg/L	100	8/29/2005
Surr: 4-Bromofluorobenzene	106	86.1-121		%REC	100	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:17:11 PM
Barium	0.71	0.020		mg/L	1	8/31/2005 2:17:11 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:17:11 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:17:11 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 2:17:11 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:17:11 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:17:11 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 23+10
Lab Order:	0508214	**Collection Date:**	8/17/2005 2:35:00 PM
Project:	Phase II Annual 2005		
Lab ID:	0508214-06	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.60	0.10		mg/L	1	8/19/2005
Chloride	500	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	4.4	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	9400	250		µg/L	250	8/30/2005
Toluene	15	5.0		µg/L	5	8/29/2005
Ethylbenzene	420	5.0		µg/L	5	8/29/2005
Xylenes, Total	360	5.0		µg/L	5	8/29/2005
Surr: 4-Bromofluorobenzene	99.9	86.1-121		%REC	5	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:52:47 PM
Barium	1.1	0.10		mg/L	5	8/31/2005 3:30:47 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:52:47 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:52:47 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 2:52:47 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:52:47 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:52:47 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: OW 11+15
Lab Order: 0508214
Collection Date: 8/17/2005 10:50:00 AM
Project: Phase II Annual 2005
Lab ID: 0508214-03
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.42	0.10		mg/L	1	8/19/2005
Chloride	340	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	25	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	750	50		µg/L	50	8/30/2005
Toluene	ND	10		µg/L	10	8/29/2005
Ethylbenzene	120	10		µg/L	10	8/29/2005
Xylenes, Total	270	10		µg/L	10	8/29/2005
Surr: 4-Bromofluorobenzene	103	86.1-121		%REC	10	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	0.038	0.020		mg/L	1	8/31/2005 2:25:34 PM
Barium	0.82	0.020		mg/L	1	8/31/2005 2:25:34 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:25:34 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:25:34 PM
Lead	0.0056	0.0050		mg/L	1	8/31/2005 2:25:34 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:25:34 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:25:34 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW 14+10
Lab Order: 0508214
Collection Date: 8/17/2005 11:30:00 AM
Project: Phase II Annual 2005
Lab ID: 0508214-04
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	1.6	0.10		mg/L	1	8/19/2005
Chloride	55	0.50		mg/L	5	8/24/2005
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/19/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	1400	10		mg/L	20	8/24/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	6000	100		µg/L	100	8/29/2005
Toluene	ND	100		µg/L	100	8/29/2005
Ethylbenzene	1200	100		µg/L	100	8/29/2005
Xylenes, Total	240	100		µg/L	100	8/29/2005
Surr: 4-Bromofluorobenzene	107	86.1-121		%REC	100	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:29:38 PM
Barium	0.12	0.020		mg/L	1	8/31/2005 2:29:38 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:29:38 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:29:38 PM
Lead	0.0055	0.0050		mg/L	1	8/31/2005 2:29:38 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:29:38 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:29:38 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: CW 23+90
Lab Order: 0508214
Collection Date: 8/17/2005 3:10:00 PM
Project: Phase II Annual 2005
Lab ID: 0508214-05
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.51	0.10		mg/L	1	8/19/2005
Chloride	480	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	1.8	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	ND	1.0		mg/L	10	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	3300	50		µg/L	50	8/29/2005
Toluene	ND	50		µg/L	50	8/29/2005
Ethylbenzene	170	50		µg/L	50	8/29/2005
Xylenes, Total	330	50		µg/L	50	8/29/2005
Surr: 4-Bromofluorobenzene	109	86.1-121		%REC	50	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:33:54 PM
Barium	0.45	0.020		mg/L	1	8/31/2005 2:33:54 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:33:54 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:33:54 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 2:33:54 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:33:54 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:33:54 PM

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Lab Order: 0508214
Project: Phase II Annual 2005
Lab ID: 0508214-02

Client Sample ID: OW 23+10
Collection Date: 8/17/2005 2:45:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.49	0.10		mg/L	1	8/19/2005
Chloride	260	2.0		mg/L	20	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	5.6	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	2.7	0.50		mg/L	5	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	530	10		µg/L	10	8/30/2005
Toluene	ND	10		µg/L	10	8/30/2005
Ethylbenzene	ND	10		µg/L	10	8/30/2005
Xylenes, Total	47	10		µg/L	10	8/30/2005
Surr: 4-Bromofluorobenzene	105	86.1-121		%REC	10	8/30/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:21:23 PM
Barium	2.3	0.10		mg/L	5	8/31/2005 3:24:47 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:21:23 PM
Chromium	ND	0.0060		mg/L	1	8/31/2005 2:21:23 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 2:21:23 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:21:23 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:21:23 PM

Qualifiers:
- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Client Sample ID: OW 23+90
Lab Order: 0508214
Collection Date: 8/17/2005 3:30:00 PM
Project: Phase II Annual 2005
Lab ID: 0508214-07
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.63	0.10		mg/L	1	8/19/2005
Chloride	230	1.0		mg/L	10	8/24/2005
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/19/2005
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/19/2005
Sulfate	13	0.50		mg/L	1	8/19/2005
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	8/27/2005
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	390	20		µg/L	20	8/29/2005
Toluene	ND	20		µg/L	20	8/29/2005
Ethylbenzene	30	20		µg/L	20	8/29/2005
Xylenes, Total	72	20		µg/L	20	8/29/2005
Surr: 4-Bromofluorobenzene	108	86.1-121		%REC	20	8/29/2005
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	8/22/2005
EPA 6010: TOTAL RECOVERABLE METALS						Analyst: CMC
Arsenic	ND	0.020		mg/L	1	8/31/2005 2:56:57 PM
Barium	2.4	0.10		mg/L	5	8/31/2005 3:46:59 PM
Cadmium	ND	0.0020		mg/L	1	8/31/2005 2:56:57 PM
Chromium	0.0075	0.0060		mg/L	1	8/31/2005 2:56:57 PM
Lead	ND	0.0050		mg/L	1	8/31/2005 2:56:57 PM
Selenium	ND	0.050		mg/L	1	8/31/2005 2:56:57 PM
Silver	ND	0.0050		mg/L	1	8/31/2005 2:56:57 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT:	San Juan Refining	Client Sample ID:	Trip Blank
Lab Order:	0508214	Collection Date:	
Project:	Phase II Annual 2005		
Lab ID:	0508214-08	Matrix:	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/29/2005
Toluene	ND	1.0		µg/L	1	8/29/2005
Ethylbenzene	ND	1.0		µg/L	1	8/29/2005
Xylenes, Total	ND	1.0		µg/L	1	8/29/2005
Surr: 4-Bromofluorobenzene	107	86.1-121		%REC	1	8/29/2005

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK	Batch ID: R16354	Test Code: E300	Units: mg/L	Analysis Date: 8/18/2005	Prep Date:
Client ID:		Run ID: LC_050818A		SeqNo: 390049	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: MBLK	Batch ID: R16415	Test Code: E300	Units: mg/L	Analysis Date: 8/23/2005	Prep Date:
Client ID:		Run ID: LC_050823A		SeqNo: 391368	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK | Batch ID: R16423 | Test Code: E300 | Units: mg/L | Analysis Date: 8/24/2005 | Prep Date:
Client ID: | Run ID: LC_050824A | SeqNo: 391843

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID: MBLK | Batch ID: R16462 | Test Code: E300 | Units: mg/L | Analysis Date: 8/26/2005 | Prep Date:
Client ID: | Run ID: LC_050826A | SeqNo: 393070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: 5mL rb-b	Batch ID: R16473	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/29/2005	Prep Date:
Client ID:		Run ID: NEPTUNE_050829A		SeqNo: 393900	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	10.5	0	10	0	105	86.1	121	0			

Sample ID: 5mL rb-b	Batch ID: R16484	Test Code: SW8260B	Units: µg/L	Analysis Date: 8/30/2005	Prep Date:
Client ID:		Run ID: NEPTUNE_050829B		SeqNo: 393928	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	10.75	0	10	0	107	86.1	121	0			

Sample ID: MB-8590	Batch ID: 8590	Test Code: SW7470	Units: mg/L	Analysis Date: 8/22/2005	Prep Date: 8/22/2005
Client ID:		Run ID: MI-LA254_050822A		SeqNo: 390791	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Method Blank

Sample ID: MB-8584 Batch ID: 8584 Test Code: SW6010A Units: mg/L Analysis Date: 8/31/2005 1:13:44 PM Prep Date: 8/23/2005

Client ID: Run ID: ICP_050831D SeqNo: 394031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	0.009111	0.005									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *04-Nov-05*

CLIENT: San Juan Refining
Work Order: 0508214
Project: *Phase II Annual 2005*

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS | Batch ID: R16354 | Test Code: E300 | Units: mg/L | Analysis Date: 8/18/2005 | Prep Date:
Client ID: | Run ID: LC_050818A | SeqNo: 390050

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4552	0.1	0.5	0	91.0	90	110	0			
Chloride	4.809	0.1	5	0	96.2	90	110	0			
Nitrogen, Nitrite (As N)	0.9869	0.1	1	0	98.7	90	110	0			
Nitrogen, Nitrate (As N)	2.455	0.1	2.5	0	98.2	90	110	0			
Phosphorus, Orthophosphate (As P)	4.876	0.5	5	0	97.5	90	110	0			
Sulfate	9.813	0.5	10	0	98.1	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.442	0.1	3.5	0	98.3	90	110	0			

Sample ID: LCS ST300-05021 | Batch ID: R16415 | Test Code: E300 | Units: mg/L | Analysis Date: 8/23/2005 | Prep Date:
Client ID: | Run ID: LC_050823A | SeqNo: 391369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5143	0.1	0.5	0	103	90	110	0			
Chloride	4.738	0.1	5	0	94.8	90	110	0			
Nitrogen, Nitrite (As N)	0.9548	0.1	1	0	95.5	90	110	0			
Nitrogen, Nitrate (As N)	2.402	0.1	2.5	0	96.1	90	110	0			
Phosphorus, Orthophosphate (As P)	4.872	0.5	5	0	97.4	90	110	0			
Sulfate	9.675	0.5	10	0	96.8	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.357	0.1	3.5	0	95.9	90	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS ST300-05021 Batch ID: R16423 Test Code: E300 Units: mg/L Analysis Date: 8/24/2005 Prep Date:
Client ID: Run ID: LC_050824A SeqNo: 391844

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5134	0.1	0.5	0	103	90	110	0			
Chloride	4.804	0.1	5	0	96.1	90	110	0			
Nitrogen, Nitrite (As N)	0.9619	0.1	1	0	96.2	90	110	0			
Nitrogen, Nitrate (As N)	2.441	0.1	2.5	0	97.6	90	110	0			
Phosphorus, Orthophosphate (As P)	4.966	0.5	5	0	99.3	90	110	0			
Sulfate	9.911	0.5	10	0	99.1	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.403	0.1	3.5	0	97.2	90	110	0			

Sample ID: LCS ST300-05021 Batch ID: R16462 Test Code: E300 Units: mg/L Analysis Date: 8/26/2005 Prep Date:
Client ID: Run ID: LC_050826A SeqNo: 393071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.5159	0.1	0.5	0	103	90	110	0			
Chloride	4.791	0.1	5	0	95.8	90	110	0			
Nitrogen, Nitrite (As N)	0.957	0.1	1	0	95.7	90	110	0			
Nitrogen, Nitrate (As N)	2.438	0.1	2.5	0	97.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.884	0.5	5	0	97.7	90	110	0			
Sulfate	9.721	0.5	10	0	97.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.395	0.1	3.5	0	97.0	90	110	0			

Sample ID: 100ng lcs Batch ID: R16473 Test Code: SW8260B Units: µg/L Analysis Date: 8/29/2005 Prep Date:
Client ID: Run ID: NEPTUNE_050829A SeqNo: 393901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.84	1	20	0	104	80	130	0			
Toluene	20.64	1	20	0	103	77	121	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0508214
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: 100ng lcs-b | Batch ID: R16484 | Test Code: SW8260B | Units: µg/L | Analysis Date: 8/30/2005 | Prep Date:
Client ID: | Run ID: NEPTUNE_050829B | SeqNo: 393930

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.01	1	20	0	105	80	130	0			
Toluene	20.28	1	20	0	101	77	121	0			

Sample ID: LCS-8590 | Batch ID: 8590 | Test Code: SW7470 | Units: mg/L | Analysis Date: 8/22/2005 | Prep Date: 8/22/2005
Client ID: | Run ID: MI-LA254_050822A | SeqNo: 390792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005303	0.0002	0.005	0	106	75.2	134	0			

Sample ID: LCSD-8590 | Batch ID: 8590 | Test Code: SW7470 | Units: mg/L | Analysis Date: 8/22/2005 | Prep Date: 8/22/2005
Client ID: | Run ID: MI-LA254_050822A | SeqNo: 390812

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005444	0.0002	0.005	0	109	75.2	134	0.005303	2.63	0	

Sample ID: LCS-8584 | Batch ID: 8584 | Test Code: SW6010A | Units: mg/L | Analysis Date: 8/31/2005 1:16:44 PM | Prep Date: 8/23/2005
Client ID: | Run ID: ICP_050831D | SeqNo: 394032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.499	0.02	0.5	0	99.8	80	120	0			
Barium	0.4868	0.02	0.5	0	97.4	80	120	0			
Cadmium	0.4904	0.002	0.5	0	98.1	80	120	0			
Chromium	0.4818	0.006	0.5	0	96.4	80	120	0			
Lead	0.4724	0.005	0.5	0	94.5	80	120	0			
Selenium	0.4776	0.05	0.5	0	95.5	80	120	0			
Silver	0.4905	0.005	0.5	0.009111	96.3	80	120	0			B

Qualifiers: ND - Not Detected at the Reporting Limit | S - Spike Recovery outside accepted recovery limits | B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits | R - RPD outside accepted recovery limits

CLIENT: San Juan Refining
Work Order: 050821-4
Project: Phase II Annual 2005

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: LCSD-8584 Batch ID: 8584 Test Code: SW6010A Units: mg/L Analysis Date: 8/31/2005 1:20:05 PM Prep Date: 8/23/2005
Client ID: Run ID: ICP_050831D SeqNo: 394033

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.496	0.02	0.5	0	99.2	80	120	0.499	0.616	20	
Barium	0.4883	0.02	0.5	0	97.7	80	120	0.4868	0.300	20	
Cadmium	0.4882	0.002	0.5	0	97.6	80	120	0.4904	0.464	20	
Chromium	0.4853	0.006	0.5	0	97.1	80	120	0.4818	0.717	20	
Lead	0.4706	0.005	0.5	0	94.1	80	120	0.4724	0.381	20	
Selenium	0.4675	0.05	0.5	0	93.5	80	120	0.4776	2.12	20	
Silver	0.4907	0.005	0.5	0.009111	96.3	80	120	0.4905	0.0265	20	B

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 8/18/2005

Work Order Number 0508214 | Received by GLS

Checklist completed by [signature] Date 8-18-05

Matrix | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	3°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
Other: _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining
Address: #50, Rd 4990 Bloomfield, NM 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II - Annual 2005
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature: 3°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HNO_3	Preservative:	HEAL No.
								0508214
8/17/05	2pm	H2O	CW22+00	2-VOA	X			-1
				1-500ml			H_2SO_4	-1
				1-500ml				1
				1-500ml		X		1
8/17/05	235pm	H_2O	CW23+10	2-VOA	X			2
				1-500ml			H_2SO_4	2
				1-500ml				2
				1-500ml		X		2

ANALYSIS REQUEST

BTEX + MTBE + TPH (8021) (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
X																
								X								
								X								
							X									
X																
								X								
								X								
							X									

Date: 8/18/05 Time: 910AM Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) [illegible] 8/18/05 @1655

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
Other: _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refinery
Address: #50, Rd 4990
Bloomfield, NM
87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II - Annual 2005
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 050814	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/17/05	1050A	H_2O	OW 11+15	2-VOA	X			3	X																
"	"	"	"	1-500ml			H_2SO_4	3									X								
"	"	"	"	1-500ml				3									X								
"	"	"	"	1-500ml		X		3								X									
8/17/05	1130AM	H_2O	CW 14+10	2-VOA	X			4	X																
"	"	"	"	1-500ml			H_2SO_4	4									X								
"	"	"	"	1-500ml				4									X								
"	"	"	"	1-500ml		X		4								X									

Date: 8/18/05 Time: 910AM Relinquished By: (Signature) Cindy Hurtado
Received By: (Signature) [signature] 8-18-05 1655

Date: Time: Relinquished By: (Signature)
Received By: (Signature)

Remarks:

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refinery
Address: #50, Rd 4990 Bloomfield, Nm 87413
Phone #: 505-632-4161
Fax #: 505-632-3911

Project Name: Phase II - Annual 2005
Project #:
Project Manager:
Sampler: Cindy Hurtado / Angela Folk
Sample Temperature:

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0508214	BTEX + MBE + TMBs (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/17/05	3:10pm	H2O	CW 23+90	2-VOA	X			5	X																
				1-~~500~~ 250 ml			H_2SO_4	5									X								
				1-~~500~~ 250 ml				5									X								
				1-~~500~~ 500 ml		X		5								X									
8/17/05	2:45pm	H2O	OW 23+10	2-VOA	X			6	X																
				1-250 ml			H_2SO_4	6									X								
				1-250 ml				6									X								
				1-500 ml		X		6								X									

Date	Time	Relinquished By: (Signature)	Received By: (Signature)
6/18/05	9:10am	Cindy Hurtado	[signature] 6-18-05 @ 1655
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

ANALYSIS REQUEST

CHAIN-OF-CUSTODY RECORD

QA/QC Package: Std ☐ Level 4 ☐ Other: _____

Client: San Juan Refining

Address: #50 Rd 4990 Bloomfield, NM 87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Project Name: Phase II - Annual 2005

Project #:

Project Manager:

Sampler: Cindy Hurtado / Angela Folk

Sample Temperature:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No. 0508214	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
8/17/05	330pm	H2O	OW 23+90	3-VOA	X			-7	X																
				1-250mL			H_2SO_4	7									X								
				1-250mL				7									X								
				1-500mL		X		7								X									
			trip blank	3/VOA	X			-8	X																

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
8/18/05	9100m	Cindy Hurtado	8-18-05 @ 1655	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

October 28, 2005

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: CW 0+60 Resample

Order No.: 0510200

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 1 sample on 10/20/2005 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: *28-Oct-05*

CLIENT:	San Juan Refining	**Client Sample ID:**	CW 0+60
Lab Order:	0510200	**Collection Date:**	10/19/2005 3:00:00 PM
Project:	CW 0+60 Resample		
Lab ID:	0510200-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 245.1: MERCURY						Analyst: CMC
Mercury	ND	0.00020		mg/L	1	10/26/2005

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Hall Environmental Analysis Laboratory

Date: *28-Oct-05*

CLIENT: San Juan Refining
Work Order: 0510200
Project: CW 0+60 Resample

QC SUMMARY REPORT
Method Blank

Sample ID MB-9056 Batch ID: 9056 Test Code: SW7470 Units: mg/L Analysis Date 10/26/2005 Prep Date 10/26/2005

Client ID: Run ID: MI-LA254_051026A SeqNo: 415137

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

2 / 4

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *28-Oct-05*

CLIENT: San Juan Refining
Work Order: *0510200*
Project: CW 0+60 Resample

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID LCS-9056	Batch ID: 9056	Test Code: SW7470	Units: mg/L		Analysis Date 10/26/2005			Prep Date 10/26/2005		
Client ID:		Run ID: MI-LA254_051026A			SeqNo: 415138					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004627	0.0002	0.005	0	92.5	80	120	0			

Sample ID LCSD-9056	Batch ID: 9056	Test Code: SW7470	Units: mg/L		Analysis Date 10/26/2005			Prep Date 10/26/2005		
Client ID:		Run ID: MI-LA254_051026A			SeqNo: 415153					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004765	0.0002	0.005	0	95.3	80	120	0.004627	2.94	0	

3 / 4

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name SJR | Date and Time Received: 10/20/2005

Work Order Number 0510200 | Received by GLS

Checklist completed by Signature [signature] Date 10/20/05

Matrix | Carrier name UPS

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	

Container/Temp Blank temperature? 4° | 4° C ± 2 Acceptable If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: Ph adjusted on CW 0+60 From 3.0 to 1.0 with 1mL of HNO_3 in Lab 10/20/05 GLS

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: San Juan Refining

Address: #50 CR 4990
Bloomfield, NM
87413

Phone #: 505-632-4161

Fax #: 505-632-3911

Project Name: ~~CW-0760~~ CW-0760 ReSample

Project #:

Project Manager:

Sampler: Cindy Hurtado

Sample Temperature: 4°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
10/19/05	3pm	H20	CW 0760	1-500ml		X		0510200 -1

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	X Mercury Method 7470				Air Bubbles or Headspace (Y or N)

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
10/19/05	3:15pm	Cindy Hurtado	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 10/20/05 15:25

Remarks: